

227th Meeting of the  
**American Astronomical Society**  
with High Energy Astrophysics Division (HEAD) and  
Historical Astronomy Division (HAD)

4-8 January 2016 | Kissimmee, FL

**Session Numbering Key**

- 100s Tuesday
- 200s Wednesday
- 300s Thursday
- 400s Friday

*Sessions are numbered in the Program Book by day and time.*

*Changes after 7 December are included only in the online program materials.*



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#aas227

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# AAS OFFICERS & COUNCILORS

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## Officers

*President (2014-2016)*

C. Megan Urry, Yale University

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*Senior Vice-President (2013-2016)*

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*Executive Officer (2006-Present)*

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2013-2016

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2014-2017

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Stephen Unwin, Jet Propulsion Laboratory

2015-2018

Daniela Calzetti, University of Massachusetts

Sally Oey, University of Michigan

Mercedes Richards, Penn State University

# ATTENDEE SERVICES

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For security purposes, please wear your badge at all times during the meeting. Attendees who do not have their name badges on will be denied entrance to meeting rooms, the exhibit hall, etc. Please do not leave personal items unattended. The AAS is not responsible for lost or stolen property.

## Registration

### City Hall Lobby

Monday: 3:00 pm - 8:00 pm

Tuesday: 7:30 am - 5:00 pm

Wednesday - Thursday: 8:00 am - 5:00 pm

Friday: 8:00 am - 12:00 pm

## Exhibit Hall

### Exhibit Hall A

Monday Evening: 7:00 pm - 9:00 pm

Tuesday - Thursday: 9:00 am - 6:30 pm

Friday: 9:00 am - 4:00 pm

## Exhibit Hall Events

### Exhibit Hall A

- **Opening Reception**

Monday: 7:00 pm - 9:00 pm

- **Morning Coffee Breaks**

Tuesday - Friday: 9:30 am - 10:00 am

- **Poster Sessions**

Tuesday - Thursday: 5:30 pm - 6:30 pm with cash bar

Friday: 1:00 pm - 2:00 pm

*Posters remaining at closing time each day will be recycled.*

## **Speaker Ready Room**

### **Captiva**

Monday: 3:00 pm - 5:00 pm

Tuesday - Thursday: 7:30 am - 4:00 pm

Friday: 7:30 am - 2:00 pm

## **Donor and Sponsor Lounge**

*Attendance by Invitation Only*

### **Flagler**

Tuesday - Thursday: 7:30 am - 5:30 pm

Friday: 7:30 am - 2:00 pm

## **What's New at the Meeting**

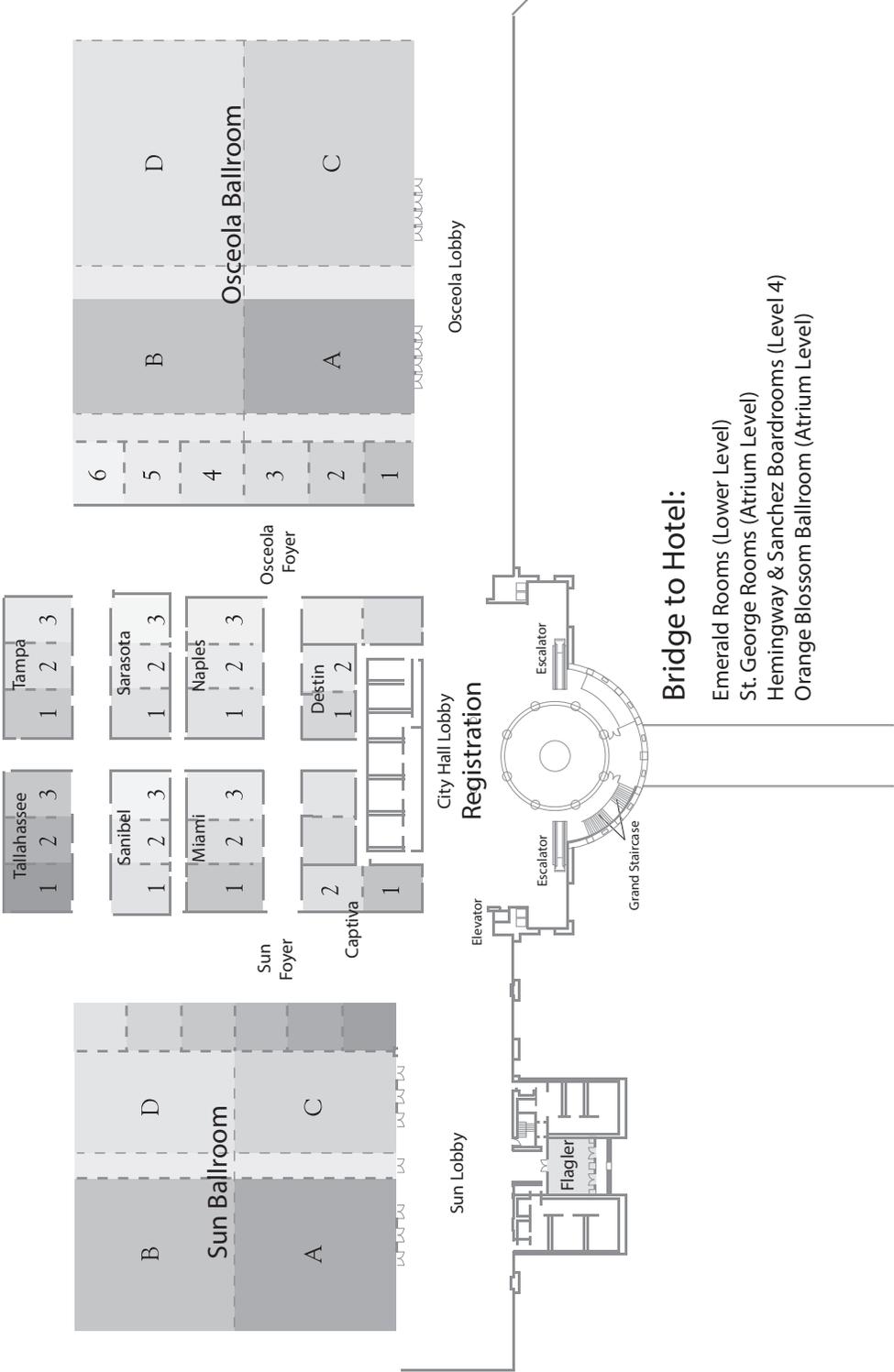
### **Student Pavilion**

#### **Exhibit Hall A**

We welcome undergraduates and graduate students to the Student Pavilion. This is a casual seating area to chill out, network with fellow students, charge your devices, meet with mentors, and learn about programs available to you.

# MEETING FLOOR PLAN

## CONVENTION CENTER Level Two



# SPONSORS

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## PLATINUM SPONSOR

*THE VALUE OF PERFORMANCE*

***NORTHROP GRUMMAN***

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## GOLD SPONSOR



## SILVER SPONSORS

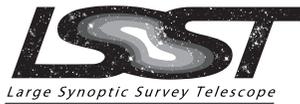


**Ball Aerospace  
& Technologies Corp.**



**GIANT MAGELLAN  
TELESCOPE**

## BRONZE SPONSORS



## CONTRIBUTORS



**We would like to thank our  
PLATINUM & GOLD SPONSORS  
for their generous support  
of the 227th AAS Meeting.**

**Northrop Grumman - Platinum Sponsor**

The James Webb Space Telescope is the world's next-generation space observatory and successor to the Hubble Space Telescope.

The most powerful space telescope ever built, the Webb Telescope will observe the most distant objects in the universe, provide images of the first galaxies formed and see unexplored planets around distant stars. The Webb Telescope is a joint project of NASA, the European Space Agency and the Canadian Space Agency.

*THE VALUE OF PERFORMANCE*

***NORTHROP GRUMMAN***

Northrop Grumman is a leading global security company providing innovative systems, products and solutions in unmanned systems, cyber, C4ISR, and logistics and modernization to government and commercial customers worldwide. Please visit [www.northropgrumman.com](http://www.northropgrumman.com) for more information.

**SBIG Imaging Systems - Gold Sponsor**

SBIG are pioneers in the field of astronomical CCD imaging hardware and software. Our goal is to design and manufacture the best astronomical instrumentation. Our philosophy is to listen to our customers. With your input and our efforts we have a winning combination. We look forward to continuing development of instrumentation to benefit the field of astronomy and scientific imaging.

Our company is run by astronomers for astronomers! Visit Tim Puckett in Booth #304.



## SPONSORED ACTIVITIES

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### **Cybercafe and Charging Stations**

Northrop Grumman

### **Hack Day**

Northrop Grumman and  
Large Synoptic Survey Telescope (LSST)

### **Program Booklet**

SBIG Instruments

### **Mobile Device Charging Station**

DFM Engineering and European Southern  
Observatory (ESO)

### **Student Education and Public Outreach Event**

Associated Universities, Inc.

### **Badge Holders & Lanyards**

Ball Aerospace

### **LCD Display Board**

PlaneWave Instruments and Association  
of Universities for Research in Astronomy  
(AURA)

### **Wednesday Morning Coffee Break**

Giant Magellan Telescope

## UNDERGRADUATE ORIENTATION SPONSORS

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AAS Committee on the Status of Minorities  
in Astronomy

AAS Committee on the Status of Women

AAS Committee for Sexual-Orientation and  
Gender Minorities in Astronomy (SGMA)

AIP - Society of Physics Students

Arizona State University

Astrobites

Brigham Young University

California Institute of Technology

Columbia University

Florida State University

Georgia State University

George Washington University

Harvard University

Indiana University

Johns Hopkins University

Maria Mitchell Observatory

National Radio Astronomy Observatory -  
NRAO

New Mexico Tech

New Mexico State University

Northwestern University

The Pennsylvania State University

Princeton University

Rutgers University

Texas A&M University

Texas Christian University

Texas Tech University

Tufts University

University of Alabama

University of Arizona

University of California, Santa Barbara

University of California, Santa Cruz

University of Chicago

University of Florida

University of Illinois

University of Maryland, College Park

University of Michigan

University of Minnesota

University of New Mexico

University of Oklahoma

University of Pennsylvania

University of Texas, Austin

University of Toledo

University of Virginia

University of Wisconsin, Madison

University of Wisconsin, Milwaukee

University of Wyoming

Yale University

## EXHIBITORS (ALPHABETICALLY)

<b>Booth Name</b>	<b>Booth #</b>
AAS - American Astronomical Society	229
Allied Powers, LLC	110
American Institute of Physics - Physics Today	316
American Institute of Physics Grad School Shopper	314
ANDOR	107
Arecibo Observatory, NSF	313
Associated Universities Inc., NSF	313
Association of Universities for Research in Astronomy (AURA), NSF	313
Astro Haven Enterprises	400
ASTRON	411
Astronomical Society of the Pacific	324
Ball Aerospace & Technologies Corp.	300
Cambridge University Press	213
Capital One	303
Center for Astronomy and Physics Education Research (CAPER)	113
Chandra X-ray Center	428
DFM Engineering, Inc.	208
Digitalis	323
e2v	117
Elsevier	421
Eureka Scientific Inc.	409
European Southern Observatory	101
Finger Lakes Instrumentation, LLC	209
Gemini Observatory, NSF	313
Giant Magellan Telescope Organization	206
Gravitational Wave Astronomy: Opening a New Window on the Universe	333
High Energy Astrophysics Division	229
Historical Astronomy Division	229
Infrared Processing and Analysis Center - IPAC	123
IOP Publishing	223
Las Cumbres Global Optical Telescope Network	111
Lowell Observatory	312
Magna-Tech Electronic Inc.	139
MMT Observatory	415
NANOGrav	331
NASA	129

**EXHIBITORS (ALPHABETICALLY) continued**

<b>Booth Name</b>	<b>Booth #</b>
NASA Exoplanet Science Institute, Kepler/K2 Project	222
NASA SOFIA	405
NASA's High-Energy Observatories: Fermi, NuSTAR and SWIFT	132
National Optical Astronomy Observatory, NSF	313
National Radio Astronomy Observatory, NSF	307
National Science Foundation (NSF)	313
National Solar Observatory, NSF	313
Northrop Grumman Systems Corporation	201
OmniGlobe	216
OPTEC	217
Oxford University Press	318
Pan-STARRS	417
PlaneWave Instruments	432
Princeton University Press	215
Sapling Learning	121
SBIG Astronomical Instruments	304
SIMBAD	218
Sloan Digital Sky Survey	219
Smithsonian/NASA Astrophysics Data System	220
Space Science Institute	119
Space Telescope Science Institute	126
SPIE - The International Society for Optics and Photonics	320
Springer	210
Square Kilometre Array	301
Teledyne Imaging Sensors	308
The Elumenati	109
The Large Synoptic Survey Telescope, NSF	313
The National Academies of Sciences, Engineering and Medicine	329
Thirty Meter Telescope	403
Universities Space Research Association (USRA)	306
University of Arizona Press	<b>SHARED BOOK EXHIBIT</b>
W. W. Norton	207
Woodland Hills Telescope	112
WorldWide Telescope Ambassadors	322

## EXHIBITORS (BY BOOTH NUMBER)

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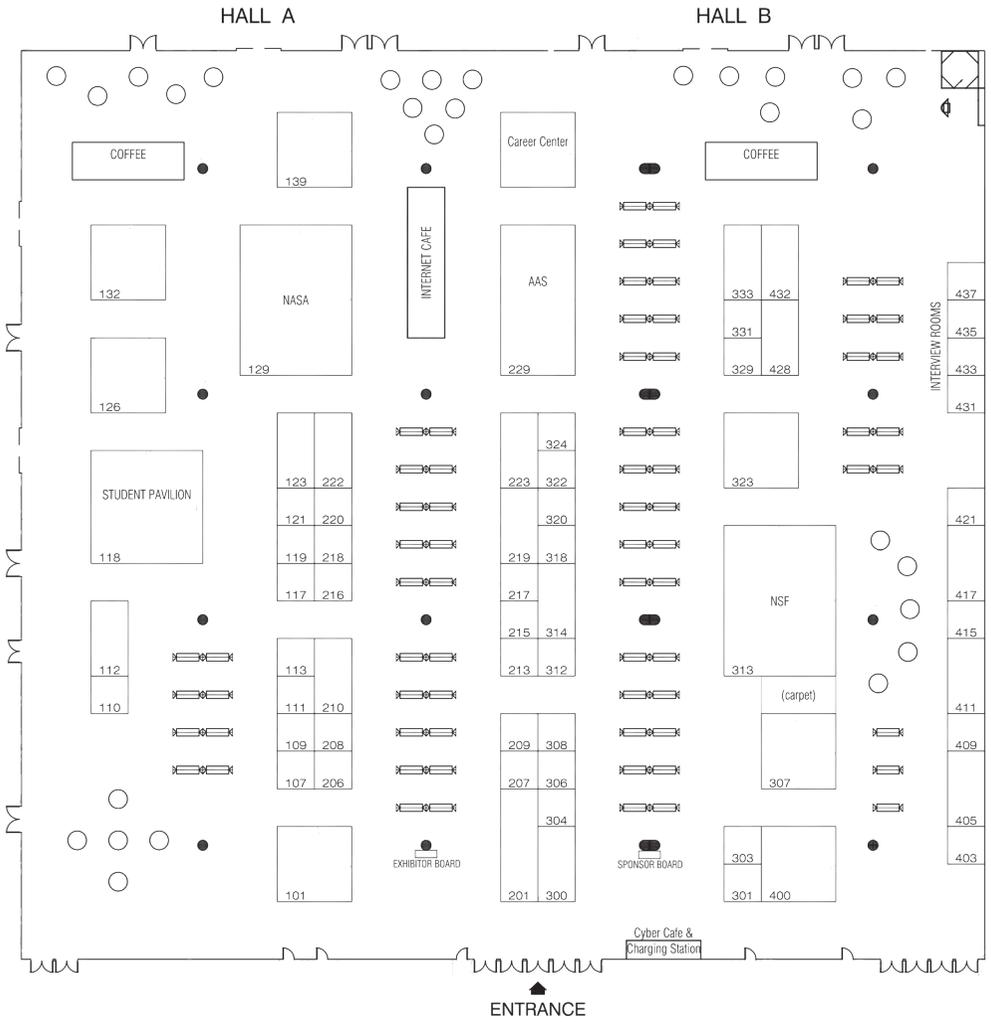
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209	Finger Lakes Instrumentation, LLC
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213	Cambridge University Press
215	Princeton University Press
216	OmniGlobe
217	OPTEC
218	SIMBAD
219	Sloan Digital Sky Survey
220	Smithsonian/NASA Astrophysics Data System
222	NASA Exoplanet Science Institute, Kepler/K2 Project
223	IOP Publishing
229	American Astronomical Society
229	High Energy Astrophysics Division
229	Historical Astronomy Division
300	Ball Aerospace & Technologies Corp.
301	Square Kilometre Array
303	Capital One

**EXHIBITORS (BY BOOTH NUMBER) continued**

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<b>Booth #</b>	<b>Booth Name</b>
304	SBIG Astronomical Instruments
306	Universities Space Research Association (USRA)
307	National Radio Astronomy Observatory, NSF
308	Teledyne Imaging Sensors
312	Lowell Observatory
313	Arecibo Observatory, NSF
313	Associated Universities Inc., NSF
313	Association of Universities for Research in Astronomy (AURA), NSF
313	Gemini Observatory, NSF
313	National Optical Astronomy Observatory, NSF
313	National Science Foundation (NSF)
313	National Solar Observatory, NSF
313	The Large Synoptic Survey Telescope, NSF
314	American Institute of Physics Grad School Shopper
316	American Institute of Physics - Physics Today
318	Oxford University Press
320	SPIE - The International Society for Optics and Photonics
322	WorldWide Telescope Ambassadors
323	Digitalis
324	Astronomical Society of the Pacific
329	The National Academies of Sciences, Engineering and Medicine
331	NANOGrav
333	Gravitational Wave Astronomy: Opening a New Window on the Universe
400	Astro Haven Enterprises
403	Thirty Meter Telescope
405	NASA SOFIA
409	Eureka Scientific Inc.
411	ASTRON
415	MMT Observatory
417	Pan-STARRS
421	Elsevier
428	Chandra X-ray Center
432	PlaneWave Instruments
<b>SHARED BOOK EXHIBIT</b>	University of Arizona Press

# EXHIBIT HALL FLOOR PLAN



# PRIZE WINNERS

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## Rodger Doxsey Travel Prize

The Rodger Doxsey Travel Prize, established through the support of his father, John Doxsey, and other friends, family, and colleagues, provides graduate students within one year of receiving or receipt of their PhD a monetary prize to enable the oral presentation of their dissertation research at a winter AAS meeting.

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### WINNERS

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**Marshall Johnson**  
*Univ. of Texas at Austin*



**Sean Johnson**  
*Univ. of Chicago*



**Charles Kilpatrick**  
*Univ. of Arizona*



**Laura Kreidberg**  
*Univ. of Chicago*



**Matthew Miller**  
*Univ. of Michigan*



**Heath Shipley**  
*Texas A&M Univ.*



**Garrett Somers**  
*The Ohio State Univ.*

#### Not Pictured

**John Chisholm**, *Univ. of Wisconsin Madison*

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### HONORABLE MENTIONS

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**Allison Kirkpatrick**  
*Univ. of Massachusetts*



**Kimberly Sokal**  
*Univ. of Virginia*

#### Not Pictured

**Scott Adams**, *Ohio State Univ.*

**Michael Bottom**, *California Institute of Technology*

**Yi-Kuan Chiang**, *Univ. of Texas, Austin*

**Caroline Morle**, *Univ. of California at Santa Cruz*

# BETH BROWN MEMORIAL AWARDS

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The ASTRO committee of the National Society of Black Physicists (NSBP) select an undergraduate and graduate student who present outstanding research in the form of posters and one winner, either graduate or undergraduate, for their oral presentation at the NSBP meeting. The AAS sponsors these students to present their work at an AAS meeting by providing funding. The oral winner also receives funding to present talks at Howard University and the University of Michigan, following the path taken by the late astronomer, Beth Brown.

## ORAL WINNER



**Christopher S. Moore**

*Univ. of Colorado, Boulder*

**125.01**

**Title:** The Effects of Magnetic Field Morphology on the Determination of Oxygen and Iron Abundances in the Solar Photosphere

**Session Title:** The Sun and Solar System

**Session Date:** 5 January; talk time including Q and A is 2:00 PM to 2:10 PM

## POSTER WINNERS



Undergraduate

**Carl E. Fields, Jr.**

Arizona State Univ

**Poster Number** 144.01

**Title:** On the Origin of the Elements: The Spectacular Role of White Dwarfs

Graduate

**Julie Dumas**

*Rensselaer Polytechnic Institute*

# AAS ANTI-HARASSMENT STATEMENT OF POLICY

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It is the policy of the American Astronomical Society (AAS) that all participants in Society activities will enjoy an environment free from all forms of discrimination, harassment, and retaliation. As a professional society, the AAS is committed to providing an atmosphere that encourages the free expression and exchange of scientific ideas. In pursuit of that ideal, the AAS is dedicated to the philosophy of equality of opportunity and treatment for all members, regardless of gender, gender identity or expression, race, color, national or ethnic origin, religion or religious belief, age, marital status, sexual orientation, disabilities, veteran status, or any other reason not related to scientific merit. Harassment, sexual or otherwise, is a form of misconduct that undermines the integrity of Society meetings. Violators of this policy will be subject to discipline.

Any individual covered by this policy who believes that he or she has been subjected to harassment should contact the AAS Executive Officer at [kevin.marvel@aaas.org](mailto:kevin.marvel@aaas.org) or other Society Officer.

Full the full AAS Anti-Harassment Statement, please visit <http://aaas.org/policies/anti-harassment-policy>

# A GUIDE TO AAS MEETING ETIQUETTE

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AAS meetings are the largest and most logistically complex astronomy meetings in the world. We ask all attendees to work together to enhance the value of the meetings by keeping in mind the following points.

## Executive Summary

- Do wear your AAS identification badge at all times during the meeting.
- Do obey the “golden rule,” i.e., treat others as you would have them treat you.
- Do not hog wireless bandwidth; use the AAS wireless service sparingly.
- Do be quiet during presentations; use computers and mobile devices discretely.
- Do silence all cell phones and other electronic devices with audible alerts.
- Do not blog, tweet, or otherwise post private conversations online.
- Do not panic if reporters attend your talk on results under journal embargo.
- Do pick up after yourself by depositing trash in the appropriate receptacles.

## General Considerations

Meetings of the American Astronomical Society are not public events. All attendees must register at the applicable rate; registration types are structured to cover all situations. The only exceptions involve sessions or other activities specifically noted as being open to the public, such as public talks or star parties held in collaboration with local amateur astronomers.

Identification badges must be worn at all times during the meeting. These badges help meeting attendees, AAS staff, and security personnel identify registered participants. Attendees not wearing their name badges will be denied entrance to session rooms, the exhibit hall, and other meeting venues. If you lose your name badge, visit the AAS registration desk to obtain a new one. Note that the design of AAS meeting badges changes regularly to prevent the inappropriate reuse of old badges.

Attendance at AAS meetings is not a right but a privilege, and attendees are expected to behave professionally. The AAS is committed to providing an atmosphere that encourages the free expression and exchange of scientific ideas. The AAS is further dedicated to the philosophy of equality of opportunity and treatment for all members and other meeting attendees, regardless of gender, race, ethnic origin, religion, age, marital status, sexual orientation, disabilities, or any other reason not related to scientific merit. It is AAS policy that all participants in Society activities will enjoy an environment free from all forms of discrimination, harassment, and retaliation. Harassment, sexual or otherwise, is a form of misconduct that undermines the integrity of Society meetings. Violators will be subject to discipline. (Full AAS anti-harassment policy: <http://aas.org/policies/anti-harassment-policy>)

AAS-meeting staff are trained professionals, expert at organizing and conducting scientific meetings. They work with professional contractors who specialize in providing audio-visual and other services, and with professional hotel and convention-center staff as well. The AAS retains security services, sometimes through the meeting venue and sometimes privately, to ensure the safety and security of all meeting attendees and exhibitors. Help us ensure a safe, secure, and professional environment by acting appropriately, reporting inappropriate behavior, and paying attention to those around you and your environment.

Attendees who are notably disrespectful or who act in an unprofessional manner toward meeting staff, contractors, other attendees, or hotel or convention-center staff will be required to leave the meeting and may have their registration rescinded without refund. In extreme cases, the AAS may call law-enforcement authorities and/or pursue legal action.

Note that all sessions except those marked “private” by the AAS are open to all registered attendees, including scientists, educators, students, journalists, and guests. All are due the same level of professional respect and courtesy. Only with your help can we ensure the most productive scientific conference.

### **Computers & Internet Service**

The AAS provides wireless Internet service throughout each meeting, but we cannot guarantee full coverage in all locations. We provide priority access in the common areas. This means you may experience limited connectivity in the session rooms.

If you do make use of wireless Internet access during a presentation, or even if you are just taking notes on your computer, please keep your activities as quiet as possible so as to minimize distractions to other attendees and the speaker. If you must use a computer during a session, please consider sitting near the back of the room so as not to distract the speaker or session chair. These same guidelines apply to mobile phones, tablets, and other electronic devices.

One of the cost drivers for meeting registration is provision of adequate bandwidth, which — believe it or not — costs tens of thousands of dollars per meeting. Excessive downloading or uploading of files, software updates, streaming video, and other bandwidth-hungry activities (e.g., gaming, exploring virtual worlds) increases the costs for all attendees. The AAS reserves the right to ban excessive users from its meeting network and to use site blocking, port blocking, and traffic shaping to ensure adequate bandwidth for all.

## **Mobile Phones & Related Devices**

Cell phones, tablets, pagers, and similar electronic devices should be silenced. Before each session begins and before you enter an active session, please silence your cell phone and any other devices that have audible alerts. Switching phones to vibrate rather than ring is not sufficient, as the vibrations can be heard or felt by those nearby.

Do not dial or take a phone call during a session. Please exit the session room before beginning or answering a call. All modern mobile phones have caller-ID and call-back features — please make use of them.

## **Blogging & Tweeting**

If you blog, tweet, or otherwise post near-real-time material from the meeting online, you must follow the guidelines above concerning the use of computers, tablets, mobile phones, and AAS wireless bandwidth.

Please do not publicly report private conversations — only scheduled presentations and public comments are fair game for blogging, tweeting, etc.

Remember that many presentations at AAS meetings concern work that has not yet been peer-reviewed. So think twice before posting a blog entry or tweet that is critical of such work. It is helpful to receive constructive criticism during the Q&A after your talk or while standing next to your poster, but it is hurtful to be raked over the coals online before your session is even over and with no easy way to respond.

New York Times editor Bill Keller said it well. When it comes to meetings among colleagues, he explained, “We need a zone of trust, where people can say what is on their minds without fear of having an unscripted remark or a partially baked idea zapped into cyberspace. Think of it as common courtesy.”

## **Sessions & Questions**

If you are giving a presentation, please be sure you have read the speaker and AV instructions on the AAS website (<http://aas.org/meetings/aas-speaker-ready-and-audio-visual-information>). All oral presentations must be uploaded to the internal network in the Speaker Ready Room. Personal laptops and USB drives will not be permitted for presentations in session rooms. We ask that you upload your presentation at least 24 hours in advance. Be sure to show up at your session on time.

The session chair is in charge of the session. He or she is empowered to stop questioning and to rearrange or otherwise adjust time slots (or not) based on tardiness or non-attendance of a scheduled speaker. The chair cannot extend talk times beyond the common limits of 10 minutes for regular contributions and 20 minutes for dissertation contributions (including time allotted for Q&A).

When asking questions of speakers please be professional, courteous, and polite. This is especially important when questioning students presenting their dissertation research.

Be considerate of other people wishing to ask questions. If you have multiple or detailed questions, speak with the presenter after the session.

### **Journalists & Embargoes**

If your presentation covers results that have been, or will be, submitted to Nature or Science or any other journal with a strict embargo policy, be sure you understand how that policy applies to scientific meetings. No journal wishes to hinder communication between scientists. For example, both Science and Nature state explicitly that conference presentations do not violate their embargo policies.

Both journals also state that if your presentation covers work that has been, or will be, submitted to them, you should limit your interaction with reporters to clarifying the specifics of your presentation. As Science puts it, “We ask that you do not expand beyond the content of your talk or give copies of the paper, data, overheads, or slides to reporters.” That does not mean you should be rude if a reporter asks you for such materials or poses a question that you do not want to answer — just explain that your results are under embargo at Science or Nature, and the reporter will understand why you cannot be more forthcoming.

### **Photography & Video**

Many events and presentations at AAS meetings are recorded for posterity by a Society photographer. Some sessions, and all press conferences, are videotaped and eventually posted on the AAS members website as a member benefit. Your attendance at an AAS meeting signifies your agreement to be photographed or videotaped in the course of normal meeting business. Invited and prize lecturers will be asked to sign a form for legal clarity.

If you take pictures during the meeting, please be considerate of others. Do not use a flash when taking pictures during sessions.

## Eating, Drinking & Smoking

Because our meetings are so full of great content, it can be hard to find time to eat breakfast or lunch. If you must eat or drink while attending a session, please do so quietly and be sure to deposit your trash properly after the session ends. Additional cleaning services cost the AAS money and increase registration costs.

Some venues have strict policies against eating or drinking in particular areas. Meeting attendees are expected to follow these policies. Attendees may not bring their own alcoholic beverages or drink them at the meeting venue outside of areas or times when they are sold. Obviously this does not apply to bars, restaurants, or other facilities co-located with our meeting venues.

AAS meetings are strictly non-smoking, consistent with laws in the localities where we hold our conferences. When possible, smoking areas will be clearly identified.

## Activities Other than Official AAS Events

AAS members are reminded that social interactions that occur outside of official AAS activities are not sponsored by AAS and should not be considered AAS activities. AAS's business and social programs and activities are limited to those that are planned and officially publicized through AAS, and AAS is not responsible for any other activities that may take place before or after such programs and activities. Participation in any such outside activities is purely voluntary. Any such outside gatherings or events are solely the responsibility of those who decide to participate in them.

If you choose to attend any outside gathering or participate in any such non-AAS sponsored activity, however, please be mindful that that as AAS members you are still expected to uphold the same standards of personal conduct with respect to fellow members as you would at an AAS-sponsored program or activity. Please also be extremely mindful of your own safety as well as that of your colleagues at all times: if you choose to use alcohol, do so only in moderation; and keep the safety and behavior of yourself and colleagues uppermost in your mind.

## A Special Thank You To Our AAS Paper Sorters

Gina Brissenden	Sebastien Lepine	Michael Rutkowski
Jeff Carlin	Jake Noel-Storr	Farid Salama
Valerie Connaughton	Terry Oswalt	Allyn Smith
Kathryn Grasha	Joshua Pepper	
Nimish Hathi	Marc Rothenberg	

# SCHEDULE AT-A-GLANCE

Sunday, 3 January 2016 & Monday, 4 January 2016

<b>Sunday, 3 January 2016</b>	
9:00 am	<b>Workshop:</b> 2016 AAS Astronomy Ambassador Workshop (day 1 of 2), 9:00 am - 5:00 pm, St. George 104 <b>Workshop:</b> Introduction to Software Carpentry 2 Day Workshop (day 1 of 2), 9:00 am - 5:30 pm, St. George 106 <b>Workshop:</b> Teaching Introductory Astronomy Using Quantitative Reasoning Activities & Research Projects, 9:00 am - 5:30 pm, Emerald 2 <b>Workshop:</b> The CAE's Tier I Teaching Excellence Workshop (day 1 of 2), 9:00 am - 5:30 pm, St. George 112 Exoplanet Exploration Program Analysis Group (ExoPAG) (day 1 of 2), 1:00 pm - 5:00 pm, Orange Blossom Ballroom <b>Workshop:</b> 2016 NSF Postdoctoral Fellows Symposium (day 1 of 2), 1:00 pm - 6:00 pm, Sun C
1:00 pm	
<b>Monday, 4 January 2016</b>	
8:00 am	<b>AAS Council Meeting,</b> 8:00 am - 5:00 pm, Tallahassee <b>Workshop:</b> Introduction to Software Carpentry 2 Day Workshop (day 2 of 2), 8:00 am - 5:30 pm, St. George 106 <b>Workshop:</b> The CAE's Tier I Teaching Excellence Workshop (day 2 of 2), 8:00 am - 5:30 pm, St. George 112 COPAG SIG, 8:00 am - 1:00 pm, Miami CosmicSIG, 8:00 am - 1:00 pm, Naples GammaSIG, 8:00 am - 1:00 pm, Tallahassee 3 XRSIG, 8:00 am - 1:00 pm, Sarasota GWSIG, 8:00 am - 1:00 pm, Sanibel
8:30 am	<b>Workshop:</b> 2016 AAS Astronomy Ambassador Workshop (day 2 of 2), 8:30 am - 5:00 pm, St. George 104
9:00 am	<b>Workshop:</b> Astrostatistics and R, 9:00 am - 6:00 pm, Emerald 8 <b>Workshop:</b> Using Python for Astronomical Data Analysis, 9:00 am - 4:30 pm, St. George 114 <b>Workshop:</b> Leadership and Team-building for Astronomers, 9:00 am - 4:00 pm, Emerald 4 <b>Workshop:</b> 2016 NSF Postdoctoral Fellows Symposium (day 2 of 2), 9:00 am - 6:00 pm <b>Workshop:</b> Next Generation Very Large Array Workshop 2016, 9:00 am - 5:00 pm, Sun B Exoplanet Exploration Program Analysis Group (ExoPAG), 9:00 am - 5:00 pm, Orange Blossom Ballroom <b>Workshop:</b> SciCoder Presents: Developing Larger Software Projects, 10:00 am - 6:00 pm, Emerald 6 COPAG I, 10:00 am - 1:00 pm Osceola B PAG Meetings, 12:00 pm - 5:00 pm, Osceola A <b>Workshop:</b> Bayesian Methods in Astronomy: Hands-on Statistics, 1:00 pm - 6:00 pm, Emerald 2 <b>Workshop:</b> Submitting Successful Proposals to the NSF IUSE Program, 1:00 pm - 5:00 pm, St. George 108 <b>90 HAD 1:</b> A Celebration of the Centenary of Einstein's General Relativity, 1:30 pm - 4:00 pm, Osceola 4 Registration, 3:00 pm - 8:00 pm, City Hall Lobby Speaker Ready Room, 3:00 pm - 5:00 pm, Captiva PhysPAG, 3:00 pm - 7:30 pm, Naples COPAG II, 4:00 pm - 8:00 pm, Osceola B Undergraduate Orientation, 5:30 pm - 7:00 pm, Sun A WG on the Preservation of Astronomical Heritage, 5:30 pm - 7:00 pm, Emerald 3 40+E Reception, 6:00 pm - 7:00 pm, Osceola 5 (Invitation Only) AAS Opening Reception, 7:00 pm - 9:00 pm, Exhibit Hall A
10:00 am	
12:00 pm	
1:00 pm	
1:30 pm	
3:00 pm	
4:00 pm	
5:30 pm	
6:00 pm	
7:00 pm	

# SCHEDULE AT-A-GLANCE

Tuesday, 5 January 2016

<b>Tuesday, 5 January 2016</b>	
7:30 am	Session Chair Breakfast, 7:30 am - 8:00 am, St. George 104 (Invitation Only) Speaker Ready Room, 7:30 am - 4:00 pm, Captiva
8:00 am	Registration, 7:30 am - 5:00 pm, City Hall Lobby
8:30 am	<b>100 Plenary Session:</b> Welcome Address by AMS President Meg Urry (Yale University), 8:00 am - 8:30 am, Osceola C <b>101 Plenary Session:</b> Kavli Foundation Lecture: The Exploration of the Pluto System by New Horizons, S. Alan Stern (SwRI), 8:30 am - 9:20 am, Osceola C
9:00 am	Exhibit Hall & Cyber Café, 9:00 am - 6:30 pm, Exhibit Hall A <b>Posters 134 - 148, 9:00 am - 6:30 pm, Exhibit Hall A</b>
	<b>134</b> History of Astronomy Poster Session <b>135</b> Elliptical and Spiral Galaxies Poster Session <b>136</b> Dwarf and Irregular Galaxies Poster Session <b>137</b> Extrasolar Planets: Detection Poster Session <b>138</b> Extrasolar Planets: Characterization and Theory Poster Session <b>139</b> Cosmology, Dark Matter & CMB Poster Session <b>140</b> Large Scale Structure, Cosmic Distance Scale Poster Session <b>141</b> The Sun and Solar System Poster Session
9:30 am	Coffee Break, 9:30 am - 10:00 am, Exhibit Hall A
10:00 am	<b>Workshop:</b> Careers 101: Career Planning, Workshop and Panel for Graduate Students and Postdocs, 9:30 am - 11:30 am, St. George 108 <b>Oral and Special Sessions 102 - 114, 10:00 am - 11:30 am</b>
	<b>102</b> Keys to Classic Astrophysical Puzzles: High Energy Gamma-Rays with VERITAS and Beyond Sun A
	<b>103</b> Supernovae: Surveys and Detections Sun B
	<b>106</b> Recent Developments in Extrasolar Planet Detection Osceola A
	<b>110</b> Variable Stars, White Dwarfs Tampa
	<b>114</b> HAD II: History of Astronomy: 19th and 20th Centuries Osceola 4
10:15 am	The Next Leap in UV/Optical/NIR Space Astronomy, 10:00 am - 11:30 am, Orange Blossom Ballroom
10:15 am	Press Conference, 10:15 am - 11:15 am, Osceola 2
11:40 am	<b>115 Plenary Session:</b> Annie Jump Cannon Award: On the Dynamics of Planets, Stars and Black Holes - New Insights from Triples, Smadar Naoz (UCLA), 11:40 am - 12:30 pm, Osceola C
12:30 pm	<b>Workshop:</b> Re-Numerating the Astronomy Classroom, 12:30 pm - 2:30 pm, Emerald 2
12:45 pm	<b>116 Town Hall:</b> Harassment in the Astronomical Sciences, 12:45 pm - 1:45 pm, Osceola C
	<b>117 Town Hall:</b> HAD Business Meeting, 12:45 pm - 1:45 pm, Osceola 4
	<b>142</b> Stars: Red Dwarfs, White Dwarfs and Brown Dwarfs Poster Session <b>143</b> Stellar Winds and Stellar Atmospheres Poster Session <b>144</b> Variable Stars & White Dwarfs Poster Session <b>145</b> Stars: Age, Rotation and Activity Poster Session <b>146</b> Instrumentation: Ground Based or Airborne Poster Session <b>147</b> Instrumentation: Space Missions Poster Session <b>148</b> Astronomy and Society Poster Session
	<b>104</b> AGN, OSO, Blazars: Origins, Evolution, Growth and Masses Sun C
	<b>105</b> Stars I: Age, Rotation and Activity Sun D
	<b>109</b> Intergalactic Medium, QSO Absorption Line Systems Naples
	<b>108</b> Gas and Dust Content in Distant Galaxies Miami
	<b>112</b> Extrasolar Planet Atmospheres: Theory I Sarasota
	<b>113</b> Instrumentation: Space and Ground Osceola 5

# SCHEDULE AT-A-GLANCE

Tuesday, 5 January 2016 (continued)

<b>Tuesday, 5 January 2016 continued</b>			
1:30 pm	NSF Education Proposal Information Session, 1:30 pm - 2:30 pm, St. George 114		
2:00 pm	<b>Oral and Special Sessions 118 - 130, 2:00 pm - 3:30 pm</b>		
	118 Galaxies in the Nearby Universe Sun A	119 AGN, Black Holes and Host Galaxies Sun B	120 Supernovae: Spectroscopy and Classification Sun C
	121 Stars II: Red Dwarfs and Brown Dwarfs Sun D	122 Extrasolar Planet Detection: Results from Kepler and K2 Osceola A	123 HEAD II: High-Energy Neutrino Astrophysics Osceola B
	124 Dust and Star Formation in High Redshift Galaxies Miami	125 The Sun and Solar System Naples	126 Elliptical and Spiral Galaxies I Tampa
	127 Tools and Tips for Better Software (aka Pain Reduction for Code Authors) Sanibel	128 Extrasolar Planet Atmospheres: Theory II Sarasota	129 Stellar Winds and Magnetospheres Osceola 5
	130 HAD III: History of Astronomy: History, Archeoastronomy, Philosophy, and Education Osceola 4		
2:15 pm	<b>Workshop: The Performing Art of Science Presentation, 2:00 pm - 5:00 pm, St. George 102</b>		
3:30 pm	Press Conference, 2:15 pm - 3:15 pm, Osceola 2		
3:30 pm	Oral History Interviewing for Beginners, 3:30 pm - 5:00 pm, Osceola 4		
3:40 pm	<b>131 Plenary Session: A New Universe of Discoveries, France Córdoba (NSF), 3:40 pm - 4:30 pm, Osceola C</b>		
4:30 pm	<b>132 Plenary Session: HAD Doggett Prize: New Information about Old Telescopes, Albert van Heijden, 4:30 pm - 5:20 pm, Osceola C</b>		
5:30 pm	<b>Evening Poster Session, 5:30 pm - 6:30 pm, Exhibit Hall A</b>		
	<b>Workshop: Career Hour 1: Leveraging Social Media for Networking and Career Advancement, 5:30 pm - 6:30 pm, St. George 108</b>		
	New Worlds New Horizons Midterm Assessment, 5:30 pm - 6:30 pm, St. George 114		
6:30 pm	Career Networking and Job Fair, 6:30 pm - 8:00 pm, Sun C		
	LGBTQIA Networking Dinner, 6:30 pm, Meet at Registration Desk		
	SPS Evening of Student Science, 6:30 pm - 8:30 pm, Tallahassee		
	AAS Agents Reception, 6:30 pm - 7:30 pm, Emerald 6 (Invitation Only)		
	<b>133 Town Hall: AAS Advocacy Town Hall with a Panel of CVD Participants, 6:30 pm - 7:30 pm, Orange Blossom Ballroom</b>		
7:00 pm	CSMA Meet & Greet, 6:30 pm - 7:30 pm, St. George 104		
7:00 pm	WFIRST Science, 7:00 pm - 9:00 pm, Tampa		
7:30 pm	The NASA K2 Mission, 7:30 pm - 9:00 pm, Sun A		

# SCHEDULE AT-A-GLANCE

Wednesday, 6 January 2016

<b>Wednesday, 6 January 2016</b>	
7:30 am	Speaker Ready Room, 7:30 am - 4:00 pm, Captiva
8:00 am	Registration, 8:00 am - 5:00 pm, City Hall Lobby
	Session Chair Breakfast, 8:00 am - 8:30 am, St. George 104 (Invitation Only)
8:30 am	<b>200 Plenary Session:</b> Black Hole Physics with the Event Horizon Telescope, Feryal Ozel (University of Arizona), 8:30 am - 9:20 am, Osceola C
9:00 am	Exhibit Hall & Cyber Café, 9:00 am-6:30 pm, Exhibit Hall A
	<b>Posters 234 - 250, 9:00 am - 6:30 pm, Exhibit Hall A</b>
	<b>234</b> Starburst Galaxies Poster Session
	<b>235</b> Galaxy Clusters Poster Session
	<b>236</b> Young Stellar Objects, T-Tauri Stars, H-H Objects Poster Session
	<b>237</b> Supernovae Poster Session
	<b>238</b> Planetary Nebulae, Supernova Remnants Poster Session
	<b>239</b> Evolved Stars, Cataclysmic Variables, and Novae Poster Session
	<b>240</b> Star Associations, Star Clusters - Galactic & Extra-galactic Poster Session
	<b>241</b> Pulsars, Neutron Stars and Black Holes Poster Session
	<b>242</b> Dust Poster Session
9:20 am	<b>201 Plenary Session:</b> AAS Prize Presentations: Buchhalter, Cosmology, Weber, Education, 9:20 am - 9:40 am, Osceola C
9:40 am	Coffee Break, 9:40 am - 10:00 am, Exhibit Hall A
10:00 am	<b>Oral and Special Sessions 202 - 214, 10:00 am - 11:30 am</b>
	<b>202</b> Galaxy Evolution in the Cluster Environment
	Sun A
	<b>203</b> Black Holes I: Models and Simulations
	Sun B
	<b>206</b> Extrasolar Planet Detection with Coronagraphy
	Osceola A
	<b>210</b> Stars III: Brown Dwarfs and Exoplanets
	Tampa
	<b>214</b> Astronomy Education Research
	Osceola 4
	<b>Workshop:</b> Graduate School and Postdocs As a Means to a Job, 10:00 am - 11:30 am, St. George 108
	AAS 227 Author & Referee Workshop, 10:00 am - 3:00 pm, St. George 104
	US Virtual Observatory Alliance Annual Meeting, 10:00 am - 11:30 am, St. George 114
	AAS Astronomy Education Board Forum, 10:00 am - 11:30 am, Orange Blossom Ballroom
10:15 am	Press Conference, 10:15 am - 11:15 am, Osceola 2
11:40 am	<b>215 Plenary Session:</b> Public Policy Plenary: Science to Action: Thoughts on Convincing a Skeptical Public, William H. Press (University of Texas at Austin), 11:40 am - 12:30 pm, Osceola C
	Education and Public Outreach Event, Student Welcome by Allison McGraw (University of Arizona), 11:40 am - 12:10 pm, Sun C, followed by event in Exhibit Hall until 2:00 pm
12:30 pm	<b>Workshop:</b> Career Hour 2: Developing Your 30-Second Value Statement (aka Your Elevator Speech), 12:30 pm - 1:30 pm, St. George 108
12:45 pm	<b>216 Town Hall:</b> NASA Town Hall, Sun A
1:30 pm	Topics in Astrostatistics, 1:30 am - 3:30 pm, St. George 106
	<b>243</b> AGN, QSO, Blazars Poster Session
	<b>244</b> Laboratory Astrophysics - Atoms and Plasmas Poster Session
	<b>245</b> College-Level General Education Practices and Resources Poster Session
	<b>246</b> K-12 Education and Public Outreach Poster Session
	<b>247</b> Majors and Graduate Student Education and Professional Development Poster Session
	<b>248</b> Out-of-School Astronomy Education Practices and Resources for Kids to Grown-Ups Poster Session
	<b>249</b> Research Opportunities for Students Poster Session
	<b>250</b> Teaching Professional Development for K-12, College, and Other Astronomy Educator Poster Session
	<b>204</b> AGN, QSO, Blazars: Searches and Surveys
	Sun C
	<b>208</b> Supernova Explosions: Models and Constraints
	Miami
	<b>212</b> Extrasolar Planet Atmospheres: BART
	Atmospheric Modelling Code and Applications
	Sarasota
	<b>209</b> Elliptical and Spiral Galaxies II
	Naples
	<b>213</b> Lectures in AstroStatistics
	Osceola 5

# SCHEDULE AT-A-GLANCE

Wednesday, 6 January 2016 (continued)

<b>Wednesday, 6 January 2016 continued</b>		
2:00 pm	Oral and Special Sessions 217 - 229, 2:00 pm - 3:30 pm	
	217 Multi-faceted Studies of Galaxy Evolution Sun A	218 Black Holes II: Surveys and Individual Objects Sun B
	221 Dark Energy Survey Early Results Osceola A	222 Hubble Space Telescope: a Vision to 2020 and Beyond Osceola B
	225 Globular and Open Clusters Tampa	226 A Report from the Inclusive Astronomy 2015 Meeting: Community Recommendations for Diversity and Inclusion in Astronomy Sanibel
	229 K-12 Education and Public Outreach Osceola 4	
	NOAO Mini-Workshop on Adaptive Optics, 2:00 pm - 4:00 pm, St. George 108	
2:15 pm	NASA/Decadal Mission Studies and STDTs, 2:00 pm - 4:00 pm, St. George 112	
3:40 pm	Press Conference, 2:15 pm - 3:15 pm, Osceola 2	
	230 Plenary Session: Dannie Heineman Prize: From "new" to Precision Science: Cosmology from 1995 to 2025, Marc Kamionkowski (Johns Hopkins University) & David N. Spergel (Princeton University), 3:40 pm - 4:30 pm, Osceola C	
4:30 pm	231 Plenary Session: HEAD Rossi Prize: A New View of the High Energy Universe with NuSTAR, Fiona Harrison (Caltech), 4:30 pm - 5:20 pm, Osceola C	
5:00 pm	Presentation of AIP's 2015 Science Writing Awards, 5:00 pm - 7:00 pm, Osceola 2	
5:30 pm	Evening Poster Session, 5:30 pm - 6:30 pm, Exhibit Hall A	
	Thirty Meter Telescope (TMT) Open House, 5:30 pm - 6:30 pm, Orange Blossom Ballroom	
6:30 pm	232 Town Hall: Preparing for the James Webb Space Telescope, 6:30 pm - 8:00 pm, Sun A	
	233 Town Hall: HEAD Business Meeting, 6:30 pm - 7:30 pm, Osceola A	
	251 Town Hall: NOAO Transformed: A Status Report, 6:30 pm - 7:30 pm, Sun D	
	AAS Donor Reception, 6:30 pm - 7:30 pm, Emerald 6 (Invitation Only)	
8:00 pm	Open Mic Night, 8:00 pm - 9:00 pm, Sun C	
	219 AGN, QSO, Blazars: Host Galaxies and Individual Sources Sun C	220 Extrasolar Planet Detection with High-Precision Radial Velocity Sun D
	223 Cosmology, CMB, and Dark Matter I Miami	224 The Astrophysics of Exoplanet Orbital Phase Curves Naples
	227 Cataclysmic Variables and Supernova Progenitors Sarasota	228 Circumstellar Disks and Dust Osceola 5

# SCHEDULE AT-A-GLANCE

Thursday, 7 January 2016

<b>Thursday, 7 January 2016</b>	
7:30 am	Speaker, Ready Room, 7:30 am - 4:00 pm, Captiva
8:00 am	Registration, 8:00 am - 5:00 pm, City Hall Lobby
8:30 am	Session Chair Breakfast, 8:00 am - 8:30 am, St. George 104 (Invitation Only)
9:00 am	<b>300 Plenary Session:</b> Henry Norris Russell Lecture: Viewing the Universe with Infrared Eyes: The Spitzer Space Telescope, Giovanni Fazio (Harvard-Smithsonian CfA), 8:30 am - 9:20 am, Osceola C Exhibit Hall & Cyber Café, 9:00 am - 6:30 pm, Exhibit Hall A
	<b>Posters 333 - 349, 9:00 am - 6:30 pm, Exhibit Hall A</b>
	<b>333</b> The Resolved Spectroscopy Of a Local Volume (RESOLVE) Survey and its Environmental Context (ECO) Poster Session
	<b>334</b> SDSS-IV MaNGA: Mapping Nearby Galaxies at Apache Point Observatory Poster Session
	<b>335</b> Opening a New Window on Cosmological Structure with Intensity Mapping Poster Session
	<b>336</b> Science Results from the Stratospheric Observatory for Infrared Astronomy (SOFIA) Poster Session
	<b>337</b> Astrophysical Constraints of Dark Matter Properties Poster Session
	<b>338</b> Relativistic Astrophysics, Gravitational Lenses & Waves Poster Session
	<b>339</b> Intergalactic Medium, QSO Absorption Line Systems Poster Session
	<b>340</b> Gamma Ray Bursts Poster Session
9:30 am	Coffee Break, 9:30 am-10:00 am, Exhibit Hall A
10:00 am	<b>Oral and Special Sessions 301 - 313, 10:00 am - 11:30 am</b>
	<b>301</b> Probing Early-type Galaxies Sun A
	<b>302</b> Planetary Nebulae and Supernova Remnants Sun B
	<b>303</b> AGN, QSO, Blazars: Dust, Obscuration, and Star Formation Sun C
	<b>304</b> Star Formation and Massive Clusters Sun D
	<b>305</b> Future Prospects in Extrasolar Planet Detection Osceola A
	<b>306</b> Extrasolar Planets: Observations I Osceola B
	<b>307</b> Cosmology, CMB, and Dark Matter II Miami
	<b>308</b> Starburst Galaxies I Naples
	<b>309</b> Circumstellar Debris Disks Tampa
	<b>310</b> Time-Domain and Applicable Methodologies Sanibel
	<b>311</b> The Resolved Spectroscopy Of a Local Volume (RESOLVE) Survey and its Environmental Context (ECO) Sarasota
	<b>312</b> SDSS-IV MaNGA: Mapping Nearby Galaxies at Apache Point Observatory Osceola 5
	<b>313</b> Research and Professional Development Opportunities for Undergraduate Majors Osceola 4
10:15 am	<b>Workshop:</b> Advising for Advisors, 10:00 am - 11:30 am, St. George 108
11:40 am	Press Conference, 10:15 - 11:15 am, Osceola 2
12:30 pm	<b>314 Plenary Session:</b> The Zwicky Transient Facility, Shrinivas Kulkarni (Caltech), 11:40 am - 12:30 pm, Osceola C
12:45 pm	<b>Workshop:</b> Career Hour 3: Interviewing: What You Need to Do Before, During, and After to Get the Job, 12:30 pm - 1:30 pm, St. George 108
	<b>315 Town Hall:</b> NSF Town Hall, 12:45 pm - 1:45 pm, Sun A

# SCHEDULE AT-A-GLANCE

Thursday, 7 January 2016 (continued)

<b>Thursday, 7 January 2016 continued</b>			
2:00 pm	<b>Oral and Special Sessions 316 - 328. 2:00 pm - 3:30 pm</b>		
	316 Cosmological Simulations of Galaxies Sun A	317 Binary Stellar Systems, X-ray Binaries I Sun B	318 AGN, QSO, Blazars: Physics and Models Sun C
	320 Science Results from the Stratospheric Observatory for Infrared Astronomy (SOFIA) Osceola A	321 Extrasolar Planets: Observations II Osceola B	323 Starburst Galaxies II Naples
	324 Catalogs, Surveys, and Data Viewing Tampa	325 Climate Change for Astronomers Sanibel	327 Astrophysical Constraints of Dark Matter Properties Osceola 5
	328 Teaching Practices for Undergraduates and Majors Osceola 4		
	The Guest Investigator Program for TESS, 2:00 pm - 3:30 pm, Orange Blossom Ballroom		
2:15 pm	Press Conference, 2:15 pm - 3:15 pm, Osceola 2		
3:40 pm	329 Plenary Session: 2014 Helen B. Warner Prize: The Past, Present, and Future of Statistical Cosmology, Christopher Hirata (The Ohio State University), 3:40 pm - 4:30 pm, Osceola C		
4:30 pm	330 Plenary Session: Observing the Non-Thermal Universe with the Highest Energy Photons, Brenda Dingus (LANL), 4:30 pm - 5:20 pm, Osceola C		
5:30 pm	<b>Evening Poster Session, 5:30 pm - 6:30 pm, Exhibit Hall A</b>		
	TMT Thermal IR Science & Instrumentation Workshop, 5:30 pm - 7:30 pm, St. George 108		
	AAS Publishing 101: Transition Updates, 5:30 pm - 6:30 pm, St. George 102		
6:00 pm	Star Party, 6:00 pm - 10:00 pm, Transportation Loop Adjacent to Exhibit Hall F		
6:30 pm	331 Town Hall: NRAO Town Hall, 6:30 pm - 8:30 pm, Sun A		
	332 Town Hall: LST Town Hall, 6:30 pm - 7:30 pm, Sun D		

# SCHEDULE AT-A-GLANCE

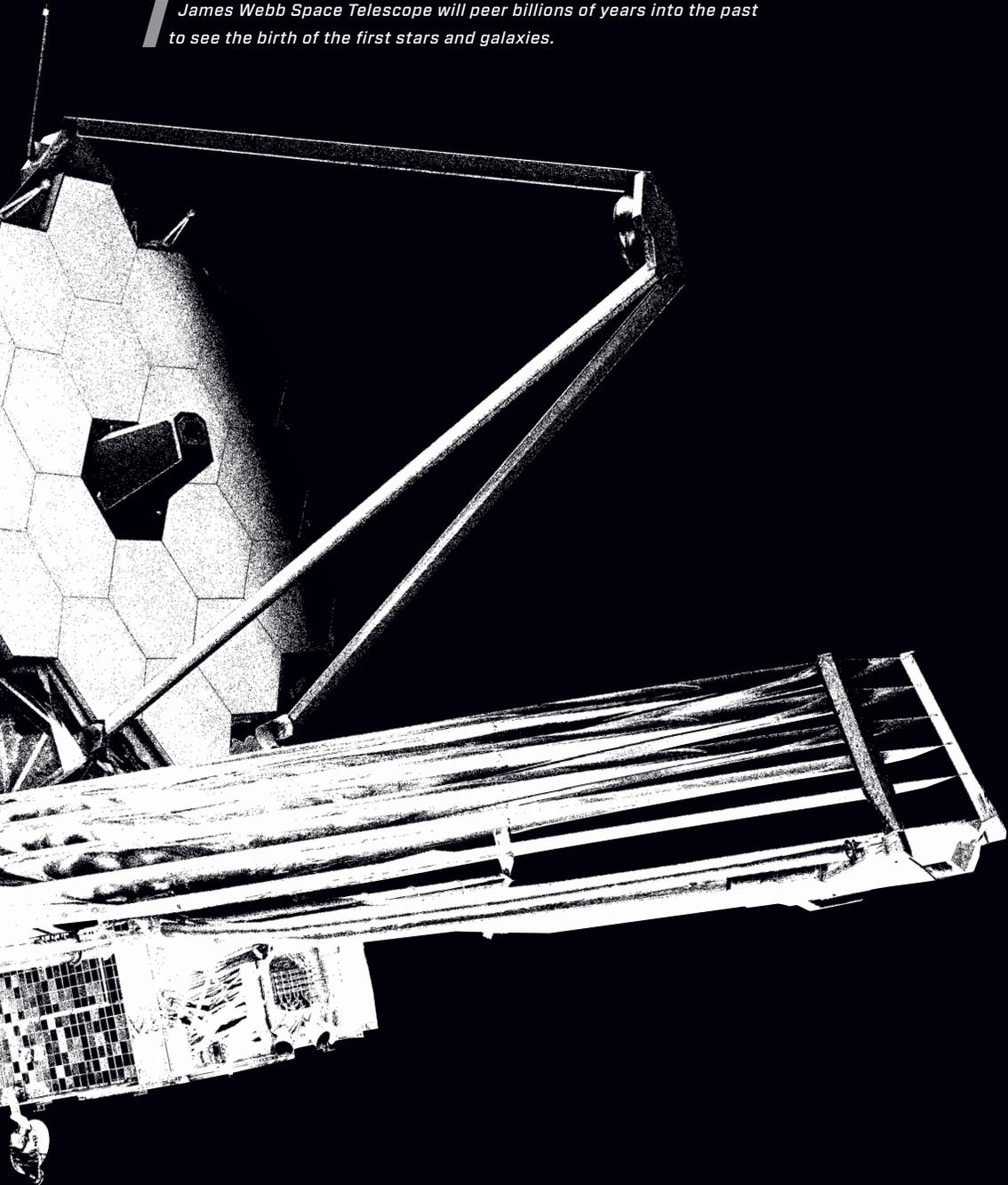
Friday, 8 January 2016

<b>Friday, 8 January 2016</b>	
7:30 am	Speaker Ready Room, 7:30 am - 2:00 pm, Captiva
8:00 am	Registration, 8:00 am - 12:00 pm, City Hall Lobby
	Session Chair Breakfast, 8:00 am - 8:30 am, St. George 104 (Invitation Only)
8:30 am	<b>400 Plenary Session:</b> 2015 Helen B. Warner Prize: Origins of Structure in Planetary Systems, Ruth Murray-Clay (University of California), 8:30 am - 9:20 am, Osceola C
9:00 am	Exhibit Hall & Cyber Café, 9:00 am - 4:00 pm, Exhibit Hall A
	<b>Late Posters 430 - 446, 9:00 am - 4:00 pm, Exhibit Hall A</b>
	<b>430</b> Extrasolar Planets and the Solar System Late Poster Session
	<b>431</b> Star Formation and Young Stars Late Poster Session
	<b>432</b> Stellar Clusters and the Milky Way Late Poster Session
	<b>433</b> Evolved Stars and Things That Go Boom in the Night Late Poster Session
	<b>434</b> Mellow Stellar Topics Late Poster Session
	<b>435</b> Pulsars, Neutron Stars and Black Holes Late Poster Session
	<b>436</b> The ISM, PNe and SNRs Late Poster Session
	<b>437</b> Binaries and Variable Stars Late Poster Session
	<b>438</b> AGN and QSOs Late Poster Session
9:30 am	Coffee Break, 9:30 am - 10:00 am, Exhibit Hall A
	Light Pollution at Campus/University Observatories, 9:30 am - 11:30 am, Orange Blossom Ballroom
10:00 am	<b>Oral and Special Sessions 401 - 413, 10:00 am - 11:30 am</b>
	<b>401</b> Physical Properties of High Redshift Galaxies Sun A
	<b>402</b> Binary Stellar Systems, X-ray Binaries II Sun B
	<b>405</b> Relativistic Astrophysics, Gravitational Lenses & Waves Osceola A
	<b>409</b> Molecular Clouds, HII Regions, Interstellar Medium I Tampa
	<b>413</b> Beyond the Academy: Showcasing Astronomy Alumni in Non-Academic Careers Osceola 4
10:15 am	Hack Day, 10:00 am - 5:00 pm, Tallahassee
11:40 am	Press Conference, 10:15 am - 11:15 am, Osceola 2
12:45 pm	<b>414 Plenary Session:</b> The Jansky VIA: Rebuilt for 21st Century Astronomy, Gregg Hallinan (Caltech), 11:40 am - 12:30 pm, Osceola C
1:00 pm	<b>415 Town Hall:</b> Gemini Observatory Town Hall, 12:45 pm - 1:45 pm, Tampa
2:00 pm	<b>Afternoon Poster Session, 1:00 pm - 2:00 pm, Exhibit Hall A</b>
	<b>Oral and Special Sessions 416 - 427, 2:00 pm - 3:30 pm</b>
	<b>416</b> Gamma Ray Bursts Sun B
	<b>417</b> AGN, QSO, Blazars: Broad lines, Narrow Lines, and Flows Sun C
	<b>420</b> Extrasolar Planets: Populations and Demographics Osceola B
	<b>424</b> Molecular Clouds, HII Regions, Interstellar Medium II Sanibel
2:15 pm	Press Conference, 2:15 pm - 3:15 pm, Osceola 2
3:40 pm	<b>428 Plenary Session:</b> News on the Search for Milky Way Satellite Galaxies, Keith Bechtol (University of Wisconsin-Madison), 3:40 pm - 4:30 pm, Osceola C
4:30 pm	<b>429 Plenary Session:</b> Lancelotti M. Berkeley Prize: Latest Results from Planck, Jan Tauber (ESA), 4:30 pm - 5:20 pm, Osceola C
5:30 pm	AA5 Closing Reception, 5:30 pm - 7:00 pm, Coquina Lawn
	<b>404</b> Formation and Evolution of Stars and Stellar Systems Sun D
	<b>408</b> Structure and Physics of Galaxies at $z < 0.2$ Naples
	<b>412</b> The Cosmic History of Light: New Results and Future Outlook Osceola 5
	<b>403</b> AGN, QSO, Blazars: Gamma Ray and Cosmic Ray Sources Sun C
	<b>407</b> Cosmology, CMB, and Dark Matter III Miami
	<b>411</b> Gamma Ray and X-ray Binary Systems Sarasota
	<b>418</b> Star Forming Regions: Observations Sun D
	<b>422</b> Star-Forming Galaxies at $z > 0.3-1.0$ Naples
	<b>426</b> Opening a New Window on Cosmological Structure with Intensity Mapping Osceola 5
	<b>419</b> Cosmology Osceola A
	<b>423</b> Pulsars and Neutron Stars Tampa
	<b>427</b> Instrumentation: Exoplanets, Adaptive Optics, Transients Osceola 4

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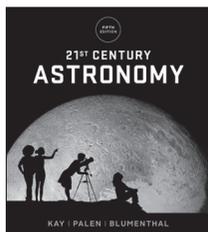
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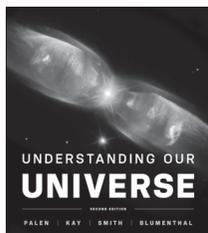
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George Blumenthal, *University of California–Santa Cruz*

### **Students learn by doing**

Influenced by astronomy education research, *21st Century Astronomy* incorporates innovative pedagogy, in text and online, that asks students to apply what they learn as they learn it. Whether students are applying concepts to an exercise or to the way they interpret the news, the Fifth Edition of *21st Century Astronomy* helps them gain a deeper understanding of the science while making meaningful connections to their lives.



## **Understanding Our Universe**

*Second Edition • Available now*

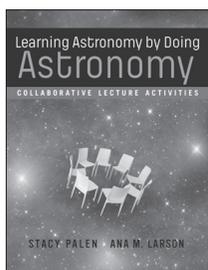
Stacy Palen, *Weber State University* • Laura Kay, *Barnard College*

Bradford Smith, *Santa Fe, New Mexico*

George Blumenthal, *University of California–Santa Cruz*

### **Active pedagogy gets students doing astronomy**

*Understanding Our Universe* promotes learning by doing in the text and online. To promote active learning, the authors have developed pedagogy that helps students apply what they learn as they learn it. Norton's online homework and tutorial system, SmartWork, uses the pedagogy and allows instructors to track student progress and assess student understanding.



## **Learning Astronomy by Doing Astronomy: Collaborative Lecture Activities**

Stacy Palen, *Weber State University* • Ana Larson, *University of Washington*

### **Engage students with classroom-tested, hands-on activities**

In this workbook, the authors draw on their experience teaching thousands of students in many different types of courses (large in-class, small in-class, hybrid, online, flipped, etc.) to develop 30 field-tested activities that you can use in your classroom. The activities have been designed to require no special software, materials, or equipment, and to be completed within 50 minutes. *Learning Astronomy by Doing Astronomy* can be purchased stand-alone or packaged with any Norton astronomy textbook at no extra cost.

Teach intro astro? Stop by booth #207 and ask how you can receive a free copy of *The Science of Interstellar*.



Image Courtesy John Gleason. ProLine PL16803 camera.

## Engineering Excellence

FLI cameras, filter wheels, & focusers are hard at work in observatories from Purple Mountain in China to Cerro Tololo in Chile; from Siding Spring in Australia to Tivoli Astrofarm in Namibia.

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- **MicroLine ML50100** CCD camera with high QE 50 megapixel sensor co-developed by ON Semi and FLI (49.1 x 36.8 mm with 6 micron pixels)
- **MicroLine ML16200** CCD camera, 16 megapixels (27 x 21.6mm with 6 micron pixels)
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# ANNUAL REVIEWS SPARK A CONNECTION

## *Annual Review of Astronomy and Astrophysics*

astro.annualreviews.org • Volume 54 • August 2016

Co-Editors: **S. M. Faber**, *University of California, Santa Cruz*

**Ewine F. van Dishoeck**, *Leiden Observatory, Leiden University* and  
*Max-Planck Institute for Extraterrestrial Physics, Garching*

The *Annual Review of Astronomy and Astrophysics*, in publication since 1963, covers the significant developments in the field of Astronomy and Astrophysics, including the Sun; Solar System and extra solarplanets; stars; the interstellar medium; our Galaxy and galaxies; active galactic nuclei; cosmology; instrumentation and techniques; and the history of the development of new areas of research.

This journal is ideal for astronomers, astrophysicists, and those in the fields of planetary and space sciences. Articles are also of interest to physicists, geophysicists, and chemists.

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## SUNDAY, 3 JANUARY 2016

### The CAE's Tier I Teaching Excellence Workshop (day 1 of 2)

**Sunday, 9:00 am - 5:30 pm; St. George 112**

Are you a current or future instructor teaching Earth, Astronomy, or Space Science? Would you like your classroom to actively engage your students in discourse about the big ideas of your class; how evidence is used to understand the universe; and the role of science in society? We invite you to come to our CAE Teaching Excellence Workshop. Spend time with your colleagues becoming an effective implementor of active-learning instructional strategies. Learn how to transform your classroom into a vibrant learning environment that will: (1) increase students' conceptual understandings; (2) improve their abilities to think critically, interpret graphs, and reason about quantitative data; (3) motivate them to actively engage in their learning; and (4) improve their self-efficacy. This Workshop will provide you with the experiences you need to create effective and productive active-learning classroom environments. We will model best practices in implementing many different classroom-tested instructional strategies. But most importantly, you and your workshop colleagues will gain first-hand experience implementing these strategies yourselves. During our many microteaching events, you'll have the opportunity to role-play the parts of student and instructor. You'll assess and critique each other's implementation in real time, as part of a supportive learning community. You'll have the opportunity to face and conquer your fears of unfamiliar teaching in collaboration with kind and gentle friends and mentors before you try them by yourself in front of your students. Workshop topics will include: creating inclusive classroom environments; strategies to improve retention & diversity of STEM majors & grads; collaborative group learning; interactive lectures, demonstrations, and videos; effective use of writing; Think-Pair-Share (Peer Instruction, Clicker Questions); Lecture- Tutorials; Ranking Tasks; assessment strategies (including homework, grading, and exams). Presented by Edward Prather and Gina Brissenden Center for Astronomy Education (CAE), Steward Observatory, Univ. of Arizona.

**Organizer: Gina Brissenden** (*Center for Astronomy Education (CAE), Steward Observatory, Univ. of Arizona*)

### Introduction to Software Carpentry 2 Day Workshop (day 1 of 2)

**Sunday, 9:00 am - 5:30 pm; St. George 106**

Computing is now an integral part of every aspect of astronomy and astrophysics, but most scientists are never taught how to build, use, validate, and share software. As a result, many spend hours or days doing things badly that could be done well in just a few minutes. The goal of the Software Carpentry Workshop is to change that. The tools presented at the 2 day workshop will enable astronomers to spend less time wrestling with software and more time doing useful research. Furthermore, good quality, well tested code will make their science results easier to confirm, distribute, and update. The Software Carpentry Workshop at the 227th AAS consists of short tutorials alternating with hands-on practical exercises and will cover the core software skills

**SUNDAY, 3 JANUARY 2016**

needed construct, use, verify, and share software in astronomy. Sunday's tutorials will be comprised of shell automation, basic python programming, and code review. Monday's sessions will shift to focus on advanced python, including numerical and astronomy oriented computing, and version control with git. The workshop will be run by a set of three certified instructors and a team of helpers. The course is aimed at astronomers at all stages of their education and careers who wish to learn computational tools to increase the reproducibility and efficiency of their work. Participants should have some knowledge of programming (not necessarily Python) and have some familiarity with the shell command line (i.e. navigating directories on the shell command line). Specific knowledge of Python and Git are not required. Registration is for both days. Participants will be required to bring laptops and to install software in advance of the workshop. A group list will be compiled approximately one month prior to the workshop to distribute software requirements and collaborative troubleshooting. Workshop participants are also encouraged to participate in the Hack Day to apply their boot camp skills. More information on the Software Carpentry project can be found at <http://software-carpentry.org>.

## **Teaching Introductory Astronomy Using Quantitative Reasoning Activities & Research Projects**

**Sunday, 9:00 am - 5:30 pm; Emerald 2**

It has long been recognized that many introductory astronomy students are terrified of courses requiring them to perform what they perceive as being tedious arithmetical calculations. At the same time, few instructional support materials exist across the broader astronomy teaching community to help students overcome their reluctance to engage in mathematical thinking and enjoy success at doing astronomy. This day-long workshop is composed of two independent sessions: From 900am-Noon, college faculty will learn how to use new active learning tutorials to develop and enhance students' quantitative reasoning skills. These active learning tutorials are purposefully designed to support students' in learning challenging astronomy concepts by introducing short and highly structured quantitative reasoning intervals where students collaboratively wrestle with how to think of astronomy in novel settings. Then, from 130pm-500pm, participating college faculty will learn how to support students in conducting authentic astronomy research by mining online astronomical databases using activities designed around a backwards-faded scaffolding approach to teaching. In these learning modules, students learn how to ask scientifically fruitful research questions, how to design strategies to obtain astronomical evidence, and how to communicate and defend their results. Participants can choose to attend either or both of these morning and afternoon sessions and learn how easily implement these collaborative learning materials. Presenters include Stephanie Slater from the CAPER Center for Astronomy & Physics Education Research, Julia Kregenow & Chris Palma from Penn State, Tim Slater from the University of Wyoming, and Windsor Morgan from Dickinson College. Classroom-ready materials will be provided to all participants that are ready to be used in the upcoming semester.

**Organizer: Timothy Slater** (*University of Wyoming*)

## SUNDAY, 3 JANUARY 2016

### 2016 AAS Astronomy Ambassador Workshop (day 1 of 2)

Sunday, 9:00 am - 5:00 pm; St. George 104

We invite graduate students, recent PhD's, and even advanced undergraduates who are sure they will be pursuing an astronomy career to join the AAS Astronomy Ambassadors program, established to support early-career AAS members interested in doing outreach to K-12 students, families, and the public. For more information, please visit <http://aas.org/meetings/aas227/aas-astronomy-ambassadors-workshop>.

**Organizers:** Richard Fienberg (*American Astronomical Society*) & Suzanne Gurton (*Astronomical Society of the Pacific*)

### Exoplanet Exploration Program Analysis Group (ExoPAG) (day 1 of 2)

Sunday, 1:00 pm - 5:00 pm; Orange Blossom Ballroom

The Exoplanet Exploration Program Analysis Group (ExoPAG) is responsible for soliciting and coordinating community input into the development and execution of NASA's Exoplanet Exploration Program (ExEP). It serves as a community-based, interdisciplinary forum for analysis in support of activity prioritization and for future exploration. It provides findings of analysis to NASA through the Astrophysics Subcommittee (APS) of the NASA Advisory Council (NAC); the ExoPAG Chair (Alan Boss) is a member of the APS.

**Organizer:** Ozhen Pananyan (*JPL*)

### 2016 NSF Postdoctoral Fellows Symposium (day 1 of 2)

Sunday, 1:00 pm - 6:00 pm; Sun C

This is the annual meeting of the NSF Astronomy & Astrophysics Postdoctoral Fellows (AAPF). The NSF AAPF program supports young scientists who carry out an integrated program of independent research and education/public outreach. During this two-day annual symposium, the Fellows gather to give talks on their current research and outreach projects. Several outside speakers are also invited to give keynote talks and participate in discussion panels on a range of topics such as exploring non-traditional outreach methods, addressing the next big problems in astronomy, and exploring alternative careers outside of academia. This meeting provides an opportunity for the current, past, and prospective Fellows to meet and discuss their work with members of the community, learn from each other's experiences, and to foster new collaborations. All members of the astronomical community are welcome and encouraged to attend.

**Organizer:** Devin Silvia (*Michigan State University*)

## COPAG SIG

Monday, 8:00 am - 1:00 pm; Miami

Organizer: Susan Neff (*NASA, GSFC*)

## GWSIG

Monday, 8:00 am - 1:00 pm; Sanibel

Organizer: Susan Neff (*NASA, GSFC*)

## XRSIG

Monday, 8:00 am - 1:00 pm; Sarasota

Organizer: Susan Neff (*NASA, GSFC*)

## CosmicSIG

Monday, 8:00 am - 1:00 pm; Naples

Organizer: Ann Hornschemeier (*NASA, GSFC*)

## GammaSIG

Monday, 8:00 am - 1:00 pm; Tallahassee 3

Organizer: Ann Hornschemeier (*NASA, GSFC*)

## The CAE's Tier I Teaching Excellence Workshop (day 2 of 2)

Monday, 8:00 am - 5:30 pm; St. George 112

Are you a current or future instructor teaching Earth, Astronomy, or Space Science? Would you like your classroom to actively engage your students in discourse about the big ideas of your class; how evidence is used to understand the universe; and the role of science in society? We invite you to come to our CAE Teaching Excellence Workshop. Spend time with your colleagues becoming an effective implementor of active-learning instructional strategies. Learn how to transform your classroom into a vibrant learning environment that will: (1) increase students' conceptual understandings; (2) improve their abilities to think critically, interpret graphs, and reason about quantitative data; (3) motivate them to actively engage in their learning; and (4) improve their self-efficacy. This Workshop will provide you with the experiences you need to create effective and productive active-learning classroom environments. We will model best practices in implementing many different classroom-tested instructional strategies. But most importantly, you and your workshop colleagues will gain first-hand experience implementing these strategies yourselves. During our many microteaching events, you'll have the opportunity to role-play the parts of student and instructor. You'll assess and critique each other's implementation in real time, as part of a supportive learning community. You'll have the opportunity to face and conquer your fears of unfamiliar teaching in collaboration with kind and gentle friends and mentors before you try

## MONDAY, 4 JANUARY 2016

them by yourself in front of your students. Workshop topics will include: creating inclusive classroom environments; strategies to improve retention & diversity of STEM majors & grads; collaborative group learning; interactive lectures, demonstrations, and videos; effective use of writing; Think-Pair-Share (Peer Instruction, Clicker Questions); Lecture- Tutorials; Ranking Tasks; assessment strategies (including homework, grading, and exams). Presented by Edward Prather and Gina Brissenden Center for Astronomy Education (CAE), Steward Observatory, Univ. of Arizona.

**Organizers:** *Gina Brissenden (Center for Astronomy Education (CAE), Steward Observatory, Univ. of Arizona)*

### Introduction to Software Carpentry 2 Day Workshop (day 2 of 2)

**Monday, 8:00 am - 5:30 pm; St. George 106**

Computing is now an integral part of every aspect of astronomy and astrophysics, but most scientists are never taught how to build, use, validate, and share software. As a result, many spend hours or days doing things badly that could be done well in just a few minutes. The goal of the Software Carpentry Workshop is to change that. The tools presented at the 2 day workshop will enable astronomers to spend less time wrestling with software and more time doing useful research. Furthermore, good quality, well tested code will make their science results easier to confirm, distribute, and update. The Software Carpentry Workshop at the 227th AAS consists of short tutorials alternating with hands-on practical exercises and will cover the core software skills needed construct, use, verify, and share software in astronomy. Sunday's tutorials will be comprised of shell automation, basic python programming, and code review. Monday's sessions will shift to focus on advanced python, including numerical and astronomy oriented computing, and version control with git. The workshop will be run by a set of three certified instructors and a team of helpers. The course is aimed at astronomers at all stages of their education and careers who wish to learn computational tools to increase the reproducibility and efficiency of their work. Participants should have some knowledge of programming (not necessarily Python) and have some familiarity with the shell command line (i.e. navigating directories on the shell command line). Specific knowledge of Python and Git are not required. Registration is for both days. Participants will be required to bring laptops and to install software in advance of the workshop. A group list will be compiled approximately one month prior to the workshop to distribute software requirements and collaborative troubleshooting. Workshop participants are also encouraged to participate in the Hack Day to apply their boot camp skills. More information on the Software Carpentry project can be found at <http://software-carpentry.org>.

**Organizer:** **AAS Employment Committee**

### AAS Council Meeting

**Monday, 8:00 am - 5:00 pm; Tallahassee 1**

The AAS Council is the board of directors for the AAS, which is a 501(c)3 non-profit corporation incorporated in the District of Columbia. The Council meeting, which is open to AAS members except for any executive sessions (note: limited seating is available due

to space constraints), allows for routine corporate business (such as approval of prize winners and setting each year's budget) as well as discussion of current conditions in the field of astronomy and closely related sciences, setting of long-term goals, and allocation of resources to achieve these goals.

## Exoplanet Exploration Program Analysis Group (ExoPAG) (day 2 of 2)

**Monday, 9:00 am - 5:00 pm; Orange Blossom Ballroom**

The Exoplanet Exploration Program Analysis Group (ExoPAG) is responsible for soliciting and coordinating community input into the development and execution of NASA's Exoplanet Exploration Program (ExEP). It serves as a community-based, interdisciplinary forum for analysis in support of activity prioritization and for future exploration. It provides findings of analysis to NASA through the Astrophysics Subcommittee (APS) of the NASA Advisory Council (NAC); the ExoPAG Chair (Alan Boss) is a member of the APS.

**Organizer: Ozhen Pananyan (JPL)**

## 2016 AAS Astronomy Ambassador Workshop (day 2 of 2)

**Monday, 8:30 am - 5:00 pm; St. George 104**

We invite graduate students, recent PhD's, and even advanced undergraduates who are sure they will be pursuing an astronomy career to join the AAS Astronomy Ambassadors program, established to support early-career AAS members interested in doing outreach to K-12 students, families, and the public. For more information, please visit <http://aas.org/meetings/aas227/aas-astronomy-ambassadors-workshop>.

**Organizers: Richard Fienberg (American Astronomical Society) & Suzanne Gurton (Astronomical Society of the Pacific)**

## Using Python for Astronomical Data Analysis

**Monday, 9:00 am - 4:30 pm; St. George 114**

This workshop will cover the use of Python tools to analyze astronomical data, with the focus primarily on Optical, IR and UV data analysis tools. The primary tools that will be covered are those available in the Astropy library and affiliated packages. The specific tools to be covered will be: - Physical units and quantities - Basics on accessing data files, both FITS and ascii tables - Coordinate utilities - Modeling and Fitting - Interactive visualization and analysis tools: - Glue - imexam - specview - Photometric tools There will be time spent on hands-on exercises. Instructions on installing the necessary software will be provided before the workshop and help will be available at the workshop for those that experience problems with installations. The prerequisites are a familiarity with astronomical data analysis. Basic Python experience is highly recommended to be able to participate in the exercises. Those without Python experience will still get much useful information about the capabilities for data analysis in Python. Experience with Python scientific libraries, particularly numpy and matplotlib, is helpful, but not required.

**Organizer: Perry Greenfield**

# MONDAY, 4 JANUARY 2016

## Leadership and Team-building for Astronomers

**Monday, 9:00 am - 4:00 pm; Emerald 4**

The AAS Employment Committee is presenting this interactive, day-long workshop. You will be introduced to techniques that with practice will enhance your skill in effectively leading and managing innovative research teams. These skills will be developed beginning with conceptual study and then applied in structured activities. Specific topics will include: Leadership: Recognize the difference between leadership and management, review the characteristics of an effective leader, and seize opportunities to develop and hone your own leadership skills. Project Management: Apply the basic elements of strategic project management, starting with the creation of a strategic hypothesis, and develop that into a logical framework of measurable goals, purpose and outcomes. Management and Team building: Build and organize higher functioning teams, enhance innovation and motivate people. Conflict Management: Identify the underlying conditions that lead to conflict, and apply techniques to move away from blame to more constructive action. Audience: Post docs and early-career faculty will find this workshop especially helpful as they begin to build and lead their research groups. Enrollment will be limited to 30 participants.

**Organizer: AAS Employment Committee**

## Astrostatistics and R

**Monday, 9:00 am - 6:00 pm; Emerald 8**

Statistics is needed for: understanding astronomical images, spectra and lightcurves; inference about underlying populations from limited samples; linking astronomical observations to astrophysical theories; and more. Fortunately, a range of concepts and methods can be learned from statistical fields like nonparametrics, density estimation, regression, data mining, spatial analysis and time series analysis. A vast range of modern methods have been implemented in R, a large and coherent public domain statistical software system. With its >5000 add-on CRAN packages, R has ~150,000 statistical functionalities with extensive graphics, links to Python and other languages, and more. The workshop starts with a broad-scope view of statistics in science; proceeds with integrated lectures and hands-on software exercises in several areas of modern statistics; and ends with a discussion on improving statistical education for young astronomers. Participants should bring a laptop with R installed; downloads are available for MacOS, Linux and Windows at <http://www.r-project.org>. CRAN packages and astronomical datasets are downloaded on-the-fly during the tutorials. R scripts and astronomical datasets will be available at [http://www2.astro.psu.edu/users/edf/AAS\\_Jan2016/](http://www2.astro.psu.edu/users/edf/AAS_Jan2016/). This workshop will be facilitated by Eric D. Feigelson (Penn State University) and two assistants.

## 2016 NSF Postdoctoral Fellows Symposium (day 2 of 2)

**Monday, 9:00 am - 6:00 pm; Sun C**

This is the annual meeting of the NSF Astronomy & Astrophysics Postdoctoral Fellows (AAPF). The NSF AAPF program supports young scientists who carry out an integrated program of independent research and education/public outreach. During this two-day annual symposium, the Fellows gather to give talks on their current research and outreach projects. Several outside speakers are also invited to give keynote talks and participate in discussion panels on a range of topics such as exploring non-traditional outreach methods, addressing the next big problems in astronomy, and exploring alternative careers outside of academia. This meeting provides an opportunity for the current, past, and prospective Fellows to meet and discuss their work with members of the community, learn from each other's experiences, and to foster new collaborations. All members of the astronomical community are welcome and encouraged to attend.

**Organizer: Devin Silvia** (*Michigan State University*)

## Next Generation Very Large Array Workshop 2016

**Monday, 9:00 am - 5:00 pm; Sun B**

Radio astronomy is playing a leading role in opening new discovery space, imaging the earliest phases of planet and star formation, studying the cool dust and gas that drive star formation in galaxies across cosmic time, observing energetic and time-varying phenomena ranging from compact stars to distant Active Galactic Nuclei, and testing the fundamental laws of physics and cosmology. Inspired by dramatic discoveries from the Jansky Very Large Array and the Atacama Large Millimeter/submillimeter Array, the community has initiated discussion of a future facility at short centimeter wavelengths that will enable a major step in imaging thermal emission from the cosmos at milliarcsecond resolution: a next generation Very Large Array (ngVLA). The past year has seen rapid progress in the ngVLA science case and technical requirements, building from an NRAO-sponsored community workshop held at the January 2015 American Astronomical Society (AAS) meeting. The ngVLA is part of the broader astronomy community discussion of future science opportunities and instrumentation. The NRAO proposes a one-day workshop at the January 2016 AAS meeting that will provide the membership an update on progress toward the ngVLA concept and will foster broad community discussion of the ngVLA science case and technical challenges. The proposed workshop will include: • Presentation of the current ngVLA science program by community leaders; • Discussion of the technical requirements and challenges emerging from the science program; • Contributed science talks that expand the ngVLA science case; and • Discussion of ngVLA synergies with other future science facilities, such as the James Webb Space Telescope, High Definition Space Telescope, and Thirty Meter Telescope. We envision a full-day ngVLA Workshop, with the morning dedicated to science presentations, and the afternoon focusing on high-level technical issues, with substantial open discussion time. We expect ~100 attendees.

**Organizer: Mark Adams** (*NRAO*)

# MONDAY, 4 JANUARY 2016

## SciCoder Presents: Developing Larger Software Projects

**Monday, 10:00 am - 6:00 pm; Emerald 6**

Astronomers typically learn to write software by modifying or creating short scripts. These tend to have specific functionality and don't lend themselves to reuse – even less so by others. This workshop will focus on taking those skills to the next level: designing and creating larger software projects, an emphasis on code sharing and reuse, unit testing, documentation, and object-oriented design. We will discuss these topics as specifically applied to astronomical data and software. These skills will not only help to reduce the amount of time spent writing code, but dramatically benefit those who inherit software. This workshop will be presented by Demitri Muna, creator of the SciCoder workshop (<http://scicoder.org>).

## COPAG I

**Monday, 10:00 am - 1:00 pm; Osceola B**

**Organizer: Susan Neff (NASA, GSFC)**

## PAG Meetings

**Monday, 12:00 pm - 5:00 pm; Osceola A**

**Organizer: Susan Neff (NASA, GSFC)**

## Bayesian Methods in Astronomy: Hands-on Statistics

**Monday, 1:00 pm - 6:00 pm; Emerald 2**

With applications ranging from cosmological parameter constraints to detection of exoplanets, Bayesian methods are increasingly becoming an essential piece of the modern astronomer's computational tool belt. In this workshop, we will take a hands-on approach to learning the Bayesian approach in an astronomical context, starting with a brief overview of relevant background and moving into practical exercises in modeling increasingly complicated data using Markov Chain Monte Carlo (MCMC) methods. The workshop will consist of a mix of lectures and coding breakouts, focusing specifically on the use of Python tools such as the emcee package. To get the most out of this workshop, participants should be comfortable with Python as a computational tool, and come with their laptops ready to write code and run models. This workshop will be facilitated by Jake VanderPlas (U. Washington) along with two assistant facilitators. Jake VanderPlas is the Director of Research in Physical Sciences at the University of Washington's eScience Institute, an interdisciplinary program designed to support data-driven discovery in a wide range of scientific fields. His own research is in astronomy, astrostatistics, machine learning, and scalable computation. He is an active developer of open science tools in Python. He co-authored the book *Statistics, Data Mining, and Machine Learning in Astronomy*, and often leads courses and workshops on these topics.

## Submitting Successful Proposals to the NSF IUSE Program

Monday, 1:00 pm - 5:00 pm; St. George 108

This workshop will provide an overview of the National Science Foundation's Improving Undergraduate STEM Education Program. We will cover all aspects of its history including the programs that preceded it, their goals, and their evolution over time. A complete description of the present IUSE program and the distinguishing characteristics of grants in today's portfolio will be given. We will then explore the process of proposal review, examples of good and bad reviews, and the benefits of reviewing. The characteristics of a good proposal will be analyzed from looking at several project summaries as well as a full proposal. Guest speakers will detail the strategies that led to their submission of a funded IUSE proposal. All topics will be explored through classroom techniques developed for modern interactive teaching. Participants will leave with numerous resources and guidance essential for submitting their own IUSE proposal.

**Organizer:** Kevin Lee (*NSF*)

## 90 HAD I: A Celebration of the Centenary of Einstein's General Relativity

Monday, 1:30 pm - 4:00 pm; Osceola 4

**Chair:** Virginia Trimble (*UC, Irvine*)

- 90.01 **Was Einstein Right? A Centennial Assessment**  
**Author(s):** Clifford M. Will<sup>1</sup>  
*Institution(s):*<sup>1</sup> *Univ. of Florida*
- 90.02 **News from Front (of the Solar System): the problem with Mercury, the Vulcan hypothesis, and General Relativity's first astronomical triumph**  
**Author(s):** William Sheehan<sup>1</sup>  
*Institution(s):*<sup>1</sup> *Child and Adolescent Behavioral Health Services*
- 90.03 **Cosmology in Mr. Tompkins' Lifetime**  
**Author(s):** Rudi Paul Lindner<sup>1</sup>  
*Institution(s):*<sup>1</sup> *Univ. of Michigan*
- 90.04 **General Relativity During the Great War**  
**Author(s):** Virginia L. Trimble<sup>1</sup>  
*Institution(s):*<sup>1</sup> *UC, Irvine*
- 90.05 **General Relativity Today**  
**Author(s):** Roger D. Blandford<sup>1</sup>  
*Institution(s):*<sup>1</sup> *KIPAC, Stanford University*

## PhysPAG

Monday, 3:00 pm - 7:30 pm; Naples

**Organizer:** Susan Neff (*NASA, GSFC*)

# MONDAY, 4 JANUARY 2016

## COPAG II

Monday, 4:00 pm - 8:00 pm; Osceola B

Organizer: Susan Neff (*NASA, GSFC*)

## Undergraduate Orientation

Monday, 5:30 pm - 7:00 pm; Sun A

Undergraduate students, their advisors, and those interested in attracting undergraduate students to their graduate program, or undergraduate research opportunity are invited to attend this event. Members of the AAS Council and of the Astronomy Education Board will be there to meet and chat with students. For the benefit of those students attending an AAS meeting for the first time, we will explain how to get the most out of an AAS meeting and outline how the meeting works. Sign up, free of charge to all undergrads, their advisors and those offering research opportunities (or jobs) to undergraduates, through the meeting registration form. Light snacks and refreshments will be provided.

## WG on the Preservation of Astronomical Heritage

Monday, 5:30 pm - 7:00 pm; Emerald 3

Annual meeting of the AAS Working Group on the Preservation of Astronomical Heritage. Anyone interested in the topic is welcome to come and participate in the discussion.

Organizer: Jennifer Bartlett (*US Naval Observatory*)

## AAS Opening Reception

Monday, 7:00 pm - 9:00 pm; Exhibit Hall A

Open to all attendees and registered guests, the Opening Reception at the Gaylord Palms kicks off the 227th meeting of the American Astronomical Society.

## 100 Plenary Session: Welcome by AAS President Megan Urry

Tuesday, 8:00 am - 8:30 am; Osceola C

Chair: C. Megan Urry (*Yale University*)

## 101 Kavli Foundation Lecture: The Exploration of the Pluto System by New Horizons

Tuesday, 8:30 am - 9:20 am; Osceola C

Chair: C. Megan Urry (*Yale University*)



101.01

**The Exploration of the Pluto System by New Horizons**

**Author(s): S. Alan Stern<sup>1</sup>**

*Institution(s): <sup>1</sup> SwRI*

**Citation:** The Kavli Foundation Plenary Lectureship is awarded to Dr.

Alan Stern, Associate Vice President at of the Southwest Research

Institute (SwRI), for his outstanding and innovative leadership over the

past two decades in designing and executing, as Principal Investigator, the New Horizons flyby mission to Pluto. This mission has provided a revolutionary new view of the Pluto-Charon system that will fundamentally alter our understanding of dwarf worlds in the outer solar system, and challenge our basic assumptions about planetary geology and evolution, thereby reshaping our understanding of our own solar system.

## Careers 101: Career Planning Workshop and Panel for Graduate Students and Postdocs

Tuesday, 9:30 am - 11:30 am; St. George 108

This FREE workshop and panel discussion will center on the current and expanding crisis in the job and career market for astronomers. Specifically targeted towards graduate students and Postdocs, this workshop will identify and investigate the shortage of traditional astronomy jobs, and how early-career scientists can best prepare for this challenge. Our focus will be on career planning for traditional astronomy positions. We will demonstrate how to orchestrate a personal career plan and develop a Plan B and Plan C for contingencies. We will discuss what early-career astronomers should do now to enhance their CVs and research reputations, and what they should look for in and how they can leverage a Postdoc appointment to set themselves up for success in the field. We will also discuss non-traditional jobs and career paths in astronomy, and introduce the skills that are needed to pursue these. Q and A between panelists and workshop participants will be highly encouraged. This session is organized by the AAS Employment Committee.

**Organizer: AAS Employment Committee**

**TUESDAY, 5 JANUARY 2016**

## **The Next Leap in UV/Optical/NIR Space Astronomy**

**Tuesday, 10:00 am - 11:30 am; Orange Blossom Ballroom**

The key scientific motivations for a large (10+ m diameter) UV-optical-NIR space observatory have been identified in several major community-led reviews, including the 2010 NRC Decadal Survey, NASA's 30-year Roadmap Study (2013) and most recently from the 2015 AURA report, "From Cosmic Birth to Living Earths." At least one reference design for such an observatory has been developed in detail by a joint NASA GSFC/JPL/MSFC and STScI team for its capability to achieve a broad range of priority science goals. A number of industry-led teams have also developed concepts for a large non-cryogenic UVOIR telescope in space. In this session we will present and discuss such telescope concepts and the priority science goals that drive their design requirements, the essential technologies and their current status, and the path forward to seeking a viable mission. Many of the designs build upon the technologies and experience developed for TPF-C, SIM, and JWST, including telescope deployment systems, active metrology, mirror materials and coatings, thermal and wavefront control systems, and coronagraph designs. We welcome at this session wide-ranging discussion of the science, the design concepts, and the capabilities that such a compelling observatory will offer the international astronomical community.

**Organizer: Marc Postman** (*Space Telescope Science Institute*)

## **102 Keys to Classic Astrophysical Puzzles: High Energy Gamma-Rays with VERITAS and Beyond**

**Tuesday, 10:00 am - 11:30 am; Sun A**

Gamma-ray astronomy has experienced huge growth over the last five years with the successes of ground-based Cherenkov telescopes such as VERITAS, and space missions such as the Fermi Gamma Ray Space Telescope. The commissioning of HAWC, a new generation water Cherenkov observatory, and the development of the international Cherenkov Telescope Array (CTA) promises to build on this success in the very near future. This suite of instruments provides exciting opportunities to explore a wide range of energetic processes along with their contexts in astrophysical systems. These systems include supernovae, pulsar wind nebulae, x-ray binaries and globular clusters, OB associations and Wolf-Rayet stars, starburst galaxies, radio galaxies, active galactic nuclei and blazars, as well as cosmic high-energy backgrounds. In such environments, gamma rays are produced through a variety of physical processes involving interactions between cosmic rays, photons, magnetic fields and the surrounding interstellar or intergalactic medium. For example, on a Galactic scale we lack an understanding of such fundamental issues as the masses of molecular clouds, the role of cosmic rays in driving our galactic wind, and feedback in the unusual conditions prevailing in the Galactic Center. In extragalactic astronomy, we can address difficult issues such as feedback from supernovae in starbursts, connections between AGN and star-forming environments, how large-scale jets are launched, and properties of the intergalactic medium. Therefore gamma-ray observations are crucial to the understanding of the inner workings of astronomical systems that have presented puzzles when observed in other spectral bands. This special session will focus on recent results from VHE

observations, which when combined with multi-wavelength and multi-messenger data, provide new perspectives on familiar astrophysical systems and point the way towards future prospects as we usher in a new era in TeV astronomy.

**Chair(s):** Lucy Fortson (*University of Minnesota*) &  
Reshmi Mukherjee (*McGill Univ.*)

**102.01 Energetic particles in supernova remnants: Results from VHE Observations**

**Author(s):** Patrick O. Slane<sup>1</sup>

*Institution(s):*<sup>1</sup> *Harvard-Smithsonian, CfA*

**102.02 Gamma Ray Constraints on Astrochemistry: Cosmic-Ray Flux and Molecular Cloud Masses**

**Author(s):** Nick Indriolo<sup>1</sup>

*Institution(s):*<sup>1</sup> *University of Michigan*

**102.03 Cosmic Rays Across the Universe**

**Author(s):** Ellen Gould Zweibel<sup>1</sup>

*Institution(s):*<sup>1</sup> *Univ. of Wisconsin*

**102.04 High Energy Insights into Extragalactic Sources**

**Author(s):** Charles D. Dermer<sup>1</sup>

*Institution(s):*<sup>1</sup> *NRL*

**102.05 Beyond VERITAS: High-Energy Gamma-Rays with the Cherenkov Telescope Array**

**Author(s):** David A. Williams<sup>1</sup>

*Institution(s):*<sup>1</sup> *UC, Santa Cruz*

## 103 Supernovae: Surveys and Detections

Tuesday, 10:00 am - 11:30 am; Sun B

**Chair:** Daniel Scolnic (*University of Chicago*)

**103.01 Supernovae by the Hundreds: the LCOGT Supernova Key Project**

**Author(s):** Dale Andrew Howell<sup>1</sup>, Iair Arcavi<sup>1</sup>, Griffin Hosseinzadeh<sup>1</sup>, Curtis McCully<sup>1</sup>, Stefano Valenti<sup>2</sup>

*Institution(s):*<sup>1</sup> *Las Cumbres Global Telescope Network, Inc.*, <sup>2</sup> *University of California, Davis*

**103.02 Exploring Type II Supernova Diversity with the LCOGT Sample**

**Author(s):** Stefano Valenti<sup>2</sup>, Dale Andrew Howell<sup>1</sup>, Iair Arcavi<sup>1</sup>, Curtis McCully<sup>1</sup>, Griffin Hosseinzadeh<sup>1</sup>

*Institution(s):*<sup>1</sup> *Las Cumbres Observatory Global Telescope Network*, <sup>2</sup> *UC Davis*

**103.03D Fast and Furious: Rapid Response to Young Supernovae**

**Author(s):** Yi Cao<sup>1</sup>, Shrinivas R. Kulkarni<sup>1</sup>, Peter E. Nugent<sup>2</sup>, Mansi M. Kasliwal<sup>1</sup>

*Institution(s):*<sup>1</sup> *Caltech*, <sup>2</sup> *Lawrence Berkeley National Lab*

**103.04 A New Type of X-ray Transient?**

**Author(s):** Franz E. Bauer<sup>1</sup>

*Institution(s):*<sup>1</sup> *Space Science Institute*

# TUESDAY, 5 JANUARY 2016

## 103.05D Peculiar Transients as Probes of Stellar Evolution and Mass-Loss

**Author(s):** Maria Drout<sup>1</sup>, Edo Berger<sup>1</sup>

*Institution(s):* <sup>1</sup> Harvard University

## 103.06 Supernova Host Galaxy Identification: Applications for the Dark Energy Survey and Future Surveys

**Author(s):** Ravi Gupta<sup>1</sup>, Stephen Kuhlmann<sup>1</sup>, Eve Kovacs<sup>1</sup>, Harold Spinka<sup>1</sup>, Daniel Goldstein<sup>3</sup>, Camille Liotine<sup>1</sup>, Katarzyna Pomian<sup>1</sup>, Richard Kessler<sup>4</sup>, Christopher D'Andrea<sup>2</sup>, Mark Sullivan<sup>6</sup>, Masao Sako<sup>5</sup>, Robert Nichol<sup>2</sup>, Andreas Papadopoulos<sup>2</sup>

*Institution(s):* <sup>1</sup> Argonne National Laboratory, <sup>2</sup> Institute for Cosmology and Gravitation, University of Portsmouth, <sup>3</sup> University of California, Berkeley, <sup>4</sup> University of Chicago, <sup>5</sup> University of Pennsylvania, <sup>6</sup> University of Southampton

## 103.07 The Multiply Imaged Strongly Lensed Supernova Refsdal

**Author(s):** Patrick Kelly<sup>1</sup>

*Institution(s):* <sup>1</sup> California - Berkeley, University of

## 104 AGN, QSO, Blazars: Origins, Evolution, Growth and Masses

Tuesday, 10:00 am - 11:30 am; Sun C

**Chair:** Jedidah Isler (*Yale University*)

### 104.01 The Fossil Record of Black Hole Seeds, with Spatially Resolved Spectroscopy

**Author(s):** Jonathan R. Trump<sup>1</sup>

*Institution(s):* <sup>1</sup> Penn State

### 104.02 The Observed Evolution of the Black-Hole-Host Mass Relation to $z \sim 3.5$

**Author(s):** Benny Trakhtenbrot<sup>1</sup>, C. Megan Urry<sup>7</sup>, Francesca M. Civano<sup>7</sup>, David J. Rosario<sup>4</sup>, Martin Elvis<sup>2</sup>, Kevin Schawinski<sup>1</sup>, Hyewon Suh<sup>5</sup>, Angela Bongiorno<sup>3</sup>, Brooke Simmons<sup>6</sup>, Stefano Marchesi<sup>7</sup>

*Institution(s):* <sup>1</sup> ETH Zurich, <sup>2</sup> Harvard-Smithsonian Center for Astrophysics, <sup>3</sup> INAF-Osservatorio Astronomico di Roma, <sup>4</sup> Max-Planck-Institut für Extraterrestrische Physik, <sup>5</sup> University of Hawaii, <sup>6</sup> University of Oxford, <sup>7</sup> Yale University

### 104.03 HST images of FeLoBAL quasars: Testing quasar-galaxy evolution models

**Author(s):** Hanna Herbst<sup>4</sup>, Fred Hamann<sup>4</sup>, Carolin Villforth<sup>3</sup>, Paola Caselli<sup>1</sup>, Anton M. Koekemoer<sup>2</sup>, Sylvain Veilleux<sup>5</sup>

*Institution(s):* <sup>1</sup> Max Planck Institute for Extraterrestrial Physics, <sup>2</sup> Space Telescope Science Institute, <sup>3</sup> University of Bath, <sup>4</sup> University of Florida, <sup>5</sup> University of Maryland

### 104.04 Dual AGNs in Mergers: An X-ray and IR investigation

**Author(s):** Shobita Satyapal<sup>1</sup>, Nathan Secrest<sup>3</sup>, Barry Rothburg<sup>2</sup>, Sara L Ellison<sup>4</sup>, Paul McNulty<sup>1</sup>

*Institution(s):* <sup>1</sup> George Mason University, <sup>2</sup> Large Binocular Telescope Observatory, <sup>3</sup> Naval Research Laboratory, <sup>4</sup> University of Victoria

**104.05D Understanding AGNs in the Local Universe through Optical Reverberation Mapping**

**Author(s):** Liuyi Pei<sup>1</sup>

*Institution(s):* <sup>1</sup> *University of California Irvine*

**104.06 Active Galactic Nuclei flicker on a characteristic timescale of 105 years: implications for black hole growth and AGN feedback**

**Author(s):** Kevin Schawinski<sup>1</sup>, Michael Koss<sup>1</sup>, Lia F. Sartori<sup>1</sup>, Simon Berney<sup>1</sup>

*Institution(s):* <sup>1</sup> *ETH Zurich*

**104.07 Improving Calibration of the MBH -  $\sigma^*$  Relation for AGN with the BRAVE Program**

**Author(s):** Merida Batista<sup>1</sup>, Misty C. Bentz<sup>1</sup>

*Institution(s):* <sup>1</sup> *Georgia State University*

**104.08 A Stellar Dynamical Black Hole Mass for Broad-Lined Seyfert Galaxy NGC 6814 and Comparison to Results from Reverberation Mapping**

**Author(s):** Emily Manne-Nicholas<sup>2</sup>, Merida Batista<sup>2</sup>, Monica Valluri<sup>4</sup>, Misty C. Bentz<sup>2</sup>, Christopher A. Onken<sup>1</sup>, Laura Ferrarese<sup>3</sup>

*Institution(s):* <sup>1</sup> *Australian National University*, <sup>2</sup> *Georgia State University*, <sup>3</sup> *Herzberg Institute for Astrophysics*, <sup>4</sup> *University of Michigan*

## 105 Stars I: Age, Rotation and Activity

Tuesday, 10:00 am - 11:30 am; Sun D

**Chair:** Sarah Schmidt (*Ohio State University*)

**105.01 A self-consistent dynamo model for fully convective stars**

**Author(s):** Rakesh Kumar Yadav<sup>1</sup>, Ulrich Christensen<sup>3</sup>, Julien Morin<sup>2</sup>, Thomas Gastine<sup>3</sup>, Ansgar Reiners<sup>4</sup>, Katja Poppenhaeger<sup>1</sup>, Scott J. Wolk<sup>1</sup>

*Institution(s):* <sup>1</sup> *Harvard-Smithsonian Center for Astrophysics*, <sup>2</sup> *LUPM, Université de Montpellier*, <sup>3</sup> *Max-Planck-Institute for Solar System Research*, <sup>4</sup> *University of Goettingen*

**105.02 A Light Curve Probe of Stellar Surface Convection and Measure of Stellar Surface Gravity**

**Author(s):** Fabienne A. Bastien<sup>2</sup>, Keivan Stassun<sup>4</sup>, Gibor S. Basri<sup>3</sup>, Joshua Pepper<sup>1</sup>

*Institution(s):* <sup>1</sup> *Lehigh University*, <sup>2</sup> *Pennsylvania State University*, <sup>3</sup> *University of California, Berkeley*, <sup>4</sup> *Vanderbilt University*

**105.03 The evolution of chromospheric activity in middle-aged Sun-like stars**

**Author(s):** Jason L. Curtis<sup>1</sup>

*Institution(s):* <sup>1</sup> *The Pennsylvania State University*

**105.04D Stellar ages from stellar rotation**

**Author(s):** Ruth Angus<sup>2</sup>, Suzanne Aigrain<sup>2</sup>, John A. Johnson<sup>1</sup>, Daniel Foreman-Mackey<sup>3</sup>

*Institution(s):* <sup>1</sup> *Harvard University*, <sup>2</sup> *University of Oxford*, <sup>3</sup> *University of Washington*

# TUESDAY, 5 JANUARY 2016

**105.05D Insight into the structure and physics of M dwarf stars through determination of the rotation, metallicities, and radii of the nearby population**

**Author(s):** Elisabeth R. Newton<sup>1</sup>

*Institution(s):* <sup>1</sup> Harvard Univ.

**105.06D What Makes Red Giants Tick? Linking Tidal Forces, Activity, and Solar-Like Oscillations via Eclipsing Binaries**

**Author(s):** Meredith L. Rawls<sup>2</sup>, Patrick Gaulme<sup>1</sup>, Jean McKeever<sup>2</sup>, Jason Jackiewicz<sup>2</sup>

*Institution(s):* <sup>1</sup> Apache Point Observatory, <sup>2</sup> New Mexico State University

## 106 Recent Developments in Extrasolar Planet Detection

Tuesday, 10:00 am - 11:30 am; Osceola A

**Chair:** Margaret Turnbull (*Global Science Institute*)

**106.01 Multiwavelength Transit Observations of the Candidate Disintegrating Planetesimals Orbiting a White Dwarf**

**Author(s):** Bryce Croll<sup>1</sup>

*Institution(s):* <sup>1</sup> Boston University

**106.02 Infrared emission from highly irradiated planets in orbit around hot white dwarfs**

**Author(s):** John H. Debes<sup>1</sup>, Phoebe Sandhaus<sup>1</sup>

*Institution(s):* <sup>1</sup> STScI

**106.03 Confirmation of the Planetary Origin of the Gravitational Microlensing Event OGLE-2006-BLG-0169**

**Author(s):** Richard K. Barry<sup>2</sup>, David P. Bennett<sup>3</sup>, Aparna Bhattacharya<sup>3</sup>, Jay Anderson<sup>6</sup>, Ian Bond<sup>1</sup>, Nyki Anderson<sup>2</sup>, Virgini Batista<sup>5</sup>, Jean-philippe Beaulieu<sup>5</sup>, Darren L. Depoy<sup>7</sup>, Subo Dong<sup>4</sup>, B. Scott Gaudi<sup>4</sup>, Andrew Gould<sup>4</sup>, Emily Gilbert<sup>2</sup>, Ryan Pfeifle<sup>2</sup>, Richard W. Pogge<sup>4</sup>, Sean Terry<sup>2</sup>, Andrzej Udalski<sup>8</sup>

*Institution(s):* <sup>1</sup> Massey University, <sup>2</sup> NASA's GSFC, <sup>3</sup> Notre Dame, <sup>4</sup> Ohio state university, <sup>5</sup> Paris Observatory, <sup>6</sup> Space Telescope Science Institute, <sup>7</sup> Texas A&M, <sup>8</sup> Warsaw University Observatory

**106.04 Mass ratio of the 2 pc binary brown dwarf LUH 16 and limits on planetary companions from astrometry**

**Author(s):** Johannes Sahlmann<sup>1</sup>, Petro F Lazorenko<sup>2</sup>

*Institution(s):* <sup>1</sup> ESA / STScI, <sup>2</sup> Main Astronomical Observatory

**106.05 An Accreting Protoplanet: Confirmation and Characterization of LkCa15b**

**Author(s):** Katherine B. Follette<sup>2</sup>, Laird Miller Close<sup>3</sup>, Jared Males<sup>3</sup>, Bruce Macintosh<sup>2</sup>, Stephanie Sallum<sup>3</sup>, Joshua A. Eisner<sup>3</sup>, Kaitlin M. Kratter<sup>3</sup>, Vanessa P. Bailey<sup>2</sup>, Denis Defrere<sup>3</sup>, Phil Hinz<sup>3</sup>, Kathleen M. Morzinski<sup>3</sup>, Timothy Rodigas<sup>1</sup>, Andrew Skemer<sup>3</sup>, Eckhart Spalding<sup>3</sup>, Peter Tuthill<sup>4</sup>, Amali Vaz<sup>3</sup>, Alycia J. Weinberger<sup>1</sup>

*Institution(s):* <sup>1</sup> Carnegie Institution, <sup>2</sup> Stanford University, <sup>3</sup> University of Arizona, <sup>4</sup> University of Sydney

**106.06D Probing Planetary Formation and Evolution Through Occultations**

**Author(s):** Joseph E. Rodriguez<sup>1</sup>  
*Institution(s):* <sup>1</sup> Vanderbilt University

**106.07 How to Image Exoplanets at Solar System Scales**

**Author(s):** Timothy Rodigas<sup>1</sup>, Alycia J. Weinberger<sup>1</sup>, Eric E. Mamajek<sup>2</sup>, Jared Males<sup>3</sup>, Laird Miller Close<sup>3</sup>, Kathleen M. Morzinski<sup>3</sup>, Phil Hinz<sup>3</sup>, Nathan A. Kaib<sup>1</sup>  
*Institution(s):* <sup>1</sup> Carnegie Institution of Washington, <sup>2</sup> Rochester Institute of Technology, <sup>3</sup> University of Arizona

**106.08 Finding the Needles in the Haystacks: Feasibility of Exomoon Detection and Spectral Recovery**

**Author(s):** Tiffany C Jansen<sup>4</sup>, Aki Roberge<sup>2</sup>, Eric Agol<sup>4</sup>, Chris Stark<sup>3</sup>, Tyler Robinson<sup>1</sup>  
*Institution(s):* <sup>1</sup> NASA Ames Research Center, <sup>2</sup> NASA Goddard Space Flight Center, <sup>3</sup> Space Telescope Science Institute, <sup>4</sup> University of Washington

**107 HEAD I: The First Supermassive Black Holes**

Tuesday, 10:00 am - 11:30 am; Osceola B

This Special Session will discuss the latest progress in our understanding of the physics of supermassive black hole formation, and assess the impact of future observations, especially those in the IR and X-ray bands.

**Chair: Christopher Reynolds** (*Univ. of Maryland*)

**107.01 The Origin of SMBHs : A Theoretical Perspective**

**Author(s):** Tiziana Di Matteo<sup>1</sup>  
*Institution(s):* <sup>1</sup> Carnegie Mellon University

**107.02 Current and Future X-ray Studies of High-Redshift AGNs and the First Supermassive Black Holes**

**Author(s):** Niel Brandt<sup>1</sup>  
*Institution(s):* <sup>1</sup> Penn State University

**107.03 The First SMBHs in the era of Euclid, WFIRST and JWST**

**Author(s):** Daniel Stern<sup>1</sup>  
*Institution(s):* <sup>1</sup> JPL/ Caltech

**108 Gas and Dust Content in Distant Galaxies**

Tuesday, 10:00 am - 11:30 am; Miami

**Chair: Roberta Paladini** (*NHSC/Caltech*)

**108.01 The Evolutionary Connection Between z~2-3 Submillimeter Galaxies and AGN as Probed by Molecular Gas Excitation**

**Author(s):** Chelsea E. Sharon<sup>1</sup>, Dominik A. Riechers<sup>1</sup>, Chris Luke Carilli<sup>4</sup>, Jacqueline Hodge<sup>2</sup>, Fabian Walter<sup>3</sup>  
*Institution(s):* <sup>1</sup> Cornell University, <sup>2</sup> Leiden Observatory, <sup>3</sup> Max Planck Institut für Astronomie, <sup>4</sup> NRAO

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**108.02D The Luminous Polycyclic Aromatic Hydrocarbon Emission Features: Applications to High Redshift Galaxies and Active Galactic Nuclei**

**Author(s):** Heath V. Shipley<sup>1</sup>

*Institution(s):*<sup>1</sup> Texas A&M University

**108.03 Dust-obscured star formation in the Frontier Fields: New observations from the Large Millimeter Telescope**

**Author(s):** Alexandra Pope<sup>1</sup>

*Institution(s):*<sup>1</sup> Univ. of Massachusetts, Amherst

**108.04 The role of AGN and star-forming in powering dusty galaxies**

**Author(s):** Anna Sajina<sup>3</sup>, Noah Kurinsky<sup>2</sup>, Eric John Roebuck<sup>3</sup>, Christopher C. Hayward<sup>1</sup>, Matteo Bonato<sup>3</sup>, Allison Kirkpatrick<sup>4</sup>, Alexandra Pope<sup>4</sup>, Lin Yan<sup>1</sup>

*Institution(s):*<sup>1</sup> Caltech, <sup>2</sup> Stanford University, <sup>3</sup> Tufts University, <sup>4</sup> UMass-Amherst

**108.05DCOPSS: The CO Power Spectrum Survey**

**Author(s):** Garrett K. Keating<sup>2</sup>, Geoffrey C. Bower<sup>1</sup>, Daniel P. Marrone<sup>3</sup>, Carl E. Heiles<sup>2</sup>

*Institution(s):*<sup>1</sup> ASIAA, <sup>2</sup> UC Berkeley, <sup>3</sup> University of Arizona

**108.06 The evolution of morphology and star formation across 12 Gyrs: Quiescent disks or dust-obscured star formation?**

**Author(s):** Tommy Wiklind<sup>1</sup>

*Institution(s):*<sup>1</sup> Catholic University of America

## 109 Intergalactic Medium, QSO Absorption Line Systems

Tuesday, 10:00 am - 11:30 am; Naples

**Chair: Andrew Fox** (*Space Telescope Science Institute*)

**109.01 Understanding the physics driving the values of Lyman-alpha forest bias parameters**

**Author(s):** Agnieszka M Cieplak<sup>1</sup>, Anze Slosar<sup>1</sup>

*Institution(s):*<sup>1</sup> Brookhaven National Laboratory

**109.02 Where Do Galaxies Spend Their Time? The Evolving Environment of Galaxies and Their CGM**

**Author(s):** L. A. Phillips<sup>1</sup>, Ali Snedden<sup>1</sup>, Jared Coughlin<sup>1</sup>, Grant James Mathews<sup>1</sup>, In-Saeng Suh<sup>1</sup>

*Institution(s):*<sup>1</sup> University of Notre Dame

**109.03D The relationships between galaxies/AGN and the circum-/intergalactic medium at  $z < 1$**

**Author(s):** Sean Johnson<sup>2</sup>, Hsiao-Wen Chen<sup>2</sup>, John S. Mulchaey<sup>1</sup>

*Institution(s):*<sup>1</sup> The Observatories of the Carnegie Institution for Science, <sup>2</sup> The University of Chicago

**109.04 New observations directly measuring the full continuous sizes of high redshift damped Ly $\alpha$  systems**

**Author(s):** Jeff Cooke<sup>2</sup>, John O'Meara<sup>1</sup>

*Institution(s):*<sup>1</sup> Saint Michaels College, <sup>2</sup> Swinburne University

- 109.05 Photon underproduction crisis and the redshift evolution of escape fraction of hydrogen ionizing photons from galaxies**  
**Author(s):** Vikram Khair<sup>1</sup>, Raghunathan Srianand<sup>1</sup>  
*Institution(s):* <sup>1</sup> Inter-University Centre for Astronomy and Astrophysics
- 109.06 Analyzing the Evolution of MgII and CIV Absorbers Observed in High Resolution with the Largest Optical Telescopes**  
**Author(s):** Nigel Mathes<sup>1</sup>, Christopher W. Churchill<sup>1</sup>, Michael Murphy<sup>2</sup>  
*Institution(s):* <sup>1</sup> New Mexico State University, <sup>2</sup> Swinburne University of Technology
- 109.07 Spectral Deception: Understanding Misleading Spectral Features Using Simulations**  
**Author(s):** Cameron B. Hummels<sup>1</sup>, Devin W. Silvia<sup>2</sup>, Britton Smith<sup>3</sup>  
*Institution(s):* <sup>1</sup> California Institute of Technology, <sup>2</sup> Michigan State University, <sup>3</sup> University of Edinburgh
- 109.08 A Deep Search for Galaxies Associated With Very Low-redshift Metal-line Absorbers: The Circumgalactic Media of Dwarf Galaxies and Environmental Effects**  
**Author(s):** Joseph Burchett<sup>3</sup>, Todd M. Tripp<sup>3</sup>, Rongmon Bordoloi<sup>1</sup>, Christopher Willmer<sup>2</sup>  
*Institution(s):* <sup>1</sup> MIT, <sup>2</sup> University of Arizona, <sup>3</sup> University of Massachusetts

## 110 Variable Stars, White Dwarfs

Tuesday, 10:00 am - 11:30 am; Tampa

**Chair:** Terry Oswalt (*Embry-Riddle Aeronautical University*)

- 110.01 Photometric Variability of a Large Sample of Be Stars**  
**Author(s):** Jonathan Labadie-Bartz<sup>1</sup>, Joshua Pepper<sup>1</sup>  
*Institution(s):* <sup>1</sup> Lehigh University
- 110.02 Formation and Asteroseismology of Extremely Low-mass White Dwarfs**  
**Author(s):** Meng Sun<sup>1</sup>, Phil Arras<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Virginia
- 110.03D The Long-Term Outcomes of Double White Dwarf Mergers**  
**Author(s):** Josiah Schwab<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of California
- 110.04 On the Discovery of Massive ZZ Ceti Variables and the Peculiar Light Curve of SDSS J1529**  
**Author(s):** Brandon Curd<sup>1</sup>, Mukremin Kilic<sup>1</sup>, Alex Gianninas<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Oklahoma
- 110.05 Study of Eclipsing Binary Systems NSVS 732240 and NSVS 5726288**  
**Author(s):** Matthew Knot<sup>1</sup>  
*Institution(s):* <sup>1</sup> Florida Institute of Technology
- 110.06D Shifting the Starspot Paradigm: Imaging Global Magnetic Structures**  
**Author(s):** Rachael M. Roettenbacher<sup>1</sup>, John D. Monnier<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Michigan

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## 110.07 Finding Every Stellar Flare in the Kepler Light Curves

**Author(s):** James R. A. Davenport<sup>1</sup>

*Institution(s):* <sup>1</sup> Western Washington University

## 111 Dwarf and Irregular Galaxies

Tuesday, 10:00 am - 11:30 am; Sanibel

**Chair:** Keith Bechtol (*Stanford*)

### 111.01 Evidence of Cosmic Accretion in Local Tadpole Galaxies

**Author(s):** Debra M. Elmegreen<sup>10</sup>, Bruce Elmegreen<sup>4</sup>, Jorge Sanchez Almeida<sup>3</sup>, Casiana Munoz-Tunon<sup>3</sup>, Marc Rafelski<sup>2</sup>, John S. Gallagher<sup>9</sup>, Jairo Mendez-Abreu<sup>8</sup>, R. Amorin<sup>5</sup>, M. Filho<sup>3</sup>, Y. Ascasibar<sup>7</sup>, P. Papaderos<sup>1</sup>, J. Vilchez<sup>6</sup>, E. Perez-Montero<sup>6</sup>

*Institution(s):* <sup>1</sup> Centro de Astrofísica da Universidade do Porto, <sup>2</sup> Goddard Space Flight Center, <sup>3</sup> IAC, <sup>4</sup> IBM T.J. Watson Research Center, <sup>5</sup> INAF, <sup>6</sup> Instituto de Astrofísica de Andalucía, <sup>7</sup> Universidad Autónoma de Madrid, <sup>8</sup> University of St. Andrews, <sup>9</sup> University of Wisconsin, <sup>10</sup> Vassar College

### 111.02 Exploding Satellites - The Tidal Debris of the Ultra-Faint Dwarf Galaxy Hercules

**Author(s):** Andreas Hans Wilhelm Kupper<sup>1</sup>, Michelle Collins<sup>4</sup>, Steffen Mieske<sup>2</sup>, Erik Jon Tollerud<sup>3</sup>

*Institution(s):* <sup>1</sup> Columbia University, <sup>2</sup> European Southern Observatory, <sup>3</sup> Space Telescope Science Institute, <sup>4</sup> University of Surrey

### 111.03D Dwarf galaxy evolution within the environments of massive galaxies

**Author(s):** Kenza S. Arraki<sup>1</sup>, Anatoly A. Klypin<sup>1</sup>, Daniel Ceverino<sup>3</sup>, Sebastian Trujillo-Gomez<sup>1</sup>, Joel R. Primack<sup>2</sup>

*Institution(s):* <sup>1</sup> New Mexico State University, <sup>2</sup> UC Santa Cruz, <sup>3</sup> Universidad Autónoma de Madrid

### 111.04 WSRT HI imaging of candidate gas-bearing dark matter halos in the Local Group

**Author(s):** Elizabeth A. Adams<sup>1</sup>, Tom Oosterloo<sup>1</sup>, John M. Cannon<sup>3</sup>, Riccardo Giovanelli<sup>2</sup>, Martha P. Haynes<sup>2</sup>

*Institution(s):* <sup>1</sup> ASTRON, <sup>2</sup> Cornell University, <sup>3</sup> Macalester College

### 111.05DH I Structure and Kinematics in the LITTLE THINGS Dwarf Galaxies

**Author(s):** Nau Raj Pokhrel<sup>1</sup>, Caroline E. Simpson<sup>1</sup>

*Institution(s):* <sup>1</sup> Florida International University

### 111.06 Star Formation at Low Metallicity in Local Dwarf Irregular Galaxies

**Author(s):** Bruce Elmegreen<sup>2</sup>, Deidre Ann Hunter<sup>4</sup>, Monica Rubio<sup>5</sup>, Elias Brinks<sup>6</sup>, Juan R Cortés<sup>3</sup>, Phil Cigan<sup>1</sup>

*Institution(s):* <sup>1</sup> Cardiff University, <sup>2</sup> IBM Research Div., <sup>3</sup> Joint ALMA Observatory, <sup>4</sup> Lowell Observatory, <sup>5</sup> University of Chile, <sup>6</sup> University of Hertfordshire

## 112 Extrasolar Planet Atmospheres: Theory I

Tuesday, 10:00 am - 11:30 am; Sarasota

Chair: Renyu Hu (*Jet Propulsion Laboratory*)

### 112.01 Non-grey thermal effects in irradiated planets atmospheres

Author(s): Vivien Parmentier<sup>3</sup>, Tristan Guillot<sup>2</sup>, Jonathan J. Fortney<sup>3</sup>, Mark S. Marley<sup>1</sup>

Institution(s): <sup>1</sup> NASA Ames research center, <sup>2</sup> Obs. de la côte d'azur, <sup>3</sup> UCSC

### 112.02D Polarimetry of hot-Jupiter systems and radiative transfer models of planetary atmospheres

Author(s): Kimberly Bott<sup>1</sup>, Jeremy Bailey<sup>1</sup>, Lucyna Kedziora-Chudczer<sup>1</sup>, Daniel Cotton<sup>1</sup>, Jonathan Marshall<sup>1</sup>

Institution(s): <sup>1</sup> University of New South Wales

### 112.03 Modeling of hot Jupiter H alpha transmission spectral line

Author(s): Chenliang Huang<sup>2</sup>, Phil Arras<sup>2</sup>, Duncan Christie<sup>1</sup>

Institution(s): <sup>1</sup> University of Florida, <sup>2</sup> University of Virginia

### 112.04D Microphysics of Exoplanet Clouds and Hazes

Author(s): Peter Gao<sup>1</sup>, Björn Benneke<sup>1</sup>, Heather Knutson<sup>1</sup>, Yuk Yung<sup>1</sup>

Institution(s): <sup>1</sup> Caltech

### 112.05D The Impact of Clouds and Hazes in Substellar Atmospheres

Author(s): Caroline Morley<sup>2</sup>, Jonathan J. Fortney<sup>2</sup>, Mark S. Marley<sup>1</sup>

Institution(s): <sup>1</sup> NASA Ames Research Center, <sup>2</sup> University of CA - Santa Cruz

## 113 Instrumentation: Space and Ground

Tuesday, 10:00 am - 11:30 am; Osceola 5

Chair: Charles Bradford (*Caltech/JPL*)

### 113.01 Simulating PSFs for WFIRST and JWST with WebbPSF

Author(s): Joseph D. Long<sup>1</sup>, Marshall D. Perrin<sup>1</sup>, Roeland P. Van Der Marel<sup>1</sup>

Institution(s): <sup>1</sup> Space Telescope Science Institute

### 113.02 AdEPT, the Advanced Energetic Pair Telescope for Medium-Energy Gamma-Ray Polarimetry

Author(s): Stanley D. Hunter<sup>1</sup>, Tonia M. Venters<sup>1</sup>, John Krizmanic<sup>1</sup>, Andrei Hanu<sup>1</sup>, Makoto Sasaki<sup>1</sup>, Andrey Timokhin<sup>1</sup>

Institution(s): <sup>1</sup> NASA/GSFC

### 113.03 It may be Possible to Use a Neutron Beam as Propulsion for Spacecraft

Author(s): Richard M Kriske<sup>1</sup>

Institution(s): <sup>1</sup> University of Minnesota

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## 113.04D High angular resolution observations of star-forming regions with BETTII and SOFIA

**Author(s):** Maxime Rizzo<sup>3</sup>, Stephen Rinehart<sup>2</sup>, Lee G. Mundy<sup>3</sup>, Dominic J. Benford<sup>2</sup>, Arnab Dhabal<sup>3</sup>, Dale J. Fixsen<sup>3</sup>, David Leisawitz<sup>2</sup>, Stephen F Maher<sup>2</sup>, Eric Mentzell<sup>2</sup>, Robert F. Silverberg<sup>2</sup>, Johannes Staguhn<sup>1</sup>, Todd Veach<sup>2</sup>  
*Institution(s):* <sup>1</sup> Johns Hopkins University, <sup>2</sup> NASA Goddard Space Flight Center, <sup>3</sup> University of Maryland, College Park

## 113.05 An Accurate, All-Sky, Absolute, Low-Frequency Flux Density Scale

**Author(s):** Richard A. Perley<sup>1</sup>, Joseph Callingham<sup>2</sup>, Bryan J. Butler<sup>1</sup>  
*Institution(s):* <sup>1</sup> NRAO, <sup>2</sup> School of Physics, University of Sydney

## 113.06 Noise and dark performance for the FIREBall-2 EMCCD delta-doped UV optimized CCD detector

**Author(s):** Erika T. Hamden<sup>1</sup>, Nicole Lingner<sup>1</sup>, Gillian Kyne<sup>1</sup>, Patrick Morrissey<sup>1</sup>, Christopher D. Martin<sup>1</sup>  
*Institution(s):* <sup>1</sup> California Institute of Technology

## 113.07 NRES: The Network of Robotic Echelle Spectrographs

**Author(s):** Robert Siverd<sup>2</sup>, Timothy M. Brown<sup>2</sup>, John Hygelund<sup>2</sup>, Todd Henderson<sup>2</sup>, Joseph Tufts<sup>2</sup>, Jason Eastman<sup>1</sup>, Julian C. Van Eyken<sup>3</sup>, Stuart Barnes<sup>4</sup>  
*Institution(s):* <sup>1</sup> Harvard Smithsonian Center for Astrophysics, <sup>2</sup> Las Cumbres Observatory Global Telescope Network, <sup>3</sup> NExScI, Caltech, <sup>4</sup> Stuart Barnes Optical Design

## 114 HAD II: History of Astronomy: 19th and 20th Centuries

Tuesday, 10:00 am - 11:30 am; Osceola 4

**Chair:** Jay Pasachoff (*Williams College*)

### 114.01 The Order of the Dolphin: Origins of SETI

**Author(s):** Maria Temming<sup>1</sup>, Anthony Crider<sup>1</sup>  
*Institution(s):* <sup>1</sup> Elon University

### 114.02 The Golden Years of Radio Astronomy

**Author(s):** Kenneth I. Kellermann<sup>1</sup>  
*Institution(s):* <sup>1</sup> NRAO

### 114.03 Max Wolf's Discovery of Near-Earth Asteroid 887 Alinda

**Author(s):** Martin Connors<sup>1</sup>, Holger Mandel<sup>2</sup>, Markus Demleitner<sup>3</sup>  
*Institution(s):* <sup>1</sup> Athabasca University, <sup>2</sup> Landesternwarte Heidelberg, <sup>3</sup> University of Heidelberg

### 114.04 Lowell Observatory's 24-inch Clark Refractor: Its History and Renovation

**Author(s):** Kevin Schindler<sup>1</sup>, Ralph Nye<sup>1</sup>, Peter Rosenthal<sup>1</sup>  
*Institution(s):* <sup>1</sup> Lowell Observatory

## 114.05 Who Really Discovered The First Asteroid, Ceres?

**Author(s):** Clifford J. Cunningham<sup>1</sup>

*Institution(s):*<sup>1</sup> National Astronomical Research Institute of Thailand

## 114.06 Lost in the Dark: A proto-history of dark matter

**Author(s):** Virginia L. Trimble<sup>1</sup>

*Institution(s):*<sup>1</sup> UC, Irvine

## 114.07 Joseph Henry and Astronomy

**Author(s):** Marc Rothenberg<sup>1</sup>

*Institution(s):*<sup>1</sup> Smithsonian Institution

## 115 Annie Jump Cannon Award: On the Dynamics of Planets, Stars and Black Holes - New Insights from Triples

Tuesday, 11:40 am - 12:30 pm; Osceola C

Chair: C. Megan Urry (Yale University)



115.01

### On the Dynamics of Planets, Stars and Black Holes - New Insights from Triples

**Author(s):** Smadar Naoz<sup>1</sup>

*Institution(s):*<sup>1</sup> UCLA

**Citation:** For her strong and pathbreaking contributions in the fields of both cosmology and planetary dynamics. Dr. Naoz demonstrated that the Kozai-Lidov formalism for the dynamics of three-body systems, studied for many decades by leading dynamicists worldwide, contained an implementation error. Her revisions have important implications for the evolution of triple systems, in particular explaining the surprising observations of many “hot Jupiters” with tight, highly eccentric and inclined, retrograde orbits. Dr. Naoz showed that the presence of an additional, moderately eccentric and inclined, massive planet in the system can naturally explain the observed orbits. For the first time Dr. Naoz provided a complete and accurate treatment of the secular dynamics of such a system.

## Re-Numerating the Astronomy Classroom

Tuesday, 12:30 pm - 2:30 pm; Emerald 2

All who step in front of an introductory science course today encounter the same problems with introducing quantitative science – students’ gross lack of arithmetic skills, inability to think numerically and frequent pervasive fear of all things numerical. Although qualitative methodologies certainly enhance the understanding of basic astronomy, their exclusive use comes at the expense of scientific authenticity and depth of understanding and also reinforces students’ belief that numerical skills are not useful in everyday life. Based on our research into Quantitative Literacy and on our years of classroom experience, this workshop will show participants how to deepen understanding, confront misconceptions, increase student motivation and self-awareness and improve arithmetic thinking using astronomy-specific materials as well

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as “real life” examples. Participants will learn how to extend existing materials (e.g., Lecture Tutorials) for this purpose and will be introduced to new possibilities in labs, class activities, think-pair-share questions and homework assignments. This is a hands-on workshop, and participants will be engaged in creating new materials of their own, in addition to being introduced to our materials.

**Organizer:** Donald McCarthy (*Univ. of Arizona*)

## 116 Harassment in the Astronomical Sciences

**Tuesday, 12:45 pm - 1:45 pm; Osceola C**

Harassment and its impact on our community are important and timely issues for the AAS and the discipline as a whole. The panelists who will lead the town hall discussion are:

- Christina Richey (Chair, AAS Committee on the Status of Women in Astronomy): Harassment in Astronomy and Planetary Science and Preliminary Results from the CSWA Survey on Workplace Climate
- Dara Norman (AAS Councillor): The AAS Ethics Task Force’s Plan for Revising the AAS Ethics Statement
- Jim Ulvestad (Director, NSF Division of Astronomical Sciences): Agency Policies on Sexual Harassment Issues in Conduct of Research Awards

**Chair:** C. Megan Urry (*Yale University*)

## 117 HAD Business Meeting

**Tuesday, 12:45 pm - 1:45 pm; Osceola 4**

**Chair:** Marc Rothenberg (*National Science Foundation*)

## NSF Education Proposal Information Session

**Tuesday, 1:30 pm - 2:30 pm; St. George 114**

This session will resemble a town hall in format and will focus on general guidance and specific suggestions aimed at increasing the number of high quality astronomy and physics education proposals submitted to NSF. The most important target for such proposals is the Division of Undergraduate Education’s IUSE (Improving Undergraduate STEM Education) Program. We will provide a general overview of the program, the review process, statistics on proposals, an overview of the IUSE:EHR portfolio in physics and astronomy, and recommendations regarding working within the existing system for the maximum benefit of the astronomy and physics education community. Information on other education programs (DRK-12, AST/ESP) and scholarship programs (S-STEM, Noyce) will be briefly summarized and pointers to numerous resources will be provided. This session is sponsored by the AAS Astronomy Education Board.

## The Performing Art of Science Presentation

Tuesday, 2:00 pm - 5:00 pm; St. George 102

Scientists are often so deep into their research they might forget to translate their content when speaking to audiences outside of their areas. This workshop offers specific skills from the theater to become a more engaging and memorable speaker, whether at a professional conference, public event, job talk or in the classroom. With a focus on clarifying the message, topics also include connection to audience; body language, gesture and movement; purpose and passion; structure and timing; PowerPoint use; managing stage fright; voice, speech and articulation; and how to include stories and metaphors to illuminate complex or important ideas. The goal is to become more clear, compelling and memorable, getting your research to come to life and your ideas to stick. Nancy Houfek, [www.nancyhoufek.com](http://www.nancyhoufek.com), brings over thirty five years of working with performers and public speakers to her consulting and coaching. A stage director, award-winning actor, and nationally recognized theater educator, Nancy presents workshops combining theater, storytelling and leadership techniques for corporations, think tanks, universities, and professional organizations through out the U.S. and Canada. This session is organized by the AAS Employment Committee.

## 118 Galaxies in the Nearby Universe

Tuesday, 2:00 pm - 3:30 pm; Sun A

Chair: Nicholas McConnell (*National Research Council Canada*)

### 118.01 The HI Content of Groups as Measured by ALFALFA

**Author(s):** Rebecca A. Koopmann<sup>4</sup>, Mary Crone-Odekon<sup>3</sup>, Martha P. Haynes<sup>1</sup>, Rose Finn<sup>2</sup>, Gregory L Hallenbeck<sup>4</sup>, Riccardo Giovanelli<sup>1</sup>

*Institution(s):* <sup>1</sup> Cornell University, <sup>2</sup> Siena College, <sup>3</sup> Skidmore College, <sup>4</sup> Union College

### 118.02 The Arcibo Pisces-Perseus Survey: An Undergraduate ALFALFA Team Project

**Author(s):** Aileen A. O'Donoghue<sup>3</sup>, Rebecca A. Koopmann<sup>4</sup>, Martha P. Haynes<sup>1</sup>, Michael Jones<sup>1</sup>, David Craig<sup>6</sup>, Gregory L Hallenbeck<sup>4</sup>, Jessica L. Rosenberg<sup>2</sup>, Aparna Venkatesan<sup>5</sup>

*Institution(s):* <sup>1</sup> Cornell University, <sup>2</sup> George Mason University, <sup>3</sup> St. Lawrence University, <sup>4</sup> Union College, <sup>5</sup> University of San Francisco, <sup>6</sup> West Texas A&M University

### 118.03D The HI mass function in ALFALFA 70% and the role of confusion in future HI surveys

**Author(s):** Michael G Jones<sup>1</sup>, Emmanouil Papastergis<sup>2</sup>, Martha P. Haynes<sup>1</sup>, Riccardo Giovanelli<sup>1</sup>

*Institution(s):* <sup>1</sup> Cornell University, <sup>2</sup> University of Groningen

### 118.04 NGC 5195 in M51: Feedback 'Burps' after a Massive Meal?

**Author(s):** Eric M. Schlegel<sup>4</sup>, Christine Jones<sup>2</sup>, Marie E. Machacek<sup>3</sup>, Laura D. Vega<sup>1</sup>

*Institution(s):* <sup>1</sup> Fisk University/Vanderbilt University, <sup>2</sup> Harvard-Smithsonian Center for Astrophysics, <sup>3</sup> Smithsonian Astrophysical Observatory, <sup>4</sup> Univ. of Texas, San Antonio

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## 118.06 The Extended Disk of NGC 404

**Author(s):** Jennifer Donovan Meyer<sup>2</sup>, Paul Martini<sup>3</sup>, Adam Leroy<sup>3</sup>, Daniel J. Pisano<sup>4</sup>, David A. Thilker<sup>1</sup>

*Institution(s):* <sup>1</sup> Johns Hopkins, <sup>2</sup> NRAO, <sup>3</sup> Ohio State University, <sup>4</sup> West Virginia University

## 118.07 A Tale of Two Tails: Exploring Stellar Populations in the Tidal Tails of NGC 3256

**Author(s):** Michael Rodruck<sup>2</sup>, Jane C. Charlton<sup>2</sup>, Iraklis Konstantopoulos<sup>1</sup>

*Institution(s):* <sup>1</sup> Australian Astronomical Observatory, <sup>2</sup> Penn State University

## 118.08 A New Coadded Spectroscopy Technique: Kinematics of NGC 4449's Tidal Stream

**Author(s):** Puragra Guhathakurta<sup>3</sup>, Elisa Toloba<sup>2</sup>, Aaron J. Romanowsky<sup>1</sup>, Jean P. Brodie<sup>3</sup>

*Institution(s):* <sup>1</sup> SJSU, <sup>2</sup> Texas Tech U, <sup>3</sup> UC, Santa Cruz

# 119 AGN, Black Holes and Host Galaxies

Tuesday, 2:00 pm - 3:30 pm; Sun B

**Chair:** Gerard Kriss (*STSci*)

## 119.01 Relations Between Black Hole Mass and Total Galaxy Stellar Mass in the Local Universe

**Author(s):** Amy E. Reines<sup>2</sup>, Marta Volonteri<sup>1</sup>

*Institution(s):* <sup>1</sup> IAP, <sup>2</sup> NOAO

## 119.02DA Near-Infrared Spectroscopic Investigation of Ionization Mechanisms and AGN Activity in Luminous Infrared Galaxies

**Author(s):** H. Jacob Borish<sup>1</sup>

*Institution(s):* <sup>1</sup> University of Virginia

## 119.03 Merger-Triggered AGN Activity as Traced by Dual and Offset AGN

**Author(s):** Julia M. Comerford<sup>1</sup>

*Institution(s):* <sup>1</sup> University of Colorado, Boulder

## 119.04D Quenching histories of galaxies and the role of AGN feedback

**Author(s):** Rebecca Jane Smethurst<sup>1</sup>, Chris Lintott<sup>1</sup>, Brooke Simmons<sup>1</sup>

*Institution(s):* <sup>1</sup> University of Oxford

## 119.05 Black holes a-wandering in Abell 2261

**Author(s):** Sarah Spolaor<sup>5</sup>, Holland Ford<sup>3</sup>, Kayhan Gultekin<sup>7</sup>, Tod R. Lauer<sup>4</sup>, T. Joseph W. Lazio<sup>2</sup>, Abraham Loeb<sup>1</sup>, Leonidas A. Moustakas<sup>2</sup>, Marc Postman<sup>6</sup>, Joanna M. Taylor<sup>6</sup>

*Institution(s):* <sup>1</sup> Harvard/CfA, <sup>2</sup> Jet Propulsion Laboratory, <sup>3</sup> JHU, <sup>4</sup> NOAO, <sup>5</sup> NRAO, <sup>6</sup> STSci, <sup>7</sup> U Michigan

## 119.07 Variability Statistics for Galaxies Observed by Kepler

**Author(s):** Michael N. Fanelli<sup>1</sup>, Pamela M. Marcum<sup>1</sup>, Jeffrey E. Van Cleve<sup>2</sup>

*Institution(s):* <sup>1</sup> NASA Ames Research Center, <sup>2</sup> SETI

## 120 Supernovae: Spectroscopy and Classification

Tuesday, 2:00 pm - 3:30 pm; Sun C

Chair: Iair Arcavi

### 120.01 Late-Time Spectral Observations of Type IIP Supernovae

**Author(s):** Jeffrey M. Silverman<sup>2</sup>, Stephanie Pickett<sup>2</sup>, J. Craig Wheeler<sup>2</sup>, Alexei Filippenko<sup>1</sup>

*Institution(s):* <sup>1</sup> University of California - Berkeley, <sup>2</sup> University of Texas at Austin

### 120.02D Type Ia Supernovae: UV, Optical, NIR Spectral Series and the Integrated Bolometric Lightcurves

**Author(s):** Michael T. Smitka<sup>1</sup>, Peter Brown<sup>1</sup>, Nicholas B. Suntzeff<sup>1</sup>

*Institution(s):* <sup>1</sup> Texas A&M University

### 120.03 Type Ibn Supernovae: Not a Single Class

**Author(s):** Griffin Hosseinzadeh<sup>1</sup>, Iair Arcavi<sup>1</sup>, Dale Andrew Howell<sup>1</sup>, Curtis McCully<sup>1</sup>, Stefano Valentini<sup>2</sup>

*Institution(s):* <sup>1</sup> Las Cumbres Observatory Global Telescope Network, <sup>2</sup> University of California, Davis

### 120.04 UV Observations of Type Iax Supernovae

**Author(s):** Curtis McCully<sup>1</sup>, Dale Andrew Howell<sup>1</sup>, Saurabh Jha<sup>2</sup>, Ryan Foley<sup>3</sup>, Steven Downing<sup>3</sup>, Stefano Valentini<sup>1</sup>

*Institution(s):* <sup>1</sup> Las Cumbres Observatory Global Telescope Network, Inc., <sup>2</sup> Rutgers, The State University of New Jersey, <sup>3</sup> University of Illinois

### 120.05 Near-infrared spectroscopy of Type Ia supernovae

**Author(s):** Eric Hsiao<sup>3</sup>, Mark Phillips<sup>5</sup>, Christopher R. Burns<sup>2</sup>, Carlos Contreras<sup>5</sup>, Christa Gall<sup>1</sup>, Peter Hoeflich<sup>3</sup>, Robert P. Kirshner<sup>4</sup>, Howie H. Marion<sup>7</sup>, Nidia Morrell<sup>5</sup>, David J. Sand<sup>6</sup>, Maximillian Stritzinger<sup>1</sup>

*Institution(s):* <sup>1</sup> Aarhus University, <sup>2</sup> Carnegie Observatories, <sup>3</sup> Florida State University, <sup>4</sup> Harvard-Smithsonian, CfA, <sup>5</sup> Las Campanas Observatory, <sup>6</sup> Texas Tech University, <sup>7</sup> University of Texas at Austin

### 120.07DA New Empirical Model for Type Ia Supernovae Using Spectrophotometry from the Nearby Supernova Factory

**Author(s):** Clare Saunders<sup>1</sup>

*Institution(s):* <sup>1</sup> Lawrence Berkeley National Laboratory

### 120.08 An Integral Condition for Core-Collapse Supernova Explosions

**Author(s):** Jeremiah Wayne Murphy<sup>1</sup>, Joshua C. Dolence<sup>2</sup>

*Institution(s):* <sup>1</sup> Florida State University, <sup>2</sup> Los Alamos National Lab

## 121 Stars II: Red Dwarfs and Brown Dwarfs

Tuesday, 2:00 pm - 3:30 pm; Sun D

Chair: Ruth Angus (University of Oxford)

### 121.01 Measuring the Ultraviolet Variability of M Dwarfs with GALEX

**Author(s):** Brittany E. Miles<sup>2</sup>, Evgenya L Shkolnik<sup>1</sup>

*Institution(s):* <sup>1</sup> Arizona State University, <sup>2</sup> UCLA

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- 121.02 Identifying Bright Carbon-Enhanced Metal-Poor Stars in the RAVE Catalog**  
**Author(s):** Vinicius Placco<sup>1</sup>, Timothy C. Beers<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Notre Dame
- 121.03 Examining the ages of M7-L8 dwarfs with the BOSS Ultracool Dwarf sample**  
**Author(s):** Sarah J. Schmidt<sup>2</sup>, Suzanne L. Hawley<sup>4</sup>, Andrew A. West<sup>1</sup>, John J. Bochanski<sup>3</sup>  
*Institution(s):* <sup>1</sup> Boston University, <sup>2</sup> Leibniz-Institute for Astrophysics Potsdam (AIP), <sup>3</sup> Rider University, <sup>4</sup> University of Washington
- 121.04 The Age of Planet Host  $\kappa$  Andromedae Based on Interferometric Observations**  
**Author(s):** Jeremy Jones<sup>2</sup>, Russel J. White<sup>2</sup>, Samuel N. Quinn<sup>2</sup>, Ellyn K. Baines<sup>3</sup>, Tabettha S. Boyajian<sup>4</sup>, Michael Ireland<sup>1</sup>  
*Institution(s):* <sup>1</sup> Australian National University, <sup>2</sup> Georgia State University, <sup>3</sup> Naval Research Laboratory, <sup>4</sup> Yale University
- 121.05 The MUSCLES Treasury Survey: Intrinsic Ly $\alpha$  Profile Reconstructions and UV, X-ray, and Optical Correlations of Low-mass Exoplanet Host Stars**  
**Author(s):** Allison Youngblood<sup>1</sup>, Kevin France<sup>1</sup>, R. O. Parke Loyd<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Colorado at Boulder
- 121.06 An Empirically-derived non-LTE XUV-Visible Spectral Synthesis Model of the M1 V Exoplanet Host Star GJ832**  
**Author(s):** Jeffrey Linsky<sup>2</sup>, Juan Fontenla<sup>1</sup>, Jesse Witbrod<sup>2</sup>, Kevin France<sup>2</sup>  
*Institution(s):* <sup>1</sup> NorthWest Research Associates, <sup>2</sup> Univ. of Colorado
- 121.07 The MUSCLES Treasury Survey: Temporally- and Spectrally-Resolved Irradiance from Low-mass Exoplanet Host Stars**  
**Author(s):** Kevin France<sup>1</sup>, R. O. Parke Loyd<sup>1</sup>, Allison Youngblood<sup>1</sup>, Jeffrey Linsky<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Colorado
- 121.08D Priming the Solar Neighborhood M dwarfs for Future Planet Searches**  
**Author(s):** Jason Dittmann<sup>1</sup>  
*Institution(s):* <sup>1</sup> Harvard Smithsonian, CfA

## 122 Extrasolar Planet Detection: Results from Kepler and K2

Tuesday, 2:00 pm - 3:30 pm; Osceola A

Chair: Russel White (Georgia State University)

- 122.01 Determining the Mass of Kepler-78b with Nonparametric Gaussian Process Estimation**  
**Author(s):** Samuel Kai Grunblatt<sup>1</sup>, Andrew Howard<sup>1</sup>, Raphaëlle Haywood<sup>2</sup>  
*Institution(s):* <sup>1</sup> University of Hawaii Institute for Astronomy, <sup>2</sup> University of St Andrews

- 122.02 Where Are All The Earth Twins Hiding? Measuring the Detection Efficiency of the Kepler Pipeline**  
**Author(s):** Jessie Christiansen<sup>2</sup>, Bruce Clarke<sup>3</sup>, Christopher J. Burke<sup>3</sup>, Shawn Seader<sup>3</sup>, Jon Michael Jenkins<sup>1</sup>, Joseph D. Twicken<sup>3</sup>, Jeffrey C. Smith<sup>3</sup>, Natalie M Batalha<sup>1</sup>, Michael R Haas<sup>1</sup>, Susan E. Thompson<sup>3</sup>, Jennifer Campbell<sup>1</sup>, Joseph Catanzarite<sup>3</sup>  
*Institution(s):* <sup>1</sup> NASA Ames Research Center, <sup>2</sup> NASA Exoplanet Science Institute, <sup>3</sup> SETI Institute
- 122.03 Visual Analysis and Comparison of Kepler Transit Timing Variations**  
**Author(s):** Mackenzie Kane<sup>1</sup>, Darin Ragozzine<sup>1</sup>, Tomer Holczer<sup>3</sup>, Tsevi Mazeh<sup>3</sup>, Jason Rowe<sup>2</sup>  
*Institution(s):* <sup>1</sup> Florida Institute of Technology, <sup>2</sup> NASA Ames Research Center, <sup>3</sup> Tel Aviv University
- 122.04 Investigation of bias in the mass-radius relationship from Radial Velocity and Transit Timing Variation measurements**  
**Author(s):** Jason H. Steffen<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Nevada, Las Vegas
- 122.05 Planetary Candidates from the First Year of the K2 Mission**  
**Author(s):** Andrew Vanderburg<sup>1</sup>, David W. Latham<sup>1</sup>, Lars A Buchhave<sup>1</sup>, Allyson Bieryla<sup>1</sup>, Perry L. Berlind<sup>1</sup>, Michael L. Calkins<sup>1</sup>, Gilbert Esquerdo<sup>1</sup>, Sophie Welsh<sup>1</sup>, John A. Johnson<sup>1</sup>  
*Institution(s):* <sup>1</sup> Harvard-Smithsonian Center for Astrophysics
- 122.06 Latest Results From the K2 Exoplanet Survey**  
**Author(s):** Ian Crossfield<sup>7</sup>, Erik Petigura<sup>1</sup>, Joshua E. Schlieder<sup>4</sup>, Andrew Howard<sup>10</sup>, Evan Sinukoff<sup>10</sup>, Kimberly Mei Aller<sup>10</sup>, Charles A. Beichman<sup>1</sup>, David R. Ciardi<sup>1</sup>, Justin R. Crepp<sup>5</sup>, Courtney D. Dressing<sup>1</sup>, Bradley M. Hansen<sup>9</sup>, Thomas Henning<sup>3</sup>, Howard T. Isaacson<sup>8</sup>, Sebastien Lepine<sup>2</sup>, Michael C. Liu<sup>10</sup>, Arturo Omar Martinez<sup>6</sup>, Christian Obermeier<sup>3</sup>, Michael W. Werner<sup>1</sup>  
*Institution(s):* <sup>1</sup> Caltech, <sup>2</sup> Georgia State University, <sup>3</sup> MPIA, <sup>4</sup> NASA/Ames, <sup>5</sup> Notre Dame, <sup>6</sup> SDSU, <sup>7</sup> UA/LPL, <sup>8</sup> UC Berkeley, <sup>9</sup> UCLA, <sup>10</sup> UH/IfA
- 122.07 Constraining the Properties of Small Stars and Small Planets Observed by K2**  
**Author(s):** Courtney D. Dressing<sup>1</sup>, Elisabeth R. Newton<sup>2</sup>, David Charbonneau<sup>2</sup>, Josh Schlieder<sup>3</sup>  
*Institution(s):* <sup>1</sup> California Institute of Technology, <sup>2</sup> Harvard Univ., <sup>3</sup> NASA Ames Research Center
- 122.08 Follow-Up of K2 Planetary Candidates from Campaigns 0, 1, and 2**  
**Author(s):** David R. Ciardi<sup>1</sup>  
*Institution(s):* <sup>1</sup> Caltech
- 122.09 Using K2 to Find Free-floating Planets**  
**Author(s):** Calen B. Henderson<sup>1</sup>  
*Institution(s):* <sup>1</sup> Jet Propulsion Laboratory

# TUESDAY, 5 JANUARY 2016

## 123 HEAD II: High-Energy Neutrino Astrophysics

Tuesday, 2:00 pm - 3:30 pm; Osceola B

This Special Session is devoted to a discussion of the latest experimental results in the field of high-energy astrophysical neutrinos (including those from ICECUBE), progress in our understanding of neutrino sources, and the prospects for future neutrino observatories.

**Chair: Elizabeth Hays** (*Smithsonian Astrophysical Observatory*)

### 123.01 Detecting Cosmic Neutrinos with IceCube at the Earth's South Pole

**Author(s): Naoko Kurahashi Neilson**<sup>1</sup>

*Institution(s):*<sup>1</sup> *Drexel University*

### 123.02 The physics and theory of astrophysical neutrino sources

**Author(s): Ke Fang**<sup>1</sup>

*Institution(s):*<sup>1</sup> *University of Maryland College Park*

### 123.03 Future prospects for high-energy neutrino observations

**Author(s): Abigail Viereg**<sup>1</sup>

*Institution(s):*<sup>1</sup> *University of Chicago*

## 124 Dust and Star Formation in High Redshift Galaxies

Tuesday, 2:00 pm - 3:30 pm; Miami

**Chair: Margaret Meixner** (*STScI*)

### 124.01 Galaxy Structure as a Driver of the Star Formation Sequence Slope and Scatter

**Author(s): Katherine E. Whitaker**<sup>1</sup>

*Institution(s):*<sup>1</sup> *UMass Amherst*

### 124.02D Star formation histories of $z \sim 2$ galaxies and their intrinsic characteristics on the SFR-M\* plane

**Author(s): Bomee Lee**<sup>1</sup>, Mauro Giavalisco<sup>1</sup>

*Institution(s):*<sup>1</sup> *University of Massachusetts at Amherst*

### 124.03 Evolution of Intrinsic Scatter in the SFR-Stellar Mass Correlation at $0.5 < z < 3.0$

**Author(s): Peter Kurczynski**<sup>4</sup>, Eric J. Gawiser<sup>4</sup>, Viviana Acquaviva<sup>1</sup>, Marc Rafelski<sup>3</sup>, Harry I. Teplitz<sup>2</sup>

*Institution(s):*<sup>1</sup> *City University of New York*, <sup>2</sup> *Infrared Processing and Analysis Center, MS 100-22, CalTech*, <sup>3</sup> *NASA Goddard Space Flight Center*, <sup>4</sup> *Rutgers University*

### 124.04 Explaining the Three-decade Correlation between Star Formation Rate and Stellar Mass in Galaxies at $z \sim 1$

**Author(s): Eric J. Gawiser**<sup>2</sup>, Peter Kurczynski<sup>2</sup>, Viviana Acquaviva<sup>1</sup>

*Institution(s):*<sup>1</sup> *CUNY NYC College of Technology*, <sup>2</sup> *Rutgers University*

### 124.05D Probing the Peak Epoch of Cosmic Star Formation ( $1 < z < 3$ )

**Author(s): Anahita Alavi**<sup>6</sup>, Brian D. Siana<sup>6</sup>, Johan Richard<sup>1</sup>, Marc Rafelski<sup>3</sup>, Mathilde Jauzac<sup>2</sup>, Marceau Limousin<sup>5</sup>, Daniel Stark<sup>7</sup>, Harry I. Teplitz<sup>4</sup>

*Institution(s):* <sup>1</sup> Centre de Recherche Astronomique de Lyon, <sup>2</sup> Durham University, <sup>3</sup> Goddard Space Flight Center, <sup>4</sup> IPAC/Caltech, <sup>5</sup> LAM, <sup>6</sup> UCR, <sup>7</sup> University of Arizona

## 124.06D Using Bayesian Evidence to Deduce the Dust-Attenuation Law at High Redshift

**Author(s):** Brett W. Salmon<sup>2</sup>, Casey J. Papovich<sup>2</sup>, Steven L. Finkelstein<sup>3</sup>, Henry Closson Ferguson<sup>1</sup>, James Long<sup>2</sup>

*Institution(s):* <sup>1</sup> Space Telescope Science Institute, <sup>2</sup> Texas A&M University, <sup>3</sup> University of Texas

## 125 The Sun and Solar System

Tuesday, 2:00 pm - 3:30 pm; Naples

**Chair:** Peter Gao (*California Institute of Technology*)

### 125.01 The Effects of Magnetic Field Morphology on the Determination of Oxygen and Iron Abundances in the Solar Photosphere

**Author(s):** Christopher S. Moore<sup>3</sup>, Han Uitenbroek<sup>2</sup>, Matthias Rempel<sup>1</sup>, Serena Criscuoli<sup>2</sup>, Mark Rast<sup>3</sup>

*Institution(s):* <sup>1</sup> High Altitude Observatory (HAO), National Center for Atmospheric Research (NCAR), <sup>2</sup> National Solar Observatory (NSO), <sup>3</sup> University of Colorado, Boulder

### 125.02 Structure, Dynamics, and Spectra of the Solar Corona at the 2013 and 2015 Total Eclipses and Plans for 2017's American Totality

**Author(s):** Jay M. Pasachoff<sup>3</sup>, Ronald Dantowitz<sup>2</sup>, Aristeidis Voulgaris<sup>1</sup>

*Institution(s):* <sup>1</sup> Aristotle U. Thessaloniki, <sup>2</sup> Clay Center Obs., <sup>3</sup> Williams College

### 125.03 Low-coronal Sources of Stealth CMEs

**Author(s):** Nathalia Alzate<sup>1</sup>, Huw Morgan<sup>1</sup>

*Institution(s):* <sup>1</sup> Aberystwyth University

### 125.04D Magnetic Influences on the Solar Wind

**Author(s):** Lauren N. Woolsey<sup>1</sup>

*Institution(s):* <sup>1</sup> Harvard University

### 125.05 Fermi-LAT observations of the gamma-ray emission from the quiescent sun - first 6 years in orbit

**Author(s):** Igor V Moskalenko<sup>3</sup>, Nicola Giglietto<sup>1</sup>, Elena Orlando<sup>3</sup>, Silvia Raino<sup>1</sup>, Andrew Strong<sup>2</sup>

*Institution(s):* <sup>1</sup> Istituto Nazionale di Fisica Nucleare, <sup>2</sup> Max-Planck-Institut fuer Extraterrestrische Physik, <sup>3</sup> Stanford University

### 125.06 Resolving Volcanism on Io with Aperture Mask Interferometry

**Author(s):** Chima McGruder<sup>3</sup>, Anand Sivaramakrishnan<sup>2</sup>, Alexandra Greenbaum<sup>1</sup>

*Institution(s):* <sup>1</sup> Johns Hopkins University, <sup>2</sup> Space Telescope Science Institute, <sup>3</sup> University of Tennessee Knoxville

### 125.07 Preparations for VLBA Astrometry of Juno at Jupiter

**Author(s):** Dayton L. Jones<sup>4</sup>, William M. Folkner<sup>1</sup>, Robert A. Jacobson<sup>1</sup>, Christopher S. Jacobs<sup>1</sup>, Jon Romney<sup>3</sup>, Vivek Dhawan<sup>3</sup>, Edward B. Fomalont<sup>2</sup>

*Institution(s):* <sup>1</sup> JPL, <sup>2</sup> NRAO, <sup>3</sup> NRAO, <sup>4</sup> Space Science Institute

# TUESDAY, 5 JANUARY 2016

## 125.08 From Dust Grains to Planetesimals: The Importance of the Streaming Instability in Protoplanetary Disks

**Author(s):** Jacob B. Simon<sup>1</sup>, Philip J. Armitage<sup>3</sup>, Andrew N Youdin<sup>2</sup>, Rixin Li<sup>2</sup>

*Institution(s):* <sup>1</sup> Southwest Research Institute, <sup>2</sup> University of Arizona, <sup>3</sup> University of Colorado

## 126 Elliptical and Spiral Galaxies I

Tuesday, 2:00 pm - 3:30 pm; Tampa

**Chair:** Pamela Marcum (*NASA Ames Research Center*)

### 126.01 The Extended Distribution of Hot Baryons Around Isolated Galaxies

**Author(s):** Joel N. Bregman<sup>2</sup>, Michael E. Anderson<sup>1</sup>, Matthew J. Miller<sup>2</sup>, Edmund J. Hodges-Kluck<sup>2</sup>

*Institution(s):* <sup>1</sup> MPA, <sup>2</sup> Univ. of Michigan

### 126.02D Baryonic Distributions in Galaxy Dark Matter Halos

**Author(s):** Emily E. Richards<sup>1</sup>

*Institution(s):* <sup>1</sup> Indiana University

### 126.03 The Longest Stellar Stream in M31's Halo

**Author(s):** Mark A. Fardal<sup>1</sup>

*Institution(s):* <sup>1</sup> University of Massachusetts

### 126.04 A New Deep, Hard X-ray Survey of M31: Monitoring Black Hole and Neutron Star Accretion States in the X-ray Binary Population of Our Nearest Neighbor

**Author(s):** Daniel R. Wik<sup>4</sup>, Ann E. Hornschemeier<sup>5</sup>, Mihoko Yukita<sup>4</sup>, Andrew Ptak<sup>5</sup>, Bret Lehmer<sup>9</sup>, Thomas J. Maccarone<sup>7</sup>, Vallia Antoniou<sup>2</sup>, Andreas Zezas<sup>10</sup>, Fiona Harrison<sup>1</sup>, Daniel Stern<sup>3</sup>, Tonia M. Venters<sup>5</sup>, Benjamin F. Williams<sup>11</sup>, Michael Eracleous<sup>6</sup>, Paul P. Plucinsky<sup>2</sup>, David A. Pooley<sup>8</sup>

*Institution(s):* <sup>1</sup> Caltech, <sup>2</sup> Harvard-Smithsonian Center for Astrophysics, <sup>3</sup> Jet Propulsion Laboratory, <sup>4</sup> Johns Hopkins University, <sup>5</sup> NASA Goddard Space Flight Center, <sup>6</sup> Penn State University, <sup>7</sup> Texas Tech University, <sup>8</sup> Trinity University, <sup>9</sup> University of Arkansas, <sup>10</sup> University of Crete, <sup>11</sup> University of Washington

### 126.05 The ALMA and HST Views of the Molecular Gas and Star Formation in the Prototypical Barred Spiral Galaxy NGC 1097

**Author(s):** Kartik Sheth<sup>5</sup>, Michael W. Regan<sup>6</sup>, Taehyun Kim<sup>3</sup>, Kotaro Kohno<sup>4</sup>, Sergio Martin<sup>1</sup>, Eric Villard<sup>2</sup>, Kyoko Onishi<sup>4</sup>

*Institution(s):* <sup>1</sup> IRAM, <sup>2</sup> Joint ALMA Observatory, <sup>3</sup> KASI, <sup>4</sup> NAOJ, <sup>5</sup> National Aeronautics & Space Administration (NASA), <sup>6</sup> STScI

### 126.06 Making the Near-Far Connection in Disk Galaxy Formation

**Author(s):** Jonathan C. Bird<sup>1</sup>

*Institution(s):* <sup>1</sup> Vanderbilt University

### 126.07 The role of interactions in triggering bars, spiral arms and AGN in disk galaxies

**Author(s):** Preethi Nair<sup>2</sup>, Sara L Ellison<sup>3</sup>, David R. Patton<sup>1</sup>

*Institution(s):* <sup>1</sup> Trent University, <sup>2</sup> University of Alabama, <sup>3</sup> University of Victoria

- 126.08 Demographics of galactic bulges in the local universe through optical windows**  
**Author(s):** Keunho Kim<sup>2</sup>, Sree Oh<sup>2</sup>, Hyunjin Jeong<sup>1</sup>, Sukyoung Yi<sup>2</sup>  
*Institution(s):* <sup>1</sup> Korea Astronomy and Space Science Institute, <sup>2</sup> Yonsei University

## 127 Tools and Tips for Better Software (aka Pain Reduction for Code Authors)

**Tuesday, 2:00 pm - 3:30 pm; Sanibel**

Research in astronomy is increasingly dependent on software methods and astronomers are increasingly called upon to write, collaborate on, release, and archive research quality software, but how can these be more easily accomplished? Building on comments and questions from previous AAS special sessions, this session, organized by the Astrophysics Source Code Library (ASCL) and the Moore-Sloan Data Science Environment at NYU, explores methods for improving software by using available tools and best practices to ease the burden and increase the reward of doing so. With version control software such as git and svn and companion online sites such as GitHub and Bitbucket, documentation generators such as Doxygen and Sphinx, and Travis CI, Intern, and Jenkins available to aid in testing software, it is now far easier to write, document and test code. Presentations cover best practices, tools, and tips for managing the life cycle of software, testing software and creating documentation, managing releases, and easing software production and sharing. After the presentations, the floor will be open for discussion and questions.

**Chair:** Alice Allen (*Astrophysics Source Code Library*)

- 127.01 Source code management with version control software**  
**Author(s):** Kenza S. Arraki<sup>1</sup>  
*Institution(s):* <sup>1</sup> New Mexico State University
- 127.02 Software testing**  
**Author(s):** Adrian M. Price-Whelan<sup>1</sup>  
*Institution(s):* <sup>1</sup> Columbia University
- 127.03 The importance of documenting code, and how you might make yourself do it**  
**Author(s):** Erik Jon Tollerud<sup>1</sup>  
*Institution(s):* <sup>1</sup> STScI
- 127.04 Best practices for code release**  
**Author(s):** G. Bruce Berriman<sup>1</sup>  
*Institution(s):* <sup>1</sup> Caltech
- 127.05 Community Building and its impact on Sustainable Scientific Software**  
**Author(s):** Matthew Turk<sup>1</sup>  
*Institution(s):* <sup>1</sup> NCSA & University of Illinois
- 127.06 What to do with a Dead Research Code**  
**Author(s):** Robert J. Nemiroff<sup>1</sup>  
*Institution(s):* <sup>1</sup> Michigan Technological Univ.

# TUESDAY, 5 JANUARY 2016

## 128 Extrasolar Planet Atmospheres: Theory II

Tuesday, 2:00 pm - 3:30 pm; Sarasota

Chair: Joseph Harrington (*University of Central Florida*)

### 128.01 Stellar activity effects on high energy exoplanet transits

Author(s): Joe Llama<sup>2</sup>, Evgenya Shkolnik<sup>1</sup>

Institution(s): <sup>1</sup> Lowell Observatory, <sup>2</sup> University of St Andrews

### 128.02 Exploring Chemical Equilibrium in Hot Jovians

Author(s): Sarah Blumenthal<sup>3</sup>, Joseph Harrington<sup>3</sup>, Avi Mandell<sup>2</sup>, Eric Hébrard<sup>2</sup>, Olivia Venot<sup>1</sup>, Patricio Cubillos<sup>3</sup>, Jasmina Blečić<sup>3</sup>, Ryan Challener<sup>3</sup>

Institution(s): <sup>1</sup> Instituut voor Sterrenkunde, Katholieke Universiteit Leuven, <sup>2</sup> NASA Goddard Space Flight Center, <sup>3</sup> University of Central Florida

### 128.03 Simulations of Hot Jupiter-Stellar Wind Hydrodynamic Interaction

Author(s): Duncan Christie<sup>1</sup>, Phil Arras<sup>2</sup>, Zhi-Yun Li<sup>2</sup>

Institution(s): <sup>1</sup> University of Florida, <sup>2</sup> University of Virginia

### 128.04D Forward Models of Exoplanets for Atmosphere Retrievals with JWST

Author(s): Alex Howe<sup>1</sup>, Adam Seth Burrows<sup>1</sup>

Institution(s): <sup>1</sup> Princeton University

### 128.05 Spectral Signatures of WFIRST-AFTA Exoplanet Coronagraphy Targets

Author(s): Nikole K. Lewis<sup>5</sup>, Mark S. Marley<sup>3</sup>, Roxana E. Lupu<sup>4</sup>, Jonathan J. Fortney<sup>6</sup>, Caroline Morley<sup>6</sup>, Thomas P. Greene<sup>3</sup>, Tyler D. Robinson<sup>6</sup>, Channon Visscher<sup>1</sup>, Richard Freedman<sup>3</sup>, Michael R. Line<sup>3</sup>, Wesley A. Traub<sup>2</sup>

Institution(s): <sup>1</sup> Dordt, <sup>2</sup> JPL, <sup>3</sup> NASA Ames, <sup>4</sup> SETI, <sup>5</sup> STScI, <sup>6</sup> UCSC

## 129 Stellar Winds and Magnetospheres

Tuesday, 2:00 pm - 3:30 pm; Osceola 5

Chair: Derek Buzasi (*Florida Gulf Coast University*)

### 129.01 $\theta$ Car: X-ray Emission from Low Density Radiation-Driven Winds

Author(s): Trisha Doyle (Mizusawa)<sup>2</sup>, Veronique Petit<sup>2</sup>, David Held Cohen<sup>6</sup>, Alexander W. Fullerton<sup>5</sup>, Marc Gagne<sup>8</sup>, Maurice A. Leutenegger<sup>3</sup>, Zequn Li<sup>6</sup>, Stanley P. Owocki<sup>7</sup>, Jon Sundqvist<sup>1</sup>, Gregg Wade<sup>4</sup>

Institution(s): <sup>1</sup> Centro de Astrobiología, CSIC-INTA, <sup>2</sup> Florida Institute of Technology, <sup>3</sup> NASA/GSFC, <sup>4</sup> Royal Military College of Canada, <sup>5</sup> STScI, <sup>6</sup> Swarthmore College, <sup>7</sup> University of Delaware, <sup>8</sup> West Chester University

### 129.02 Spectropolarimetric Analysis of the Giant Magnetosphere of O-type Star NGC1624-2

Author(s): Rebecca MacInnis<sup>1</sup>, Veronique Petit<sup>1</sup>, Gregg Wade<sup>2</sup>

Institution(s): <sup>1</sup> Florida Institute of Technology, <sup>2</sup> Royal Military College of Canada

### 129.03 Massive-Star Magnetospheres in the Near-Infrared

Author(s): Mary E. Oksala<sup>1</sup>

Institution(s): <sup>1</sup> Observatoire de Paris-Meudon

- 129.04 An X-ray Comparison of Centrifugal Magnetospheres in Five B-type Stars**  
**Author(s):** Corinne Fletcher<sup>1</sup>, Veronique Petit<sup>1</sup>, Y. Naze<sup>6</sup>, Asif Ud-Doula<sup>2</sup>, Gregg Wade<sup>4</sup>, Matt Shultz<sup>3</sup>, David Held Cohen<sup>5</sup>  
*Institution(s):* <sup>1</sup> Florida Institute of Technology, <sup>2</sup> Penn State Worthington Scranton, <sup>3</sup> Queen's University, <sup>4</sup> Royal Military College of Canada, <sup>5</sup> Swarthmore College, <sup>6</sup> Universite de Liege
- 129.05D Steady-State Models of X-ray Emission from Massive-Star Magnetospheres**  
**Author(s):** Christopher Bard<sup>1</sup>, Richard D. Townsend<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Wisconsin
- 129.06 Charge Exchange of Ne<sup>9+</sup> for X-ray Emission**  
**Author(s):** David Lyons<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Georgia

## 130 HAD III: History of Astronomy: History, Archeoastronomy, Philosophy, and Education

Tuesday, 2:00 pm - 3:30 pm; Osceola 4

**Chair: Terry Oswalt** (*Embry-Riddle Aeronautical University*)

- 130.02 Kilohoku Ho`okele Wa`a--- Na `Ohana Hoku `Eha (The Astronomy of the Hawaiian Navigators--- The Four Star Families)**  
**Author(s):** Stephanie Slater<sup>1</sup>, Timothy F. Slater<sup>3</sup>, Kalepa C. Baybayan<sup>2</sup>  
*Institution(s):* <sup>1</sup> CAPER Ctr Phys and Astro Educ Res, <sup>2</sup> University of Hawai'i- Hilo, <sup>3</sup> University of Wyoming
- 130.03 Profiling Some of the Lesser-Known Historical Women Astronomers**  
**Author(s):** Ashley Pagnotta<sup>1</sup>  
*Institution(s):* <sup>1</sup> American Museum of Natural History
- 130.04 Teaching the History of Astronomy On Site in London**  
**Author(s):** Linda M. French<sup>1</sup>  
*Institution(s):* <sup>1</sup> Illinois Wesleyan Univ.
- 130.05 The Astronomy Genealogy Project: A Progress Report**  
**Author(s):** Joseph S. Tenn<sup>1</sup>  
*Institution(s):* <sup>1</sup> Sonoma State Univ.
- 130.06 Critical Issues in the Philosophy of Astronomy and Cosmology**  
**Author(s):** Steven J. Dick<sup>1</sup>  
*Institution(s):* <sup>1</sup> NASA
- 130.07 General relativity, Islamic cosmology, at odds or not?**  
**Author(s):** Ian Steer<sup>1</sup>  
*Institution(s):* <sup>1</sup> NED

# TUESDAY, 5 JANUARY 2016

## Oral History Interviewing for Beginners

Tuesday, 3:30 pm - 5:00 pm; Osceola 4

The AAS Oral History Project has the goal of interviewing members at various career stages. The project is in collaboration with the AIP Neils Bohr Library where the interviews will be archived and made publicly available. The history of the project will be presented. This workshop is for members interested in learning about the project as well as those interested in volunteering to conduct interviews for the project. Participant will be given the interview questions and interviewing tips. Please come learn how to help us document the exciting histories and career paths of your colleagues as a participant in this important effort.

**Organizer:** Jarita Holbrook (*University of the Western Cape*)

## 131 Plenary Session: A New Universe of Discoveries

Tuesday, 3:40 pm - 4:30 pm; Osceola C

**Chair:** Chryssa Kouveliotou (*GWU*)



**131.01**

**A New Universe of Discoveries**

**Author(s):** France A. Córdova<sup>1</sup>

*Institution(s):* <sup>1</sup> NSF

## 132 HAD Doggett Prize: New Information about Old Telescopes

Tuesday, 4:30 pm - 5:20 pm; Osceola C

**Chair:** Jay Pasachoff (*Williams College*)



**132.01**

**New Information about Old Telescopes**

**Author(s):** Albert Van Helden<sup>1</sup>

*Institution(s):* <sup>1</sup> Rice University

**Citation:** for outstanding scholarship in the history of the telescope, extensive and insightful exploration of telescopic astronomy in the 17th and 18th centuries, significant contributions to Galilean studies, and dedicated service to the historical astronomy community and the public at large.

## New Worlds New Horizons Midterm Assessment

Tuesday, 5:30 pm - 6:30 pm; St. George 114

The 2010 National Research Council (NRC) decadal survey, “New Worlds, New Horizons in Astronomy and Astrophysics (NWNH)” is a strategic document built upon input from a significant fraction of the astronomy and astrophysics communities. NWNH was based

on the best information available at the time it was written. However, it was recognized even at the time that scientific, technical, and programmatic changes would require a mid-decade assessment of progress and recommendations for possible mid-course corrections. Furthermore, NWNH identified a number of specific contingencies that would require evaluation leading possibly to recommendations for appropriate action. The NRC has convened a Midterm Assessment Committee to review the responses of NASA's Astrophysics program, NSF's Astronomy program, and DOE's Cosmic Frontiers program to NWNH; to assess the state of the field and progress toward the NWNH goals; and to address the issues and contingencies raised in NWNH and relevant NRC reports. The Midterm Assessment Committee seeks the participation of the agencies and the community as it carries out its evaluation and formulates its recommendations. At this session, members of the Committee will present the status of the review and participants will be invited to comment and to provide input to the Committee. Coffee and tea will be available.

**Organizer: Jacqueline Hewitt (MIT)**

## **Career Hour 1: Leveraging Social Media for Networking and Career Advancement**

**Tuesday, 5:30 pm - 6:30 pm; St. George 108**

More and more recruiters, job decision-makers and hiring managers are using the web to find and research potential candidates. How can you make sure that you are not only found, but are ahead of the pack? In this session, we will discuss how decision-makers use LinkedIn and Facebook, and how you can use LinkedIn to establish yourself as a leader in your field, enhance your research reputation, and seek out and take advantage of innovative opportunities. We will demonstrate how to optimize your presence on Twitter, and create a winning LinkedIn profile, and how to use its multitude of features (such as joining and commenting in groups) to generate solid leads for your career. This session is organized by the AAS Employment Committee.

## **New Worlds New Horizons Midterm Assessment**

**Tuesday, 5:30 pm - 6:30 pm; St. George 114**

The 2010 National Research Council (NRC) decadal survey, "New Worlds, New Horizons in Astronomy and Astrophysics (NWNH)" is a strategic document built upon input from a significant fraction of the astronomy and astrophysics communities. NWNH was based on the best information available at the time it was written. However, it was recognized even at the time that scientific, technical, and programmatic changes would require a mid-decade assessment of progress and recommendations for possible mid-course corrections. Furthermore, NWNH identified a number of specific contingencies that would require evaluation leading possibly to recommendations for appropriate action. The NRC has convened a Midterm Assessment Committee to review the responses of NASA's Astrophysics program, NSF's Astronomy program, and DOE's Cosmic Frontiers program to NWNH; to assess the state of the field and progress toward the NWNH goals; and to address the issues and contingencies raised in NWNH and relevant NRC reports.

# TUESDAY, 5 JANUARY 2016

The Midterm Assessment Committee seeks the participation of the agencies and the community as it carries out its evaluation and formulates its recommendations. At this session, members of the Committee will present the status of the review and participants will be invited to comment and to provide input to the Committee.

## LGBTIQA Networking Dinner

**Tuesday, 6:30 pm - 8:30 pm; AAS Registration Desk**

The AAS Committee for Sexual-Orientation and Gender Minorities in Astronomy (SGMA) works to promote equality for lesbian, gay, bisexual, transgender, intersex, questioning, and asexual individuals within our profession. Join us for dinner on Tuesday evening, January 5. We'll meet in front of the Meeting Registration Desk at 6:30 and walk to a local restaurant. Please bring a method of payment for this dinner.

**Organizer: William Dixon** (*Space Telescope Science Institute*)

## Career Networking and Job Fair

**Tuesday, 6:30 pm - 8:00 pm; Sun C**

The AAS Employment Committee invites employers and potential employees to the the Career Networking and Job Fair. Learn about the various career services offered at the meeting and by the association, including the Career Center, Job Register, career hours, workshops and much more.

## 133 AAS Advocacy Town Hall with a Panel of CVD Participants

**Tuesday, 6:30 pm - 7:30 pm; Orange Blossom Ballroom**

Every year the AAS organizes a group of volunteer members to visit policymakers in Washington, DC, for a Congressional Visits Day (CVD). These volunteers get first-hand experience advocating for the astronomical sciences through meetings with Congressional staffers, agency representatives, and OMB and OSTP employees. The AAS Public Policy staff will present a brief overview of the astronomical science policy landscape and the society's advocacy efforts. This will lead us into an open discussion with a panel of former CVD participants. We encourage anyone interested in engaging in science policy and advocacy to attend and participate in the discussion.

## CSMA Meet & Greet

**Tuesday, 6:30 pm - 7:30 pm; St. George 104**

## SPS Evening of Student Science

**Tuesday, 6:30 pm - 8:30 pm; Tallahassee**

The Society of Physics Students (SPS) sponsors this meeting and invites all undergraduates attending the AAS Meeting. At this meeting they have an opportunity to display their posters and showcase their research. A noted astronomer (TBD at this time) will give a short talk on astronomy as a personal endeavor, providing a perspective on the field and its future, as well as an introduction to his/her extensive research interests. The session provides an opportunity to slow down and savor the field and the accomplishments of one's colleagues.

**Organizer: Daniel Golombek (STScI)**

## WFIRST Science

**Tuesday, 7:00 pm - 9:00 pm; Tampa**

WFIRST is the top ranked large space mission of the Astro2010 Decadal Survey. NASA has acquired two "Hubble class" 2.4m mirror telescopes, one of which is being baselined for WFIRST. The predicted performance is impressive with IR surveys covering 1000's of square degrees to 27th magnitude. In addition to a wide-field imaging camera with a grism and an IFU spectrograph, a high contrast coronagraph will significantly advance exoplanet direct imaging. Observing time will be available to the community through a vigorous Guest Investigator program. The mission will make large advances in studies of dark energy, exoplanets, galaxy formation and many other areas of extragalactic, galactic and solar system astrophysics. This splinter session will examine the scientific opportunities for the AAS community made available by the WFIRST mission.

**Organizer: Neil Gehrels (NASA's GSFC)**

## The NASA K2 Mission

**Tuesday, 7:30 pm - 9:00 pm; Sun A**

This splinter meeting will highlight science from the K2 mission during its first two years of operation. A short "town hall" presentation by the project will be followed by science talks featuring community members and used to highlight the many types and breadth of K2 science. Additionally, planning for the K2 mission over the next two years of operation including soliciting community input will be discussed as well.

**Organizer: Steve Howell (NASA ARC)**

POSTER SESSIONS

134 HAD IV: History of Astronomy Poster Session

Tuesday, 5:30 pm - 6:30 pm; Exhibit Hall A

- 134.01 **Stonehenge's Greater Cursus**  
Author(s): Paul Burley<sup>1</sup>, Howard D Mooers<sup>1</sup>  
Institution(s): <sup>1</sup> University of Minnesota Duluth
- 134.02 **Urania in the Marketplace: The Selling of Mt. Palomar**  
Author(s): Kenneth S. Rumstay<sup>1</sup>  
Institution(s): <sup>1</sup> Valdosta State University
- 134.03 **Preserving the History of Wesleyan University's Van Vleck Observatory**  
Author(s): Roy E. Kilgard<sup>1</sup>, Paul Erickson<sup>1</sup>, William Herbst<sup>1</sup>, Seth Redfield<sup>1</sup>, Amrys Williams<sup>1</sup>  
Institution(s): <sup>1</sup> Wesleyan Univ.

135 Elliptical and Spiral Galaxies Poster Session

Tuesday, 5:30 pm - 6:30 pm; Exhibit Hall A

- 135.01 **Formaldehyde in Absorption: Tracing Molecular Gas in Early-Type Galaxies**  
Author(s): Niklaus M Dollhopf<sup>2</sup>, Jennifer Donovan Meyer<sup>1</sup>  
Institution(s): <sup>1</sup> National Radio Astronomy Observatory, <sup>2</sup> University of Virginia
- 135.02 **Stellar Populations of Shell Galaxies**  
Author(s): Scott Carlsten<sup>2</sup>, Alfredo Zenteno<sup>1</sup>  
Institution(s): <sup>1</sup> NOAO-South, <sup>2</sup> Rice University
- 135.03 **An HI Survey of Extremely Isolated Early-type Galaxies**  
Author(s): Pamela M. Marcum<sup>1</sup>, Trisha L. Ashley<sup>1</sup>, Michael N. Fanelli<sup>1</sup>  
Institution(s): <sup>1</sup> NASA Ames Research Center
- 135.04 **The Dynamical Relationship Between the Bar and Spiral Patterns of NGC 1365**  
Author(s): Jason Speights<sup>1</sup>  
Institution(s): <sup>1</sup> Frostburg State University
- 135.05 **Measuring the Dark Matter Content of Galaxies with SALT**  
Author(s): Alex Bixel<sup>2</sup>, Jerry Sellwood<sup>1</sup>, Carl Mitchell<sup>1</sup>  
Institution(s): <sup>1</sup> Rutgers, The State University of New Jersey, <sup>2</sup> University of Virginia
- 135.06 **Spectral Observations of Superthin Galaxies**  
Author(s): Dmitry Bizyaev<sup>1</sup>, Stefan J. Kautsch<sup>2</sup>, Natalia Ya Sotnikova<sup>3</sup>, Aleksander Mosenkov<sup>4</sup>, Vladimir P Reshetnikov<sup>3</sup>  
Institution(s): <sup>1</sup> NMSU/APO, <sup>2</sup> Nova Southeastern University, <sup>3</sup> St. Petersburg State University, <sup>4</sup> Universiteit Gent
- 135.07 **Searching for Non-Circular Motions in H $\alpha$  Velocity Fields**  
Author(s): Wesley Peters<sup>1</sup>, Rachel Kuzio de Naray<sup>1</sup>  
Institution(s): <sup>1</sup> Georgia State University

- 135.08 High-Resolution H $\alpha$  Velocity Fields of Nearby Spiral Galaxies with the Southern African Large Telescope**  
**Author(s):** Carl Mitchell<sup>3</sup>, Ted Williams<sup>4</sup>, Kristine Spekkens<sup>2</sup>, Karen Lee-Waddell<sup>2</sup>, Rachel Kuzio de Naray<sup>1</sup>, Jerry Sellwood<sup>3</sup>  
*Institution(s):* <sup>1</sup> Georgia State University, <sup>2</sup> Royal Military College of Canada, <sup>3</sup> Rutgers, the State University of New Jersey, <sup>4</sup> South African Astronomical Observatory
- 135.09 The RINGS Survey: Optical Broadband Photometry**  
**Author(s):** Rachel Kuzio de Naray<sup>1</sup>, Carl Mitchell<sup>3</sup>, Kristine Spekkens<sup>2</sup>, Jerry Sellwood<sup>3</sup>, Ted Williams<sup>4</sup>  
*Institution(s):* <sup>1</sup> Georgia State University, <sup>2</sup> Royal Military College of Canada, <sup>3</sup> Rutgers University, <sup>4</sup> South African Astronomical Observatory
- 135.10 The Influence of Companion Morphology on Dust Properties and Star Formation in Galaxy Pairs**  
**Author(s):** Donovan L. Domingue<sup>1</sup>, Chen Cao<sup>3</sup>, C. Kevin Xu<sup>2</sup>, Tom Jarrett<sup>5</sup>, Joseph Ronca<sup>1</sup>, Emily Hill<sup>4</sup>  
*Institution(s):* <sup>1</sup> Georgia College and State Univ., <sup>2</sup> IPAC, <sup>3</sup> School of Space Science and Physics, Shandong University, <sup>4</sup> Specialty Analytical, <sup>5</sup> University of Cape Town
- 135.11 Searching for Tidal Features in Galaxy Pair ARP 142**  
**Author(s):** Joseph Ronca<sup>1</sup>, Donovan L. Domingue<sup>1</sup>  
*Institution(s):* <sup>1</sup> Georgia College and State University
- 135.12 Scattered UV light in the interarm regions of M101**  
**Author(s):** Alison Faye Crocker<sup>2</sup>, Rupali Chandar<sup>7</sup>, Daniela Calzetti<sup>6</sup>, Benne Holwerda<sup>5</sup>, Claus Leitherer<sup>3</sup>, Cristina Popescu<sup>4</sup>, Richard Tuffs<sup>1</sup>  
*Institution(s):* <sup>1</sup> Max Planck Institut fr Kernphysik, Saupfercheckweg, <sup>2</sup> Reed College, <sup>3</sup> STSCI, <sup>4</sup> University of Central Lancashire, <sup>5</sup> University of Leiden, <sup>6</sup> University of Massachusetts, <sup>7</sup> University of Toledo
- 135.13 Turbulence and Star Formation in a Sample of Spiral Galaxies**  
**Author(s):** Erin R Maier<sup>3</sup>, Deidre Ann Hunter<sup>1</sup>, Li-Hsin Chien<sup>2</sup>  
*Institution(s):* <sup>1</sup> Lowell Observatory, <sup>2</sup> Northern Arizona University, <sup>3</sup> University of Iowa
- 135.14 Star formation rates of spiral galaxies in the Cosmic Web**  
**Author(s):** Mehmet Alpaslan<sup>1</sup>, Pamela M. Marcum<sup>1</sup>  
*Institution(s):* <sup>1</sup> NASA Ames Research Centre

## 136 Dwarf and Irregular Galaxies Poster Session

Tuesday, 5:30 pm - 6:30 pm; Exhibit Hall A

- 136.01 SHIELD: The Star Formation Law in Extremely Low-mass Galaxies**  
**Author(s):** Yaron Teich<sup>1</sup>, Andrew McNichols<sup>1</sup>, John M. Cannon<sup>1</sup>  
*Institution(s):* <sup>1</sup> Macalester College

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- 136.02 SHIELD: Neutral Gas Kinematics and Dynamics**  
**Author(s):** Andrew McNichols<sup>1</sup>, Yaron Teich<sup>1</sup>, John M. Cannon<sup>1</sup>  
*Institution(s):* <sup>1</sup> Macalester College
- 136.03 SHIELD II: TRGB Distance Measurements from HST Imaging**  
**Author(s):** John M. Cannon<sup>1</sup>, Kristen B. McQuinn<sup>2</sup>, Evan D. Skillman<sup>2</sup>  
*Institution(s):* <sup>1</sup> Macalester College, <sup>2</sup> University of Minnesota
- 136.04 SHIELD II: WSRT HI Spectral Line Observations**  
**Author(s):** Alex Jonah Robert Gordon<sup>2</sup>, John M. Cannon<sup>2</sup>, Elizabeth A. Adams<sup>1</sup>  
*Institution(s):* <sup>1</sup> ASTRON, <sup>2</sup> Macalester College
- 136.05 SHIELD II: AGC 198507 - An Extremely Rare Low-Mass Galaxy Interaction?**  
**Author(s):** Karin Nikolina Borg Stevens<sup>1</sup>, John M. Cannon<sup>1</sup>, Andrew McNichols<sup>1</sup>, Kristen B. McQuinn<sup>2</sup>, Yaron Teich<sup>1</sup>  
*Institution(s):* <sup>1</sup> Macalester College, <sup>2</sup> University of Minnesota
- 136.06 The Extremely Metal-Poor Dwarf Galaxy AGC 198691**  
**Author(s):** Alec S. Hirschauer<sup>1</sup>, John Joseph Salzer<sup>1</sup>, John M. Cannon<sup>2</sup>, Evan D. Skillman<sup>3</sup>  
*Institution(s):* <sup>1</sup> Indiana University, <sup>2</sup> Macalester College, <sup>3</sup> University of Minnesota
- 136.07 SHIELD II: VLA HI Spectral Line Observations**  
**Author(s):** Eojin Lee<sup>1</sup>, John M. Cannon<sup>1</sup>, Andrew McNichols<sup>1</sup>, Yaron Teich<sup>1</sup>  
*Institution(s):* <sup>1</sup> Macalester College
- 136.08 Star Formation in Extreme Environments: The Case of the Prototypical Blue Compact Dwarf Galaxy II Zw 40**  
**Author(s):** Amanda A. Kepley<sup>2</sup>, Adam Leroy<sup>3</sup>, Kelsey E. Johnson<sup>5</sup>, Karin Sandstrom<sup>4</sup>, C.-H. Rosie Chen<sup>1</sup>  
*Institution(s):* <sup>1</sup> Max Planck Institute for Radio Astronomy, <sup>2</sup> National Radio Astronomy Observatory, <sup>3</sup> The Ohio State University, <sup>4</sup> University of California, San Diego, <sup>5</sup> University of Virginia
- 136.09 The Star Formation Properties of Void Dwarf Galaxies**  
**Author(s):** Crystal Moorman<sup>1</sup>, Michael S. Vogeley<sup>1</sup>  
*Institution(s):* <sup>1</sup> Drexel University
- 136.10 Gas Flowing out of the Large Magellanic Cloud Galaxy due to Numerous Supernovae Explosions**  
**Author(s):** Madeline Horn<sup>1</sup>, Kathleen Barger<sup>2</sup>, Nicolas Lehner<sup>3</sup>, J. Christopher Howk<sup>3</sup>, L. Matthew Haffner<sup>4</sup>  
*Institution(s):* <sup>1</sup> Smith College, <sup>2</sup> Texas Christian University, <sup>3</sup> University of Notre Dame, <sup>4</sup> University of Wisconsin-Madison
- 136.11 Cannibalization of Dwarf Galaxies by the Milky Way: Distance to the Leading Arm of the Magellanic Clouds**  
**Author(s):** Jacqueline Antwi-Danso<sup>1</sup>, Kathleen Barger<sup>1</sup>, L. Matthew Haffner<sup>2</sup>  
*Institution(s):* <sup>1</sup> Texas Christian University, <sup>2</sup> University of Wisconsin-Madison

- 136.12 Investigating the Diffuse Ionized Gas in the Magellanic Stream with Mapped WHAM Observations**  
**Author(s):** Brianna Smart<sup>2</sup>, L. Matthew Haffner<sup>2</sup>, Kathleen Barger<sup>1</sup>, Mike Hernandez<sup>1</sup>  
*Institution(s):* <sup>1</sup> Texas Christian University, <sup>2</sup> University of Wisconsin
- 136.13 The Extended Ionized Halos and Bridge of the Magellanic Clouds**  
**Author(s):** Dhanesh Krishnarao<sup>5</sup>, Brianna Smart<sup>5</sup>, L. Matthew Haffner<sup>5</sup>, Kathleen Barger<sup>2</sup>, Gregory J Madsen<sup>4</sup>, Alex S. Hill<sup>1</sup>, Bryan M. Gaensler<sup>3</sup>  
*Institution(s):* <sup>1</sup> Haverford College, <sup>2</sup> Texas Christian University, <sup>3</sup> The University of Toronto, <sup>4</sup> University of Cambridge, <sup>5</sup> University of Wisconsin-Madison
- 136.14 Physical Properties of the Magellanic Bridge Tidal Remnant through Mapped H $\alpha$ , [SII], and [NII] Emission**  
**Author(s):** Kathleen Barger<sup>1</sup>, L. Matthew Haffner<sup>2</sup>  
*Institution(s):* <sup>1</sup> Texas Christian University, <sup>2</sup> University of Wisconsin-Madison
- 136.15 The Discovery of Galaxy Groups with Only Low Mass, Dwarf Members**  
**Author(s):** Sabrina Stierwalt<sup>4</sup>, Sandra Liss<sup>4</sup>, Kelsey E. Johnson<sup>4</sup>, Gurtina Besla<sup>3</sup>, Nitya Kallivayalil<sup>4</sup>, David R. Patton<sup>2</sup>, Mary E. Putman<sup>1</sup>  
*Institution(s):* <sup>1</sup> Columbia University, <sup>2</sup> Trent University, <sup>3</sup> University of Arizona, <sup>4</sup> University of Virginia
- 136.16 The Spectral Energy Distributions of Interacting Dwarf Galaxies**  
**Author(s):** Sandra Liss<sup>4</sup>, Kelsey E. Johnson<sup>4</sup>, Sabrina Stierwalt<sup>4</sup>, Nitya Kallivayalil<sup>4</sup>, Gurtina Besla<sup>3</sup>, David R. Patton<sup>1</sup>, George C. Privon<sup>2</sup>  
*Institution(s):* <sup>1</sup> Trent University, <sup>2</sup> Universidad de Concepción, <sup>3</sup> University of Arizona, <sup>4</sup> University of Virginia
- 136.17 Using Rotation Curves for Low Surface Brightness Galaxies to Evaluate LCDM**  
**Author(s):** Elizabeth Tarantino<sup>1</sup>, Federico Lelli<sup>1</sup>, Stacy McGaugh<sup>1</sup>  
*Institution(s):* <sup>1</sup> Case Western Reserve University
- 136.18 Stable State Simulations of Andromeda Dwarf Spheroidal Satellite Galaxies Using MOND**  
**Author(s):** Matthew Valentosky<sup>1</sup>, Benjamin Blankertz<sup>1</sup>, Stephen Alexander<sup>1</sup>, Justin Messinger<sup>1</sup>, Alex Staron<sup>1</sup>  
*Institution(s):* <sup>1</sup> Miami University
- 136.19 Getting to Know the Neighbors: Deep Imaging of the Andromeda Satellite Dwarf Galaxy Cassiopeia III with WIYN pODI**  
**Author(s):** Madison Smith<sup>2</sup>, Katherine L. Rhode<sup>1</sup>, Steven Janowiecki<sup>1</sup>  
*Institution(s):* <sup>1</sup> Indiana University, <sup>2</sup> Maria Mitchell Observatory
- 136.20 Photometric Calibration of DECam Images of the Sextans Dwarf Spheroidal Galaxy**  
**Author(s):** Brittany Howard<sup>2</sup>, Kathy Vivas<sup>1</sup>  
*Institution(s):* <sup>1</sup> Cerro Tololo Inter-American Observatory, <sup>2</sup> University of Michigan - Dearborn

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- 136.21 Mapping the Tidal Destruction of the Hercules Dwarf: A Wide-Field DECam Imaging Search for RR Lyrae**  
**Author(s):** Christopher Garling<sup>1</sup>, Beth Willman<sup>1</sup>, Jonathan R. Hargis<sup>1</sup>, David J. Sand<sup>2</sup>, Denija Crnojevic<sup>2</sup>  
*Institution(s):* <sup>1</sup> Haverford College, <sup>2</sup> Texas Tech University
- 136.22 Ghostly Halos in Dwarf Galaxies: a probe of star formation in the Early Universe**  
**Author(s):** Hoyoung Kang<sup>1</sup>, Massimo Ricotti<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Maryland
- 136.23 The Resolved Stellar Halo and Dwarf Satellite Population of NGC 3109**  
**Author(s):** Jonathan R. Hargis<sup>1</sup>, Denija Crnojevic<sup>6</sup>, David J. Sand<sup>6</sup>, Beth Willman<sup>2</sup>, Kristine Spekkens<sup>4</sup>, Carl J. Grillmair<sup>5</sup>, Jay Strader<sup>3</sup>  
*Institution(s):* <sup>1</sup> Haverford College, <sup>2</sup> LSST and Steward Observatory, <sup>3</sup> Michigan State University, <sup>4</sup> Royal Military College of Canada, <sup>5</sup> Spitzer Science Center, <sup>6</sup> Texas Tech University
- 136.24 A Survey of Localized Star Clusters in NGC 1427A**  
**Author(s):** John R Weaver<sup>1</sup>, Michael Gregg<sup>2</sup>  
*Institution(s):* <sup>1</sup> Maria Mitchell Observatory, <sup>2</sup> UC, Davis
- 136.25 Characterizing Dw1335-29, a Recently Discovered Dwarf Satellite of M83**  
**Author(s):** Andreia Jessica Carrillo<sup>3</sup>, Eric F. Bell<sup>3</sup>, Jeremy Bailin<sup>2</sup>, Antonela Monachesi<sup>1</sup>  
*Institution(s):* <sup>1</sup> Max Planck Institute for Astrophysics, <sup>2</sup> University of Alabama, <sup>3</sup> University of Michigan

## 137 Extrasolar Planets: Detection Poster Session

Tuesday, 5:30 pm - 6:30 pm; Exhibit Hall A

- 137.01 CELESTA: A Catalog of Earth-Like Exoplanet Survey Targets**  
**Author(s):** Colin Orion Chandler<sup>2</sup>, Iain McDonald<sup>1</sup>, Stephen R. Kane<sup>2</sup>  
*Institution(s):* <sup>1</sup> Jodrell Bank Centre for Astrophysics, <sup>2</sup> San Francisco State University
- 137.02 Science Yield Modeling with EXOSIMS**  
**Author(s):** Daniel Garrett<sup>1</sup>, Dmitry Savransky<sup>1</sup>  
*Institution(s):* <sup>1</sup> Cornell University
- 137.03 Archival Legacy Investigation of Circumstellar Environments (ALICE). Survey results**  
**Author(s):** Remi Soummer<sup>4</sup>, Elodie Choquet<sup>4</sup>, Laurent Pueyo<sup>4</sup>, J. Brendan Hagan<sup>4</sup>, Elena Gofas-Salas<sup>4</sup>, Abhijith Rajan<sup>1</sup>, Christine Chen<sup>4</sup>, Marshall D. Perrin<sup>4</sup>, John H. Debes<sup>4</sup>, David A. Golimowski<sup>4</sup>, Dean C. Hines<sup>4</sup>, Mamadou N'Diaye<sup>4</sup>, Glenn Schneider<sup>5</sup>, Dimitri Mawet<sup>2</sup>, Christian Marois<sup>3</sup>  
*Institution(s):* <sup>1</sup> Arizona State University, <sup>2</sup> Caltech, <sup>3</sup> NRC Herzberg Institute of Astrophysics, <sup>4</sup> Space Telescope Science Institute, <sup>5</sup> University of Arizona

- 137.04 A Search for Rocky Planets in Close Orbits around White Dwarfs with COS**  
**Author(s):** Phoebe Sandhaus<sup>1</sup>, John H. Debes<sup>1</sup>, Justin Ely<sup>1</sup>, Dean C. Hines<sup>1</sup>  
*Institution(s):* <sup>1</sup> STScI
- 137.05 Cloud-Kepler: Towards Efficient Identification and Characterization of Aperiodic and Infrequent Transit Events**  
**Author(s):** Girish Manideep Duvvuri<sup>2</sup>, Peter R. McCullough<sup>1</sup>, Scott W. Fleming<sup>1</sup>  
*Institution(s):* <sup>1</sup> STScI, <sup>2</sup> Wesleyan University
- 137.06 An Aperture Photometry Pipeline for K2 Data**  
**Author(s):** Derek L. Buzasi<sup>1</sup>, Lindsey Carboneau<sup>1</sup>, Andy Lezcano<sup>1</sup>, Ekaterina Vydra<sup>1</sup>  
*Institution(s):* <sup>1</sup> Florida Gulf Coast University
- 137.07 The Detection of Kepler K2 Campaigns 3 and 4 Planet Candidates**  
**Author(s):** Katherine L. Karnes<sup>1</sup>, Tarryn Kahre<sup>3</sup>, Jeffrey C. Smith<sup>2</sup>, Douglas A. Caldwell<sup>2</sup>  
*Institution(s):* <sup>1</sup> Colgate University, <sup>2</sup> SETI Institute/NASA Ames Research Center, <sup>3</sup> University of Oklahoma
- 137.08 A Systematic Search for Exoplanet Candidates in K2 Data**  
**Author(s):** Tarryn Kahre<sup>3</sup>, Katherine L. Karnes<sup>1</sup>, Douglas A. Caldwell<sup>2</sup>, Jeffrey C. Smith<sup>2</sup>  
*Institution(s):* <sup>1</sup> Colgate University, <sup>2</sup> SETI Institute, <sup>3</sup> University of Oklahoma
- 137.09 Modeling Starspots on Kepler-78**  
**Author(s):** Andrew Mayo<sup>1</sup>, Andrew Vanderburg<sup>1</sup>, Xavier Dumusque<sup>1</sup>, John A. Johnson<sup>1</sup>  
*Institution(s):* <sup>1</sup> Harvard-Smithsonian Center for Astrophysics
- 137.10 A CubeSat to Search for Transiting Planets Around the Young Star Beta Pictoris**  
**Author(s):** Ameer Blake<sup>1</sup>, Aki Roberge<sup>2</sup>  
*Institution(s):* <sup>1</sup> Howard University, <sup>2</sup> NASA GSFC
- 137.11 Transit Photometry results on WASP 58b and a KELT target**  
**Author(s):** Rex R Yeigh<sup>1</sup>, Hannah Jang-Condell<sup>1</sup>, David Kasper<sup>1</sup>, Tyler G Ellis<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Wyoming
- 137.12 Enabling Remote and Automated Operations at The Red Buttes Observatory**  
**Author(s):** Tyler G Ellis<sup>1</sup>, Hannah Jang-Condell<sup>1</sup>, David Kasper<sup>1</sup>, Rex R Yeigh<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Wyoming
- 137.13 Design Considerations: Falcon M Dwarf Habitable Exoplanet Survey**  
**Author(s):** Daniel Polsgrove<sup>1</sup>, Steven Novotny<sup>1</sup>, Devin J. Della-Rose<sup>1</sup>, Francis Chun<sup>1</sup>, Roger Tippets<sup>1</sup>, Patrick O'Shea<sup>1</sup>, Matthew Miller<sup>1</sup>  
*Institution(s):* <sup>1</sup> US Air Force Academy
- 137.14 The First Year of Robotic Science with MINERVA**  
**Author(s):** Nate McCrady<sup>5</sup>, John A. Johnson<sup>2</sup>, Jason Wright<sup>3</sup>, Robert Wittenmyer<sup>4</sup>, Jason Eastman<sup>2</sup>, Thomas G. Beatty<sup>3</sup>, Michael Bottom<sup>1</sup>, Samson Johnson<sup>5</sup>  
*Institution(s):* <sup>1</sup> Caltech, <sup>2</sup> Harvard CfA, <sup>3</sup> Pennsylvania State University, <sup>4</sup> U. New South Wales, <sup>5</sup> University of Montana

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- 137.15 Calibrating Images from the MINERVA Cameras**  
**Author(s):** Ana Mercedes Colón<sup>1</sup>  
*Institution(s):* <sup>1</sup> Dartmouth College
- 137.16 High Precision Photometry of Bright Transiting Exoplanet Hosts**  
**Author(s):** Maurice Wilson<sup>1</sup>, Jason Eastman<sup>2</sup>, John A. Johnson<sup>2</sup>  
*Institution(s):* <sup>1</sup> Embry-Riddle Aeronautical, <sup>2</sup> Harvard-Smithsonian Center for Astrophysics
- 137.17 An Infrared Radial Velocity Search for ‘Hot Jupiters’ Around Young Stars**  
**Author(s):** Justin R. Cantrell<sup>1</sup>, Russel White<sup>1</sup>, John Ira Bailey<sup>2</sup>  
*Institution(s):* <sup>1</sup> Georgia State University, <sup>2</sup> University of Michigan
- 137.18 Pipeline Development and Early Performance of the High-resolution, High-precision Radial Velocity TOU Spectrograph**  
**Author(s):** Bo Ma<sup>1</sup>, Jian Ge<sup>1</sup>, Frank Varosi<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Florida
- 137.19 Telluric Line Effect on High Precision Radial Velocity Survey of K and M Dwarfs**  
**Author(s):** Sirinrat Sithajan<sup>2</sup>, Jian Ge<sup>2</sup>, Ji Wang<sup>1</sup>  
*Institution(s):* <sup>1</sup> California Institute of Technology, <sup>2</sup> University of Florida
- 137.20 Simulations of Detectability of Extrasolar Planets by a Joint Doppler and WFIRST-AFTA Coronagraph Survey**  
**Author(s):** Ashley Chontos<sup>1</sup>, Bruce Macintosh<sup>2</sup>, Eric L. Nielsen<sup>2</sup>  
*Institution(s):* <sup>1</sup> Department of Physics, State University of New York at Albany, <sup>2</sup> Kavli Institute for Particle Astrophysics and Cosmology, Stanford University
- 137.21 Estimation of chromatic errors from broadband images for high contrast imaging: sensitivity analysis**  
**Author(s):** Dan Sirbu<sup>1</sup>, Ruslan Belikov<sup>1</sup>  
*Institution(s):* <sup>1</sup> NASA ARC
- 137.22 Managing the optical wavefront for high contrast exoplanet imaging with the WFIRST-AFTA coronagraph**  
**Author(s):** John T. Trauger<sup>1</sup>, John E. Krist<sup>1</sup>, Dwight Moody<sup>1</sup>  
*Institution(s):* <sup>1</sup> JPL
- 137.23 Characterizing Exoplanet Motions Using Random Orbit Generation for the Gemini Planet Imager Exoplanet Survey**  
**Author(s):** Sarah Caroline Blunt<sup>1</sup>, Eric Nielsen<sup>3</sup>, Franck Marchis<sup>3</sup>, Robert De Rosa<sup>7</sup>, Quinn Konopacky<sup>8</sup>, Bruce Macintosh<sup>5</sup>, Jason Wang<sup>7</sup>, Christian Marois<sup>2</sup>, Laurent Pueyo<sup>4</sup>, Julien Rameau<sup>6</sup>, James R. Graham<sup>7</sup>  
*Institution(s):* <sup>1</sup> Brown University, <sup>2</sup> National Research Council of Canada Herzberg, <sup>3</sup> SETI Institute, <sup>4</sup> Space Telescope Science Institute, <sup>5</sup> Stanford University, <sup>6</sup> Université de Montreal, <sup>7</sup> University of California at Berkeley, <sup>8</sup> University of California at San Diego
- 137.25 First Experimental Results Using Sparse Aperture Mask for Low Order Wavefront Sensing**  
**Author(s):** Hari Subedi<sup>1</sup>, Neil T Zimmerman<sup>1</sup>, N. Jeremy Kasdin<sup>1</sup>, A J Eldorado Riggs<sup>1</sup>  
*Institution(s):* <sup>1</sup> Princeton University

- 137.26 Progress on an external occulter testbed at flight Fresnel numbers**  
**Author(s):** Yunjong Kim<sup>2</sup>, Dan Sirbu<sup>1</sup>, Michael Galvin<sup>2</sup>, N. Jeremy Kasdin<sup>2</sup>, Robert J. Vanderbei<sup>2</sup>  
*Institution(s):* <sup>1</sup> NASA Ames, <sup>2</sup> Princeton University
- 137.27 Suppression of Astronomical Sources Using Starshades and the McMath-Pierce Solar Telescope**  
**Author(s):** Megan Novicki<sup>1</sup>, Steve Warwick<sup>1</sup>, Daniel Smith<sup>1</sup>, Michael Richards<sup>1</sup>, Anthony Harness<sup>2</sup>  
*Institution(s):* <sup>1</sup> Northrop Grumman Aerospace Systems, <sup>2</sup> University of Colorado
- 137.28 Measurements of High-Contrast Starshade Performance in the Field**  
**Author(s):** Daniel Smith<sup>3</sup>, Tiffany M. Glassman<sup>3</sup>, Steve Warwick<sup>3</sup>, Megan Novicki<sup>3</sup>, Michael Richards<sup>3</sup>, Keith Patterson<sup>2</sup>, Anthony Harness<sup>1</sup>  
*Institution(s):* <sup>1</sup> Colorado University, <sup>2</sup> Jet Propulsion Laboratory, <sup>3</sup> Northrop Grumman
- 137.29 WFIRST Exoplanet Imaging: Can Broadband Colors Efficiently Discriminate Planets from the Background?**  
**Author(s):** Margaret C. Turnbull<sup>2</sup>, Ralf C. Kotulla<sup>3</sup>, John S. Gallagher<sup>3</sup>, Aronne Merrelli<sup>3</sup>, Tristan L'Ecuyer<sup>3</sup>, Guangwei Fu<sup>3</sup>, Renyu Hu<sup>1</sup>  
*Institution(s):* <sup>1</sup> JPL, <sup>2</sup> SETI Institute, <sup>3</sup> University of Wisconsin

## 138 Extrasolar Planets: Characterization and Theory Poster Session

Tuesday, 5:30 pm - 6:30 pm; Exhibit Hall A

- 138.01 Detection and Characterization of Exoplanets using Projections on Karhunen-Loeve Eigenimages: Forward Modeling**  
**Author(s):** Laurent Pueyo<sup>1</sup>  
*Institution(s):* <sup>1</sup> Space Telescope Science Institute
- 138.02 Symplectic Integrators: Variational Integrators for Nonconservative systems**  
**Author(s):** David Tsang<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Maryland
- 138.03 Variability in the pre-transit signal of HD 189733 b**  
**Author(s):** Paul W. Cauley<sup>4</sup>, Seth Redfield<sup>4</sup>, Adam G. Jensen<sup>2</sup>, Travis Barman<sup>1</sup>, Michael Endl<sup>3</sup>, William D. Cochran<sup>3</sup>  
*Institution(s):* <sup>1</sup> University of Arizona, <sup>2</sup> University of Nebraska Kearney, <sup>3</sup> University of Texas at Austin, <sup>4</sup> Wesleyan University
- 138.04 Stellar Angular Diameter Relations for Microlensing Surveys**  
**Author(s):** Arthur Adams<sup>2</sup>, Tabettha S. Boyajian<sup>2</sup>, Kaspar von Braun<sup>1</sup>  
*Institution(s):* <sup>1</sup> Lowell Observatory, <sup>2</sup> Yale University
- 138.05 Astrometry of Directly Imaged Exoplanets after PSF Subtraction using MCMC Forward Modeling**  
**Author(s):** Jason Wang<sup>3</sup>, James R. Graham<sup>3</sup>, Laurent Pueyo<sup>1</sup>, Jean-Baptiste Ruffio<sup>2</sup>  
*Institution(s):* <sup>1</sup> Space Telescope Science Institute, <sup>2</sup> Stanford, <sup>3</sup> UC Berkeley

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## 138.06 Adaptive Optics Imaging of Exoplanet Host Stars

**Author(s):** Miranda Herman<sup>1</sup>, Mason Waaler<sup>1</sup>, Jennifer Patience<sup>1</sup>, Kimberly Ward-Duong<sup>1</sup>, Abhijith Rajan<sup>1</sup>, Don McCarthy<sup>3</sup>, Craig Kulesa<sup>3</sup>, Paul A Wilson<sup>2</sup>  
*Institution(s):* <sup>1</sup> Arizona State University, <sup>2</sup> Paris Observatory, <sup>3</sup> University of Arizona

## 138.07 A Study of the Effects of Underlying Assumptions in the Reduction of Multi-Object Photometry of Transiting Exoplanets

**Author(s):** M. Ryleigh Fitzpatrick<sup>3</sup>, Kyle Pearson<sup>2</sup>, Caitlin Ann Griffith<sup>3</sup>, Marina Dunn<sup>3</sup>, Nicholas John Montiel<sup>3</sup>, Robert T. Zellem<sup>1</sup>, Jenny Calahan<sup>3</sup>, Quadry Chance<sup>3</sup>, Andrew Henrici<sup>3</sup>, Dominic Sanchez<sup>3</sup>  
*Institution(s):* <sup>1</sup> Jet Propulsion Laboratory- California Institute of Technology, <sup>2</sup> Northern Arizona University, <sup>3</sup> University of Arizona

## 138.08 Lithium Abundance in Planet Search Stars

**Author(s):** Justin Myles<sup>1</sup>  
*Institution(s):* <sup>1</sup> Yale University

## 138.09 Investigating Detailed Abundance Patterns in the Hyades Cluster

**Author(s):** Drake Williams<sup>1</sup>, Simon C. Schuler<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Tampa

## 138.10 Detailed Abundances of Stars with Small Planets Discovered by Kepler

**Author(s):** Simon C. Schuler<sup>7</sup>, Zachary A Vaz<sup>7</sup>, Orlando J. Katime Santrich<sup>6</sup>, Katia M. L. Cunha<sup>6</sup>, Verne V. Smith<sup>5</sup>, Jeremy R King<sup>2</sup>, Luan Ghezzi<sup>3</sup>, Steve B. Howell<sup>4</sup>, Johanna Teske<sup>1</sup>  
*Institution(s):* <sup>1</sup> Carnegie DTM, <sup>2</sup> Clemson University, <sup>3</sup> Harvard University, <sup>4</sup> NASA ARC, <sup>5</sup> NOAO, <sup>6</sup> Observatorio Nacional, <sup>7</sup> University of Tampa

## 138.11 Abundance Analysis of 10 Kepler Planetary Hosts

**Author(s):** Zachary A Vaz<sup>5</sup>, Simon C. Schuler<sup>5</sup>, Drake Williams<sup>5</sup>, Katia M. L. Cunha<sup>3</sup>, Verne V. Smith<sup>4</sup>, Luan Ghezzi<sup>2</sup>, Johanna Teske<sup>1</sup>  
*Institution(s):* <sup>1</sup> Carnegie Institution of Washington, <sup>2</sup> Harvard-Smithsonian Center for Astrophysics, <sup>3</sup> Observatório Nacional, <sup>4</sup> Steward Observatory, University of Arizona, <sup>5</sup> University of Tampa

## 138.12 Characterizing the Period Ratio Distribution of Kepler Exoplanetary Systems

**Author(s):** James L Conaway<sup>1</sup>, Darin Ragozzine<sup>1</sup>  
*Institution(s):* <sup>1</sup> Florida Institute of Technology

## 138.13 The mass of the super-Earth orbiting the brightest Kepler planet hosting star

**Author(s):** Mercedes Lopez-Morales<sup>1</sup>  
*Institution(s):* <sup>1</sup> Harvard-Smithsonian CfA

## 138.14 Transit, Secondary Eclipse, and Phase Curve Modeling to Characterize Kepler Exoplanet Candidates

**Author(s):** Jesse Tarnas<sup>1</sup>, Seth Redfield<sup>1</sup>  
*Institution(s):* <sup>1</sup> Wesleyan University

## 138.15 Spitzer Meets K2: Spitzer Studies of Candidate Exoplanets Identified by K2

**Author(s):** Michael W. Werner<sup>1</sup>  
*Institution(s):* <sup>1</sup> JPL

- 138.16 The HERMES K2 Follow-up Program at the Anglo-Australian Telescope**  
**Author(s):** Robert A. Wittenmyer<sup>2</sup>, Sarah L. Martell<sup>2</sup>, James Esdaile<sup>2</sup>, Sanjib Sharma<sup>1</sup>, Dennis Stello<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Sydney, <sup>2</sup> UNSW Australia
- 138.17 A Habitability Test of the Exoplanetary System K2-3**  
**Author(s):** Ryan Diaz-Perez<sup>3</sup>, David M. Kipping<sup>1</sup>, John A. Johnson<sup>2</sup>  
*Institution(s):* <sup>1</sup> Columbia University, <sup>2</sup> Harvard University, <sup>3</sup> University of Massachusetts Boston
- 138.18 Home Sweet Home?: Determining Habitability From the Eccentricities of Kepler-186**  
**Author(s):** Moiya McTier<sup>2</sup>, David M. Kipping<sup>1</sup>  
*Institution(s):* <sup>1</sup> Columbia University, <sup>2</sup> Harvard College
- 138.19 Investigating the Orbital Period Valley of Giant Planets in Kepler Data**  
**Author(s):** Brianna P. Thomas<sup>2</sup>, Jayne L. Birkby<sup>1</sup>  
*Institution(s):* <sup>1</sup> Harvard Smithsonian Center for Astrophysics, <sup>2</sup> Howard University
- 138.20 Are there exoplanets near their Roche limits?**  
**Author(s):** Timothy Sanders<sup>1</sup>, Sourav Chatterjee<sup>2</sup>, Frederic A. Rasio<sup>2</sup>, Francesca Valsecchi<sup>2</sup>  
*Institution(s):* <sup>1</sup> Chicago State University, <sup>2</sup> Northwestern University
- 138.21 Introducing an unknown companion in the Kepler-56 system (via radial velocity observations and dynamical analysis)**  
**Author(s):** Oderah Justin Otor<sup>2</sup>, Benjamin T. Montet<sup>1</sup>, John A. Johnson<sup>1</sup>  
*Institution(s):* <sup>1</sup> Harvard University, <sup>2</sup> Princeton University
- 138.22 Characterizing Transiting Exoplanet Atmospheres with JWST**  
**Author(s):** Michael R. Line<sup>1</sup>, Thomas P. Greene<sup>2</sup>, Cezar Montero<sup>3</sup>, Jonathan J. Fortney<sup>3</sup>  
*Institution(s):* <sup>1</sup> Hubble Postdoctoral Fellow, <sup>2</sup> NASA Ames Research Center, <sup>3</sup> University of California Santa Cruz
- 138.23 The Effect of Atmospheric Hydrogen on the Albedo and Surface Temperature of Mars**  
**Author(s):** Nicole Lisa Wallack<sup>2</sup>, Lisa Kaltenegger<sup>1</sup>, Ramses Ramirez<sup>1</sup>  
*Institution(s):* <sup>1</sup> Carl Sagan Institute: The Pale Blue Dot and Beyond, Cornell University, <sup>2</sup> University at Albany (SUNY)
- 138.24 Measuring Doppler Beaming with Kepler and TESS**  
**Author(s):** Laura Mayorga<sup>1</sup>, Jason Jackiewicz<sup>1</sup>  
*Institution(s):* <sup>1</sup> New Mexico State University
- 138.25 Determining the Atmospheric Nature of Super-Earth and Sub-Neptune Exoplanets**  
**Author(s):** Joshua Lothringer<sup>7</sup>, Ian Crossfield<sup>7</sup>, Bjoern Benneke<sup>1</sup>, Heather Knutson<sup>1</sup>, Diana Dragomir<sup>4</sup>, Jonathan J. Fortney<sup>8</sup>, Andrew Howard<sup>3</sup>, Peter R. McCullough<sup>6</sup>, Ronald L. Gilliland<sup>5</sup>, Eliza Kempton<sup>2</sup>, Caroline Morley<sup>8</sup>  
*Institution(s):* <sup>1</sup> California Institute of Technology, <sup>2</sup> Grinnell College, <sup>3</sup> Institute for Astronomy, University of Hawaii, <sup>4</sup> Las Cumbres Observatory Global Telescope Network, <sup>5</sup> Penn State University, <sup>6</sup> Space Telescope Science Institute, <sup>7</sup> University of Arizona, <sup>8</sup> University of California - Santa Cruz

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- 138.26 Atmospheric heating in an irradiated transiting super-Earth and super-Neptune**  
**Author(s):** Brendan P. Miller<sup>2</sup>, Elena Gallo<sup>4</sup>, Jason Wright<sup>3</sup>, Katja Poppenhaeager<sup>1</sup>  
*Institution(s):* <sup>1</sup> Center for Astrophysics, <sup>2</sup> College of St. Scholastica, <sup>3</sup> Pennsylvania State University, <sup>4</sup> University of Michigan
- 138.27 The Role of Exotic Molecules In Model Exoplanet Spectra**  
**Author(s):** Caroline Chang<sup>1</sup>, Nandini Iyer<sup>2</sup>, Caroline Morley<sup>3</sup>, Jonathan J. Fortney<sup>3</sup>  
*Institution(s):* <sup>1</sup> Ardenwood, <sup>2</sup> Homestead High School, <sup>3</sup> University of California Santa Cruz
- 138.28 Understanding dynamical instability in 4-planet systems with equal orbital spacing ( $\Delta$ )**  
**Author(s):** David R Rice<sup>1</sup>, Jason H. Steffen<sup>2</sup>, Frederic A. Rasio<sup>1</sup>  
*Institution(s):* <sup>1</sup> Northwestern University, <sup>2</sup> University of Nevada, Las Vegas
- 138.29 From Sub-Neptunes to Earth-like Exoplanets: Modeling Optically Thick and Thin Planetary Atmospheres**  
**Author(s):** Howard Chen<sup>1</sup>, Leslie Rogers<sup>2</sup>, James Kasting<sup>3</sup>  
*Institution(s):* <sup>1</sup> Department of Astronomy, Boston University, <sup>2</sup> Department of Astronomy, California Institute of Technology, <sup>3</sup> Department of Geosciences, The Pennsylvania State University
- 138.30 Proxima Centauri's Influence on Planet Formation in Alpha Centauri**  
**Author(s):** Rachel Worth<sup>1</sup>, Steinn Sigurdsson<sup>1</sup>  
*Institution(s):* <sup>1</sup> The Pennsylvania State University

## 139 Cosmology, Dark Matter & CMB Poster Session

Tuesday, 5:30 pm - 6:30 pm; Exhibit Hall A

- 139.01 The Formation and Evolution of Stripped Dark Matter Halos**  
**Author(s):** Jessica Zhu<sup>2</sup>, Austin Zong Tuan<sup>1</sup>, Christoph Lee<sup>3</sup>, Joel R. Primack<sup>3</sup>  
*Institution(s):* <sup>1</sup> Phillips Academy, <sup>2</sup> The Harker School, <sup>3</sup> University of California, Santa Cruz
- 139.02 Cosmology from CMB polarization with POLARBEAR and the Simons Array**  
**Author(s):** Darcy Barron<sup>1</sup>  
*Institution(s):* <sup>1</sup> UC Berkeley
- 139.03 Optimization of the WFIRST Type Ia Supernova Survey**  
**Author(s):** Rebekah Alianora Hounsell<sup>2</sup>, Ryan Foley<sup>2</sup>, Daniel Scolnic<sup>1</sup>  
*Institution(s):* <sup>1</sup> KICP at the University of Chicago, <sup>2</sup> University of Illinois Urbana Champaign
- 139.04 Effects of Neutrino Decay on Oscillation Probabilities**  
**Author(s):** Kayla Leonard<sup>2</sup>, André de Gouvêa<sup>1</sup>  
*Institution(s):* <sup>1</sup> Northwestern University, <sup>2</sup> University of Texas at Austin
- 139.05 Constraining Cosmological Parameters Using the Correlation Function**  
**Author(s):** Michael Warrenner<sup>1</sup>  
*Institution(s):* <sup>1</sup> Union College

- 139.06 Understanding the Intrinsic Properties of SDSS Galaxies**  
**Author(s):** Munazza Khalida Alam<sup>2</sup>, Ariyeh Maller<sup>1</sup>  
*Institution(s):* <sup>1</sup> CUNY City College of Technology, <sup>2</sup> CUNY Hunter College
- 139.07 How to define dark matter halo mass**  
**Author(s):** Kate Storey-Fisher<sup>1</sup>, Ariyeh Maller<sup>2</sup>  
*Institution(s):* <sup>1</sup> Brown University, <sup>2</sup> The New York City College of Technology
- 139.08 Reconsidering the Effects of Local Star Formation On Type Ia Supernova Cosmology**  
**Author(s):** David Jones<sup>1</sup>, Adam G. Riess<sup>1</sup>, Daniel Scolnic<sup>2</sup>  
*Institution(s):* <sup>1</sup> The Johns Hopkins University, <sup>2</sup> The Kavli Institute for Cosmological Physics, University of Chicago
- 139.09 Sampling the Probability Distribution of Type Ia Supernova Lightcurve Parameters in Cosmological Analysis**  
**Author(s):** Mi Dai<sup>1</sup>, Yun Wang<sup>2</sup>  
*Institution(s):* <sup>1</sup> Homer L. Dodge Department of Physics and Astronomy, University of Oklahoma, <sup>2</sup> Infrared Processing and Analysis Center, California Institute of Technology
- 139.10 See Change: Classifying single observation transients from HST using SNCosmo**  
**Author(s):** Caroline Sofiatti Nunes<sup>13</sup>, Saul Perlmutter<sup>13</sup>, Jakob Nordin<sup>13</sup>, David Rubin<sup>4</sup>, Chris Lidman<sup>1</sup>, Susana E. Deustua<sup>10</sup>, Andrew S. Fruchter<sup>10</sup>, Greg Scott Aldering<sup>8</sup>, Mark Brodwin<sup>23</sup>, Carlos E. Cunha<sup>11</sup>, Peter R. Eisenhardt<sup>6</sup>, Anthony H. Gonzalez<sup>20</sup>, Myungkook J. Jee<sup>14</sup>, Hendrik Hildebrandt<sup>17</sup>, Henk Hoekstra<sup>16</sup>, Joana Santos<sup>3</sup>, S. Adam Stanford<sup>14</sup>, Dana R. Stern<sup>6</sup>, Rene Fassbender<sup>5</sup>, Johan Richard<sup>2</sup>, Piero Rosati<sup>19</sup>, Risa H. Wechsler<sup>11</sup>, Adam Muzzin<sup>16</sup>, Jon Willis<sup>25</sup>, Hans Boehringer<sup>9</sup>, Michael Gladders<sup>18</sup>, Ariel Goobar<sup>12</sup>, Rahman Amanullah<sup>12</sup>, Isobel Hook<sup>24</sup>, Dragan Huterer<sup>22</sup>, Jiasheng Huang<sup>13</sup>, Alex G. Kim<sup>8</sup>, Marek Kowalski<sup>17</sup>, Eric Linder<sup>8</sup>, Reynald Pain<sup>7</sup>, Clare Saunders<sup>13</sup>, Nao Suzuki<sup>8</sup>, Kyle H. Barbary<sup>13</sup>, Eli S. Rykoff<sup>11</sup>, Joshua Meyers<sup>11</sup>, Anthony L. Spadafora<sup>8</sup>, Brian Hayden<sup>13</sup>, Gillian Wilson<sup>15</sup>, Eduardo Rozo<sup>11</sup>, Matt Hilton<sup>21</sup>, Samantha Dixon<sup>13</sup>, Mike Yen<sup>13</sup>  
*Institution(s):* <sup>1</sup> Australian Astronomical Observatory, <sup>2</sup> Centre de Recherche Astronomique de Lyon, <sup>3</sup> ESAC/ESA, <sup>4</sup> Florida State University, <sup>5</sup> INAF - Osservatorio Astronomico di Roma, <sup>6</sup> JPL, <sup>7</sup> Laboratoire de Physique Nucleaire des Hautes Energies, <sup>8</sup> LBNL, <sup>9</sup> Max-Planck-Institut fur extraterrestrische Physik, <sup>10</sup> Space Telescope Science Institute, <sup>11</sup> Stanford University, <sup>12</sup> Stockholm University, <sup>13</sup> UC Berkeley, <sup>14</sup> UC Davis, <sup>15</sup> UC Riverside, <sup>16</sup> Universiteit Leiden, <sup>17</sup> University of Bonn, <sup>18</sup> University of Chicago, <sup>19</sup> University of Ferrara via Saragat, <sup>20</sup> University of Florida, <sup>21</sup> University of KwaZulu-Natal, <sup>22</sup> University of Michigan, <sup>23</sup> University of Missouri, <sup>24</sup> University of Oxford, <sup>25</sup> University of Victoria
- 139.11 Measuring Dark Matter With MilkyWay@home**  
**Author(s):** Siddhartha Shelton<sup>2</sup>, Heidi Jo Newberg<sup>2</sup>, Matthew Arsenault<sup>2</sup>, Jacob Bauer<sup>2</sup>, Travis Desell<sup>2</sup>, Roland Judd<sup>2</sup>, Malik Magdon-Ismael<sup>2</sup>, Matthew Newby<sup>2</sup>, Colin Rice<sup>2</sup>, Jeffrey Thompson<sup>2</sup>, Steve Ulin<sup>2</sup>, Jake Weiss<sup>2</sup>, Larry Widrow<sup>1</sup>  
*Institution(s):* <sup>1</sup> Queens University, <sup>2</sup> Rensselaer Polytechnic Institute

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- 139.12 New measurement of the Joint Fluctuations of the CXB and the CIB with Chandra and Spitzer**  
**Author(s):** Nico Cappelluti<sup>3</sup>, Alexander Kashlinsky<sup>1</sup>, Guenther Hasinger<sup>2</sup>, Yanxia Li<sup>2</sup>, Richard G. Arendt<sup>1</sup>  
*Institution(s):* <sup>1</sup> NASA GSFC, <sup>2</sup> University of Hawaii, <sup>3</sup> Yale University
- 139.13 Simulating Ultracompact Mini-halos Near the Era of Matter-Radiation Equality**  
**Author(s):** Avery Bailey<sup>2</sup>, Adrienne L. Erickcek<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of North Carolina-Chapel Hill, <sup>2</sup> University of Virginia
- 139.14 Mapping the Galaxy Color-Redshift Relation: Optimal Photo-z Calibration Strategies for Cosmology Surveys**  
**Author(s):** Daniel C. Masters<sup>2</sup>, Peter L. Capak<sup>4</sup>, Daniel Stern<sup>3</sup>, Jason Rhodes<sup>3</sup>, Bahram Mobasher<sup>6</sup>, Samuel Schmidt<sup>5</sup>, Charles L. Steinhardt<sup>2</sup>, Andreas Faisst<sup>2</sup>, Josh S Speagle<sup>1</sup>  
*Institution(s):* <sup>1</sup> Harvard, <sup>2</sup> Infrared Processing and Analysis Center, Caltech, <sup>3</sup> JPL/Caltech, <sup>4</sup> Spitzer Science Center, Caltech, <sup>5</sup> UC Davis, <sup>6</sup> UC Riverside
- 139.15 Detecting Bias in a Self-Organizing Map of Galaxy Photometry Data**  
**Author(s):** Zachary R Claytor<sup>1</sup>  
*Institution(s):* <sup>1</sup> Ohio Wesleyan University
- 139.16 Inclination Dependence of Estimated Galaxy Masses and Star Formation Rates**  
**Author(s):** Betsy Hernandez<sup>3</sup>, Ariyeh Maller<sup>2</sup>, Barry McKernan<sup>1</sup>, Saavik Ford<sup>1</sup>  
*Institution(s):* <sup>1</sup> CUNY-BMCC, <sup>2</sup> CUNY-City Tech, <sup>3</sup> CUNY-Hunter College
- 139.17 Estimating the Supernova Cosmological Constraints Possible With the Wide-Field Infrared Survey Telescope**  
**Author(s):** Miles Currie<sup>1</sup>, David Rubin<sup>4</sup>, Greg Scott Aldering<sup>2</sup>, Charles Baltay<sup>5</sup>, Parker Fagrellius<sup>3</sup>, David R. Law<sup>4</sup>, Saul Perlmutter<sup>3</sup>, Klaus Pontoppidan<sup>4</sup>  
*Institution(s):* <sup>1</sup> Florida State University, <sup>2</sup> Lawrence Berkeley National Laboratory, <sup>3</sup> LBNL/UC Berkeley, <sup>4</sup> STScI, <sup>5</sup> Yale
- 139.18 The Union3 Supernova Ia Compilation**  
**Author(s):** David Rubin<sup>5</sup>, Greg Scott Aldering<sup>3</sup>, Rahman Amanullah<sup>3</sup>, Kyle H. Barbary<sup>3</sup>, Adam Bruce<sup>8</sup>, Greta Chappell<sup>2</sup>, Miles Currie<sup>2</sup>, Kyle S. Dawson<sup>13</sup>, Susana E. Deustua<sup>5</sup>, Mamoru Doi<sup>12</sup>, Hannah Fakhouri<sup>8</sup>, Andrew S. Fruchter<sup>5</sup>, Rachel A. Gibbons<sup>14</sup>, Ariel Goobar<sup>7</sup>, Eric Hsiao<sup>2</sup>, Xiaosheng Huang<sup>11</sup>, Yutaka Ihara<sup>12</sup>, Alex G. Kim<sup>3</sup>, Robert A. Knop<sup>4</sup>, Marek Kowalski<sup>10</sup>, Evan Krechmer<sup>8</sup>, Chris Lidman<sup>1</sup>, Eric Linder<sup>3</sup>, Joshua Meyers<sup>6</sup>, Tomoki Morokuma<sup>12</sup>, Jakob Nordin<sup>3</sup>, Saul Perlmutter<sup>3</sup>, Pascal Ripoche<sup>3</sup>, Pilar Ruiz-Lapuente<sup>9</sup>, Eli S. Rykoff<sup>3</sup>, Clare Saunders<sup>8</sup>, Anthony L. Spadafora<sup>3</sup>, Nao Suzuki<sup>12</sup>, Naohiro Takahashi<sup>12</sup>, Naoki Yasuda<sup>12</sup>  
*Institution(s):* <sup>1</sup> Australian Astronomical Observatory, <sup>2</sup> florida state university, <sup>3</sup> Lawrence Berkeley National Laboratory, <sup>4</sup> Quest University Canada, <sup>5</sup> Space Telescope Science Institute, <sup>6</sup> Stanford University, <sup>7</sup> Stockholm University, <sup>8</sup> UC, Berkeley, <sup>9</sup> University of Barcelona, <sup>10</sup> University of Bonn, <sup>11</sup> University of San Francisco, <sup>12</sup> University of Tokyo, <sup>13</sup> University of Utah, <sup>14</sup> Vanderbilt University

## 140 Large Scale Structure, Cosmic Distance Scale Poster Session

Tuesday, 5:30 pm - 6:30 pm; Exhibit Hall A

### 140.01 The Cosmic Web in 2MASS

**Author(s):** Boryana Hadzhiyska<sup>2</sup>, David Alonso<sup>1</sup>, Michael A. Strauss<sup>2</sup>  
*Institution(s):* <sup>1</sup> Oxford University, <sup>2</sup> Princeton University

### 140.02 Dark Matter Halo Properties From Thermal Sunyaev-Zel'dovich and Soft X-ray Emission Cross-Correlation

**Author(s):** Vincent James Lakey<sup>1</sup>, Kevin Huffenberger<sup>1</sup>  
*Institution(s):* <sup>1</sup> Florida State University

### 140.03 Full-depth Coadds of the WISE and NEOWISE-Reactivation Data

**Author(s):** Aaron M. Meisner<sup>1</sup>, Dustin Lang<sup>3</sup>, David J. Schlegel<sup>2</sup>  
*Institution(s):* <sup>1</sup> Berkeley Center for Cosmological Physics, <sup>2</sup> Lawrence Berkeley National Laboratory, <sup>3</sup> University of Toronto

### 140.04 Probing the Stellar Content of Galaxy Groups with Value-Added Group Catalogues in the SDSS DR7

**Author(s):** Victor Calderon<sup>3</sup>, Andreas A. Berlind<sup>3</sup>, Manodeep Sinha<sup>3</sup>, Cameron McBride<sup>1</sup>, Roman Scoccimarro<sup>2</sup>  
*Institution(s):* <sup>1</sup> Center for Astrophysics at Harvard University, <sup>2</sup> New York University, <sup>3</sup> Vanderbilt University

### 140.05 Refining the Expanding Photosphere Method: Comparison of Velocity and Temperature Parameters

**Author(s):** Robert C. Mitchell<sup>1</sup>  
*Institution(s):* <sup>1</sup> St. Ambrose University

### 140.06 Estimating the angular power spectrum of $z > 2$ BOSS QSOs using the MASTER method

**Author(s):** Felipe Maldonado<sup>1</sup>, Kevin Huffenberger<sup>1</sup>, Aditya Rotti<sup>1</sup>  
*Institution(s):* <sup>1</sup> Florida State University

### 140.07 Foreground Characterization for the Murchison Widefield Array Using the Jansky Very Large Array

**Author(s):** Michael P Busch<sup>1</sup>, Judd D. Bowman<sup>1</sup>, Piyanat Kittiwisit<sup>1</sup>, Danny Jacobs<sup>1</sup>  
*Institution(s):* <sup>1</sup> Arizona State University

## 141 The Sun and Solar System Poster Session

Tuesday, 5:30 pm - 6:30 pm; Exhibit Hall A

### 141.01 Solar Meridional Flows Inferred with Helioseismology

**Author(s):** Han Tang<sup>1</sup>, Jason Jackiewicz<sup>1</sup>  
*Institution(s):* <sup>1</sup> New Mexico State University

# TUESDAY, 5 JANUARY 2016

- 141.03 The plasmoid instability and Hall effect during chromospheric magnetic reconnection**  
**Author(s):** Nicholas Arnold Murphy<sup>1</sup>, Vyacheslav Lukin<sup>2</sup>  
*Institution(s):*<sup>1</sup> Harvard-Smithsonian Center for Astrophysics, <sup>2</sup> National Science Foundation
- 141.04 Solar Coronal Oscillations and the Coronal Heating Problem**  
**Author(s):** Tze Goh<sup>1</sup>  
*Institution(s):*<sup>1</sup> Columbia University
- 141.05 Probing Solar Wind Turbulence Using JVAS and VLA Calibrator Sources**  
**Author(s):** Sarah Betti<sup>1</sup>  
*Institution(s):*<sup>1</sup> National Radio Astronomy Observatory
- 141.06 Tracing Dust Grains from Supernovae to The Solar Nebulae**  
**Author(s):** Ian Luebbers<sup>1</sup>, Matthew Goodson<sup>2</sup>, Fabian Heitsch<sup>2</sup>  
*Institution(s):*<sup>1</sup> Macalester College, <sup>2</sup> The University of North Carolina at Chapel Hill
- 141.07 Mapping Buried Impact Craters in the Chryse Basin to Understand the Distribution of Outflow Channel Sediment**  
**Author(s):** Moira Miller<sup>2</sup>, Herbert V. Frey<sup>1</sup>  
*Institution(s):*<sup>1</sup> NASA Goddard Space Flight Center, <sup>2</sup> Virginia Tech
- 141.08 Thermophysical Model of S-complex NEAs: 1627 Ivar**  
**Author(s):** Jenna Crowell<sup>5</sup>, Ellen S. Howell<sup>3</sup>, Christopher Magri<sup>6</sup>, Yanga R. Fernandez<sup>5</sup>, Sean E. Marshall<sup>2</sup>, Brian D. Warner<sup>1</sup>, Ronald J. Vervack, Jr.<sup>4</sup>  
*Institution(s):*<sup>1</sup> Center for Solar System Studies - Palmer Divide Station, <sup>2</sup> Cornell University, <sup>3</sup> LPL/University of Arizona, <sup>4</sup> The Johns Hopkins University Applied Physics Laboratory, <sup>5</sup> University of Central Florida, <sup>6</sup> University of Maine at Farmington
- 141.09 Determining the Shape of an Asteroid**  
**Author(s):** Krista Hibert<sup>1</sup>, Helene Flohic<sup>1</sup>  
*Institution(s):*<sup>1</sup> University of the Pacific
- 141.10 Hilda Asteroid Colors: Insight into Giant Planet Migration?**  
**Author(s):** Benjamin Sharkey<sup>3</sup>, Erin L. Ryan<sup>2</sup>, Charles E. Woodward<sup>3</sup>, Keith S. Noll<sup>1</sup>  
*Institution(s):*<sup>1</sup> NASA Goddard, <sup>2</sup> U. Maryland, <sup>3</sup> University of Minnesota - Twin Cities
- 141.11 Detecting Mass Loss in Main Belt Asteroids**  
**Author(s):** Erik Sandberg<sup>2</sup>, Jayadev Rajagopal<sup>1</sup>, Susan E. Ridgway<sup>1</sup>, Ralf C. Kotulla<sup>3</sup>, Francisco Valdes<sup>1</sup>, Lori Allen<sup>1</sup>  
*Institution(s):*<sup>1</sup> NOAO, <sup>2</sup> NOAO/KPNO REU, <sup>3</sup> University of Wisconsin - Milwaukee
- 141.12 Small Jovian Trojan Asteroids: An Excess of Slow Rotators**  
**Author(s):** Linda M. French<sup>1</sup>  
*Institution(s):*<sup>1</sup> Illinois Wesleyan Univ.

- 141.13 A Continuing Analysis of Possible Activity Drivers for the Enigmatic Comet 29P/Schwassmann-Wachmann 1**  
**Author(s):** Charles Chambeau<sup>5</sup>, Yanga Fernández<sup>5</sup>, Nalin H. Samarasinha<sup>4</sup>, Beatrice E. A. Mueller<sup>4</sup>, Gal Sarid<sup>2</sup>, Karen Jean Meech<sup>3</sup>, Laura Woodney<sup>1</sup>  
*Institution(s):* <sup>1</sup> California State University, San Bernardino, <sup>2</sup> Florida Space Institute, <sup>3</sup> Institute for Astronomy, <sup>4</sup> Planetary Science Institute, <sup>5</sup> University of Central Florida
- 141.14 Searching for Simpler Models of Astrophysical Pattern Formation**  
**Author(s):** Eryn Cangi<sup>2</sup>, Daniel M Abrams<sup>1</sup>  
*Institution(s):* <sup>1</sup> Northwestern University, <sup>2</sup> University of Oregon
- 141.15 Orbit Refinement of Asteroids and Comets Using a Robotic Telescope Network**  
**Author(s):** Austin Lantz Caughey<sup>1</sup>, Johnny Brown<sup>1</sup>, Andrew W. Puckett<sup>1</sup>, Vivian L. Hoette<sup>2</sup>, Michael Johnson<sup>1</sup>, Cameron B McCarty<sup>1</sup>, Kevin Whitmore<sup>1</sup>  
*Institution(s):* <sup>1</sup> Columbus State University, <sup>2</sup> The University of Chicago, Yerkes Observatory
- 141.16 5 – 14  $\mu\text{m}$  Spitzer spectra of the Themis and Veritas asteroid families**  
**Author(s):** Zoe A. Landsman<sup>3</sup>, Javier Licandro<sup>1</sup>, Humberto Campins<sup>3</sup>, Julie Ziffer<sup>4</sup>, Mario de Prá<sup>2</sup>  
*Institution(s):* <sup>1</sup> Instituto de Astrofísica de Canarias (IAC), <sup>2</sup> Observatório Nacional, <sup>3</sup> University of Central Florida, <sup>4</sup> University of Southern Maine
- 141.17 A hard X-ray study of the Jovian magnetosphere with NuSTAR**  
**Author(s):** Kaya Mori<sup>2</sup>, Charles James Hailey<sup>2</sup>, Melania Nynka<sup>2</sup>, Brian Grefenstette<sup>1</sup>  
*Institution(s):* <sup>1</sup> California Institute of Technology, <sup>2</sup> Columbia University
- 141.18 Images Analysis of the Propeller Bleriot orbiting in Saturn's outer A Ring**  
**Author(s):** Cheng Chen<sup>1</sup>, Holger Hoffmann<sup>2</sup>, Frank Spahn<sup>2</sup>, Martin seiss<sup>2</sup>  
*Institution(s):* <sup>1</sup> Graduated Institute of Astronomy, National Central University, <sup>2</sup> Universität Potsdam
- 141.19 Observations of HCN and its Isotopologues on Titan using ALMA**  
**Author(s):** Edward Molter<sup>2</sup>, Conor A. Nixon<sup>2</sup>, Martin Cordiner<sup>2</sup>, Steven B. Charnley<sup>2</sup>, Patrick GJ Irwin<sup>3</sup>, Joseph Serigano<sup>1</sup>, Nicholas Teanby<sup>4</sup>  
*Institution(s):* <sup>1</sup> Dept. of Earth & Planetary Sciences, Johns Hopkins University, <sup>2</sup> NASA Goddard Space Flight Center, <sup>3</sup> Oxford University, <sup>4</sup> University of Bristol
- 141.20 Chemistry of the Upper Atmosphere of Neptune**  
**Author(s):** Elizabeth Nance<sup>1</sup>  
*Institution(s):* <sup>1</sup> St. Mary's College of Maryland
- 141.21 Stardust Under a Microscope - 3D maps of Wild 2/81P Cometary Samples in Aerogel**  
**Author(s):** Amanda J. White<sup>1</sup>, Denton Ebel<sup>1</sup>  
*Institution(s):* <sup>1</sup> American Museum of Natural History

## 141.22 The Distribution of Geometric Albedos of Jupiter-Family Comets From SEPPCoN and Visible-Wavelength Photometry

**Author(s):** Yanga R. Fernandez<sup>7</sup>, Harold A. Weaver<sup>2</sup>, Casey M. Lisse<sup>2</sup>, Karen Jean Meech<sup>5</sup>, Stephen C. Lowry<sup>6</sup>, James M. Bauer<sup>1</sup>, Alan Fitzsimmons<sup>4</sup>, Colin Snodgrass<sup>3</sup>

*Institution(s):* <sup>1.</sup> Caltech/JPL, <sup>2.</sup> JHU APL, <sup>3.</sup> Open Univ., <sup>4.</sup> Queen's Univ. Belfast, <sup>5.</sup> UH-Ifa, <sup>6.</sup> Univ. Kent, <sup>7.</sup> Univ. of Central Florida

## 142 Stars: Red Dwarfs, White Dwarfs and Brown Dwarfs Poster Session

Tuesday, 5:30 pm - 6:30 pm; Exhibit Hall A

### 142.01 The Census of Objects within 10 Parsecs

**Author(s):** Todd J. Henry<sup>4</sup>, Wei-Chun Jao<sup>3</sup>, Jennifer G. Winters<sup>3</sup>, Sergio Dieterich<sup>2</sup>, Charlie T. Finch<sup>6</sup>, Nigel C Hambly<sup>8</sup>, Philip A. Ianna<sup>4</sup>, Donald W. McCarthy<sup>7</sup>, Adric R. Riedel<sup>1</sup>, John P Subasavage<sup>5</sup>

*Institution(s):* <sup>1.</sup> Caltech, <sup>2.</sup> Carnegie Institution for Science, <sup>3.</sup> Georgia State University, <sup>4.</sup> RECONS Institute, <sup>5.</sup> United State Naval Observatory, <sup>6.</sup> United State Naval Observatory, <sup>7.</sup> University of Arizona, <sup>8.</sup> University of Edinburgh

### 142.02 Characterizing the Stars Closest to the Sun

**Author(s):** Elizabeth Dabrowski<sup>2</sup>, Jamie R Lomax<sup>1</sup>, Evan Rich<sup>1</sup>, John P. Wisniewski<sup>1</sup>

*Institution(s):* <sup>1.</sup> University of Oklahoma, <sup>2.</sup> University of Puget Sound

### 142.03 Knowing Our Neighbors: Two In and One Out

**Author(s):** Jennifer L. Bartlett<sup>5</sup>, John C. Lurie<sup>6</sup>, Philip A. Ianna<sup>3</sup>, Adric R. Riedel<sup>1</sup>, Jennifer G. Winters<sup>2</sup>, Charlie T. Finch<sup>5</sup>, Wei-Chun Jao<sup>2</sup>, John P Subasavage<sup>4</sup>, Todd J. Henry<sup>3</sup>

*Institution(s):* <sup>1.</sup> California Institute of Technology, <sup>2.</sup> Georgia State University, <sup>3.</sup> RECONS Institute, <sup>4.</sup> U.S. Naval Observatory, <sup>5.</sup> U.S. Naval Observatory, <sup>6.</sup> University of Washington

### 142.04 The Motion Verified Red Stars (MoVeRS) Catalog and Low-Mass Field Stars with Warm Dust

**Author(s):** Christopher Theissen<sup>1</sup>, Andrew A. West<sup>1</sup>, Saurav Dhital<sup>2</sup>

*Institution(s):* <sup>1.</sup> Boston University, <sup>2.</sup> Embry-Riddle Aeronautical University

### 142.05 Mapping the Abyss: A Breakthrough in Mass Determinations for Stars and Brown Dwarfs using HST and RECONS Astrometry

**Author(s):** Raymond Andrew Sevrinsky<sup>1</sup>, Todd J. Henry<sup>2</sup>, Wei-Chun Jao<sup>1</sup>

*Institution(s):* <sup>1.</sup> Georgia State University, <sup>2.</sup> RECONS Institute

### 142.06 A Study of the Wide Main Sequence: The Long-Term Photometric Variability of Low Mass Stars

**Author(s):** Tiffany Pewett<sup>3</sup>, Todd J. Henry<sup>4</sup>, Altonio D Hosey<sup>4</sup>, Sergio Dieterich<sup>2</sup>, Wei-Chun Jao<sup>3</sup>, Jennifer G. Winters<sup>3</sup>, Adric R. Riedel<sup>1</sup>

*Institution(s):* <sup>1.</sup> American Museum of Natural History, <sup>2.</sup> Carnegie Institution for Science, <sup>3.</sup> Georgia State University, <sup>4.</sup> RECONS Institute

- 142.07 Potential Nearby M Dwarf Stars Selected from the 2MASS Catalogs**  
**Author(s):** Thomas H. Robertson<sup>1</sup>, Dayna L Thompson<sup>1</sup>  
*Institution(s):* <sup>1</sup> Ball State Univ.
- 142.09 Stellar & Planetary Parameters for K2's M dwarf Systems**  
**Author(s):** Arturo Omar Martinez<sup>5</sup>, Ian Crossfield<sup>6</sup>, Joshua E. Schlieder<sup>4</sup>, Erik Petigura<sup>1</sup>, Kimberly Mei Aller<sup>7</sup>, Sebastien Lepine<sup>2</sup>, Charles A. Beichman<sup>1</sup>, Andrew Howard<sup>7</sup>, Michael W. Werner<sup>3</sup>  
*Institution(s):* <sup>1</sup> Caltech, <sup>2</sup> Georgia State University, <sup>3</sup> Jet Propulsion Laboratory, <sup>4</sup> NASA/Ames, <sup>5</sup> San Diego State University, <sup>6</sup> University of Arizona, <sup>7</sup> University of Hawaii/Institute of Astronomy
- 142.11 White Dwarf-M Dwarf Binaries in the Solar Neighborhood**  
**Author(s):** Julie N. Skinner<sup>1</sup>, Dylan P. Morgan<sup>1</sup>, John R Thorstensen<sup>2</sup>, Sebastien Lepine<sup>3</sup>  
*Institution(s):* <sup>1</sup> Boston University, <sup>2</sup> Dartmouth College, <sup>3</sup> Georgia State University
- 142.12 Quantitative Spectral Morphology Analysis of Unusually Red and Blue L Dwarfs**  
**Author(s):** Sara Camnasio<sup>3</sup>, Munazza Khalida Alam<sup>3</sup>, Emily L. Rice<sup>2</sup>, Kelle L. Cruz<sup>3</sup>, Jacqueline K. Faherty<sup>1</sup>, Gregory N. Mace<sup>5</sup>, Emily Martin<sup>4</sup>, Sarah E. Logsdon<sup>4</sup>, Ian S. McLean<sup>4</sup>  
*Institution(s):* <sup>1</sup> Carnegie Institution of Washington, <sup>2</sup> CUNY College of Staten Island, <sup>3</sup> CUNY Hunter College, <sup>4</sup> University of California, Los Angeles, <sup>5</sup> University of Texas at Austin
- 142.13 Combing the Brown Dwarf Desert with the APOGEE Catalog of Stellar and Substellar Companion Candidates**  
**Author(s):** Nicholas William Troup<sup>6</sup>, Nathan M. De Lee<sup>3</sup>, Joleen K. Carlberg<sup>2</sup>, David L. Nidever<sup>4</sup>, Steven R. Majewski<sup>6</sup>, Keivan Stassun<sup>7</sup>, Kevin R. Covey<sup>8</sup>, Michael F. Skrutskie<sup>6</sup>, Carlos Allende-Prieto<sup>1</sup>, Fred R. Hearty<sup>5</sup>  
*Institution(s):* <sup>1</sup> Instituto de Astrofísica de Canarias, <sup>2</sup> NASA Goddard Spaceflight Center, <sup>3</sup> Northern Kentucky University, <sup>4</sup> Steward Observatory/UA, <sup>5</sup> The Pennsylvania State University, <sup>6</sup> University of Virginia, <sup>7</sup> Vanderbilt University, <sup>8</sup> Western Washington University
- 142.14 Photometry, Astrometry, and Young Discoveries of Ultracool Dwarfs in the Pan-STARRS1 3 $\pi$  Survey**  
**Author(s):** William M. J. Best<sup>1</sup>, Eugene A. Magnier<sup>1</sup>, Michael C. Liu<sup>1</sup>  
*Institution(s):* <sup>1</sup> Institute for Astronomy, University of Hawaii
- 142.15 Quantifying Slopes of L Dwarfs' and Planetary Mass Objects' K Band Spectra**  
**Author(s):** Cam Buzard<sup>1</sup>, Kelle L. Cruz<sup>2</sup>  
*Institution(s):* <sup>1</sup> Barnard College, <sup>2</sup> CUNY Hunter

- 142.16 High-Resolution Spectral Line Analysis of Unusually Red and Blue L Dwarfs**  
**Author(s):** Emily L. Rice<sup>2</sup>, Munazza Khalida Alam<sup>3</sup>, Sara Camnasio<sup>3</sup>, Kelle L. Cruz<sup>3</sup>, Jacqueline K. Faherty<sup>1</sup>, Gregory Mace<sup>5</sup>, Emily Martin<sup>4</sup>, Sarah E. Logsdon<sup>4</sup>, Ian S. McLean<sup>4</sup>  
*Institution(s):* <sup>1</sup> Carnegie Institution of Washington, <sup>2</sup> CUNY College of Staten Island, <sup>3</sup> CUNY Hunter College, <sup>4</sup> University of California, Los Angeles, <sup>5</sup> University of Texas at Austin
- 142.17 Atmospheric Properties of T Dwarfs Inferred from Model Fits at Low Spectral Resolution**  
**Author(s):** Paige A. Godfrey<sup>2</sup>, Emily L. Rice<sup>2</sup>, Joe Filippazzo<sup>2</sup>, Stephanie Douglas<sup>1</sup>  
*Institution(s):* <sup>1</sup> Columbia University, <sup>2</sup> CUNY College of Staten Island
- 142.18 Brown Dwarf Binary Statistics in a Volume-Limited Spectroscopic Sample of 25pc**  
**Author(s):** Daniella Bardalez Gagliuffi<sup>7</sup>, Adam J. Burgasser<sup>7</sup>, Christopher R. Gelino<sup>2</sup>, Jacqueline K. Faherty<sup>3</sup>, Kelle L. Cruz<sup>1</sup>, Nathalie Skrzypek<sup>4</sup>, Sarah J. Schmidt<sup>5</sup>, JOHANNES SAHLMANN<sup>6</sup>  
*Institution(s):* <sup>1</sup> American Museum of Natural History, <sup>2</sup> California Institute of Technology, <sup>3</sup> Carnegie Department of Terrestrial Magnetism, <sup>4</sup> Imperial College, <sup>5</sup> Ohio State University, <sup>6</sup> Space Telescope Science Institute, <sup>7</sup> University of California, San Diego
- 142.19 TRENDS: Compendium of Benchmark Objects**  
**Author(s):** Erica J. Gonzales<sup>4</sup>, Justin R. Crepp<sup>4</sup>, Eric Bechter<sup>4</sup>, John A. Johnson<sup>1</sup>, Benjamin T. Montet<sup>1</sup>, Andrew Howard<sup>2</sup>, Geoffrey W. Marcy<sup>3</sup>, Howard T. Isaacson<sup>3</sup>  
*Institution(s):* <sup>1</sup> Harvard-Smithsonian Center for Astrophysics, <sup>2</sup> Institute for Astronomy, University of Hawaii, <sup>3</sup> University of California, Berkeley, <sup>4</sup> University of Notre Dame
- 142.20 The possible false-detection of a transiting brown dwarf candidate in the overlapping fields of Kepler and MARVELS**  
**Author(s):** Alan Reyes<sup>2</sup>, Jian Ge<sup>2</sup>, Neil Thomas<sup>1</sup>, Bo Ma<sup>2</sup>, Michael Francis Heslar<sup>2</sup>  
*Institution(s):* <sup>1</sup> United States Air Force Academy, <sup>2</sup> University of Florida
- 142.21 The Mass-Radius-Luminosity-Rotation Relationship for M Dwarf Stars**  
**Author(s):** Eunkyoo Han<sup>2</sup>, Philip Steven Muirhead<sup>2</sup>, Jonathan Swift<sup>3</sup>, Howard T. Isaacson<sup>4</sup>, Daniel DeFelippis<sup>1</sup>  
*Institution(s):* <sup>1</sup> Columbia University, <sup>2</sup> Department of Astronomy, Boston University, <sup>3</sup> The Thacher School, <sup>4</sup> University of California

**143 Stellar Winds and Stellar Atmospheres Poster Session**

Tuesday, 5:30 pm - 6:30 pm; Exhibit Hall A

- 143.02 Discovering Massive Runaway Stars with Infrared Bow Shock Nebulae: Four OB Stars Found in WISE**  
**Author(s):** Heather N. Wernke<sup>3</sup>, Henry A. Kobulnicky<sup>5</sup>, Daniel A. Dale<sup>5</sup>, Matthew S. Povich<sup>1</sup>, Julian E. Andrews<sup>1</sup>, William T. Chick<sup>5</sup>, Stephan Munari<sup>5</sup>, Grace M. Olivier<sup>2</sup>, Danielle Schurhammer<sup>5</sup>, Rebecca L. Sorber<sup>4</sup>  
*Institution(s):* <sup>1</sup> California State Polytechnic University, <sup>2</sup> Case Western Reserve University, <sup>3</sup> Embry-Riddle Aeronautical University, <sup>4</sup> Front Range Community College, <sup>5</sup> University of Wyoming
- 143.03 Discovering Massive Runaway Stars with Infrared Bow Shock Nebulae: Four New OB Runaway Candidate Stars Found in WISE Atlas Images**  
**Author(s):** Grace M. Olivier<sup>2</sup>, Henry A. Kobulnicky<sup>5</sup>, Matthew S. Povich<sup>1</sup>, William T. Chick<sup>5</sup>, Daniel A. Dale<sup>5</sup>, Julian E. Andrews<sup>1</sup>, Stephan Munari<sup>5</sup>, Danielle Schurhammer<sup>5</sup>, Rebecca Sorber<sup>4</sup>, Heather N. Wernke<sup>3</sup>  
*Institution(s):* <sup>1</sup> California State Polytechnic University, Pomona, <sup>2</sup> Case Western Reserve University, <sup>3</sup> Embry Riddle Aeronautical University, <sup>4</sup> Front Range Community College, <sup>5</sup> University of Wyoming
- 143.04 Discovering Massive Runaway Stars with Infrared Bow Shock Nebulae: First Results**  
**Author(s):** Julian E. Andrews<sup>1</sup>, Matthew S. Povich<sup>1</sup>, Henry A. Kobulnicky<sup>5</sup>, William T. Chick<sup>5</sup>, Daniel A. Dale<sup>5</sup>, Stephan Munari<sup>5</sup>, Grace M. Olivier<sup>2</sup>, Danielle Schurhammer<sup>5</sup>, Rebecca L. Sorber<sup>4</sup>, Heather N. Wernke<sup>3</sup>  
*Institution(s):* <sup>1</sup> Cal Poly Pomona, <sup>2</sup> Case Western Reserve University, <sup>3</sup> Embry-Riddle Aeronautical University, <sup>4</sup> Front Range Community College, <sup>5</sup> University of Wyoming
- 143.05 Discovering Massive Runaway Stars with Infrared Bowshock Nebulae: Identifying Twelve New Early-Type Stars using SMOG**  
**Author(s):** William T. Chick<sup>5</sup>, Julian E. Andrews<sup>1</sup>, Henry A. Kobulnicky<sup>5</sup>, Matthew S. Povich<sup>1</sup>, Daniel A. Dale<sup>5</sup>, Stephan Munari<sup>5</sup>, Grace M. Olivier<sup>2</sup>, Danielle Schurhammer<sup>5</sup>, Rebecca L. Sorber<sup>4</sup>, Heather N. Wernke<sup>3</sup>  
*Institution(s):* <sup>1</sup> Cal Poly Pomona, <sup>2</sup> Case Western Reserve University, <sup>3</sup> Embry-Riddle Aeronautical University, <sup>4</sup> Front Range Community College, <sup>5</sup> University of Wyoming
- 143.06 Identifying Massive Runaway Stars by Detecting Infrared Bowshock Nebula: Four OB Stars and a New Massive Early-B Binary System**  
**Author(s):** Rebecca L. Sorber<sup>1</sup>  
*Institution(s):* <sup>1</sup> Front Range Community College

# TUESDAY, 5 JANUARY 2016

**143.07 Utilizing Synthetic Spectra to Refine Lambda Boo Stars' UV Classification Criteria**

**Author(s):** Kwang-Ping Cheng<sup>2</sup>, James E. Neff<sup>3</sup>, Dustin Johnson<sup>2</sup>, Erik Tarbell<sup>2</sup>, Christopher Romo<sup>2</sup>, Patricia Steele<sup>3</sup>, Richard O. Gray<sup>1</sup>, Christopher J. Corbally<sup>4</sup>  
*Institution(s):* <sup>1</sup> *Appalachian State Univ.*, <sup>2</sup> *Cal. State Univ., Fullerton*, <sup>3</sup> *College of Charleston*, <sup>4</sup> *Vatican Observatory*

**143.08 The Abundances of the Fe Group Elements in Early B Stars in the Magellanic Clouds and Bridge**

**Author(s):** Geraldine J. Peters<sup>2</sup>, Saul J. Adelman<sup>1</sup>  
*Institution(s):* <sup>1</sup> *The Citadel*, <sup>2</sup> *Univ. of Southern California*

**143.09 Am stars and the influence of binarity on infall**

**Author(s):** Charles R. Cowley<sup>1</sup>  
*Institution(s):* <sup>1</sup> *Univ. of Michigan*

**143.10 Abundance analysis of five field blue horizontal-branch stars**

**Author(s):** Francis LeBlanc<sup>1</sup>, Issouf Kafando<sup>2</sup>, Carmelle Robert<sup>2</sup>  
*Institution(s):* <sup>1</sup> *Université de Moncton*, <sup>2</sup> *Université Laval*

## 144 Variable Stars & White Dwarfs Poster Session

Tuesday, 5:30 pm - 6:30 pm; Exhibit Hall A

**144.01 On The Origin of The Elements: The Spectacular Role of White Dwarfs**

**Author(s):** Carl Fields<sup>1</sup>, Robert Farmer<sup>1</sup>, Ilka Petermann<sup>1</sup>, Francis Timmes<sup>1</sup>  
*Institution(s):* <sup>1</sup> *Arizona State University*

**144.02 A Study of Short-term White Dwarf Variability Using gPhoton**

**Author(s):** Michael Tucker<sup>3</sup>, Scott W. Fleming<sup>3</sup>, Daniel B. Caton<sup>1</sup>, Chase Million<sup>2</sup>, Bernie Shiao<sup>3</sup>  
*Institution(s):* <sup>1</sup> *Appalachian State University*, <sup>2</sup> *Million Concepts*, <sup>3</sup> *Space Telescope Science Institute*

**144.03 Release of the gPhoton Database of GALEX Photon Events**

**Author(s):** Scott W. Fleming<sup>3</sup>, Chase Million<sup>2</sup>, Bernie Shiao<sup>3</sup>, Michael Tucker<sup>1</sup>, R. O. Parke Loyd<sup>4</sup>  
*Institution(s):* <sup>1</sup> *Appalachian State University*, <sup>2</sup> *Million Concepts*, <sup>3</sup> *Space Telescope Science Institute*, <sup>4</sup> *University of Colorado*

**144.04 Photometry of the old nova HZ Pup**

**Author(s):** Tomas Cassanelli<sup>2</sup>, Tim Abbott<sup>1</sup>  
*Institution(s):* <sup>1</sup> *CTIO*, <sup>2</sup> *University of Bonn*

**144.05 There and Back Again?: The Disappearing Pulsations of CS 1246**

**Author(s):** Alan Vasquez Soto<sup>1</sup>, Brad Barlow<sup>1</sup>  
*Institution(s):* <sup>1</sup> *High Point University*

**144.06 Time Series Photometry of the Variable Stars AN Lyn and UU Lyn**

**Author(s):** Leanne Teri Lunsford<sup>1</sup>, Michael D. Joner<sup>1</sup>, Eric G. Hintz<sup>1</sup>  
*Institution(s):* <sup>1</sup> *Brigham Young University*

- 144.07 Time Series Photometry of KZ Lacertae**  
**Author(s):** Michael D. Joner<sup>1</sup>  
*Institution(s):* <sup>1</sup> Brigham Young Univ.
- 144.08 Photometric and Spectroscopic Analysis of the delta Scuti Variable V2455 Cygni**  
**Author(s):** Marissa Mannard<sup>1</sup>, Eric G. Hintz<sup>1</sup>, Michael D. Joner<sup>1</sup>  
*Institution(s):* <sup>1</sup> Brigham Young University
- 144.09 KELT RR Lyrae Variable Stars Observed by the NKU Schneider Observatory**  
**Author(s):** Nathan M. De Lee<sup>3</sup>, Neil Russell<sup>3</sup>, Karen Kinemuchi<sup>1</sup>, Joshua Pepper<sup>2</sup>, Joseph E. Rodriguez<sup>4</sup>, Martin Paegert<sup>4</sup>  
*Institution(s):* <sup>1</sup> Apache Point Observatory, <sup>2</sup> Lehigh University, <sup>3</sup> Northern Kentucky University, <sup>4</sup> Vanderbilt University
- 144.10 Observing Globular Cluster RR Lyraes with the BYU West Mountain Observator**  
**Author(s):** Elizabeth Jeffery<sup>1</sup>, Michael D. Joner<sup>1</sup>  
*Institution(s):* <sup>1</sup> Brigham Young University
- 144.11 A Swift/UVOT Survey of RR Lyrae Stars in the M2 and Omega Centauri Globular Clusters**  
**Author(s):** Michael Siegel<sup>1</sup>, Benjamin Balzer<sup>1</sup>  
*Institution(s):* <sup>1</sup> Pennsylvania State University
- 144.12 Fourier Decomposition and Properties of the Variable Stars in the Globular Cluster NGC 6584**  
**Author(s):** Paul T Hettinger<sup>1</sup>, Nathan J Villiger<sup>1</sup>, Brian W. Murphy<sup>1</sup>  
*Institution(s):* <sup>1</sup> Butler University
- 144.13 K2 and M4: A Unique Opportunity to Unlock the Mysteries of Globular Clusters**  
**Author(s):** Charles A. Kuehn<sup>4</sup>, Dennis Stello<sup>5</sup>, Simon Campbell<sup>2</sup>, Jason Drury<sup>5</sup>, Gayandhi de Silva<sup>1</sup>, Ben Maclean<sup>3</sup>, Timothy R Bedding<sup>5</sup>, Daniel Huber<sup>5</sup>  
*Institution(s):* <sup>1</sup> Australian Astronomical Observatory, <sup>2</sup> Max Planck Institute for Astrophysics, <sup>3</sup> Monash University, <sup>4</sup> University of Northern Colorado, <sup>5</sup> University of Sydney
- 144.14 Light Curve Models of Rotationally Distorted, Pulsating Stars**  
**Author(s):** M. Virginia McSwain<sup>1</sup>  
*Institution(s):* <sup>1</sup> Lehigh Univ.
- 144.15 RR Lyrae Variables in M33: an analysis of the galaxy's population**  
**Author(s):** Nahathai Tanakul<sup>2</sup>, Ata Sarajedini<sup>2</sup>, Soung-Chul Yang<sup>1</sup>  
*Institution(s):* <sup>1</sup> Korean Astronomy and Space Science institute (KASI), <sup>2</sup> University of Florida
- 144.16 The star formation history of DDO210 as probed by its pulsating variable stars**  
**Author(s):** Antonio J Ordoñez<sup>1</sup>, Ata Sarajedini<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Florida

# TUESDAY, 5 JANUARY 2016

- 144.17 Starspots on LO Pegasi, 2006-2015**  
**Author(s):** Robert O. Harmon<sup>2</sup>, Mark Chalmers<sup>2</sup>, Robel Geda<sup>3</sup>, Brandi Henry<sup>1</sup>, Viesulas Sliupas<sup>2</sup>  
*Institution(s):* <sup>1</sup> Eastern University, <sup>2</sup> Ohio Wesleyan University, <sup>3</sup> Rutgers University
- 144.18 Direct Measures of Time-Dependent Diameters and Temperatures of Mira Variables**  
**Author(s):** Alma Emilia Ruiz-Velasco<sup>1</sup>, Gerard van Belle<sup>1</sup>, Michelle J. Creech-Eakman<sup>2</sup>  
*Institution(s):* <sup>1</sup> Lowell Observatory, <sup>2</sup> New Mexico Institute of Mining and Technology
- 144.19 Cepheid light curve demography via Bayesian functional data analysis**  
**Author(s):** Thomas J. Loredo<sup>1</sup>, Martin Hendry<sup>3</sup>, Daniel Kowal<sup>2</sup>, David Ruppert<sup>2</sup>  
*Institution(s):* <sup>1</sup> Cornell Center for Astrophysics and Planetary Science, <sup>2</sup> Cornell University, <sup>3</sup> University of Glasgow
- 144.20 Spitzer mid-IR colors as Cepheid metallicity indicators**  
**Author(s):** Victoria Scowcroft<sup>1</sup>, Wendy L. Freedman<sup>4</sup>, Barry Madore<sup>1</sup>, Rachael Beaton<sup>1</sup>, Jeffrey Rich<sup>1</sup>, Mark Seibert<sup>1</sup>, Andy Monson<sup>3</sup>, Jane R. Rigby<sup>2</sup>  
*Institution(s):* <sup>1</sup> Carnegie Institution for Science, <sup>2</sup> NASA Goddard, <sup>3</sup> Penn State, <sup>4</sup> University of Chicago
- 144.21 The Shocking Truth about Cepheids: The Secret X-ray Lives of Classical Cepheids: Origin of Pulsed FUV and X-Ray Emissions of delta Cep and beta Dor**  
**Author(s):** John Ruby<sup>1</sup>, Scott G. Engle<sup>1</sup>, Edward F. Guinan<sup>1</sup>  
*Institution(s):* <sup>1</sup> Villanova University
- 144.22 The Secret Lives of Cepheids: Searching for Evolutionary Changes Using Photoelectric Photometry**  
**Author(s):** Michael Toce<sup>1</sup>, Edward F. Guinan<sup>1</sup>, Scott G. Engle<sup>1</sup>, Richard P. Wasatonic<sup>1</sup>  
*Institution(s):* <sup>1</sup> Villanova University
- 144.23 Analysis of Kepler Observations of ASAS Variable Stars**  
**Author(s):** Jacklyn M Pezzato<sup>2</sup>, Kenneth J. Mighell<sup>1</sup>  
*Institution(s):* <sup>1</sup> National Optical Astronomy Observatory, <sup>2</sup> Swarthmore College
- 144.24 AGB Stars in the Large and Small Magellanic Clouds**  
**Author(s):** Matthew Portman<sup>2</sup>, Benjamin A. Sargent<sup>1</sup>, Leander Held<sup>1</sup>, Joel Kastner<sup>1</sup>  
*Institution(s):* <sup>1</sup> Rochester Institute of Technology, <sup>2</sup> University of Texas at Dallas
- 144.25 The Pan-STARRS 1 Medium Deep Field Variable Star Catalog**  
**Author(s):** Heather Flewelling<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Hawaii

**144.26 Fourier Decomposition and Properties of the Variable Stars in the Globular Cluster NGC 4833**

**Author(s):** Hunter M Reed<sup>1</sup>, Michael A Pajkos<sup>1</sup>, Brian W. Murphy<sup>1</sup>, Andrew Darragh<sup>1</sup>

*Institution(s):* <sup>1</sup> Butler University

**145 Stars: Age, Rotation and Activity Poster Session**

Tuesday, 5:30 pm - 6:30 pm; Exhibit Hall A

**145.01 Finding the Orientation of the Stellar Spin Axis**

**Author(s):** Tessa D Wilkinson<sup>2</sup>, Anna-Lea Lesage<sup>1</sup>

*Institution(s):* <sup>1</sup> Leiden University, <sup>2</sup> University of Washington

**145.02 Angular Momentum Evolution of Solar-type Stars and Implications for Gyrochronology**

**Author(s):** Donald M. Terndrup<sup>1</sup>, Garrett Somers<sup>1</sup>, Jamie Tayar<sup>1</sup>, Marc H. Pinsonneault<sup>1</sup>

*Institution(s):* <sup>1</sup> Ohio State Univ.

**145.03 Comparative Analysis of Age Indicators in Young M and L dwarfs**

**Author(s):** Kelle L. Cruz<sup>4</sup>, Carolina Galindo<sup>3</sup>, Jacqueline K. Faherty<sup>2</sup>, Adric R. Riedel<sup>1</sup>

*Institution(s):* <sup>1</sup> California Institute of Technology, <sup>2</sup> Carnegie Institution of Washington, <sup>3</sup> CUNY Graduate Center, <sup>4</sup> CUNY Hunter College

**145.04 Dating the Stars Next Door: Ages and Coronal X-Ray Activities of Local K-Type Stars**

**Author(s):** Marcus Katynski<sup>1</sup>, Edward F. Guinan<sup>1</sup>, Scott G. Engle<sup>1</sup>

*Institution(s):* <sup>1</sup> Villanova University

**145.05 Fundamental Parameters of Nearby Red Dwarfs: Stellar Radius as an Indicator of Age**

**Author(s):** Michele L. Silverstein<sup>3</sup>, Todd J. Henry<sup>4</sup>, Jennifer G. Winters<sup>3</sup>, Wei-Chun Jao<sup>3</sup>, Adric R. Riedel<sup>1</sup>, Sergio Dieterich<sup>2</sup>

*Institution(s):* <sup>1</sup> California Institute of Technology, <sup>2</sup> Carnegie Institution for Science, <sup>3</sup> Georgia State University, <sup>4</sup> RECONS Institute

**145.06 Fast Rotators in Kepler 2: An Empirical Method to Determine Spot Lifetime**

**Author(s):** Dicy Ann E. Saylor<sup>1</sup>, Sebastien Lepine<sup>1</sup>, Ian Crossfield<sup>2</sup>, Erik Petigura<sup>4</sup>, Joshua E. Schlieder<sup>3</sup>

*Institution(s):* <sup>1</sup> Georgia State University, <sup>2</sup> Lunar and Planetary Lab, <sup>3</sup> NASA Ames Research Center, <sup>4</sup> University of California, Berkeley

**145.07 A Million Years Young: Determining the Ages of 11 Suspected Young Brown Dwarfs**

**Author(s):** Ellie Schwab<sup>3</sup>, Victoria DiTomasso<sup>5</sup>, Adric R. Riedel<sup>1</sup>, Emily L. Rice<sup>4</sup>, Kelle L. Cruz<sup>5</sup>, Jacqueline K. Faherty<sup>2</sup>

*Institution(s):* <sup>1</sup> California Institute of Technology, <sup>2</sup> Carnegie Institution of Washington, <sup>3</sup> CUNY City College of New York, <sup>4</sup> CUNY College of Staten Island, <sup>5</sup> CUNY Hunter College

# TUESDAY, 5 JANUARY 2016

- 145.08 Measuring M Dwarf Rotation in the Pan-STARRS 1 Medium Deep Survey**  
**Author(s):** Erin R Fong<sup>2</sup>, Peter K. G. Williams<sup>1</sup>, Edo Berger<sup>1</sup>  
*Institution(s):* <sup>1</sup> Harvard-Smithsonian Center for Astrophysics, <sup>2</sup> Tufts University
- 145.09 Initial K2 results on Pleiades Rotation Rates**  
**Author(s):** Luisa M. Rebull<sup>2</sup>, Jerome Bouvier<sup>1</sup>, John R. Stauffer<sup>2</sup>, Ann Marie Cody<sup>3</sup>  
*Institution(s):* <sup>1</sup> Institut de Planetologie et d'Astrophysique de Grenoble (IPAG), <sup>2</sup> IPAC/Caltech, <sup>3</sup> NASA/Ames
- 145.10 Measuring the rotation periods of 4-10 Myr T-Tauri stars in the Orion OB1 association**  
**Author(s):** Md Tanveer Karim<sup>8</sup>, Keivan Stassun<sup>9</sup>, Cesar Briceño<sup>4</sup>, Kathy Vivas<sup>4</sup>, Stefanie Raetz<sup>5</sup>, Nuria Calvet<sup>7</sup>, Cecilia Mateu<sup>3</sup>, Juan Jose Downes<sup>3</sup>, Jesus Hernandez<sup>3</sup>, Ralph Neuhäuser<sup>2</sup>, Markus Mugrauer<sup>2</sup>, Hidenori Takahashi<sup>6</sup>, Kengo Tachihara<sup>6</sup>, Rolf Chini<sup>1</sup>  
*Institution(s):* <sup>1</sup> Astronomisches Institut, Ruhr-Universität Bochum, <sup>2</sup> Astrophysikalisches Institut und Universitäts-Sternwarte, <sup>3</sup> Centro de Investigaciones de Astronomía, <sup>4</sup> Cerro Tololo Inter-American Observatory, <sup>5</sup> European Space Research and Technology Centre, <sup>6</sup> Gunma Astronomical Observatory, <sup>7</sup> University of Michigan, <sup>8</sup> University of Rochester, <sup>9</sup> Vanderbilt University
- 145.12 Activity and Variability in M Dwarfs**  
**Author(s):** Madison Hill<sup>2</sup>, Andrew A. West<sup>1</sup>  
*Institution(s):* <sup>1</sup> Boston University, <sup>2</sup> Gettysburg College
- 145.13 Simulating Starspot Properties as a Function of Stellar Properties When Emergence Rates are High**  
**Author(s):** Kate Hotton<sup>1</sup>, Steven H. Saar<sup>1</sup>  
*Institution(s):* <sup>1</sup> Harvard-Smithsonian, CfA
- 145.14 GALEX Observes Nearby Cool Stars: Constraints on Ultraviolet Coronal Activity**  
**Author(s):** Jonathan Wheatley<sup>1</sup>, Barry Welsh<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of California Berkeley
- 145.15 Magnetic Activity of Ultracool Dwarfs**  
**Author(s):** Myles McKay<sup>2</sup>, Rachel A. Osten<sup>3</sup>, Beate Stelzer<sup>1</sup>  
*Institution(s):* <sup>1</sup> Istituto Nazionale di Astrofisica, <sup>2</sup> South Carolina State University, <sup>3</sup> Space Telescope Science Institute
- 145.16 Determining Stellar Magnetic Fields and Coronal Densities by Radio Spectrum Modeling**  
**Author(s):** Sophie Deam<sup>1</sup>, Tyler Stercula<sup>1</sup>, Erin Maier<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Iowa

**145.17 A Very Bright, Very Hot, and Very Long Flaring Event from the Young Nearby M Dwarf Binary DG CVn**

**Author(s):** Rachel A. Osten<sup>5</sup>, Stephen Alan Drake<sup>9</sup>, Adam Kowalski<sup>8</sup>, Hans A. Krimm<sup>3</sup>, Kim Page<sup>7</sup>, Kosmas Gazeas<sup>6</sup>, Jamie A. Kennea<sup>4</sup>, Sam Oates<sup>1</sup>, Mat Page<sup>2</sup>, Neil Gehrels<sup>3</sup>

*Institution(s):* <sup>1</sup> Instituto de Astrofísica de Andalucía, <sup>2</sup> Mullard Space Science Lab, University College London, <sup>3</sup> NASA's GSFC, <sup>4</sup> Penn State University, <sup>5</sup> Space Telescope Science Institute, <sup>6</sup> University of Athens, <sup>7</sup> University of Leicester, <sup>8</sup> University of Maryland College Park, <sup>9</sup> USRA/CRESST

## 146 Instrumentation: Ground Based or Airborne Poster Session

Tuesday, 5:30 pm - 6:30 pm; Exhibit Hall A

**146.01 Developing an Interferometer to Measure the Global 21cm Monopole**

**Author(s):** Rachel Domagalski<sup>1</sup>, Nipanjana Patra<sup>1</sup>, Cherie Day<sup>1</sup>, Aaron Parsons<sup>1</sup>

*Institution(s):* <sup>1</sup> University of California, Berkeley

**146.02 The Half Wave Plate Rotator for the BLAST-TNG Balloon-Borne Telescope**

**Author(s):** Hananiel Setiawan<sup>2</sup>, Peter Ashton<sup>3</sup>, Giles Novak<sup>3</sup>, Francesco E Angilè<sup>4</sup>, Mark J. Devlin<sup>4</sup>, Nicholas Galitzki<sup>4</sup>, Peter Ade<sup>1</sup>, Simon Doyle<sup>1</sup>, Enzo Pascale<sup>1</sup>, Giampaolo Pisano<sup>1</sup>, Carole E Tucker<sup>1</sup>

*Institution(s):* <sup>1</sup> Cardiff University, <sup>2</sup> Michigan State University, <sup>3</sup> Northwestern University, <sup>4</sup> University of Pennsylvania

**146.03 The CCAT 25m-class Submillimeter Telescope**

**Author(s):** Michel Fich<sup>1</sup>

*Institution(s):* <sup>1</sup> Univ. of Waterloo

**146.04 Development of Kinetic Inductance Detectors for Far-Infrared Spectroscopy**

**Author(s):** Alyssa Barlis<sup>2</sup>, James E. Aguirre<sup>2</sup>, Thomas Stevenson<sup>1</sup>

*Institution(s):* <sup>1</sup> NASA Goddard Space Flight Center, <sup>2</sup> University of Pennsylvania

**146.05 FIREhose: Reducing Data from FIRE**

**Author(s):** Haley Diane Fica<sup>1</sup>, Erini Lambrides<sup>4</sup>, Jackie Faherty<sup>2</sup>, Kelle L. Cruz<sup>3</sup>

*Institution(s):* <sup>1</sup> Barnard College, <sup>2</sup> Carnegie Institute of Science, <sup>3</sup> CUNY Hunter College, <sup>4</sup> Johns Hopkins University

**146.06 MIRADAS: The Multi-Object R=22K Near-IR Spectropolarimeter for the 10.4-meter GTC**

**Author(s):** Stephen S. Eikenberry<sup>1</sup>

*Institution(s):* <sup>1</sup> Univ. of Florida

- 146.07 Laboratory Performance and Commissioning of the CHARIS IFS**  
**Author(s):** Tyler Dean Groff<sup>4</sup>, N. Jeremy Kasdin<sup>4</sup>, Michael Galvin<sup>4</sup>, Mary Anne Peters<sup>4</sup>, Jeffrey K. Chilcote<sup>7</sup>, Timothy Brandt<sup>2</sup>, Gillian R. Knapp<sup>4</sup>, Michael Carr<sup>4</sup>, Craig Loomis<sup>4</sup>, Michael W. McElwain<sup>1</sup>, Kyle Mede<sup>6</sup>, Olivier Guyon<sup>5</sup>, Nemanja Jovanovic<sup>5</sup>, Naruhisa Takato<sup>5</sup>, Masahiko Hayashi<sup>3</sup>  
*Institution(s):* <sup>1</sup>. *Goddard Space Flight Center*, <sup>2</sup>. *Institute for Advanced Studies*, <sup>3</sup>. *National Astronomical Observatory of Japan*, <sup>4</sup>. *Princeton University*, <sup>5</sup>. *Subaru Telescope*, <sup>6</sup>. *University of Tokyo*, <sup>7</sup>. *University of Toronto*
- 146.08 An Autonomous Ultra-High Frequency Satellite Downlink Station for the Arecibo Observatory**  
**Author(s):** Colin Mussman<sup>1</sup>  
*Institution(s):* <sup>1</sup>. *Arecibo Observatory*
- 146.09 Steps Toward Real-Time Atmospheric Phase Fluctuation Correction for a High Resolution Radar System**  
**Author(s):** Grant R. Denn<sup>2</sup>, Barry Geldzahler<sup>4</sup>, Rick Birr<sup>6</sup>, Robert Brown<sup>6</sup>, Richard Hoblitzell<sup>6</sup>, Kevin Grant<sup>6</sup>, Michael Miller<sup>6</sup>, Gary Woods<sup>6</sup>, Arby Archuleta<sup>1</sup>, Michael Ciminera<sup>1</sup>, Timothy Cornish<sup>1</sup>, faramaz davarian<sup>6</sup>, jonathan kocz<sup>1</sup>, dennis lee<sup>1</sup>, David Dominic Morabito<sup>1</sup>, Melissa Soriano<sup>1</sup>, Philip Tsao<sup>1</sup>, Victor Vilnrotter<sup>1</sup>, Hali Jakeman-Flores<sup>3</sup>, melanie Ott<sup>3</sup>, W. Joe Thomes<sup>3</sup>, Jason Soloff<sup>5</sup>  
*Institution(s):* <sup>1</sup>. *Jet Propulsion Laboratory*, <sup>2</sup>. *Metropolitan State University Of Denver*, <sup>3</sup>. *NASA Goddard Space Flight Center*, <sup>4</sup>. *NASA Headquarters*, <sup>5</sup>. *NASA Johnson Space Flight Center*, <sup>6</sup>. *NASA Kennedy Space Center*
- 146.10 Advanced astronomical interference filters from SCHOTT technology**  
**Author(s):** Anthony B. Hull<sup>4</sup>, Steffen Reichel<sup>2</sup>, Ulf Brauneck<sup>3</sup>, Sebastien Bourquin<sup>3</sup>, Antoni Marin-Franch<sup>1</sup>  
*Institution(s):* <sup>1</sup>. *CEFCA*, <sup>2</sup>. *SCHOTT AG*, <sup>3</sup>. *SCHOTT Suisse*, <sup>4</sup>. *University of New Mexico*
- 146.11 The Effects of Commercial Airline Traffic on LSST Observing Efficiency**  
**Author(s):** Rose Gibson<sup>2</sup>, Charles Claver<sup>1</sup>  
*Institution(s):* <sup>1</sup>. *LSST*, <sup>2</sup>. *Wellesley College*
- 146.12 Study of Optical Mode Scrambling of Fiber Optics for High Precision Radial Velocity Measurements**  
**Author(s):** Anthony Cassette<sup>1</sup>, Jian Ge<sup>1</sup>, Sarik Jeram<sup>1</sup>, Khaya Klanot<sup>1</sup>, Bo Ma<sup>1</sup>, Frank Varosi<sup>1</sup>  
*Institution(s):* <sup>1</sup>. *University of Florida*
- 146.13 Breaking the 1m/s RV Precision Limit**  
**Author(s):** Eric Bechter<sup>2</sup>, Justin R. Crepp<sup>2</sup>, David King<sup>1</sup>, Jonathan Crass<sup>2</sup>, Andrew Bechter<sup>2</sup>, Ryan Ketterer<sup>2</sup>  
*Institution(s):* <sup>1</sup>. *University of Cambridge*, <sup>2</sup>. *University of Notre Dame*

- 146.14 Verification of Absolute Calibration of Quantum Efficiency for LSST CCDs**  
**Author(s):** Rebecca Coles<sup>5</sup>, James Chiang<sup>4</sup>, David Cinabro<sup>5</sup>, Woodrow Gilbertson<sup>3</sup>, justine Haupt<sup>1</sup>, Ivan Kotov<sup>1</sup>, Homer Neal<sup>4</sup>, Andrei Nomerotski<sup>1</sup>, Paul O'Connor<sup>1</sup>, Christopher Stubbs<sup>2</sup>, Peter Takacs<sup>1</sup>  
*Institution(s):* <sup>1</sup> Brookhaven National Laboratory, <sup>2</sup> Harvard, <sup>3</sup> Purdue University, <sup>4</sup> SLAC National Accelerator Laboratory, <sup>5</sup> Wayne State University
- 146.15 An Investigation of CCD Charge Transfer and Detector Anomalies for a Low Light Level Application**  
**Author(s):** Samantha Dixon<sup>2</sup>, Greg Scott Aldering<sup>1</sup>, Rachel Domagalski<sup>2</sup>, Kyle Boone<sup>2</sup>, Parker Fagrelus<sup>2</sup>, Brian Hayden<sup>1</sup>, Saul Perlmutter<sup>1</sup>, Clare Saunders<sup>2</sup>, Caroline Sofiatti<sup>2</sup>  
*Institution(s):* <sup>1</sup> Lawrence Berkeley National Laboratory, <sup>2</sup> University of California, Berkeley
- 146.16 The Renovation and Future Capabilities of the Thacher Observatory**  
**Author(s):** Katie O'Neill<sup>1</sup>, Natalie Osuna<sup>1</sup>, Nick Edwards<sup>1</sup>, Douglas Klink<sup>1</sup>, Jonathan Swift<sup>1</sup>, Chris Vyhna<sup>1</sup>, Kurt Meyer<sup>1</sup>  
*Institution(s):* <sup>1</sup> The Thacher School
- 146.17 Astronomy Legacy Project – Pisgah Astronomical Research Institute**  
**Author(s):** Thurburn Barker<sup>2</sup>, Michael W. Castelaz<sup>1</sup>, Lee Rottler<sup>2</sup>, J. Donald Cline<sup>2</sup>  
*Institutions:* <sup>1</sup> Pisgah Astronomical Research Institute, Rosman, NC, United States. <sup>2</sup> Brevard College, Brevard, NC, United States.
- 146.18 Detection Limit for the Globally Distributed Falcon Telescope Network and Viability for Exoplanet Detection**  
**Author(s):** Steven Novotny<sup>1</sup>, Daniel Polsgrove<sup>1</sup>, Francis Chun<sup>1</sup>, Roger Tippetts<sup>1</sup>, Devin J. Della-Rose<sup>1</sup>, randall carlson<sup>1</sup>  
*Institution(s):* <sup>1</sup> US Air Force Academy
- 146.19 LRS2: A New Integral Field Spectrograph for the HET**  
**Author(s):** Sarah E. Tuttle<sup>2</sup>, Gary J. Hill<sup>2</sup>, Taylor S. Chonis<sup>2</sup>, Stephanie Tonnesen<sup>1</sup>  
*Institution(s):* <sup>1</sup> Carnegie Observatories, <sup>2</sup> University of Texas at Austin
- 146.20 Magdalena Ridge Observatory Interferometer – New Path to First Light**  
**Author(s):** Michelle J. Creech-Eakman<sup>2</sup>, Ifan Payne<sup>1</sup>, Chris Haniff<sup>3</sup>, David Buscher<sup>3</sup>, John Young<sup>3</sup>, Van Romero<sup>2</sup>  
*Institution(s):* <sup>1</sup> Magdalena Ridge Observatory, <sup>2</sup> New Mexico Tech., <sup>3</sup> University of Cambridge
- 146.21 Bringing Perfect Vision to the Daniel K. Inouye Solar Telescope**  
**Author(s):** Russ Matijevec<sup>2</sup>, Erik Johansson<sup>1</sup>, Luke Johnson<sup>1</sup>, Jeff Cavaco<sup>2</sup>  
*Institution(s):* <sup>1</sup> National Solar Observatory, <sup>2</sup> Northrop Grumman
- 146.22 Characterization of Silicon Moth-Eye Antireflection Coatings for Astronomical Applications in the Infrared**  
**Author(s):** Sarik Jeram<sup>1</sup>, Jian Ge<sup>1</sup>, Peng Jiang<sup>1</sup>, Blayne Phillips<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Florida

## 147 Instrumentation: Space Missions Poster Session

Tuesday, 5:30 pm - 6:30 pm; Exhibit Hall A

- 147.01 SPHEREx: An All-Sky Spectral Survey**  
**Author(s):** James Bock<sup>1</sup>  
*Institution(s):* <sup>1</sup> California Institute of Technology
- 147.02 Probing the Origin and Evolution of Interstellar and Protoplanetary Biogenic Molecules: A Comprehensive Survey of Interstellar Ices with SPHEREx**  
**Author(s):** Gary J. Melnick<sup>1</sup>  
*Institution(s):* <sup>1</sup> Harvard-Smithsonian, CfA
- 147.03 SPHEREx: Probing the Physics of Inflation**  
**Author(s):** Olivier Dore<sup>1</sup>  
*Institution(s):* <sup>1</sup> JPL/Caltech
- 147.04 SPHEREx: Understanding the Origin and Evolution of Galaxies Through the Extragalactic Background Light**  
**Author(s):** Michael B. Zemcov<sup>1</sup>  
*Institution(s):* <sup>1</sup> Rochester Institute of Technology
- 147.05 SPHEREx: Science Opportunities for the Astronomical Community**  
**Author(s):** Asantha R. Cooray<sup>1</sup>  
*Institution(s):* <sup>1</sup> UC Irvine
- 147.06 SPHEREx: Instrument design and implementation**  
**Author(s):** Phillip Korngut<sup>1</sup>  
*Institution(s):* <sup>1</sup> California Institute of Technology
- 147.07 WFC3/UVIS 2.0**  
**Author(s):** Susana E. Deustua<sup>1</sup>, Jennifer Mack<sup>1</sup>, Ariel Bowers<sup>1</sup>  
*Institution(s):* <sup>1</sup> Space Telescope Science Institute
- 147.08 HST WFC3/UVIS: charge transfer efficiency monitoring and mitigation**  
**Author(s):** Sylvia M. Baggett<sup>1</sup>, Megan L. Sosey<sup>1</sup>, Jay Anderson<sup>1</sup>, Catherine Gosmeyer<sup>1</sup>, Matthew Bourque<sup>1</sup>, Varun Bajaj<sup>1</sup>, Harish G. Khandrika<sup>1</sup>, Catherine Martlin<sup>1</sup>, Vera Kozhurina-Platais<sup>1</sup>, Elena Sabbi<sup>1</sup>  
*Institution(s):* <sup>1</sup> STScI
- 147.09 HST WFC3/IR Calibration Updates**  
**Author(s):** Meredith Durbin<sup>2</sup>, Gabriel Brammer<sup>2</sup>, Knox S. Long<sup>1</sup>, Norbert Pirzkal<sup>2</sup>, Russell E. Ryan<sup>2</sup>, Peter R. McCullough<sup>2</sup>, Sylvia M. Baggett<sup>2</sup>, Catherine Gosmeyer<sup>2</sup>, Matthew Bourque<sup>2</sup>  
*Institution(s):* <sup>1</sup> Eureka Scientific Inc, <sup>2</sup> Space Telescope Science Institute
- 147.10 HST WFC3: Instrument Status and Advice for Cycle 24 Proposers**  
**Author(s):** Elena Sabbi<sup>1</sup>  
*Institution(s):* <sup>1</sup> STScI

- 147.11 Updates on the Performance and Calibration of HST/STIS**  
**Author(s):** Sean A. Lockwood<sup>1</sup>, John H. Debes<sup>1</sup>, Justin Ely<sup>1</sup>, TalaWanda Monroe<sup>1</sup>, John A. Biretta<sup>1</sup>, Gisella De Rosa<sup>1</sup>, Mees Fix<sup>1</sup>, Andrew Fox<sup>1</sup>, Robert I. Jedrzejewski<sup>1</sup>, Cristina M. Oliveira<sup>1</sup>, Molly S. Peebles<sup>1</sup>, Steven V. Penton<sup>1</sup>, Rachel Plesha<sup>1</sup>, Charles R. Proffitt<sup>1</sup>, Julia Roman-Duval<sup>1</sup>, David J. Sahnou<sup>1</sup>, Paule Sonnentrucker<sup>1</sup>, Joanna M. Taylor<sup>1</sup>, Nolan R. Walborn<sup>1</sup>, James White<sup>1</sup>  
*Institution(s):* <sup>1</sup> STScI
- 147.12 Pixel-Based CTI Corrections for HST/STIS CCD Data**  
**Author(s):** John A. Biretta<sup>1</sup>, Sean A. Lockwood<sup>1</sup>, John H. Debes<sup>1</sup>  
*Institution(s):* <sup>1</sup> STScI
- 147.13 The Future of Flats Onboard JWST with the Near Infrared Camera**  
**Author(s):** Brian H. Brooks<sup>1</sup>  
*Institution(s):* <sup>1</sup> Space Telescope Science Institute
- 147.14 Observer's Interface for JWST Observation Specifications**  
**Author(s):** Miranda Link<sup>1</sup>, Robert Douglas<sup>1</sup>, Christopher Moriarty<sup>1</sup>, Anthony Roman<sup>1</sup>  
*Institution(s):* <sup>1</sup> Space Telescope Science Institute
- 147.15 JWST/MIRI Data Reduction Pipeline**  
**Author(s):** Stacey N. Bright<sup>1</sup>  
*Institution(s):* <sup>1</sup> Space Telescope Science Institute
- 147.16 Relationship of Science Return to Potential Architectures for WFIRST**  
**Author(s):** Jonathan Arenberg<sup>1</sup>, Alberto Conti<sup>1</sup>, Brian Lottman<sup>1</sup>, Ronald S. Polidan<sup>1</sup>  
*Institution(s):* <sup>1</sup> Northrop Grumman
- 147.17 Post-processing images from the WFIRST-AFTA coronagraph testbed**  
**Author(s):** Neil T Zimmerman<sup>2</sup>, Marie Ygouf<sup>2</sup>, Laurent Pueyo<sup>2</sup>, Remi Soummer<sup>2</sup>, Marshall D. Perrin<sup>2</sup>, Bertrand Mennesson<sup>1</sup>, Eric Cady<sup>1</sup>, Camilo Mejia Prada<sup>1</sup>  
*Institution(s):* <sup>1</sup> Jet Propulsion Laboratory, <sup>2</sup> Space Telescope Science Institute
- 147.18 PSF subtraction for the WFIRST-AFTA coronagraph**  
**Author(s):** Marie Ygouf<sup>3</sup>, Laurent Pueyo<sup>3</sup>, Neil T Zimmerman<sup>3</sup>, Remi Soummer<sup>3</sup>, Marshall D. Perrin<sup>3</sup>, Bertrand Mennesson<sup>1</sup>, John E. Krist<sup>1</sup>, Gautam Vasisht<sup>1</sup>, Bijan Nemati<sup>1</sup>, Bruce Macintosh<sup>2</sup>  
*Institution(s):* <sup>1</sup> Jet Propulsion Laboratory, <sup>2</sup> Stanford University, <sup>3</sup> STScI
- 147.19 Multiple Gigabit-per-Second Class Data Link Enabling WFIRST at L2**  
**Author(s):** Ronald S. Polidan<sup>1</sup>, James Munger<sup>1</sup>, Alberto Conti<sup>1</sup>  
*Institution(s):* <sup>1</sup> Northrop Grumman Aerospace Systems
- 147.20 The Space Infrared Telescope for Cosmology and Astrophysics (SPICA) in the New Framework**  
**Author(s):** Charles Bradford<sup>1</sup>  
*Institution(s):* <sup>1</sup> Caltech/JPL

# TUESDAY, 5 JANUARY 2016

- 147.21 The Guest Investigator Program for the Transiting Exoplanet Survey Satellite (TESS)**  
**Author(s):** Stephen Rinehart<sup>2</sup>, George R. Ricker<sup>1</sup>, Sara Seager<sup>1</sup>, David W. Latham<sup>3</sup>, Roland Kraft Vanderspek<sup>1</sup>, Joshua N. Winn<sup>1</sup>  
*Institution(s):* <sup>1</sup> MIT, <sup>2</sup> NASA's GSFC, <sup>3</sup> SAO
- 147.22 LUVOIR and HabEx mission concepts enabled by NASA's Space Launch System**  
**Author(s):** H. Philip Stahl<sup>1</sup>  
*Institution(s):* <sup>1</sup> NASA
- 147.23 An Engineering Design Reference Mission for a Future Large-Aperture UVOIR Space Observatory**  
**Author(s):** Harley A. Thronson<sup>1</sup>, Matthew R Bolcar<sup>1</sup>, Mark Clampin<sup>1</sup>, Julie A. Crooke<sup>1</sup>, David Redding<sup>2</sup>, Norman Rioux<sup>1</sup>, H. Philip Stahl<sup>3</sup>  
*Institution(s):* <sup>1</sup> NASA GSFC, <sup>2</sup> NASA JPL, <sup>3</sup> NASA MSFC
- 147.24 Life Finder Detectors; Detector Needs and Status for Spectroscopic Biosignature Characterization**  
**Author(s):** Bernard J. Rauscher<sup>1</sup>, Matthew R Bolcar<sup>1</sup>, Mark Clampin<sup>1</sup>, Shawn Domagal-Goldman<sup>1</sup>, Michael W. McElwain<sup>1</sup>, Samuel H. Moseley<sup>1</sup>, Carl Stahle<sup>1</sup>, Christopher C. Stark<sup>2</sup>, Harley A. Thronson<sup>1</sup>  
*Institution(s):* <sup>1</sup> NASA's GSFC, <sup>2</sup> Space Telescope Science Institute
- 147.25 Modular Orbital Demonstration of an Evolvable Space Telescope (MODEST)**  
**Author(s):** Brian Baldauf<sup>1</sup>, Alberto Conti<sup>1</sup>  
*Institution(s):* <sup>1</sup> Northrop Grumman Corporation
- 147.26 BurstCube: A CubeSat for Gravitational Wave Counterparts**  
**Author(s):** Judith L. Racusin<sup>1</sup>, Jeremy S Perkins<sup>1</sup>, Michael Stephen Briggs<sup>2</sup>, Georgia De Nolfo<sup>1</sup>, John Krizmanic<sup>1</sup>, Valerie Connaughton<sup>3</sup>, Julie E. McEnery<sup>1</sup>  
*Institution(s):* <sup>1</sup> NASA/GSFC, <sup>2</sup> University of Alabama Huntsville, <sup>3</sup> USRA
- 147.27 The Astro-H In-Flight Calibration Plan**  
**Author(s):** Laura Brenneman<sup>1</sup>  
*Institution(s):* <sup>1</sup> Smithsonian Astrophysical Observatory
- 147.28 Arcus: An X-ray Grating Spectroscopy Mission**  
**Author(s):** Randall K. Smith<sup>1</sup>  
*Institution(s):* <sup>1</sup> Smithsonian Astrophysical Observatory
- 147.29 Data Collection and Recording on the Wisconsin/GSFC X-ray Quantum Calorimeter**  
**Author(s):** Laura O'Neill<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Miami
- 147.30 Here There Be Dragons: Characterization of ACS/WFC Scattered Light Anomalies**  
**Author(s):** Blair Porterfield<sup>1</sup>, Dan A. Coe<sup>1</sup>  
*Institution(s):* <sup>1</sup> Space Telescope Science Institute

**147.31 Focal plane actuation for the development of a high resolution suborbital telescope**

**Author(s):** Alex Duke Miller<sup>1</sup>, Paul A. Scowen<sup>1</sup>, Todd Veach<sup>2</sup>

*Institution(s):*<sup>1</sup>. Arizona State University, <sup>2</sup>. NASA Goddard

**147.32 ACCESS Sub-system Performance**

**Author(s):** Mary Elizabeth Kaiser<sup>2</sup>, Matthew J. Morris<sup>2</sup>, Lauren Nicole Aldoroty<sup>2</sup>, David Godon<sup>2</sup>, Russell Pelton<sup>2</sup>, Stephan R. McCandliss<sup>2</sup>, Robert L. Kurucz<sup>1</sup>, Jeffrey W. Kruk<sup>3</sup>, Bernard J. Rauscher<sup>3</sup>, Randy A. Kimble<sup>3</sup>, Edward L. Wright<sup>7</sup>, Dominic J. Benford<sup>3</sup>, Jonathan P. Gardner<sup>3</sup>, Paul D. Feldman<sup>2</sup>, H. Warren Moos<sup>2</sup>, Adam G. Riess<sup>2</sup>, Ralph Bohlin<sup>5</sup>, Susana E. Deustua<sup>5</sup>, William Van Dyke Dixon<sup>5</sup>, David J. Sahnou<sup>5</sup>, Michael Lampton<sup>4</sup>, Saul Perlmutter<sup>6</sup>

*Institution(s):*<sup>1</sup>. Harvard-Smithsonian Center for Astrophysics, <sup>2</sup>. Johns Hopkins University, <sup>3</sup>. NASA Goddard Space Flight Center, <sup>4</sup>. Space Sciences Laboratory, UC Berkeley, <sup>5</sup>. Space Telescope Science Institute, <sup>6</sup>. University of California, Berkeley, <sup>7</sup>. University of California, Los Angeles

**147.33 Observer's Interface for Solar System Target Specification**

**Author(s):** Anthony Roman<sup>1</sup>, Miranda Link<sup>1</sup>, Christopher Moriarty<sup>1</sup>, John A. Stansberry<sup>1</sup>

*Institution(s):*<sup>1</sup>. Space Telescope Science Institute

## 148 Astronomy and Society Poster Session

Tuesday, 5:30 pm - 6:30 pm; Exhibit Hall A

**148.01 Child Care Gifts to Bolster Astronomy**

**Author(s):** Robert J. Nemiroff<sup>2</sup>, Alice Allen<sup>1</sup>

*Institution(s):*<sup>1</sup>. Astrophysics Source Code Library, <sup>2</sup>. Michigan Technological Univ.

**148.02 Astronomy Allies**

**Author(s):** Heather Flewelling<sup>2</sup>, Katherine A. Alatalo<sup>1</sup>

*Institution(s):*<sup>1</sup>. The Carnegie Observatories, <sup>2</sup>. University of Hawaii

# WEDNESDAY, 6 JANUARY 2016

## 200 Plenary Talk: Black Hole Physics with the Event Horizon Telescope

Wednesday, 8:30 am - 9:20 am; Osceola C

Chair: Chryssa Kouveliotou (GWU)



200.01

**Black Hole Physics with the Event Horizon Telescope**

**Author(s): Feryal Ozel<sup>1</sup>**

*Institution(s):<sup>1</sup> University of Arizona*

## 201 AAS Prize Presentations: Buchalter Cosmology, Weber, Education

Wednesday, 9:20 am - 9:40 am; Osceola C

Chair: C. Megan Urry (Yale University)

### **Citations:**

#### **Buchalter Cosmology**

Marina Cortês and Lee Smolin for their work entitled “The Universe as a Process of Unique Events” published in Physical Review D and recognized by the judging panel as “a remarkable approach for introducing the irreversible flow of time into the foundations of physics.”

Jonathan Kaufman, Brian Keating, Brad Johnson for their work entitled “Precision Tests of Parity Violation Over Cosmological Distances”, recognized by the judging panel as “an inventive proposal to significantly enhance cosmic microwave background polarization measurement, enabling new potential tests of fundamental physics.”

Carroll Wainwright, Matthew Johnson, Hiranya Peiris, Anthony Aguirre, Luis Lehner, Steven Liebling for their work entitled “Simulating the Universe(s): from Cosmic Bubble Collisions to Cosmological Observables with Numerical Relativity”, published in the Journal of Cosmology and Astroparticle Physics and recognized by the judging panel as “a significant advance in linking theoretical predictions with potentially observable signatures of bubble universes in a multiverse cosmology.”

#### **Weber**

Claire E. Max

For co-inventing sodium-laser-guide-star adaptive optics and for shepherding adaptive optics from its roots in classified space surveillance to its prominence today as an essential technology on large telescopes. Dr. Max’s leadership has advanced the field of adaptive optics and transformed how we observe by making near-diffraction-limited imaging possible on large telescopes, thus opening new fields of discovery, including resolving stars and gas near supermassive black holes and studying extrasolar planets.

## Education

David Morrison

For a lifetime of outstanding contributions to the understanding of astronomy by college students and the public and to the debunking of astronomical pseudoscience — through his textbooks, popular books, slide sets, websites, articles, public talks, and work with the media.

## AAS Astronomy Education Board Forum

**Wednesday, 10:00 am - 11:30 am; Orange Blossom Ballroom**

The mission of the AAS is to enhance and share humanity's understanding of the universe. The AAS Astronomy Education Board invites all interested attendees to participate in two presentations and discussions of relevance to the "share" part of this noble mission: (1) Title IX - the federal law that prohibits discrimination in federally funded education programs and activities the basis of sex - and the implementation of and compliance with Title IX by colleges and universities in the U.S.; and (2) the newly charged AAS Task Force on Education, its activities and goals in the upcoming months, and what AAS members can do to make their voices heard in the crucial conversation about education in our Society.

## AAS 227 Author & Referee Workshop

**Wednesday, 10:00 am - 3:00 pm; Tallahassee**

AAS Publishing will run a four hour workshop for authors and referees.

**Organizer: Julie Steffen (AAS)**

## Graduate School and Postdocs As a Means to a Job

**Wednesday, 10:00 am - 11:30 am; St. George 108**

In this workshop, led by academic career counselor and author Dr. Karen Kelsky, we examine the conditions of the current American job market, the most common mistakes made by job-seekers, and the ways you can maximize your chances of success while looking for a tenure-track job. We'll cover: the big-picture conditions of the U.S. tenure track job market; how to build a competitive CV in grad school; the all-important 5-year-plan; how to think like a search committee; the qualities of a successful tenure track job candidate; the ethos of job market documents; the most common mistakes made by job seekers; the three keys to academic interviewing; and the non-academic option. We also examine some of the intangible pitfalls that bedevil job documents and interviewing. This session is organized by the AAS Employment Committee. This session is organized by the AAS Employment Committee.

## 202 Galaxy Evolution in the Cluster Environment

**Wednesday, 10:00 am - 11:30 am; Sun A**

**Chair: Stephanie Tonnesen (Columbia University)**

# WEDNESDAY, 6 JANUARY 2016

- 202.01 Disentangling the ICL with the CHEFs in the Pandora galaxy cluster**  
**Author(s):** Yolanda Jimenez-Teja<sup>1</sup>, Renato A. Dupke<sup>2</sup>  
*Institution(s):* <sup>1</sup> National Observatory, <sup>2</sup> University of Michigan/Eureka Scientific
- 202.02 Investigating star formation properties of galaxies in massive clusters with Herschel and ALMA**  
**Author(s):** John F. Wu<sup>7</sup>, Andrew J. Baker<sup>7</sup>, Paula Aguirre<sup>6</sup>, D. Barkats<sup>2</sup>, Mark Halpern<sup>8</sup>, Matt Hilton<sup>10</sup>, John Patrick Hughes<sup>7</sup>, Leopoldo Infante<sup>6</sup>, Robert Lindner<sup>1</sup>, Tobias Marriage<sup>3</sup>, Felipe Menanteau<sup>9</sup>, Cristobal Sifon<sup>4</sup>, Axel Weiss<sup>5</sup>  
*Institution(s):* <sup>1</sup> Earthling Interactive, <sup>2</sup> European Southern Observatory, <sup>3</sup> Johns Hopkins University, <sup>4</sup> Leiden University, <sup>5</sup> Max Planck Institute for Radio Astronomy, <sup>6</sup> Pontificia Universidad Católica de Chile, <sup>7</sup> Rutgers University, The State University of New Jersey, <sup>8</sup> University of British Columbia, <sup>9</sup> University of Illinois, Urbana-Champaign, <sup>10</sup> University of Kwazulu-Natal
- 202.03 Exploring the z~1 Sky with the Massive and Distant Clusters of WISE Survey**  
**Author(s):** Anthony H. Gonzalez<sup>1</sup>  
*Institution(s):* <sup>1</sup> Univ. of Florida
- 202.04 Massive and Distant Clusters of WISE Survey (MaDCoWS): Stellar Mass Fraction in IR-Selected Clusters at z ~ 1**  
**Author(s):** Bandon Decker<sup>1</sup>, Mark Brodwin<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Missouri -- Kansas City
- 202.05 Crowded Field Photometry in the CLASH Clusters: Measuring the Red Sequence of Cluster Galaxies with Robust Photometry**  
**Author(s):** Thomas Connor<sup>1</sup>, Megan Donahue<sup>1</sup>, John Moustakas<sup>3</sup>, Daniel Kelson<sup>2</sup>, Dan A. Coe<sup>4</sup>, Marc Postman<sup>4</sup>  
*Institution(s):* <sup>1</sup> Michigan State University, <sup>2</sup> Observatories of the Carnegie Institution of Washington, <sup>3</sup> Sienna College, <sup>4</sup> Space Telescope Science Institute
- 202.06 The Phase Space of z=1.2 Clusters: Probing Dust Temperature and Star Formation Rate as a Function of Environment and Accretion History**  
**Author(s):** Allison Noble<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Toronto
- 202.07 ALMA Reveals a Galaxy-Scale Fountain of Cold Molecular Gas Pumped by a Black Hole**  
**Author(s):** Grant Tremblay<sup>1</sup>  
*Institution(s):* <sup>1</sup> Yale University
- 202.08 A very Deep Chandra Observation of NGC 1404: the Best Constraints on the Transport Processes in the Intracluster Medium**  
**Author(s):** Yuanyuan Su<sup>1</sup>, Ralph P. Kraft<sup>1</sup>, Elke Roediger<sup>3</sup>, Paul Nulsen<sup>1</sup>, William R. Forman<sup>1</sup>, Eugene Churazov<sup>2</sup>, Christine Jones<sup>1</sup>, Marie E. Machacek<sup>1</sup>, Scott W. Randall<sup>1</sup>  
*Institution(s):* <sup>1</sup> Harvard-Smithsonian Center for Astrophysics, <sup>2</sup> Max Planck Institute for Astrophysics, <sup>3</sup> University of Hull

# WEDNESDAY, 6 JANUARY 2016

## 202.09 Evidence for particle re-acceleration in the binary merging galaxy cluster A3411-3412 ?

**Author(s):** Reinout J. Van Weeren<sup>4</sup>, Felipe Andrade-Santos<sup>4</sup>, William Dawson<sup>2</sup>, Dharam Vir Lal<sup>3</sup>, Georgiana A Ogrean<sup>4</sup>, Nathan Golovich<sup>5</sup>, Marcus Brüggen<sup>1</sup>, Christine Jones<sup>4</sup>, William R. Forman<sup>4</sup>

*Institution(s):* <sup>1</sup> *Hamburger Sternwarte*, <sup>2</sup> *Lawrence Livermore National Lab*, <sup>3</sup> *NCRA*, <sup>4</sup> *Smithsonian Astrophysical Observatory*, <sup>5</sup> *UC Davis*

## 203 Black Holes I: Models and Simulations

Wednesday, 10:00 am - 11:30 am; Sun B

**Chair:** Laura Brenneman (*Harvard-Smithsonian Center for Astrophysics*)

### 203.01 General Relativistic Mini-Disk Dynamics during Black Hole Binary Inspiral

**Author(s):** Dennis Bowen<sup>1</sup>

*Institution(s):* <sup>1</sup> *RIT*

### 203.02D Thin Disk Accretion in the Magnetically-Arrested State

**Author(s):** Mark J. Avara<sup>1</sup>, Jonathan McKinney<sup>1</sup>, Christopher S. Reynolds<sup>1</sup>

*Institution(s):* <sup>1</sup> *University of Maryland*

### 203.03D Predicting Observational Signatures of Gas Disks Around Massive Black Hole Binaries

**Author(s):** Daniel J. D'Orazio<sup>1</sup>, Zoltan Haiman<sup>1</sup>, Andrew MacFadyen<sup>2</sup>, Paul Duffell<sup>3</sup>, Brian Farris<sup>1</sup>, David Schiminovich<sup>1</sup>

*Institution(s):* <sup>1</sup> *Columbia University*, <sup>2</sup> *New York University*, <sup>3</sup> *University of California Berkeley*

### 203.04D Radiative Transfer Models of Tidal Disruption Events: What Sets their Emission Line Strengths and Total Optical Flux?

**Author(s):** Nathaniel Roth<sup>2</sup>, Daniel Kasen<sup>2</sup>, James Guillochon<sup>1</sup>, Enrico Ramirez-Ruiz<sup>3</sup>

*Institution(s):* <sup>1</sup> *Harvard-Smithsonian Center for Astrophysics*, <sup>2</sup> *UC Berkeley*, <sup>3</sup> *UC Santa Cruz*

### 203.05D The Debris Streams from Tidal Disruption Events

**Author(s):** Eric Coughlin<sup>1</sup>

*Institution(s):* <sup>1</sup> *JILA, University of Colorado and National Institute of Standards and Technology*

## 204 AGN, QSO, Blazars: Searches and Surveys

Wednesday, 10:00 am - 11:30 am; Sun C

**Chair:** Sara Buson (*NASA/GSFC*)

### 204.01 Searching for Low-Mass AGN to $z < 1$

**Author(s):** Kristina Pardo<sup>1</sup>, Andy D. Goulding<sup>1</sup>, Jenny E. Greene<sup>1</sup>, Rachel S. Somerville<sup>2</sup>

*Institution(s):* <sup>1</sup> *Princeton University*, <sup>2</sup> *Rutgers University*

# WEDNESDAY, 6 JANUARY 2016

## 204.02 Interim results from the ongoing hunt for supermassive black hole binaries

**Author(s):** Jessie C. Runnoe<sup>5</sup>, Gavin Mathes<sup>4</sup>, Alison Pennell<sup>5</sup>, Stephanie Meghan Brown<sup>5</sup>, Michael Eracleous<sup>5</sup>, Todd A. Boroson<sup>3</sup>, Tamara Bogdanovic<sup>2</sup>, Steinn Sigurdsson<sup>5</sup>, Jules P. Halpern<sup>1</sup>, Jia Liu<sup>1</sup>  
*Institution(s):* <sup>1</sup> Columbia University, <sup>2</sup> Georgia Tech University, <sup>3</sup> LGOCT, <sup>4</sup> New Mexico State University, <sup>5</sup> The Pennsylvania State University

## 204.03 The Chandra COSMOS Legacy Survey

**Author(s):** Francesca M. Civano<sup>5</sup>, Stefano Marchesi<sup>1</sup>, Martin Elvis<sup>4</sup>, C. Megan Urry<sup>5</sup>, Andrea Comastri<sup>3</sup>, Hyewon Suh<sup>2</sup>  
*Institution(s):* <sup>1</sup> Bologna University, <sup>2</sup> IfA, <sup>3</sup> INAF, <sup>4</sup> SAO, <sup>5</sup> Yale University

## 204.04 Photometric redshifts of 5000 Xray selected Stripe 82 sources

**Author(s):** Tonima Tasnim Ananna<sup>3</sup>, Mara Salvato<sup>1</sup>, C. Megan Urry<sup>3</sup>, Stephanie M. LaMassa<sup>2</sup>  
*Institution(s):* <sup>1</sup> Max Planck Institute for Extraterrestrial Physics, <sup>2</sup> Space Telescope Science Institute, <sup>3</sup> Yale University

## 204.05D Exploring the Quasar Luminosity Function with Quasars Selected by both Color and Variability

**Author(s):** Christina M. Peters<sup>1</sup>, Gordon T. Richards<sup>1</sup>  
*Institution(s):* <sup>1</sup> Drexel University

## 204.06 Star Formation of Type 2 AGN host galaxies at $0 < z <= 1$

**Author(s):** Hyewon Suh<sup>2</sup>, Francesca M. Civano<sup>3</sup>, Martin Elvis<sup>1</sup>, Guenther Hasinger<sup>2</sup>, Stefano Marchesi<sup>3</sup>  
*Institution(s):* <sup>1</sup> Harvard-Smithsonian Center for Astrophysics, <sup>2</sup> Institute for Astronomy, University of Hawaii, <sup>3</sup> Yale Center for Astronomy and Astrophysics

## 204.07 Mapping the WISE sky in 3D

**Author(s):** Alexander Mendez<sup>1</sup>, Brice Ménard<sup>1</sup>, Mubdi Rahman<sup>1</sup>  
*Institution(s):* <sup>1</sup> Johns Hopkins University

## 204.08 Using R-W1 to Find Obscured Black Hole Growth

**Author(s):** Stephanie M. LaMassa<sup>4</sup>, Francesca M. Civano<sup>6</sup>, Marcella Brusa<sup>1</sup>, Daniel Stern<sup>2</sup>, Eilat Glikman<sup>3</sup>, Sarah Gallagher<sup>5</sup>, C. Megan Urry<sup>6</sup>  
*Institution(s):* <sup>1</sup> INAF - Bologna, <sup>2</sup> JPL, <sup>3</sup> Middlebury College, <sup>4</sup> NASA-GSFC, <sup>5</sup> University of Western Ontario, <sup>6</sup> Yale University

## 205 Young Stellar Objects, Very Young Stars

Wednesday, 10:00 am - 11:30 am; Sun D

Chair: Ann Marie Cody (Caltech)

## 205.01 30 Doradus - Relating Young Stars Imaged by Spitzer and Hubble to the CO Molecular Gas Observed with ALMA

**Author(s):** Omnarayani Nayak<sup>2</sup>, Margaret Meixner<sup>3</sup>, Remy Indebetouw<sup>4</sup>, Elena Sabbi<sup>3</sup>, Guido De Marchi<sup>1</sup>, Nino Panagia<sup>3</sup>  
*Institution(s):* <sup>1</sup> European Space Agency, <sup>2</sup> Johns Hopkins University, <sup>3</sup> Space Telescope Science Institute, <sup>4</sup> The University of Virginia

## 205.02D A Wide Angle Survey of Young Stellar Associations for Hot Jupiters and Pre-Main Sequence Binaries

**Author(s):** Ryan J. Oelkers<sup>2</sup>, Lucas M. Macri<sup>2</sup>, Jennifer L. Marshall<sup>2</sup>, Darren L. Depoy<sup>2</sup>, Diego Garcia Lambas<sup>1</sup>

*Institution(s):* <sup>1</sup> Observatorio Astronomico, <sup>2</sup> Texas AandM University

## 205.03 Protostellar Multiplicity in Perseus Characterized by the VLA Nascent Disk and Multiplicity (VANDAM) Survey

**Author(s):** John J. Tobin<sup>2</sup>, Leslie Looney<sup>7</sup>, Zhi-Yun Li<sup>8</sup>, Claire J. Chandler<sup>4</sup>, Michael Dunham<sup>1</sup>, Dominique Segura-Cox<sup>7</sup>, Sarah Sadavoy<sup>3</sup>, Carl Melis<sup>5</sup>, Robert J. Harris<sup>7</sup>, Kaitlin M. Kratter<sup>6</sup>, Laura M. Perez<sup>4</sup>

*Institution(s):* <sup>1</sup> Harvard-CfA, <sup>2</sup> Leiden Observatory, <sup>3</sup> Max Planck Institute for Astronomy, <sup>4</sup> NRAO, <sup>5</sup> UC San Diego, <sup>6</sup> University of Arizona, <sup>7</sup> University of Illinois, <sup>8</sup> University of Virginia

## 205.04D Dynamical Masses Demonstrate the Discordant Model Ages for Upper Scorpius

**Author(s):** Aaron C Rizzuto<sup>2</sup>, Michael Ireland<sup>1</sup>, Adam L. Kraus<sup>2</sup>, Trent J. Dupuy<sup>2</sup>

*Institution(s):* <sup>1</sup> Australian National University, <sup>2</sup> University of Texas at Austin

## 205.05D Older and colder: The impact of starspots on stellar masses, ages, and lithium during the pre-main sequence

**Author(s):** Garrett Somers<sup>1</sup>

*Institution(s):* <sup>1</sup> The Ohio State University

## 205.06 Polarization Complicates Images of Protoplanetary Disks

**Author(s):** Hannah Jang-Condell<sup>1</sup>

*Institution(s):* <sup>1</sup> University of Wyoming

## 206 Extrasolar Planet Detection with Coronagraphy

Wednesday, 10:00 am - 11:30 am; Osceola A

**Chair:** Timothy Rodigas (*Carnegie Institution of Washington*)

### 206.01 WFIRST-AFTA Coronagraphic Instrument Science Yield Modeling Updates

**Author(s):** Dmitry Savransky<sup>1</sup>, Daniel Garrett<sup>1</sup>

*Institution(s):* <sup>1</sup> Cornell University

### 206.02D SDC: a multistage coronagraphic platform at Palomar observatory

**Author(s):** Michael Bottom<sup>1</sup>, Eugene Serabyn<sup>3</sup>, Chris Shelton<sup>3</sup>, J. Kent Wallace<sup>3</sup>, Randall D. Bartos<sup>3</sup>, Jonas Kuhn<sup>2</sup>, Dimitri Mawet<sup>1</sup>, Bertrand Mennesson<sup>3</sup>, Rick Burruss<sup>3</sup>

*Institution(s):* <sup>1</sup> California Institute of Technology, <sup>2</sup> ETH Zurich, <sup>3</sup> Jet Propulsion Lab

### 206.03 PIAACMC coronagraph on WFIRST-AFTA

**Author(s):** Brian D. Kern<sup>1</sup>, Olivier Guyon<sup>3</sup>, Ruslan Belikov<sup>2</sup>, Daniel Wilson<sup>1</sup>, Ilya Poberezhskiy<sup>1</sup>

*Institution(s):* <sup>1</sup> JPL, <sup>2</sup> NASA Ames Research Center, <sup>3</sup> University of Arizona

# WEDNESDAY, 6 JANUARY 2016

## 206.04D Recursive Focal Plane Wavefront and Bias Estimation for the Direct Imaging of Exoplanets

**Author(s):** A J Eldorado Riggs<sup>1</sup>, N. Jeremy Kasdin<sup>1</sup>, Tyler Dean Groff<sup>1</sup>  
*Institution(s):* <sup>1</sup> Princeton University

## 206.05 High Contrast Imaging in Multi-Star Systems: Technology Development and First Lab Results

**Author(s):** Ruslan Belikov<sup>2</sup>, Eduardo Bendek<sup>2</sup>, Eugene Pluzhnik<sup>2</sup>, Sandrine Thomas<sup>1</sup>  
*Institution(s):* <sup>1</sup> LSST, <sup>2</sup> NASA Ames Research Center

## 206.07 Technology Needs for the Direct Imaging of Exoplanets

**Author(s):** Nicholas Siegler<sup>1</sup>  
*Institution(s):* <sup>1</sup> Jet Propulsion Laboratory

## 207 New Insights into Galactic Structure and Evolution from High-Energy Observations

Wednesday, 10:00 am - 11:30 am; Osceola B

The past few years have seen dramatic new discoveries in our Galaxy. The very large structures of high-energy particles known as the Fermi bubbles point to previous activity at the Galactic Center; the treasure trove of pulsars found using the Fermi Large Area Telescope has revealed a panoply of fascinating results about neutron stars; and new discoveries of dwarf spheroidal galaxies in data taken by the Dark Energy Survey combine with Fermi-LAT observations to explore the particle nature of dark matter.

**Chair:** Julie McEnery (*NASA's GSFC*)

### 207.01 Pulsar Riches from Fermi

**Author(s):** Scott M. Ransom<sup>1</sup>  
*Institution(s):* <sup>1</sup> NRAO

### 207.02 What is the Source of the Galactic Center Gamma-Ray Excess

**Author(s):** Tim Linden<sup>1</sup>  
*Institution(s):* <sup>1</sup> The Ohio State University

### 207.03 What is the Origin of the Fermi Bubbles

**Author(s):** Karen Hsiang-Yi<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Maryland

## 208 Supernova Explosions: Models and Constraints

Wednesday, 10:00 am - 11:30 am; Miami

**Chair:** Eric Schlegel (*Univ. of Texas, San Antonio*)

### 208.01 Shock Breakout and Early Light Curves of Type II-P Supernovae Observed with Kepler

**Author(s):** Peter M. Garnavich<sup>4</sup>, Bradley E. Tucker<sup>1</sup>, Armin Rest<sup>3</sup>, Edward J. Shaya<sup>6</sup>, Robert Olling<sup>6</sup>, Daniel Kasen<sup>5</sup>, Victoria Villar<sup>2</sup>  
*Institution(s):* <sup>1</sup> Australian National University, <sup>2</sup> CfA, <sup>3</sup> STScI, <sup>4</sup> Univ. of Notre Dame, <sup>5</sup> University of California, Berkeley, <sup>6</sup> University of Maryland

- 208.02 Rapidly Rising Transients in the Supernova - Superluminous Supernova Gap**  
**Author(s):** Iair Arcavi<sup>1</sup>, William M Wolf<sup>2</sup>, Dale Andrew Howell<sup>1</sup>, Lars Bildsten<sup>2</sup>  
*Institution(s):* <sup>1</sup> Las Cumbres Observatory Global Telescope, <sup>2</sup> UCSB
- 208.03D Investigating SNe Ia progenitor diversity through late-time IR spectroscopy**  
**Author(s):** Tiara Diamond<sup>1</sup>  
*Institution(s):* <sup>1</sup> NPP, Goddard Space Flight Center
- 208.05 Effects of Turbulence on the Critical Conditions of Explosion**  
**Author(s):** Quintin Mabanta<sup>1</sup>, Jeremiah Wayne Murphy<sup>1</sup>  
*Institution(s):* <sup>1</sup> Florida State University
- 208.06D The effects of resolution, dimensionality, and nuclear network size on detonations in low-density Type Ia supernovae environments**  
**Author(s):** Thomas Papatheodore<sup>1</sup>, O. E. Bronson Messer<sup>1</sup>, William R. Hix<sup>2</sup>  
*Institution(s):* <sup>1</sup> Oak Ridge National Laboratory, <sup>2</sup> University of Tennessee
- 208.07 Do Single-Degenerate Type Ia Supernovae Generally Lead to Normal Type Ia Supernovae?**  
**Author(s):** Robert Fisher<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Massachusetts Dartmouth

## 209 Elliptical and Spiral Galaxies II

Wednesday, 10:00 am - 11:30 am; Naples

**Chair:** Stefan Kautsch (*Nova Southeastern University*)

- 209.01 Characterizing "Radio Mode" AGN Outbursts: the Recent 12 Myr History of the Supermassive Black Hole in M87**  
**Author(s):** William R. Forman<sup>3</sup>, Eugene Churazov<sup>2</sup>, Christine Jones<sup>3</sup>, Sebastian Heinz<sup>4</sup>, Ralph P. Kraft<sup>1</sup>, Alexey Vikhlinin<sup>1</sup>  
*Institution(s):* <sup>1</sup> Harvard Smithsonian Center for Astrophysics, <sup>2</sup> MPA, <sup>3</sup> SAO, <sup>4</sup> University of Wisconsin
- 209.02 Circumnuclear molecular gas in M87 detected with ALMA**  
**Author(s):** Catherine E Vlahakis<sup>1</sup>  
*Institution(s):* <sup>1</sup> Joint ALMA Observatory
- 209.03 Evidence for Expulsion of the Star Formation Gas Reservoir by the AGN in Local Blue Ellipticals**  
**Author(s):** Megan E. Schwamb<sup>1</sup>, Chris Lintott<sup>2</sup>, Rebecca Smethurst<sup>2</sup>, Sandor Kruk<sup>2</sup>, Satoki Matsushita<sup>1</sup>, Ivy Wong<sup>3</sup>, Shiang-Yu Wang<sup>1</sup>  
*Institution(s):* <sup>1</sup> Institute of Astronomy & Astrophysics, Academia Sinica (ASIAA), <sup>2</sup> University of Oxford, <sup>3</sup> UWA/ICRAR
- 209.04 Early-type Host Galaxies of Type Ia Supernovae: Origin of the Correlation between Hubble Residual and Host Mass**  
**Author(s):** Yijung Kang<sup>1</sup>, Young-Lo Kim<sup>1</sup>, Dongwook Lim<sup>1</sup>, Chul Chung<sup>1</sup>, Young-Wook Lee<sup>1</sup>  
*Institution(s):* <sup>1</sup> Yonsei University

# WEDNESDAY, 6 JANUARY 2016

## 209.05 IMF or Abundance Variations? Steep Gradients at the Centers of Elliptical Galaxies

**Author(s):** Nicholas J. McConnell<sup>1</sup>, Jessica R. Lu<sup>2</sup>, Andrew Mann<sup>3</sup>

*Institution(s):* <sup>1</sup> NRC Herzberg, <sup>2</sup> University of Hawaii, <sup>3</sup> University of Texas

## 209.06 The Dark Matter Conspiracy in Early-type Galaxies

**Author(s):** Aaron J. Romanowsky<sup>2</sup>, Michele Cappellari<sup>1</sup>, Jean P. Brodie<sup>3</sup>

*Institution(s):* <sup>1</sup> Oxford University, <sup>2</sup> San Jose State University, <sup>3</sup> University of California Observatories

## 209.07 Testing the Universality of the Stellar IMF with Chandra

**Author(s):** David Coulter<sup>4</sup>, Bret Lehmer<sup>6</sup>, Rafael T. Eufrazio<sup>2</sup>, Arunav Kundu<sup>1</sup>, Mark Peacock<sup>3</sup>, Ann E. Hornschemeier<sup>2</sup>, Antara Basu-Zych<sup>2</sup>, Anthony H. Gonzalez<sup>7</sup>, Tom Maccarone<sup>5</sup>, Claudia Maraston<sup>8</sup>, Steve E. Zepf<sup>3</sup>

*Institution(s):* <sup>1</sup> Eureka Scientific, <sup>2</sup> Goddard Space Flight Center, <sup>3</sup> Michigan State University, <sup>4</sup> Portland State University, <sup>5</sup> Texas Tech University, <sup>6</sup> University of Arkansas, <sup>7</sup> University of Florida, <sup>8</sup> University of Portsmouth

## 209.08D A sub-kiloparsec scale view of star formation in M31

**Author(s):** Alexia Lewis<sup>1</sup>, Julianne Dalcanton<sup>1</sup>

*Institution(s):* <sup>1</sup> University of Washington

## 210 Stars III: Brown Dwarfs and Exoplanets

Wednesday, 10:00 am - 11:30 am; Tampa

**Chair:** John Stauffer (*Caltech*)

### 210.01D Fundamental Parameters of Low-Mass Stars, Brown Dwarfs, and Planets

**Author (s):** Benjamin Montet<sup>2</sup>, John A. Johnson<sup>3</sup>, Brendan Bowler<sup>2</sup>, Evgenya Shkolnik<sup>1</sup>

*Institution(s):* <sup>1</sup> Arizona State University, <sup>2</sup> California Institute of Technology, <sup>3</sup> Harvard University

### 210.02D Fundamental Parameters and Spectral Energy Distributions of Young and Field Age Objects with Masses Spanning the Stellar to Planetary Regime

**Author(s):** Joe Filippazzo<sup>2</sup>, Emily L. Rice<sup>2</sup>, Jacqueline K. Faherty<sup>1</sup>, Kelle L. Cruz<sup>3</sup>, Paige A. Godfrey<sup>2</sup>

*Institution(s):* <sup>1</sup> Carnegie Institution of Washington, <sup>2</sup> College of Staten Island, <sup>3</sup> Hunter College

### 210.03D The BASS survey for brown dwarfs in young moving groups

**Author(s):** Jonathan Gagne<sup>3</sup>, David Lafreniere<sup>5</sup>, Rene Doyon<sup>5</sup>, Lison Malo<sup>2</sup>, Jacqueline K. Faherty<sup>3</sup>, Etienne Artigau<sup>5</sup>, Kelle L. Cruz<sup>1</sup>, Adam J. Burgasser<sup>8</sup>, Joe Filippazzo<sup>1</sup>, Marie-Eve Naud<sup>5</sup>, Loic Albert<sup>5</sup>, Sandie Bouchard<sup>5</sup>, John Gizis<sup>9</sup>, Jasmin Robert<sup>7</sup>, Daniel Nadeau<sup>7</sup>, Emily C. Bowsher<sup>4</sup>, Christine Nicholls<sup>6</sup>

*Institution(s):* <sup>1</sup> American Museum of Natural History, Department of Astrophysics, <sup>2</sup> Canada-France-Hawaii Telescope, <sup>3</sup> Carnegie Institution of Washington, <sup>4</sup> Columbia University, Department of Astronomy, <sup>5</sup> Institut de Recherche sur les Exoplanètes (iREx), <sup>6</sup> Institute for Astrophysics, University of Vienna, <sup>7</sup> Université de Montréal, <sup>8</sup> University of California, San Diego, <sup>9</sup> University of Delaware

## 210.04D Auroral Phenomena in Brown Dwarf Atmospheres

**Author(s):** J. Sebastian Pineda<sup>1</sup>, Gregg Hallinan<sup>1</sup>

*Institution(s):* <sup>1</sup> Caltech

## 210.05 A Statistical Study of Brown Dwarf Companions from the SDSS-III MARVELS Survey

**Author(s):** Nolan Grieves<sup>3</sup>, Jian Ge<sup>3</sup>, Neil Thomas<sup>3</sup>, Bo Ma<sup>3</sup>, Nathan M. De Lee<sup>1</sup>, Brian L. Lee<sup>3</sup>, Scott W. Fleming<sup>2</sup>, Sirinrat Sithajan<sup>3</sup>, Frank Varosi<sup>3</sup>, Jian Liu<sup>3</sup>, Bo Zhao<sup>3</sup>, Rui Li<sup>3</sup>, Eric Agol<sup>4</sup>

*Institution(s):* <sup>1</sup> Northern Kentucky University, <sup>2</sup> Space Telescope Science Institute, <sup>3</sup> University of Florida, <sup>4</sup> University of Washington

## 211 Astrobiology/Laboratory Astrophysics - Atoms and Plasmas

Wednesday, 10:00 am - 11:30 am; Sanibel

**Chair:** Rodolfo Montez (*Vanderbilt University*)

### 211.01 Planetary Habitability over Cosmic-Time Based on Cosmic-Ray Levels

**Author(s):** Paul A. Mason<sup>2</sup>, Peter L. Biermann<sup>1</sup>

*Institution(s):* <sup>1</sup> Max-Planck-Institut für Radioastronomie, <sup>2</sup> New Mexico State University

### 211.02 The Fragility of the Terrestrial Planets During a Giant Planet Instability

**Author(s):** Nathan A. Kaib<sup>2</sup>, John E. Chambers<sup>1</sup>

*Institution(s):* <sup>1</sup> Carnegie Institution for Science, <sup>2</sup> University of Oklahoma

### 211.03 Solar Irradiance Changes And Photobiological Effects At Earth's Surface Following Astrophysical Ionizing Radiation Events

**Author(s):** Brian Thomas<sup>2</sup>, Patrick Neale<sup>1</sup>

*Institution(s):* <sup>1</sup> Smithsonian Environmental Research Center, <sup>2</sup> Washburn Univ.

### 211.04 Spectral identification of abiotic O<sub>2</sub> buildup from early runaways and rarefied atmospheres

**Author(s):** Edward Schwieterman<sup>3</sup>, Victoria Meadows<sup>3</sup>, Shawn Domagal-Goldman<sup>1</sup>, Giada Arney<sup>3</sup>, Tyler D Robinson<sup>2</sup>, Rodrigo Luger<sup>3</sup>, Rory Barnes<sup>3</sup>

*Institution(s):* <sup>1</sup> NASA Goddard Space Flight Center, <sup>2</sup> University of California - Santa Cruz, <sup>3</sup> University of Washington

### 211.05 Non-equilibrium modelling of Fe XVII emission in an intense X-ray free electron laser and the implications for the 3C/3D oscillator strength ratio

**Author(s):** Stuart Loch<sup>1</sup>, Connor Ballance<sup>3</sup>, YE LI<sup>1</sup>, Michael Fogle<sup>1</sup>, Christopher J Fontes<sup>2</sup>

*Institution(s):* <sup>1</sup> Auburn University, <sup>2</sup> Los Alamos National Laboratory, <sup>3</sup> Queen's University Belfast

### 211.06 The velocity dependence of X-ray emission due to Charge Exchange in the Cygnus Loop

**Author(s):** Renata Cumbee<sup>1</sup>, David Lyons<sup>1</sup>, Patrick Dean Mullen<sup>1</sup>, Robin L. Shelton<sup>1</sup>, Phillip C. Stancil<sup>1</sup>, David R. Schultz<sup>2</sup>

*Institution(s):* <sup>1</sup> University of Georgia, <sup>2</sup> University of North Texas

# WEDNESDAY, 6 JANUARY 2016

## 211.07 Improved and Expanded Near-IR Oscillator Strengths for Ti I

**Author(s):** Michael P. Wood<sup>1</sup>, Chris Sneden<sup>2</sup>, Gillian Nave<sup>1</sup>

*Institution(s):* <sup>1</sup> NIST, <sup>2</sup> University of Texas

## 211.08 AtomDB and PyAtomDB: Atomic Data and Modelling Tools for High Energy and Non-Maxwellian Plasmas

**Author(s):** Adam Foster<sup>1</sup>, Randall K. Smith<sup>1</sup>, Nancy S. Brickhouse<sup>1</sup>, Xiaohong Cui<sup>1</sup>

*Institution(s):* <sup>1</sup> Harvard Smithsonian, CfA

## 212 Extrasolar Planet Atmospheres: BART Atmospheric Modelling Code and Applications

Wednesday, 10:00 am - 11:30 am; Sarasota

**Chair:** Shawn Domagal-Goldman (NASA Goddard Space Flight Center)

### 212.01 A Random Walk on WASP-12b with the Bayesian Atmospheric Radiative Transfer (BART) Code

**Author(s):** Joseph Harrington<sup>2</sup>, Patricio Cubillos<sup>2</sup>, Jasmina Blečić<sup>2</sup>, Ryan Challener<sup>2</sup>, Patricio Rojo<sup>1</sup>, Nathaniel B. Lust<sup>2</sup>, Oliver Bowman<sup>2</sup>, Sarah D Blumenthal<sup>2</sup>, Andrew S. D. Foster<sup>2</sup>, Austin James Foster<sup>2</sup>, Madison Stemm<sup>2</sup>, Dylan Bruce<sup>2</sup>

*Institution(s):* <sup>1</sup> Universidad de Chile, <sup>2</sup> University of Central Florida

### 212.02 Bayesian Atmospheric Radiative Transfer (BART) Code and Application to WASP-43b

**Author(s):** Jasmina Blečić<sup>1</sup>, Joseph Harrington<sup>3</sup>, Patricio Cubillos<sup>3</sup>, Oliver Bowman<sup>3</sup>, Patricio Rojo<sup>2</sup>, Madison Stemm<sup>3</sup>, Nathaniel B. Lust<sup>3</sup>, Ryan Challener<sup>3</sup>, Austin James Foster<sup>3</sup>, Andrew S. Foster<sup>3</sup>, Sarah D Blumenthal<sup>3</sup>, Dylan Bruce<sup>3</sup>

*Institution(s):* <sup>1</sup> New York University of Abu Dhabi, <sup>2</sup> Universidad de Chile, <sup>3</sup> University of Central Florida

### 212.03 Constraining the atmosphere of exoplanet WASP-34b

**Author(s):** Ryan Challener<sup>4</sup>, Joseph Harrington<sup>4</sup>, Patricio Cubillos<sup>3</sup>, Justin Garland<sup>4</sup>, Andrew S. D. Foster<sup>4</sup>, Jasmina Blečić<sup>2</sup>, Austin James Foster<sup>4</sup>, Barry Smalley<sup>1</sup>

*Institution(s):* <sup>1</sup> Keele University, <sup>2</sup> New York University Abu Dhabi, <sup>3</sup> Space Research Institute, Austrian Academy of Sciences, <sup>4</sup> University of Central Florida

### 212.04 Analysis of Secondary Eclipse Observations of Hot-Jupiters WASP-26b and CoRoT-1b

**Author(s):** Emerson DeLarme<sup>1</sup>, Joseph Harrington<sup>1</sup>, Patricio Cubillos<sup>1</sup>, Jasmina Blečić<sup>1</sup>, Andrew S. Foster<sup>1</sup>, Justin Garland<sup>1</sup>, Austin James Foster<sup>1</sup>, Andrew Cameron<sup>2</sup>

*Institution(s):* <sup>1</sup> University of Central Florida, <sup>2</sup> University of St Andrews

### 212.05 Atmospheric, Orbital and Secondary Eclipse Analysis of HAT-P-30-WASP-51b

**Author(s):** Andrew S. Foster<sup>1</sup>, Joseph Harrington<sup>1</sup>, Patricio Cubillos<sup>1</sup>, Jasmina Blečić<sup>1</sup>, Ryan Challener<sup>1</sup>, Austin James Foster<sup>1</sup>, Justin Garland<sup>1</sup>

*Institution(s):* <sup>1</sup> University of Central Florida

## 212.06 Secondary Eclipse Observations and Orbital Analysis of WASP-32b

**Author(s):** Justin Garland<sup>5</sup>, Joseph Harrington<sup>5</sup>, Patricio Cubillos<sup>3</sup>, Jasmina Bleicic<sup>2</sup>, Andrew S. Foster<sup>5</sup>, Oliver Bowman<sup>4</sup>, Pierre F.L. Maxted<sup>1</sup>

**Institution(s):** <sup>1</sup> Keele University, <sup>2</sup> New York University Abu Dhabi, <sup>3</sup> Space Research Institute, Austria Academy of Sciences, <sup>4</sup> University of California Los Angeles, <sup>5</sup> University of Central Florida

## 213 Lectures in AstroStatistics

**Wednesday, 10:00 am - 11:30 am; Osceola 5**

A functional literacy in AstroStatistics is becoming a necessity for astronomers who are confronted with high-quality datasets from modern instruments. New astronomical datasets pose unprecedented data analytic challenges with complex data that aim to improve our understanding of the Universe, provided that they are carefully analyzed and uncertainties are accounted for correctly. This requires descriptive science-driven statistical models and methods that relate our best underlying physical processes to observables. The field of AstroStatistics is at this intersection of observational Astronomy, Statistics, and data science. Our session is aimed at making Astronomers familiar with newer techniques that are becoming available, with the goal of expanding the analysis toolkit that is available to them. We will therefore review basic methods, covering topics like the least-squares fitting, different types of distributions, Machine Learning concepts that allow classification and clustering, and Bayesian analysis, in a series of three lectures by experts in the field. We welcome posters dealing with AstroStatistical techniques to be associated with this session. The speakers will be available to participate in informal discussions during the afternoon, after the session.

**Chair:** Aneta Siemiginowska (*Harvard-Smithsonian, CfA*)

### 213.01 The Likelihood Function and Likelihood Statistics

**Author(s):** Edward L. Robinson<sup>1</sup>

**Institution(s):** <sup>1</sup> Univ. of Texas

### 213.02 From least squares to multilevel modeling: A graphical introduction to Bayesian inference

**Author(s):** Thomas J. Loredo<sup>1</sup>

**Institution(s):** <sup>1</sup> Cornell Center for Astrophysics and Planetary Science

### 213.03 Topics in Machine Learning for Astronomers

**Author(s):** Jessi Cisewski<sup>1</sup>

**Institution(s):** <sup>1</sup> Yale University

## 214 Astronomy Education Research

**Wednesday, 10:00 am - 11:30 am; Osceola 4**

**Chair:** Debra Burris (*Univ. of Central Arkansas*)

# WEDNESDAY, 6 JANUARY 2016

## 214.01 First Light Observations from the International Study of Astronomy Reasoning (ISTAR) Database

**Author(s):** Coty B. Tatge<sup>5</sup>, Stephanie Slater<sup>1</sup>, Timothy F. Slater<sup>5</sup>, Paulo S. Bretones<sup>2</sup>, David McKinnon<sup>4</sup>, Sharon Schleigh<sup>3</sup>

*Institution(s):* <sup>1</sup> Center for Astronomy & Physics Education Research, <sup>2</sup> DME/UFSCar, <sup>3</sup> Eastern Carolina University, <sup>4</sup> Edith Cowan University, <sup>5</sup> University of Wyoming

## 214.02 Assessing NASE Professional Development in Astronomy Workshops

**Author(s):** Susana E. Deustua<sup>1</sup>, Beatriz Garcia<sup>3</sup>, Rosa M Ros<sup>2</sup>

*Institution(s):* <sup>1</sup> Space Telescope Science Institute, <sup>2</sup> Universitat Politècnica de Catalunya, <sup>3</sup> UTN Facultad Mendoza

## 214.03 Examining the Role of Numeracy in College STEM Courses: Results from the Quantitative Reasoning for College Science (QuARCS) Assessment Instrument

**Author(s):** Katherine B. Follette<sup>1</sup>, Donald W. McCarthy<sup>2</sup>, Erin F. Dokter<sup>2</sup>, Sanlyn Buxner<sup>2</sup>, Edward E. Prather<sup>2</sup>

*Institution(s):* <sup>1</sup> Stanford University, <sup>2</sup> University of Arizona

## 214.04 A Research-Informed Approach to Teaching about Interferometry in STEM Classrooms

**Author(s):** Colin Scott Wallace<sup>4</sup>, Timothy G. Chambers<sup>3</sup>, Julia R. Kamenetzky<sup>1</sup>, Edward E. Prather<sup>1</sup>, Seth D. Hornstein<sup>2</sup>

*Institution(s):* <sup>1</sup> University of Arizona, <sup>2</sup> University of Colorado Boulder, <sup>3</sup> University of Michigan, <sup>4</sup> University of North Carolina at Chapel Hill

## 214.05 Status and Evolution of the Journal of Astronomy & Earth Science Education's First Year

**Author(s):** Timothy F. Slater<sup>1</sup>

*Institution(s):* <sup>1</sup> University of Wyoming

## 214.06 Vision Forward for NASA's Astrophysics Education Program

**Author(s):** Hashima Hasan<sup>1</sup>, Kartik J. Sheth<sup>1</sup>

*Institution(s):* <sup>1</sup> NASA Headquarters

## 214.07 The Legacy of NASA Astrophysics E/PO: Conducting Professional Development, Developing Key Themes & Resources, and Broadening E/PO Audiences

**Author(s):** Brandon L. Lawton<sup>4</sup>, Denise A. Smith<sup>4</sup>, Bonnie K. Meinke<sup>4</sup>, Lindsay Bartolone<sup>2</sup>, Jim Manning<sup>3</sup>, Gregory R. Schultz<sup>1</sup>

*Institution(s):* <sup>1</sup> ASP, <sup>2</sup> Astrophysics & Heliophysics Forums, <sup>3</sup> Astrophysics Forum, <sup>4</sup> STScI

## 214.08 The Legacy of NASA Astrophysics E/PO: Scientist Engagement and Higher Education

**Author(s):** Jim Manning<sup>3</sup>, Denise A. Smith<sup>5</sup>, Bonnie Meinke<sup>5</sup>, Brandon Lawton<sup>5</sup>, Gregory Schulz<sup>1</sup>, Lindsay Bartolone<sup>2</sup>, Luciana Bianchi<sup>4</sup>

*Institution(s):* <sup>1</sup> Astronomical Society of the Pacific, <sup>2</sup> Astrophysics & Heliophysics Forums, <sup>3</sup> Astrophysics Forum, <sup>4</sup> Johns Hopkins University, <sup>5</sup> STScI

## US Virtual Observatory Alliance Annual Meeting

Wednesday, 10:00 am - 11:30 am; St. George 114

The US Virtual Observatory Alliance (USVOA) is a US-wide open collaboration endorsed by the American Astronomical Society to expand and promote VO tools and services. The USVOA is also the US project of the International Virtual Observatory Alliance (IVOA), the global effort to facilitate VO standards and goals. The USVOA will be holding its annual face to face meeting at the AAS meeting. We will report on both US and international activities for the past year, and describe planned initiatives for the coming year. We will solicit questions and concerns, and will work to answer or resolve them where we can, and will carry items related to the international project to the IVOA for further discussion. We encourage everyone interested to attend, from those who are casually interested to those more directly embedded in VO developments.

**Organizer:** Brian Glendenning (*NRAO*)

## Education and Public Outreach Event, Student Welcome by Allison McGraw (*University of Arizona*)

Wednesday, 11:40 am - 12:10 pm; Sun C

## 215 Public Policy Plenary: Science to Action: Thoughts on Convincing a Skeptical Public

Wednesday, 11:40 am - 12:30 pm; Osceola C

**Chair:** Jack Burns (*Univ. of Colorado at Boulder*)



215.01

**Science to Action: Thoughts on Convincing a Skeptical Public**

**Author(s):** William Press<sup>1</sup>

*Institution(s):* <sup>1</sup> *University of Texas at Austin*

## Career Hour 2: Developing Your 30-Second Value Statement (aka Your Elevator Speech)

Wednesday, 12:30 pm - 1:30 pm; St. George 108

I have a brand and you have a brand. A brand is simply a promise of value and every successful professional and company is successful in part because they know how to articulate their brand. The ability to communicate your promise of value is vitally important for not only crafting your own career path, but also for finding out about hidden opportunities and jobs. In this workshop, we will learn the fundamentals of branding as it relates to career development and planning strategy. We will work together to develop you own 30-second brand statement which you can use in networking, and informational and job interviews. We will discuss the connection between brand, attitude, and reputation, and why every interaction with someone

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affects how people perceive your brand. You will leave this workshop with the ability to elucidate your own brand to whomever you meet, giving you a critical competitive edge in your career and the job market. This session is organized by the AAS Employment Committee

## 216 NASA Town Hall

**Wednesday, 12:45 pm - 1:45 pm; Sun A**

Senior representatives from NASA's Science Mission Directorate and Astrophysics Division will discuss NASA's science program and outlook. Topics will include the status of the research program, highlights of operating missions, NASA's response to the Astro2010 decadal survey, progress of missions in development, and anticipated opportunities for both non-flight basic research awards (grants) and flight mission investigations.

**Chair: Linda Sparke** (*NASA Headquarters*)

## Topics in Astrostatistics

**Wednesday, 1:30 pm - 3:30 pm; St. George 106**

The session will provide a forum for a discussion of variety of topics in Astrostatistics following the Special Session "Lectures on Astrostatistics" held on Wednesday morning. It will also anticipate the 'Time-domain methodology' session scheduled for Thursday morning. The speakers from both sessions are expected to attend. In addition a discussion on connections between the American Statistical Association Astrostatistics Interest Group and the AAS Working Group on Astroinformatics and Astrostatistics will take place.

**Organizer: Aneta Siemiginowska** (*Harvard-Smithsonian, CfA*)

## NOAO Mini-Workshop on Adaptive Optics

**Wednesday, 2:00 pm - 3:30 pm; St. George 108**

The NOAO US National Gemini Office is continuing a series of data reduction mini-workshops as part of an initiative on post-observing run support. This second-in-the-series workshop will focus on adaptive optics (AO) from pre-observation concerns through data reduction. There are currently a number of 4 to 8m class telescopes that offer AO in their suite of available observing modes. The workshop will start with a presentation on the fundamentals of AO by Claire Max, with an eye specifically to data taking and reduction. Additional talks will feature results from speakers who used AO to meet specific science goals. The speakers will address both the observational setup and data reduction challenges of working with AO data, how these were resolved, and lessons learned. Audience interaction will be encouraged.

**Organizer: Dara Norman** (*NOAO*)

## NASA Decadal Mission Studies and STDTs

Wednesday, 2:00 pm - 4:00 pm; St. George 112

NASA Decadal Mission Studies and STDTs.

Organizer: Susan Neff (*NASA's GSFC*)

## 217 Multi-faceted Studies of Galaxy Evolution

Wednesday, 2:00 pm - 3:30 pm; Sun A

Chair: Claudia Scarlata (*University of Minnesota*)

**217.01 The interplay between galaxy transition and molecular gas in the next generation of radio facilities**

Author(s): Katherine A. Alatalo<sup>1</sup>

Institution(s): <sup>1</sup> *The Carnegie Observatories*

**217.02D Galactic Conformity Beyond the Virial Radius in Observations and Simulations**

Author(s): Aaron D Bray<sup>1</sup>

Institution(s): <sup>1</sup> *Harvard University*

**217.03D Shining a light on star formation driven outflows: the physical conditions within galactic outflows**

Author(s): John P. Chisholm<sup>4</sup>, Christina A. Tremonti<sup>4</sup>, Claus Leitherer<sup>3</sup>, Aida Wofford<sup>1</sup>, Yanmei Chen<sup>2</sup>

Institution(s): <sup>1</sup> *Institut d'Astrophysique de Paris*, <sup>2</sup> *Nanjing University*, <sup>3</sup> *Space Telescope Science Institute*, <sup>4</sup> *University of Wisconsin*

**217.04 The gaseous environments of quasars: outflows, feedback & cold mode accretion**

Author(s): Chen Chen<sup>1</sup>

Institution(s): <sup>1</sup> *University of Florida*

**217.05D The Bivariate Luminosity--HI Mass Distribution Function of Galaxies based on the NIBLES Survey**

Author(s): Zhon Butcher<sup>2</sup>, Stephen E. Schneider<sup>2</sup>, Wim van Driel<sup>1</sup>, Matt Lehnert<sup>1</sup>

Institution(s): <sup>1</sup> *Institut d'Astrophysique de Paris*, <sup>2</sup> *UMass-Amherst*

**217.06 The Cosmic Infrared Background as a Test of Cold versus Warm Dark Matter**

Author(s): Darren Reed<sup>1</sup>

Institution(s): <sup>1</sup> *Institute for Computational Cosmology/S3IT*

## 218 Black Holes II: Surveys and Individual Objects

Wednesday, 2:00 pm - 3:30 pm; Sun B

Chair: Kelly Holley-Bockelmann (*Vanderbilt University*)

**218.01D Are we baffled? Astrophysical implications of Parkes Pulsar Timing Array gravitational-wave constraints**

Author(s): Vikram Ravi<sup>1</sup>, Stuart Wyithe<sup>2</sup>

Institution(s): <sup>1</sup> *Caltech*, <sup>2</sup> *University of Melbourne*

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## 218.02 The Best and the Brightest: Tidal Disruption Events Discovered by ASAS-SN

**Author(s):** Thomas Warren-Son Holoien<sup>1</sup>

*Institution(s):* <sup>1</sup> The Ohio State University

## 218.03 Using Microlensing Maps to Determine Spin of Black Holes

**Author(s):** Juan Guerra<sup>2</sup>, Matthew O'Dowd<sup>2</sup>, Rachel L. Webster<sup>4</sup>, Kathleen Labrie<sup>3</sup>, Saavik Ford<sup>1</sup>, Barry McKernan<sup>1</sup>, Nicholas Bate<sup>5</sup>

*Institution(s):* <sup>1</sup> CUNY BMCC, <sup>2</sup> CUNY Lehman College, <sup>3</sup> Gemini Observatory, <sup>4</sup> Melbourne University, <sup>5</sup> University of Cambridge

## 218.04 Evidence for an Intermediate Mass Black Hole Lurking in the Center of a Globular Cluster

**Author(s):** Bulent Kiziltan<sup>1</sup>

*Institution(s):* <sup>1</sup> Harvard-Smithsonian Center for Astrophysics

## 218.05 Detection of Extended Radio Emission in the Center of NGC 404: Implications for the Accreting Intermediate-Mass Black Hole Scenario

**Author(s):** Kristina Nyland<sup>2</sup>, Joan Wrobel<sup>3</sup>, Lisa Young<sup>1</sup>

*Institution(s):* <sup>1</sup> New Mexico Tech, <sup>2</sup> NRAO, <sup>3</sup> NSF

## 218.06 A Super-Eddington, Compton-Thick Wind in GRO J1655-40?

**Author(s):** Joseph Neilsen<sup>2</sup>, Farid Rahoui<sup>1</sup>, Jeroen Homan<sup>2</sup>, Michelle Buxton<sup>3</sup>

*Institution(s):* <sup>1</sup> European Southern Observatory, <sup>2</sup> MIT Kavli Institute, <sup>3</sup> Yale University

## 218.07 How Massive are the Heaviest Black Holes in X-ray Binaries? Exploring IC 10 X-1 and its Kind.

**Author(s):** Silas Laycock<sup>3</sup>, Tom Maccarone<sup>2</sup>, James F. Steiner<sup>1</sup>, Dimitris Christodoulou<sup>3</sup>, Jun Yang<sup>3</sup>, Breanna A. Binder<sup>4</sup>, Rigel Cappallo<sup>3</sup>

*Institution(s):* <sup>1</sup> Harvard Smithsonian Center for Astrophysics, <sup>2</sup> Texas Tech University, <sup>3</sup> University of Massachusetts, <sup>4</sup> University of Washington

## 218.08 Fast IR photometry of V404 Cyg in outburst with CIRCE/GTC

**Author(s):** Yigit Dallilar<sup>1</sup>, Stephen S. Eikenberry<sup>1</sup>, Alan Garner<sup>1</sup>, Richard D.

Stelter<sup>1</sup>, Poshak Gandhi<sup>4</sup>, Liam K. Hardy<sup>3</sup>, Vik S. Dhillon<sup>3</sup>, Stuart Littlefair<sup>3</sup>, Rob Fender<sup>2</sup>, Kunal P Mooley<sup>2</sup>

*Institution(s):* <sup>1</sup> UNIVERSITY OF FLORIDA, <sup>2</sup> UNIVERSITY OF OXFORD, <sup>3</sup> UNIVERSITY OF SHEFFIELD, <sup>4</sup> UNIVERSITY OF SOUTHAMPTON

## 219 AGN, QSO, Blazars: Host Galaxies and Individual Sources

Wednesday, 2:00 pm - 3:30 pm; Sun C

**Chair:** Nancy Levenson (*Gemini Observatory*)

## 219.01 The dynamics and energetics of FR-II radio galaxies

**Author(s):** Jeremy Harwood<sup>1</sup>, Raffaella Morganti<sup>1</sup>, Martin Hardcastle<sup>2</sup>, J. Croston<sup>3</sup>

*Institution(s):* <sup>1</sup> ASTRON, Netherlands Institute for Radio Astronomy, <sup>2</sup> University of Hertfordshire, <sup>3</sup> University of Southampton

**219.02 Host galaxies of luminous type II AGN: Winds, shocks, and comparisons to The SAMI Galaxy Survey**

**Author(s):** Rebecca McElroy<sup>1</sup>, Scott Croom<sup>1</sup>, Michael Pracy<sup>1</sup>

*Institution(s):* <sup>1</sup> University of Sydney

**219.03 Three LINERs Under the Hubble Spectral Microscope**

**Author(s):** Mallory Molina<sup>5</sup>, Michael Eracleous<sup>5</sup>, Aaron J. Barth<sup>6</sup>, Dan Maoz<sup>3</sup>, Jonelle Walsh<sup>4</sup>, Luis C. Ho<sup>1</sup>, Joseph C. Shields<sup>2</sup>

*Institution(s):* <sup>1</sup>. KIAA Peking Univeristy, <sup>2</sup>. Ohio University, <sup>3</sup>. Tel Aviv University, <sup>4</sup>. Texas A&M Univeristy, <sup>5</sup>. The Pennsylvania State University, <sup>6</sup>. University of California, Irvine

**219.04D Multi-wavelength polarimetry and variability study of M87 jet during 2002-2008**

**Author(s):** Sayali S Avachat<sup>2</sup>, Eric S. Perlman<sup>2</sup>, Mihai Cara<sup>4</sup>, Frazer Owen<sup>3</sup>, Daniel E Harris<sup>1</sup>, William B. Sparks<sup>4</sup>, Kunyang Li<sup>2</sup>, Katie Kosak<sup>2</sup>

*Institution(s):* <sup>1</sup>. Center for Astrophysics, <sup>2</sup>. Florida Institute of Technology, <sup>3</sup>. National Radio Astronomy Observatory, <sup>4</sup>. Space Telescope Science Institute

**219.05 Morphological research on radio loud AGN 4C39.25 using KaVA observations**

**Author(s):** Hyemin Yoo<sup>2</sup>, Bong Won Sohn<sup>1</sup>, Sukyoung Yi<sup>2</sup>

*Institution(s):* <sup>1</sup>. Korea Astronomy and Space Science Institute, <sup>2</sup>. Yonsei University

**219.06 Discovery of a Fast, Broad, Transient outflow in NGC 985**

**Author(s):** Gerard A. Kriss<sup>3</sup>, Jacobo Ebrero<sup>1</sup>, Jelle Kaastra<sup>2</sup>, Justin Ely<sup>3</sup>

*Institution(s):* <sup>1</sup>. ESAC, <sup>2</sup>. SRON, <sup>3</sup>. STScI

## 220 Extrasolar Planet Detection with High-Precision Radial Velocity

Wednesday, 2:00 pm - 3:30 pm; Sun D

**Chair:** Laurent Pueyo (*Space Telescope Science Institute*)

**220.01  $\nu$  Octantis: a conjectured S-type retrograde planet in a spectroscopic binary system**

**Author(s):** Benjamin E. Nelson<sup>1</sup>, David Ramm<sup>2</sup>, Michael Endl<sup>3</sup>

*Institution(s):* <sup>1</sup>. CIERA - Northwestern University, <sup>2</sup>. University of Canterbury, <sup>3</sup>. University of Texas, Austin

**220.02D Giant Planets in Open Clusters and Binaries: Observational Constraints on Migration**

**Author(s):** Samuel N. Quinn<sup>2</sup>, Russel J. White<sup>2</sup>, David W. Latham<sup>3</sup>, Lars A Buchhave<sup>1</sup>, Guillermo Torres<sup>3</sup>

*Institution(s):* <sup>1</sup>. Centre for Star & Planet Formation, Natural History Museum of Denmark, University of Copenhagen, <sup>2</sup>. Georgia State University, <sup>3</sup>. Harvard-Smithsonian Center for Astrophysics

**220.03D Weighing Rocky Exoplanets with Improved Radial Velocimetry**

**Author(s):** Sharon Xuesong Wang<sup>1</sup>, Jason Wright<sup>1</sup>

*Institution(s):* <sup>1</sup>. Pennsylvania State University

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## 220.04 The Latest Results from Project NIRRVs: Precise Near Infrared Radial Velocity Surveys

**Author(s):** Peter Plavchan<sup>1</sup>

*Institution(s):* <sup>1</sup> Missouri State University

## 220.05D The Automated Planet Finder's automation & first two years of science

**Author(s):** Jennifer Burt<sup>1</sup>, Greg Laughlin<sup>1</sup>, Steven S. Vogt<sup>1</sup>, Bradford Holden<sup>1</sup>

*Institution(s):* <sup>1</sup> University of California - Santa Cruz

## 220.06 The Dharma Planet Survey (DPS), a Robotic, High Cadence and High Doppler Precision Survey of Habitable Rocky Planets around Nearby Stars

**Author(s):** Jian Ge<sup>2</sup>, Bo Ma<sup>2</sup>, Matthew W. Muterspaugh<sup>1</sup>, Michael Singer<sup>2</sup>, Frank Varosi<sup>2</sup>, Scott Powell<sup>2</sup>, Michael W Williamson<sup>1</sup>, Sirinrat Sithajan<sup>2</sup>, Nolan Grieves<sup>2</sup>, Bo Zhao<sup>2</sup>, Sidney Schofield<sup>2</sup>, Jian Liu<sup>2</sup>, Anthony Cassette<sup>2</sup>, Kevin Carlson<sup>2</sup>, Khaya Klanot<sup>2</sup>, Sarik Jeram<sup>2</sup>, Rory Barnes<sup>3</sup>

*Institution(s):* <sup>1</sup> Tennessee State University, <sup>2</sup> Univ. of Florida, <sup>3</sup> University of Washington

## 221 Dark Energy Survey Early Results

Wednesday, 2:00 pm - 3:30 pm; Osceola A

The Dark Energy Survey is probing the origin of cosmic acceleration and the nature of dark energy by carrying out two interleaved, multi-band imaging surveys using the 570-megapixel Dark Energy Camera built by the collaboration for the NOAO Blanco 4-meter telescope at CTIO. The survey began in August 2013 and has completed two of its five 105-night observing seasons, including grizY imaging of several thousand square degrees and time-domain griz imaging of 30 sq. deg. with a 6-night cadence. This session will present an overview and present status of the survey and will feature early science results from supernovae, galaxy clusters, large-scale structure, weak gravitational lensing, and the discovery of new Milky Way dwarf galaxy satellites.

**Organizer:** Joshua Frieman (*Fermi Nat'l Accelerator Lab.*)

### 221.01 Status of the Dark Energy Survey

**Author(s):** Elizabeth J. Buckley-Geer<sup>1</sup>

*Institution(s):* <sup>1</sup> Fermi Nat'l Accelerator Laboratory

### 221.02 Early Weak Lensing Results From The Dark Energy Survey

**Author(s):** Niall Maccrann<sup>1</sup>

*Institution(s):* <sup>1</sup> University of Manchester

### 221.03 Clusters of Galaxies in the Dark Energy Survey

**Author(s):** Tesla E. Jeltema<sup>1</sup>

*Institution(s):* <sup>1</sup> University of California, Santa Cruz

### 221.04 Galaxy Clustering in the Dark Energy Survey

**Author(s):** Ashley Ross<sup>1</sup>

*Institution(s):* <sup>1</sup> Ohio State University

### 221.05 Early Results from the DES SN Survey

**Author(s):** Daniel Scolnic<sup>1</sup>

*Institution(s):* <sup>1</sup> University of Chicago

## 221.06 Discovery and Spectroscopic Follow-up of Milky Way Satellites in the Dark Energy Survey

**Author(s):** Ting Li<sup>1</sup>

*Institution(s):*<sup>1</sup> Texas AandM University

## 222 Hubble Space Telescope: a Vision to 2020 and Beyond

**Wednesday, 2:00 pm - 3:30 pm; Osceola B**

With the recent completion of its 25th year of operations, the Hubble Space Telescope is still at its peak of scientific capability, and continues to impact the astronomy community (and the public) in numerous ways. The “powers of ten” of Hubble range from over 1 million observations, to hundreds of PhD students supported, to one Nobel Prize for work conducted with Hubble. Although the last servicing mission is now more than 6 years behind us, Hubble is as in demand as ever, with Cycle 23 proposal submissions being the third highest to date. This special session is devoted to recent developments aimed at giving new life to the instruments and science with the Hubble Space Telescope. Topics will address plans for the next several years of operations, to extend Hubble’s lifetime into the JWST era and remain a forefront observatory while doing so, by maximizing the scientific output with new observing modes, as well as accelerating the pace of discovery with catalogs and archive tools. The session will be accompanied by a poster session to broaden the discussion with more community ideas and results from Hubble.

**Organizer:** Rachel Osten (*Space Telescope Science Institute*)

### 222.01 Maximizing the Scientific Return and Legacy of the Hubble Space Telescope Mission

**Author(s):** Jennifer J. Wiseman<sup>1</sup>

*Institution(s):*<sup>1</sup> NASA / GSFC

### 222.02 Hubble Space Telescope: a Vision to 2020 and Beyond: The Hubble Source Catalog

**Author(s):** Louis-Gregory Strolger<sup>1</sup>

*Institution(s):*<sup>1</sup> STScI

### 222.03 High precision astrometry with HST/WFC3 Scanning mode: parallaxes of two Galactic Cepheids

**Author(s):** Stefano Casertano<sup>1</sup>, Adam G. Riess<sup>1</sup>

*Institution(s):*<sup>1</sup> STScI

### 222.04 The new European Hubble archive

**Author(s):** Guido De Marchi<sup>2</sup>, Maria Arevalo<sup>1</sup>, Bruno Merin<sup>1</sup>

*Institution(s):*<sup>1</sup> European Space Astronomy Centre, <sup>2</sup> European Space Research and Technology Centre

### 222.05 Near-infrared Grism Spectroscopy with the Wide Field Camera 3: Insights from the 3D-HST Survey

**Author(s):** Ivelina G. Momcheva<sup>1</sup>

*Institution(s):*<sup>1</sup> Yale University

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## 222.06 The Ultraviolet Spectroscopic Legacy of HST

**Author(s):** Thomas R. Ayres<sup>1</sup>

*Institution(s):* <sup>1</sup> University of Colorado

## 223 Cosmology, CMB, and Dark Matter I

Wednesday, 2:00 pm - 3:30 pm; Miami

**Chair:** Olivier Dore (*JPL/Caltech*)

### 223.01 Testing Gravity using Cosmic Voids

**Author(s):** Bridget Falck<sup>1</sup>

*Institution(s):* <sup>1</sup> University of Oslo

### 223.02D Cosmological constraints from weak lensing non-Gaussian statistics

**Author(s):** Jia Liu<sup>1</sup>, Zoltan Haiman<sup>1</sup>, Andrea Petri<sup>1</sup>, James Hill<sup>1</sup>, Lam Hui<sup>1</sup>, Jan Michael Kratochvil<sup>2</sup>, Morgan May<sup>1</sup>

*Institution(s):* <sup>1</sup> Columbia University, <sup>2</sup> UKZN

### 223.03 21 cm Power Spectrum Upper Limits from PAPER-64

**Author(s):** Zaki Shiraz Ali<sup>2</sup>, Aaron Parsons<sup>2</sup>, Jonathan Pober<sup>1</sup>

*Institution(s):* <sup>1</sup> Brown University, <sup>2</sup> University of California Berkeley

### 223.04 Commissioning and Science Forecasts for the Hydrogen Epoch of Reionization Array (HERA)

**Author(s):** Aaron Parsons<sup>1</sup>

*Institution(s):* <sup>1</sup> University of California, Berkeley

### 223.05D Testing Gravity using Galaxy Redshift Surveys and CMB

**Author(s):** Shadab Alam<sup>5</sup>, Shirley Ho<sup>5</sup>, Alessandra Silvestri<sup>3</sup>, Anthony Pullen<sup>5</sup>, Mariana Vargas-Magana<sup>5</sup>, Donald P. Schneider<sup>1</sup>, Surhud More<sup>4</sup>, Hironao Miyatake<sup>2</sup>, Rachel Mandelbaum<sup>5</sup>

*Institution(s):* <sup>1</sup> Department of Astronomy and Astrophysics, The Pennsylvania State University,, <sup>2</sup> et Propulsion Laboratory, California Institute of Technology, <sup>3</sup>.Institute Lorentz, Leiden University,, <sup>4</sup>.Kavli Institute for the Physics and Mathematics of the Universe (WPI), UTIAS, The University of Tokyo, <sup>5</sup>. McWilliams Centre for Cosmology, CMU

### 223.06 The rise and fall of a challenger: the Bullet Cluster in $\Lambda$ cold dark matter simulations

**Author(s):** Robert Thompson<sup>1</sup>, Romeel Dave<sup>3</sup>, Kentaro Nagamine<sup>2</sup>

*Institution(s):* <sup>1</sup> National Center for Supercomputing Applications, <sup>2</sup> University of Osaka, <sup>3</sup>. University of Western Cape

### 223.07 Unlocking Dark Matter Physics out of Galactic Substructures

**Author(s):** Francis-Yan Cyr-Racine<sup>1</sup>, Leonidas A. Moustakas<sup>2</sup>, Charles R. Keeton<sup>3</sup>

*Institution(s):* <sup>1</sup>. Harvard University, <sup>2</sup>. Jet Propulsion Lab, <sup>3</sup>. Rutgers University

## 224 The Astrophysics of Exoplanet Orbital Phase Curves

Wednesday, 2:00 pm - 3:30 pm; Naples

High-quality space-based time series photometry of short-period exoplanets reveals not only transits and eclipses, but also orbital phase variations. Such phase curves have only recently become accessible in the optical (Kepler, CoRoT), near infrared (HST), and mid-infrared (Spitzer). These data give a more complete and detailed picture of exoplanets than can be gleaned from eclipses and transits alone, although at the same time present challenges in both data analysis and astrophysical interpretation. Atmospheric temperature can be resolved longitudinally with a single infrared phase curve, vertically with multi-wavelength phase curves, and in 3D if combined with multi-wavelength eclipse mapping. Such measurements constrain a planet's energy budget, heat transport, thermal inertia, and temperature structure. In the optical the atmospheric photometric modulations are comparable in amplitude to gravitational effects, including the beaming effect (Doppler boosting) and tidal deformation of the host star (ellipsoidal variations). Therefore, optical phase curves contain information about the planet's mass and their analysis requires simultaneously fitting all processes. This Special Session will include talks by leaders in this field who will present recent results.

**Chair: Avi Shporer (JPL)**

### 224.01 Multiband Spitzer phase curves of three highly-irradiated hot Jupiters

**Author(s): Ian Wong<sup>1</sup>**

*Institution(s):* <sup>1</sup> Caltech

### 224.02 Testing Atmospheric Circulation Theories with Multi-Wavelength Phase-Curve Observations of WASP-43b

**Author(s): Kevin B. Stevenson<sup>3</sup>, Jacob Bean<sup>3</sup>, Michael R. Line<sup>1</sup>, Jonathan J. Fortney<sup>1</sup>, Jean-Michel Desert<sup>4</sup>, Laura Kreidberg<sup>3</sup>, Adam P. Showman<sup>2</sup>, Tiffany Kataria<sup>5</sup>**

*Institution(s):* <sup>1</sup> UC Santa Cruz, <sup>2</sup> University of Arizona, <sup>3</sup> University of Chicago, <sup>4</sup> University of Colorado, <sup>5</sup> University of Exeter

### 224.03 Global Abundance and Temperature Constraints via Joint Spectroscopic Phase Curve Retrievals

**Author(s): Michael R. Line<sup>1</sup>, Kevin B. Stevenson<sup>2</sup>, Jacob Bean<sup>4</sup>, Laura Kreidberg<sup>4</sup>, Jonathan J. Fortney<sup>3</sup>**

*Institution(s):* <sup>1</sup> Hubble Postdoctoral Fellow, <sup>2</sup> Sagan Postdoctoral Fellow, <sup>3</sup> University of California Santa Cruz, <sup>4</sup> University of Chicago

### 224.04 Characterizing Exoplanet Atmospheres with Visible-Wavelength Phase Curves

**Author(s): Renyu Hu<sup>1</sup>, Avi Shporer<sup>1</sup>**

*Institution(s):* <sup>1</sup> Jet Propulsion Laboratory

### 224.05 A transition in the cloud composition of hot Jupiters atmospheres

**Author(s): Vivien Parmentier<sup>3</sup>, Jonathan J. Fortney<sup>3</sup>, Adam P. Showman<sup>1</sup>, Caroline Morley<sup>3</sup>, Mark S. Marley<sup>2</sup>**

*Institution(s):* <sup>1</sup> Lpl, <sup>2</sup> Nasa Ames, <sup>3</sup> UCSC

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## 224.06 Phase Curves of Eccentric Exoplanets

**Author(s):** Nikole K. Lewis<sup>3</sup>, Julien de Wit<sup>2</sup>, Gregory P. Laughlin<sup>4</sup>, Heather Knutson<sup>1</sup>

*Institution(s):* <sup>1</sup> Caltech, <sup>2</sup> MIT, <sup>3</sup> STScI, <sup>4</sup> UCSC

## 224.07 Evidence for an Extrasolar Trojan Asteroid Population from Kepler Phase Curve Stacking

**Author(s):** Daniel Angerhausen<sup>1</sup>

*Institution(s):* <sup>1</sup> ORAU - NASA Goddard

## 224.08 Kepler beaming binaries radial velocity follow-up with WIYN/Hydra

**Author(s):** Avi Shporer<sup>2</sup>, Keivan Stassun<sup>4</sup>, Simchon Faigler<sup>3</sup>, Tsevi Mazeh<sup>3</sup>, Tabettha S. Boyajian<sup>6</sup>, Lev Tal-Or<sup>1</sup>, Andrej Prsa<sup>5</sup>

*Institution(s):* <sup>1</sup> Institut für Astrophysik, <sup>2</sup> JPL, <sup>3</sup> Tel Aviv University, <sup>4</sup> Vanderbilt University, <sup>5</sup> Villanova University, <sup>6</sup> Yale University

## 225 Globular and Open Clusters

Wednesday, 2:00 pm - 3:30 pm; Tampa

**Chair:** Catherine Pilachowski (*Indiana University*)

## 225.01D Low-resolution Spectroscopic study of Globular Clusters with Multiple Populations

**Author(s):** Dongwook Lim<sup>1</sup>, Young-Wook Lee<sup>1</sup>

*Institution(s):* <sup>1</sup> Yonsei University

## 225.02D Neutron-Capture Abundances in the Milky Way: New Insights from Open Clusters

**Author(s):** Jamie Christine Overbeek<sup>1</sup>, Eileen D. Friel<sup>1</sup>, Heather R. Jacobson<sup>2</sup>

*Institution(s):* <sup>1</sup> Indiana University, <sup>2</sup> Massachusetts Institute of Technology

## 225.03 GEMS Observations of Obscured Galactic Bulge Globular Clusters

**Author(s):** Douglas Geisler<sup>2</sup>, Sara Saracino<sup>3</sup>, Emanuele Dalessandro<sup>3</sup>, Francesco Ferraro<sup>3</sup>, Barbara Lanzoni<sup>3</sup>, Francesco Mauro<sup>2</sup>, Sandro Villanova<sup>2</sup>, Christian Moni Bidin<sup>1</sup>, Paolo Miocchi<sup>3</sup>, Davide Massari<sup>3</sup>

*Institution(s):* <sup>1</sup> Universidad Catolica del Norte, <sup>2</sup> Universidad de Concepcion, <sup>3</sup> Universita di Bologna

## 225.05 Effects of Stellar-Mass Black Holes on Star Cluster Evolution and Survival

**Author(s):** Sourav Chatterjee<sup>1</sup>, Meagan Morscher<sup>1</sup>, Carl L. Rodriguez<sup>1</sup>, Frederic A. Rasio<sup>1</sup>

*Institution(s):* <sup>1</sup> CIERA-Northwestern University

## 226 A Report from the Inclusive Astronomy 2015 Meeting: Community Recommendations for Diversity and Inclusion in Astronomy

Wednesday, 2:00 pm - 3:30 pm; Sanibel

More than 150 members of the astronomical community came together at Vanderbilt University in June 2015 for the first Inclusive Astronomy meeting. Inclusive Astronomy was structured around four broad themes: (1) Eliminating Barriers to Access, (2) Creating Inclusive Environments, (3) Establishing a Community of Inclusive Practice, and (4) Policy, Power, and Leadership. This special session is intended to summarize key points that emerged at the meeting, and most importantly – in the spirit of the previous Baltimore Charter and Pasadena Recommendations – to present a mature draft of the “Nashville Recommendations” that emerged from the conference. These recommendations, which include specific action items on multiple timescales (immediate, intermediate, long-term) for multiple stakeholders (academic institutions, funding agencies, professional societies), will be presented to AAS Council to consider endorsement. Feedback from Society members attending this session are welcomed. The goal of the Nashville Recommendations is to advance astronomy toward becoming a profession marked by diversity, broad inclusion, and thus continued excellence. Session speakers: Adam Burgasser (UC San Diego) – Summary of Recommendations and Process Keivan Stassun (Vanderbilt University, Fisk University) – Summary of Creating Inclusive Kim Coble (Chicago State University) – Summary of Eliminating Barriers to Access Nick Murphy (SAO) – Summary of Establishing a Community of Inclusive Practice Dara Norman (NOAO) – Summary of Policy, Power, and Leadership Jedidah Isler (Vanderbilt University, Harvard University) – Session Participant Feedback on Draft Recommendations

## 227 Cataclysmic Variables and Supernova Progenitors

Wednesday, 2:00 pm - 3:30 pm; Sarasota

Chair: Sumner Starrfield (*Arizona State University*)

### 227.01 An HST Study of the Ultraviolet Variability of Quiescent Cataclysmic Variables

Author(s): Paula Szkody<sup>1</sup>, Anjum S. Mukadam<sup>1</sup>, Boris T Gaensicke<sup>2</sup>  
Institution(s): <sup>1</sup> Univ. of Washington, <sup>2</sup> University of Warwick

### 227.02 Analysis of Positive Superhump Shapes Near Superoutburst Maximum in CV SU UMa-like Systems

Author(s): Michele Bobertz<sup>3</sup>, Irina Voloshina<sup>1</sup>, Amit Goel<sup>2</sup>  
Institution(s): <sup>1</sup> Sternberg Astronomical Institute, <sup>2</sup> UCF, <sup>3</sup> Valencia College

### 227.03 Non-Detection of Nova Shells Around Asynchronous Polars

Author(s): Ashley Pagnotta<sup>1</sup>, David Zurek<sup>1</sup>  
Institution(s): <sup>1</sup> American Museum of Natural History

### 227.04 Search for Gamma-Ray Emission from Galactic Novae using Fermi-LAT Pass 8

Author(s): Sara Buson<sup>2</sup>, Anna Franckowiak<sup>4</sup>, Teddy Cheung<sup>3</sup>, Pierre Jean<sup>1</sup>  
Institution(s): <sup>1</sup> IRAP, <sup>2</sup> NASA/GSFC/CRESST/UMBC, <sup>3</sup> NRL/Space Science Division, <sup>4</sup> SLAC/Stanford Univ.

# WEDNESDAY, 6 JANUARY 2016

## 227.05 Clues to the evolution of helium WD-WD binaries from the Palomar Transient Factory

**Author(s):** John K. Cannizzo<sup>1</sup>

*Institution(s):* <sup>1</sup> NASA/GSFC/CRESST/UMBC

## 227.06D Late-time Constraints on the Fates of Supernova Impostors

**Author(s):** Scott Adams<sup>1</sup>

*Institution(s):* <sup>1</sup> The Ohio State University

## 227.07 Discovery of Five Candidates for Present Day $\eta$ Carinae Analogs in Nearby Galaxies

**Author(s):** Rubab M. Khan<sup>1</sup>

*Institution(s):* <sup>1</sup> NASA Goddard Space Flight Center

## 227.08 Constraining the Progenitor Masses of Core Collapse Supernova Remnants

**Author(s):** Mariangelly Díaz Rodríguez<sup>1</sup>, Jeremiah Wayne Murphy<sup>1</sup>, Benjamin Elwood<sup>1</sup>, Benjamin F. Williams<sup>3</sup>, David Rubin<sup>2</sup>

*Institution(s):* <sup>1</sup> Florida State University, <sup>2</sup> Space Telescope Science Institute, <sup>3</sup> The University of Washington

## 228 Circumstellar Disks and Dust

Wednesday, 2:00 pm - 3:30 pm; Osceola 5

**Chair:** Matthew Povich (*Cal Poly Pomona*)

### 228.01 Destruction of Refractory Carbon in Protoplanetary Disks

**Author(s):** Dana Anderson<sup>1</sup>, Edwin A. Bergin<sup>5</sup>, Geoffrey A. Blake<sup>1</sup>, Fred Ciesla<sup>4</sup>, Ruud Visser<sup>2</sup>, Jeong-Eun Lee<sup>3</sup>

*Institution(s):* <sup>1</sup> California Institute of Technology, <sup>2</sup> European Southern Observatory, <sup>3</sup> Kyung Hee University, <sup>4</sup> The University of Chicago, <sup>5</sup> University of Michigan

### 228.02 The Epsilon Eridani Debris Disk Resolved by Millimeter Interferometry

**Author(s):** David J. Wilner<sup>1</sup>, Meredith A. MacGregor<sup>1</sup>, Sean M. Andrews<sup>1</sup>, Lestrade Jean-Francois<sup>2</sup>, Sarah Tahli Maddison<sup>3</sup>

*Institution(s):* <sup>1</sup> Harvard-Smithsonian, CfA, <sup>2</sup> Observatoire de Paris, <sup>3</sup> Swinburne University of Technology

### 228.03D The Dust Properties of the Beta Pictoris Debris Disk from an Analysis of its Thermal Emission and Scattered Light

**Author(s):** Nicholas Ballering<sup>1</sup>, George Rieke<sup>1</sup>, Kate Y.L. Su<sup>1</sup>, Andras Gaspar<sup>1</sup>

*Institution(s):* <sup>1</sup> University of Arizona / Steward Observatory

### 228.04 Revealing the structure and dust content of debris disks on solar systems scales with GPI

**Author(s):** Gaspard Duchene<sup>5</sup>, Michael P. Fitzgerald<sup>6</sup>, Paul Kalas<sup>5</sup>, James R. Graham<sup>5</sup>, Pauline Arriaga<sup>6</sup>, Sebastian Bruzzone<sup>10</sup>, Christine Chen<sup>2</sup>, Rebekah Ilene Dawson<sup>5</sup>, Ruobing Dong<sup>5</sup>, Zachary Draper<sup>9</sup>, Thomas Esposito<sup>5</sup>, Katherine Follette<sup>3</sup>, Li-Wei Hung<sup>6</sup>, Samantha Lawler<sup>9</sup>, Stanimir Metchev<sup>10</sup>, Max Millar-Blanchaer<sup>8</sup>, Ruth Murray-Clay<sup>7</sup>, Marshall D. Perrin<sup>2</sup>, Julien Rameau<sup>4</sup>, Jason Wang<sup>5</sup>, Schuyler Wolff<sup>1</sup>, Bruce Macintosh<sup>3</sup>

*Institution(s):* <sup>1</sup> Johns Hopkins University, <sup>2</sup> Space Telescope Science Institute, <sup>3</sup> Stanford University, <sup>4</sup> Université de Montréal, <sup>5</sup> University of California Berkeley, <sup>6</sup> University of California Los Angeles, <sup>7</sup> University of California Santa Barbara, <sup>8</sup> University of Toronto, <sup>9</sup> University of Victoria, <sup>10</sup> University of Western Ontario

## **228.05 Anomalous Microwave Emission in HII regions: is it really anomalous ? The case of RCW 49**

**Author(s):** Roberta Paladini<sup>2</sup>, Adriano Ingallinera<sup>3</sup>, Claudia Agliozzo<sup>5</sup>, Christopher Tibbs<sup>1</sup>, Alberto Noriega-Crespo<sup>4</sup>, Grazia Umam<sup>3</sup>, Clive Dickinson<sup>6</sup>, Corrado Trigiglio<sup>3</sup>

*Institution(s):* <sup>1</sup> European Space Agency, <sup>2</sup> IPAC/Caltech, <sup>3</sup> Osservatorio Astrofisico di Catania, <sup>4</sup> Space Telescope Science Institute, <sup>5</sup> Universidad Andres Bello, <sup>6</sup> University of Manchester

## **228.06 Mass Loss from Dusty AGB and Red Supergiant Stars in the Magellanic Clouds and in the Galaxy**

**Author(s):** Benjamin A. Sargent<sup>2</sup>, Sundar Srinivasan<sup>1</sup>, Margaret Meixner<sup>3</sup>, Joel Kastner<sup>2</sup>

*Institution(s):* <sup>1</sup> Academia Sinica Institute of Astronomy and Astrophysics, <sup>2</sup> Rochester Institute of Technology, <sup>3</sup> Space Telescope Science Institute

## **228.07D Hot Exozodiacal Dust Disks, their Detection and Variability, as Measured with Long-Baseline Optical Interferometry.**

**Author(s):** Nicholas Jon Scott<sup>1</sup>

*Institution(s):* <sup>1</sup> Georgia State University, Astronomy Dept

## **229 K-12 Education and Public Outreach**

Wednesday, 2:00 pm - 3:30 pm; Osceola 4

**Chair:** Timothy Slater (*University of Wyoming*)

### **229.01 ThinkSpace: Spatial Thinking in Middle School Astronomy Labs**

**Author(s):** Patricia S. Udomprasert<sup>2</sup>, Alyssa A. Goodman<sup>2</sup>, Julia Plummer<sup>3</sup>, Philip M. Sadler<sup>2</sup>, Erin Johnson<sup>2</sup>, Susan Sunbury<sup>2</sup>, Helen Zhang<sup>1</sup>, Mary E. Dussault<sup>2</sup>

*Institution(s):* <sup>1</sup> Boston College, <sup>2</sup> Harvard-Smithsonian Center for Astrophysics, <sup>3</sup> Pennsylvania State University

### **229.02 Astronomy in Chile Education Ambassadors Program' Gives On-site Experience to Build Knowledge and Enhance Impact: Success of Inaugural Class and Plans for the Future**

**Author(s):** Charles E. Blue<sup>2</sup>, Timothy Spuck<sup>1</sup>

*Institution(s):* <sup>1</sup> Associated Universities, Inc, <sup>2</sup> NRAO

### **229.03 Public Outreach Guerilla Style: Just Add Science to Existing Events**

**Author(s):** Richard Gelderman<sup>1</sup>

*Institution(s):* <sup>1</sup> Western Kentucky Univ.

### **229.04 Preparing the Public for JWST**

**Author(s):** Joel D. Green<sup>1</sup>, Denise A. Smith<sup>1</sup>, Brandon L. Lawton<sup>1</sup>, Hussein Jirdeh<sup>1</sup>, Bonnie K. Meinke<sup>1</sup>

*Institution(s):* <sup>1</sup> Space Telescope Science Institute

# WEDNESDAY, 6 JANUARY 2016

## 229.05 Skynet Junior Scholars: Bringing Astronomy to Deaf and Hard of Hearing Youth

**Author(s):** Kate Meredith<sup>2</sup>, Kathryn Williamson<sup>1</sup>, Constance Gartner<sup>3</sup>, Vivian L. Hoette<sup>2</sup>, Sue Ann Heatherly<sup>1</sup>

*Institution(s):* <sup>1</sup> National Radio Astronomy Observatory, <sup>2</sup> University of Chicago Yerkes Observatory, <sup>3</sup> Wisconsin School for the Deaf

## 230 Dannie Heineman Prize: From “~” to Precision Science: Cosmology from 1995 to 2025

Wednesday, 3:40 pm - 4:30 pm; Osceola C

Chair: Robert Brown (AIP)



230.01

**From “~” to Precision Science: Cosmology from 1995 to 2025**

**Author(s):** Marc Kamionkowski<sup>1</sup>, David N. Spergel<sup>2</sup>

*Institution(s):* <sup>1</sup> Johns Hopkins University, <sup>2</sup> Princeton University

**Citation:** for their outstanding contributions to the investigation of the fluctuations of the cosmic microwave background, which have led to major breakthroughs in our understanding of the universe.

## 231 HEAD Rossi Prize: A New View of the High Energy Universe with NuSTAR

Wednesday, 4:30 pm - 5:20 pm; Osceola C

Chair: Nicholas White (USRA)



231.01

**A New View of the High Energy Universe with NuSTAR**

**Author(s):** Fiona Harrison<sup>1</sup>

*Institution(s):* <sup>1</sup> Caltech

**Citation:** for her groundbreaking work on supernova remnants, neutron stars, and black holes enabled by NuSTAR, the first satellite to focus X-rays above 10 keV. Her assembly and leadership of the extraordinary NuSTAR team has opened a new window on the Universe.

## Presentation of AIP’s 2015 Science Writing Awards

Wednesday, 5:00 pm - 7:00 pm; Osceola 2

Come celebrate as Robert G.W. Brown, CEO of AIP, presents three of AIP’s 2015 Science Communication Awards to the winners in the Articles, Books, and Broadcast and New Media categories.

## Thirty Meter Telescope (TMT) Open House

**Wednesday, 5:30 pm - 6:30 pm; Orange Blossom Ballroom**

The Thirty Meter Telescope (TMT) will enable revolutionary advances in optical/infrared astronomy. With an order of magnitude more collecting area than today's 8-10m telescopes, and nearly 5 times better angular resolution than the James Webb Space Telescope at similar infrared wavelengths, TMT will make fundamental contributions to most areas of astronomy and astrophysics, from planetary systems (in and out of our own solar system) to galaxy formation and cosmology. At this TMT Open House we will report on the status of the observatory, and highlight new developments in instrumentation, adaptive optics, and science planning. The TMT International Observatory partnership includes Canada, China, India, Japan, Caltech, and the University of California. AURA is also an Associate Member of TMT, and NOAO executes AURA's TMT-related activities on behalf of the US community. The US TMT Science Working Group (SWG) consists of astronomers from institutions across the US, and is evaluating the community's interests and aspirations for science with TMT. We will report on work by the SWG and the TMT project to develop a plan for US national participation in TMT. This plan describes the scientific, technological, educational, and programmatic benefits of TMT participation for the US community, and considers the choices and decisions that would maximize those benefits. Members of the US TMT SWG will attend this Open House, and there will be ample time for audience questions and discussion. The session will also highlight ways that astronomers everywhere can become involved in TMT, including opportunities for instrumentation development, membership in the TMT International Science Development Teams, and attendance at the annual TMT Science Forum. Complimentary refreshments and hors d'oeuvres will be provided.

**Organizer:** Mark Dickinson (*NOAO*)

## 232 Preparing for the James Webb Space Telescope

**Wednesday, 6:30 pm - 8:00 pm; Sun A**

The James Webb Space Telescope will be the most powerful telescope that astronomers have ever constructed, and is essential for answering the top science questions outlined in the NAC Astrophysics 2000 and 2010 Decadal Surveys. The Jan 2016 AAS meeting will take place less than two years before JWST's Cycle 1 Call for Proposals. To begin preparing the community to capitalize on early science observations, STScI will present the science timeline for JWST as it relates to proposal planning and future availability of software tools. STScI will also discuss science policies for the GO community. The Town Hall will also feature a presentation on JWST status, budget, and schedule. Dr. Eric Smith (JWST Program Director, NASA HQ) will describe the progress of JWST in 2015 (e.g., the major milestone of building the 18-segmented primary mirror and secondary and aft optics) and the future outlook of the program towards its Oct 2018 launch. Ample time will be reserved for discussion with the community.

**Organizer:** Jason Kalirai (*Space Telescope Science Institute*)

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## 233 HEAD Business Meeting

Wednesday, 6:30 pm - 7:30 pm; Osceola A

Chair: Nicholas White (*USRA*)

## 251 Town Hall: NOAO Transformed: A Status Report

Wednesday, 6:30 pm - 7:30 pm; Sun D

NOAO is deploying a new suite of research capabilities for the community-at-large in partnership with NSF, DOE, NASA, and various major science collaborations. Instrumentation capabilities available now include the ultra-wide field optical imager DECam as well as new optical and infrared medium-resolution spectrometers. Coming in the near future are DESI ultra-wide-field, 5000-fiber optical spectrometer and the Extreme Precision Doppler Spectrometer (EPDS). Wide-field optical surveys with DECam in the South and Mosaic 1.1 in the North are delivering major new data products to the Science Archive for community use. In support of those new data products, NOAO is developing catalog exploration, exploitation, and visualization tools within the Data Lab project. Meanwhile, NOAO remains active as the US gateway to Gemini and its recently improved instrument suite. NOAO may also be poised to act as the US OIR System coordinator. Join us for a presentation by the NOAO Director as well as ample opportunity for discussion.

Organizer: Kathie Coil (*NOAO*)

## Open Mic Night

Wednesday, 8:00 pm - 9:00 pm; Sun C

The first and second AAS Open Mic nights held at prior winter meetings were enjoyed by all who attended. We had more performers the second time around than the first, and many more members in the audience. We had tears, laughter and some simply amazing music and singing; so we will once again be holding an AAS Open Mic night on Wednesday evening. Members and meeting attendees are encouraged to share their talents with their colleagues in a welcoming, accepting environment. Story tellers, poets, musicians, comedians, jugglers (no fire!): everyone is invited to participate. We welcome all styles and genres of music from bluegrass to speed metal...seriously! Performances must be acceptable to a general audience of your peers and the AAS reserves the right to limit performances based on content. Let us know if you want to perform quickly, as we will be on a first-come, first-served basis for this popular event, but we may be able to accept walk-on performances depending on time availability. Come have some fun and strut your stuff. Cocktails, wine and beer will be available for purchase.

## POSTER SESSIONS

### 234 Starburst Galaxies Poster Session

Wednesday, 5:30 pm - 6:30 pm; Exhibit Hall A

- 234.01 Sources of High-Energy Emission in the Green Pea Galaxies: New Constraints from Magellan Spectra**  
**Author(s):** Derek Alexander Carroll<sup>1</sup>  
*Institution(s):*<sup>1</sup> *University of Massachusetts Amherst*
- 234.02 Peas in a Pod: Environment and Ionization in Green Pea Galaxies**  
**Author(s):** Heather Kurtz<sup>1</sup>, Anne Jaskot<sup>1</sup>, Patrick Drew<sup>2</sup>, Dylan Pare<sup>2</sup>, Jon Griffin<sup>2</sup>, Michael Petersen<sup>2</sup>  
*Institution(s):*<sup>1</sup> *Smith College*, <sup>2</sup> *University of Massachusetts*
- 234.03 The Conditions Underpinning Extreme Star Formation in ULIRGs and LIRGs as Revealed by Herschel Far-Infrared Spectroscopy**  
**Author(s):** Gabriel A Vasquez<sup>1</sup>, Matthew Ashby<sup>2</sup>, Howard Alan Smith<sup>2</sup>, Moiya McTier<sup>2</sup>, Marcio Melendez<sup>3</sup>  
*Institution(s):*<sup>1</sup> *Florida State University*, <sup>2</sup> *Harvard Smithsonian Center for Astrophysics*, <sup>3</sup> *University of Maryland*
- 234.04 Stellar Masses and Star Formation Rates of Lensed Dusty Star-Forming Galaxies from the SPT Survey**  
**Author(s):** Jingzhe Ma<sup>1</sup>, Anthony Gonzalez<sup>1</sup>  
*Institution(s):*<sup>1</sup> *University of Florida*
- 234.05 Exploring Extragalactic Emission: The H $\alpha$  Dot Survey**  
**Author(s):** Rayna Rampalli<sup>2</sup>, John Joseph Salzer<sup>1</sup>  
*Institution(s):*<sup>1</sup> *Indiana University*, <sup>2</sup> *Wellesley College*
- 234.06 Spatially Resolved Stellar Populations Of Nearby Post-Starburst Galaxies In SDSS-IV MaNGA**  
**Author(s):** Charles Liu<sup>1</sup>, Ashley Betances<sup>1</sup>, Alaina Marie Bonilla<sup>1</sup>, Andrea Gonzalez<sup>1</sup>, Christina Migliore<sup>2</sup>, Daniel Goddard<sup>3</sup>, Karen Masters<sup>3</sup>  
*Institution(s):*<sup>1</sup> *CUNY College of Staten Island*, <sup>2</sup> *Northeastern University*, <sup>3</sup> *University of Portsmouth*
- 234.07 The Nearby Analogues of Pure Starburst Galaxies**  
**Author(s):** Benjamin C. Kaiser<sup>1</sup>, Anthony Crider<sup>1</sup>, Chris T. Richardson<sup>1</sup>  
*Institution(s):*<sup>1</sup> *Elon University*
- 234.08 Spatially resolved star-formation in nearby analogues of Lyman break galaxies**  
**Author(s):** Sabrina Appel<sup>2</sup>, Andrew J. Baker<sup>3</sup>, Kirsten Hall<sup>1</sup>  
*Institution(s):*<sup>1</sup> *Johns Hopkins University*, <sup>2</sup> *Reed College*, <sup>3</sup> *Rutgers, the State University of New Jersey*

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## 234.09 Green Pea Galaxies Reveal Secrets of Ly $\alpha$ Escape

**Author(s):** Huan Yang<sup>1</sup>, Sangeeta Malhotra<sup>1</sup>, Max Gronke<sup>4</sup>, James E. Rhoads<sup>1</sup>, Anne Jaskot<sup>3</sup>, Zhenya Zheng<sup>2</sup>, Mark Dijkstra<sup>4</sup>, JunXian Wang<sup>5</sup>

*Institution(s):* <sup>1</sup> Arizona State University, <sup>2</sup> Pontificia Universidad Catolica de Chile, <sup>3</sup> Smith College, <sup>4</sup> University of Oslo, <sup>5</sup> University of Science and Technology of China

## 235 Galaxy Clusters Poster Session

Wednesday, 5:30 pm - 6:30 pm; Exhibit Hall A

### 235.01 SED Fitting of Virgo Cluster Galaxies and Evidence for Enhanced Star Formation due to Accretion

**Author(s):** Leah Fulmer<sup>1</sup>, Jeffrey D. Kenney<sup>2</sup>, Louise O. V. Edwards<sup>2</sup>

*Institution(s):* <sup>1</sup> University of Wisconsin - Madison, <sup>2</sup> Yale University

### 235.02 Gas Sloshing in the Rich Cluster A2204: Putting Constraints on the Properties of the Magnetized Hot Plasma

**Author(s):** Christine Jones<sup>1</sup>, Huanqing Chen<sup>3</sup>, Zhiyuan Li<sup>3</sup>, Felipe Andrade-Santos<sup>1</sup>, John Zuhone<sup>2</sup>

*Institution(s):* <sup>1</sup> Harvard-Smithsonian, CfA, <sup>2</sup> MIT, <sup>3</sup> Nanjing University

### 235.03 A Cosmic Train Wreck: JVLA Radio Observations of the HST Frontier Fields Cluster Abell 2744

**Author(s):** Connor Pearce<sup>7</sup>, Reinout J. Van Weeren<sup>1</sup>, Christine Jones<sup>1</sup>, William R. Forman<sup>1</sup>, Georgiana A O'Greehan<sup>1</sup>, Felipe Andrade-Santos<sup>1</sup>, Ralph P. Kraft<sup>1</sup>, William Dawson<sup>2</sup>, Marcus Brüggen<sup>5</sup>, Elke Roediger<sup>6</sup>, Esra Bulbul<sup>3</sup>, Tony Mroczkowski<sup>4</sup>

*Institution(s):* <sup>1</sup> Harvard Smithsonian Center for Astrophysics, <sup>2</sup> Lawrence Livermore Nat. Lab., <sup>3</sup> Massachusetts Institute of Technology, <sup>4</sup> Naval Research Lab, <sup>5</sup> University of Hamburg, <sup>6</sup> University of Hull, <sup>7</sup> University of Southampton

### 235.04 A Census of Star Formation and Active Galactic Nuclei Populations in Abell 1689

**Author(s):** Logan H Jones<sup>2</sup>, David Wesley Atlee<sup>1</sup>

*Institution(s):* <sup>1</sup> City University of New York, <sup>2</sup> University of Arkansas

### 235.06 A Mid-IR Investigation of the GMBCG Catalogue using WISE

**Author(s):** James Runge<sup>1</sup>, Haojing Yan<sup>1</sup>

*Institution(s):* <sup>1</sup> University of Missouri - Columbia

### 235.07 H-alpha Imaging Survey of Low-Redshift Cluster Dwarf Galaxies

**Author(s):** Wayne Barkhouse<sup>2</sup>, Sandanuwan Kalawila<sup>2</sup>, Cody Rude<sup>1</sup>, Madina Sultanova<sup>2</sup>, Haylee Nichole Archer<sup>2</sup>, Gregory Foote<sup>2</sup>

*Institution(s):* <sup>1</sup> MIT Haystack Observatory, <sup>2</sup> Univ. of North Dakota

### 235.08 Using Herschel Far-Infrared Photometry to Constrain Star Formation Rates in CLASH Cluster Galaxies

**Author(s):** Rebecca L Larson<sup>3</sup>, Marc Postman<sup>2</sup>, Kevin Fogarty<sup>1</sup>

*Institution(s):* <sup>1</sup> John's Hopkins University, <sup>2</sup> Space Telescope Science Institute, <sup>3</sup> University of Texas at Austin

- 235.09 Intracluster Light in Galaxy Groups and Clusters**  
**Author(s):** Tahlia DeMaio<sup>2</sup>, Anthony Gonzalez<sup>2</sup>, Ann I. Zabludof<sup>1</sup>, Dennis F. Zaritsky<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Arizona, <sup>2</sup> University of Florida
- 235.10 Systematic Uncertainties in Characterizing Cluster Outskirts: The Case of Abell 133**  
**Author(s):** Jennie Paine<sup>2</sup>, Georgiana A Ogrea<sup>1</sup>, Paul Nulsen<sup>1</sup>, Duncan Farrah<sup>2</sup>  
*Institution(s):* <sup>1</sup> Harvard-Smithsonian Center for Astrophysics, <sup>2</sup> Virginia Tech
- 235.11 Quantifying peculiarity of cluster galaxies and their kinematic features**  
**Author(s):** Sree Oh<sup>2</sup>, Hyunjin Jeong<sup>1</sup>, Yun-Kyeong Sheen<sup>1</sup>, Sukyoung Yi<sup>2</sup>  
*Institution(s):* <sup>1</sup> KASI, <sup>2</sup> Yonsei University
- 235.12 Searching for Galaxy Overdensities in the Fields of 10  $z > 6$  Quasars**  
**Author(s):** Jaclyn C Bradli<sup>1</sup>, Fabian Walter<sup>1</sup>, Bram Venemans<sup>1</sup>, Roberto Decarli<sup>1</sup>, Laura Zschaechner<sup>1</sup>  
*Institution(s):* <sup>1</sup> Max Planck Institut für Astronomie
- 235.13 The Importance of Compact Group Environments Over Cosmic Time**  
**Author(s):** Christopher Wiens<sup>1</sup>, Kelsey E. Johnson<sup>1</sup>, Trey Wenger<sup>1</sup>, Liting Xiao<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Virginia
- 235.14 The Galaxy Cluster Environments of Wide Angle Tail Radio Sources**  
**Author(s):** Edmund Douglass<sup>4</sup>, Elizabeth L. Blanton<sup>1</sup>, Scott W. Randall<sup>2</sup>, Tracy E. Clarke<sup>3</sup>, Joshua Wing<sup>2</sup>  
*Institution(s):* <sup>1</sup> Boston University, <sup>2</sup> Harvard-Smithsonian Center for Astrophysics, <sup>3</sup> Naval Research Laboratory, <sup>4</sup> SUNY - Farmingdale State College
- 235.15 Using Strong Gravitational Lensing to Identify Fossil Group Progenitors**  
**Author(s):** Lucas Johnson<sup>1</sup>, Jimmy Irwin<sup>1</sup>, Raymond Edwin White<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Alabama
- 235.16 Cluster Dynamical Mass from Magellan Multi-Object Spectroscopy for SGAS Clusters**  
**Author(s):** Katherine Murray<sup>4</sup>, Keren Sharon<sup>4</sup>, Traci Johnson<sup>4</sup>, Daniel Gifford<sup>4</sup>, Michael Gladders<sup>3</sup>, Matthew Bayliss<sup>1</sup>, Michael Florian<sup>3</sup>, Jane R. Rigby<sup>2</sup>, Christopher J. Miller<sup>4</sup>  
*Institution(s):* <sup>1</sup> Colby College, <sup>2</sup> NASA Goddard, <sup>3</sup> University of Chicago, <sup>4</sup> University of Michigan
- 235.17 Sunyaev-Zel'dovich pressure profiles and masses of infrared-selected galaxy clusters**  
**Author(s):** Brittany Fuzia<sup>1</sup>, Kevin Huffenberger<sup>1</sup>, Nicola Mehrrens<sup>2</sup>, Casey J. Papovich<sup>2</sup>  
*Institution(s):* <sup>1</sup> Florida State University, <sup>2</sup> Texas A&M University
- 235.18 Cluster Position Angle Alignments in the CLASH Survey**  
**Author(s):** Melissa McIntosh<sup>1</sup>, Roberto de Propris<sup>3</sup>, Michael West<sup>2</sup>  
*Institution(s):* <sup>1</sup> Harvard University, <sup>2</sup> Lowell Observatory, <sup>3</sup> University of Turku

# WEDNESDAY, 6 JANUARY 2016

## 236 Young Stellar Objects, Very Young Stars, T-Tauri Stars, H-H Objects Poster Session

Wednesday, 5:30 pm - 6:30 pm; Exhibit Hall A

- 236.01 X-Ray Grating Spectroscopy of the T Tauri Star RY Tau**  
**Author(s):** Steve L. Skinner<sup>1</sup>, Marc Audard<sup>2</sup>, Manuel Guedel<sup>3</sup>  
*Institution(s):*<sup>1</sup> Univ. Of Colorado, <sup>2</sup> Univ. of Geneva, <sup>3</sup> Univ. of Vienna
- 236.02 Ultraviolet Extinction Curves For Nearby T Tauri Stars**  
**Author(s):** Matthew McJunkin<sup>1</sup>, Kevin France<sup>1</sup>  
*Institution(s):*<sup>1</sup> University of Colorado at Boulder
- 236.03 Component Properties of T Tauri Star Binaries**  
**Author(s):** Ryan Muzzio<sup>1</sup>  
*Institution(s):*<sup>1</sup> Kenyon College
- 236.04 An Update on the V582 Mon (KH 15D) Binary T Tauri System**  
**Author(s):** William Herbst<sup>2</sup>, Rachel Aronow<sup>2</sup>, Nicole Annemarie Arulanantham<sup>1</sup>  
*Institution(s):*<sup>1</sup> University of Colorado, <sup>2</sup> Wesleyan Univ.
- 236.05 The DF Tau T Tauri Binary**  
**Author(s):** Nuria Meilani Laure Wright-Garba<sup>2</sup>, Lisa A. Prato<sup>2</sup>, Thomas Allen<sup>2</sup>, Lauren Biddle<sup>2</sup>, Ian Avilez<sup>2</sup>, Gail Schaefer<sup>1</sup>  
*Institution(s):*<sup>1</sup> Georgia State University, <sup>2</sup> Lowell Observatory
- 236.06 Accretion and Magnetic Reconnection in the Pre-Main Sequence Binary DQ Tau as Revealed through High-Cadence Optical Photometry**  
**Author(s):** Benjamin M. Tofflemire<sup>6</sup>, Robert D. Mathieu<sup>6</sup>, David R. Ardila<sup>1</sup>, Rachel L. Akeson<sup>2</sup>, David R. Ciardi<sup>2</sup>, Gregory Herczeg<sup>3</sup>, Christopher M. Johns-Krull<sup>5</sup>, Alberto Vodniza<sup>4</sup>  
*Institution(s):*<sup>1</sup> Aerospace Corp. , <sup>2</sup> Caltech - IPAC, <sup>3</sup> Kavli Institute, <sup>4</sup> Observatorio Astronómico Universidad de Nariño, <sup>5</sup> Rice University, <sup>6</sup> University of Wisconsin - Madison
- 236.07 3-D MHD disk wind simulations of protostellar jets**  
**Author(s):** Jan E. Staff<sup>2</sup>, Nico Koning<sup>1</sup>, Rachid Ouyed<sup>1</sup>, Kei Tanaka<sup>2</sup>, Jonathan C. Tan<sup>2</sup>  
*Institution(s):*<sup>1</sup> University of Calgary, <sup>2</sup> University of Florida
- 236.08 The Inferred Magnetic Field on 50 AU Scales Around IRAS 4A**  
**Author(s):** Erin Guilfoil Cox<sup>8</sup>, Robert J. Harris<sup>8</sup>, Leslie Looney<sup>8</sup>, Dominique Segura-Cox<sup>8</sup>, John J. Tobin<sup>3</sup>, Zhi-Yun Li<sup>9</sup>, Lukasz Tychoniec<sup>1</sup>, Claire J. Chandler<sup>5</sup>, Michael Dunham<sup>2</sup>, Kaitlin M. Kratter<sup>6</sup>, Carl Melis<sup>7</sup>, Laura M. Perez<sup>5</sup>, Sarah Sadavoy<sup>4</sup>  
*Institution(s):*<sup>1</sup> Astronomical Observatory Institute, <sup>2</sup> Harvard-Smithsonian Center for Astrophysics, <sup>3</sup> Leiden University, <sup>4</sup> Max-Planck-Institut für Astronomie, <sup>5</sup> National Radio Astronomy Observatory, <sup>6</sup> Steward Observatory, <sup>7</sup> UC San Diego, <sup>8</sup> University of Illinois at Urbana-Champaign, <sup>9</sup> University of Virginia

- 236.09 The VLA Nascent Disk and Multiplicity Survey (VANDAM): Resolved Candidate Disks around Class 0 and I Protostars**  
**Author(s):** Dominique Segura-Cox<sup>7</sup>, Robert J. Harris<sup>7</sup>, John J. Tobin<sup>2</sup>, Leslie Looney<sup>7</sup>, Zhi-Yun Li<sup>8</sup>, Claire J. Chandler<sup>4</sup>, Kaitlin M. Kratter<sup>5</sup>, Michael Dunham<sup>1</sup>, Sarah Sadavoy<sup>3</sup>, Laura M. Perez<sup>4</sup>, Carl Melis<sup>6</sup>  
*Institution(s):* <sup>1.</sup> Harvard-Smithsonian Center for Astrophysics, <sup>2.</sup> Leiden Observatory, <sup>3.</sup> Max-Planck-Institut für Astronomie, <sup>4.</sup> NRAO, <sup>5.</sup> University of Arizona, <sup>6.</sup> University of California--San Diego, <sup>7.</sup> University of Illinois, <sup>8.</sup> University of Virginia
- 236.10 Finding Young Stars in IC417**  
**Author(s):** Caroline Odden<sup>4</sup>, Luisa M. Rebull<sup>3</sup>, Richard Sanchez<sup>2</sup>, Garrison Hall<sup>5</sup>, AnnaMaria Dear<sup>4</sup>, Cassie Hengel<sup>1</sup>, Mia LaRocca<sup>4</sup>, Samantha Lin<sup>4</sup>, Sabine Nix<sup>4</sup>, Teaghan Sweckard<sup>1</sup>, Katie Wilhelm<sup>1</sup>  
*Institution(s):* <sup>1.</sup> Buffalo High School, <sup>2.</sup> Clear Creek Middle School, <sup>3.</sup> IPAC/Caltech, <sup>4.</sup> Phillips Academy, <sup>5.</sup> University of South Carolina, Upstate
- 236.11 Properties of Young Stars in Nearby SFRs: Cepheus, Ophiuchus and Taurus**  
**Author(s):** Thomas Allen<sup>4</sup>, Jakub Prchlik<sup>1</sup>, S. Thomas Megeath<sup>8</sup>, Scott J. Wolk<sup>2</sup>, Robert A. Gutermuth<sup>6</sup>, Judith Pipher<sup>7</sup>, Lisa A. Prato<sup>4</sup>, Jacob Noel Mclane<sup>9</sup>, Lauren Biddle<sup>4</sup>, Nuria Meilani Laure Wright-Garba<sup>4</sup>, Ryan Muzzio<sup>3</sup>, Ian Avilez<sup>5</sup>  
*Institution(s):* <sup>1.</sup> Case Western Reserve University, <sup>2.</sup> CfA, <sup>3.</sup> Kenyon College, <sup>4.</sup> Lowell Observatory, <sup>5.</sup> NAU, <sup>6.</sup> UMass Amherst, <sup>7.</sup> University of Rochester, <sup>8.</sup> University of Toledo, <sup>9.</sup> UT Austin
- 236.12 The Mass-Radius Relation of Young Stars from K2**  
**Author(s):** Adam L. Kraus<sup>5</sup>, Ann Marie Cody<sup>3</sup>, Kevin R. Covey<sup>6</sup>, Aaron C Rizzuto<sup>5</sup>, Andrew Mann<sup>5</sup>, Michael Ireland<sup>1</sup>, Eric L. N. Jensen<sup>4</sup>, Philip Steven Muirhead<sup>2</sup>  
*Institution(s):* <sup>1.</sup> Australian National University, <sup>2.</sup> Boston University, <sup>3.</sup> NASA Ames Research Center, <sup>4.</sup> Swarthmore College, <sup>5.</sup> The University of Texas at Austin, <sup>6.</sup> Western Washington University
- 236.13 Probabilistic HR Diagrams: A New Infrared and X-ray Chronometer for Very Young, Massive Stellar Clusters and Associations**  
**Author(s):** Jessica Maldonado<sup>1</sup>, Matthew S. Povich<sup>1</sup>  
*Institution(s):* <sup>1.</sup> Cal Poly Pomona

# WEDNESDAY, 6 JANUARY 2016

## 237 Supernovae Poster Session

Wednesday, 5:30 pm - 6:30 pm; Exhibit Hall A

### 237.01 See Change: First Results from the Supernova Cosmology Project High Redshift Cluster Supernova Survey

**Author(s):** Brian Hayden<sup>9</sup>, Greg Scott Aldering<sup>9</sup>, Rahman Amanullah<sup>18</sup>, Kyle H. Barbary<sup>22</sup>, Hans Boehringer<sup>12</sup>, Mark Brodwin<sup>26</sup>, Carlos E. Cunha<sup>17</sup>, Susana E. Deustua<sup>16</sup>, Samantha Dixon<sup>22</sup>, Peter R. Eisenhardt<sup>8</sup>, Parker Fagrelus<sup>22</sup>, Rene Fassbender<sup>14</sup>, Andrew S. Fruchter<sup>16</sup>, Michael Gladders<sup>23</sup>, Anthony H. Gonzalez<sup>24</sup>, Ariel Goobar<sup>18</sup>, Hendrik Hildebrandt<sup>2</sup>, Matt Hilton<sup>1</sup>, Henk Hoekstra<sup>10</sup>, Isobel Hook<sup>27</sup>, Xiaosheng Huang<sup>9</sup>, Dragan Huterer<sup>25</sup>, James Jee<sup>19</sup>, Alex G. Kim<sup>9</sup>, Marek Kowalski<sup>6</sup>, Chris Lidman<sup>3</sup>, Eric Linder<sup>9</sup>, Kyle Luther<sup>22</sup>, Joshua Meyers<sup>17</sup>, Adam Muzzin<sup>10</sup>, Jakob Nordin<sup>6</sup>, Reynald Pain<sup>11</sup>, Saul Perlmutter<sup>9</sup>, Johan Richard<sup>4</sup>, Piero Rosati<sup>21</sup>, Eduardo Rozo<sup>17</sup>, David Rubin<sup>5</sup>, Eli S. Rykoff<sup>15</sup>, Joana Santos<sup>13</sup>, Clare Saunders<sup>22</sup>, Caroline Sofiatti<sup>22</sup>, Anthony L. Spadafora<sup>9</sup>, S. Adam Stanford<sup>19</sup>, Daniel Stern<sup>8</sup>, Nao Suzuki<sup>7</sup>, Risa H. Wechsler<sup>17</sup>, Jon Willis<sup>28</sup>, Gillian Wilson<sup>20</sup>, Mike Yen<sup>22</sup>  
*Institution(s):* <sup>1</sup> University of KwaZulu-Nata, <sup>2</sup> Argelander-Institut für Astronomie, <sup>3</sup> Australian Astronomical Observatory, <sup>4</sup> CRAL, Observatoire de Lyon,, <sup>5</sup> Florida State University, <sup>6</sup> Humboldt Universität zu Berlin, <sup>7</sup> IPMU, <sup>8</sup> JPL, <sup>9</sup> Lawrence Berkeley National Lab, <sup>10</sup> Leiden University, <sup>11</sup> LPNHE, <sup>12</sup> Max-Planck-Institut für Extraterrestrische Physik, <sup>13</sup> Osservatorio Astrofisico di Firenze, <sup>14</sup> Osservatorio Astronomico di Roma, <sup>15</sup> SLAC National Accelerator Laboratory, <sup>16</sup> Space Telescope Science Institute, <sup>17</sup> Stanford University, <sup>18</sup> Stockholm University, <sup>19</sup> UC Davis, <sup>20</sup> UC Riverside, <sup>21</sup> Università degli Studi di Ferrara, <sup>22</sup> University of California Berkeley, <sup>23</sup> University of Chicago, <sup>24</sup> University of Florida, <sup>25</sup> University of Michigan, <sup>26</sup> University of Missouri Kansas City, <sup>27</sup> University of Oxford Astrophysics, <sup>28</sup> University of Victoria

### 237.02 Supernovae Detection in Dust Extinguished Galaxies - A Spitzer Survey

**Author(s):** Chadwick F Casper<sup>1</sup>, Ori Dosovitz Fox<sup>1</sup>, Gary Li<sup>1</sup>, Alexei Filippenko<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of California, Berkeley

### 237.03 Automated Artifact Rejection for Transient Identification in WFC3 IR Image Subtractions

**Author(s):** Kyle Luther<sup>2</sup>, Kyle Boone<sup>2</sup>, Brian Hayden<sup>1</sup>, Greg Scott Aldering<sup>1</sup>, Saul Perlmutter<sup>2</sup>  
*Institution(s):* <sup>1</sup> Lawrence Berkeley National Laboratory, <sup>2</sup> UC Berkeley

### 237.04 The Host Galaxies of Superluminous Supernovae from the Palomar Transient Factory

**Author(s):** Daniel A. Perley<sup>3</sup>, Lin Yan<sup>1</sup>, Robert Quimby<sup>4</sup>, Annalisa De Cia<sup>2</sup>, Avishay Gal-Yam<sup>5</sup>, Paul Vreeswijk<sup>5</sup>  
*Institution(s):* <sup>1</sup> Caltech, <sup>2</sup> ESO, <sup>3</sup> Niels Bohr Institute, University of Copenhagen, <sup>4</sup> SDSU, <sup>5</sup> Weizmann Institute of Science

## 237.05 Determination of RV and Distance for SN 2012cu, the Type Ia Supernova with Highest Extinction

**Author(s):** Xiaosheng Huang<sup>14</sup>, Zachary Raha<sup>14</sup>, Greg Scott Aldering<sup>7</sup>, Pierre Antilogus<sup>12</sup>, Cecilia Aragon<sup>7</sup>, Stephen J. Bailey<sup>7</sup>, Charles Baltay<sup>15</sup>, Kyle H. Barbary<sup>13</sup>, Derek Baugh<sup>9</sup>, Kyle Boone<sup>7</sup>, Sebastien Bongard<sup>12</sup>, Clement Buton<sup>10</sup>, Juncheng Chen<sup>9</sup>, Michael Childress<sup>2</sup>, Nicolas Chotard<sup>10</sup>, Yannick Copin<sup>10</sup>, Parker Fagrelius<sup>7</sup>, Hannah Fakhouri<sup>7</sup>, Ulrich Feindt<sup>5</sup>, Mathilde Fleury<sup>12</sup>, Dominique Fouchez<sup>1</sup>, Emmanuel Gangler<sup>3</sup>, Brian Hayden<sup>7</sup>, Alex G. Kim<sup>7</sup>, Marek Kowalski<sup>5</sup>, Pierre-Francois Leget<sup>3</sup>, Simona Lombardo<sup>5</sup>, Jakob Nordin<sup>5</sup>, Reynald Pain<sup>12</sup>, Emmanuel Pecontal<sup>11</sup>, Rui Pereira<sup>10</sup>, Saul Perlmutter<sup>7</sup>, David L. Rabinowitz<sup>15</sup>, Mickael Rigault<sup>5</sup>, David Rubin<sup>4</sup>, Karl Runge<sup>7</sup>, Clare Saunders<sup>7</sup>, Richard A. Scalzo<sup>2</sup>, Gerard Smadja<sup>10</sup>, Caroline Sofiatti<sup>7</sup>, Nao Suzuki<sup>6</sup>, Andrew Stocker<sup>14</sup>, Stefan Taubenberger<sup>8</sup>, Charling Tao<sup>9</sup>, Rollin Thomas<sup>7</sup>

*Institution(s):* <sup>1.</sup> Aix-Marseille Universite, <sup>2.</sup> Australian National University, <sup>3.</sup> Clermont Universite, Universite Blaise Pascal, <sup>4.</sup> Florida State University, <sup>5.</sup> Humboldt-Universitat zu Berlin, <sup>6.</sup> Kavli Institute for the Physics and Mathematics of the Universe, <sup>7.</sup> Lawrence Berkeley National Laboratory, <sup>8.</sup> Max-Planck-Institut fur Astrophysik, <sup>9.</sup> Tsinghua University, <sup>10.</sup> Universite de Lyon, <sup>11.</sup> Universite Lyon, <sup>12.</sup> Universite Pierre et Marie Curie Paris 6, Universite Paris Diderot Paris 7, <sup>13.</sup> University of California, Berkeley, <sup>14.</sup> University of San Francisco, <sup>15.</sup> Yale University

## 237.06 The Untimely Demise of SN 2008S

**Author(s):** Ben Sugerman<sup>1</sup>, Ashlee Bengel<sup>1</sup>, Andrew Cosgrove<sup>1</sup>, Kayla Snyder<sup>1</sup>  
*Institution(s):* <sup>1.</sup> Goucher College

## 237.07 Understanding the Ultraviolet Flux from Supernovae

**Author(s):** Peter J Brown<sup>1</sup>  
*Institution(s):* <sup>1.</sup> Texas A&M

## 237.08 Studies of Template-based Photometric Classification of Supernovae

**Author(s):** Leia Asimacopoulos<sup>2</sup>, Stephen Londo<sup>2</sup>, Joseph Macaluso<sup>2</sup>, John Cunningham<sup>2</sup>, Steve Kuhlmann<sup>1</sup>, Eve Kovacs<sup>1</sup>  
*Institution(s):* <sup>1.</sup> Argonne National Laboratory, <sup>2.</sup> Loyola University Chicago

## 237.09 Late-time mid-IR emission from Type Ia and stripped-envelope core-collapse supernovae - possible sign of circumstellar interaction

**Author(s):** Tamas Szalai<sup>2</sup>, Jozsef Vinko<sup>2</sup>, David A. Pooley<sup>1</sup>, Jeffrey Michael Silverman<sup>3</sup>, J. Craig Wheeler<sup>3</sup>  
*Institution(s):* <sup>1.</sup> Trinity University, <sup>2.</sup> University of Szeged, <sup>3.</sup> University of Texas at Austin

# WEDNESDAY, 6 JANUARY 2016

- 237.10 Using Twin Type Ia Supernovae to Improve Cosmological Distance Measurements**  
**Author(s):** Kyle Boone<sup>11</sup>, Hannah Fakhouri<sup>11</sup>, Greg Scott Aldering<sup>6</sup>, Pierre Antilogus<sup>5</sup>, Cecilia Aragon<sup>6</sup>, Stephen J. Bailey<sup>6</sup>, Charles Baltay<sup>12</sup>, Kyle H. Barbary<sup>1</sup>, Derek Baugh<sup>8</sup>, Dan Birchall<sup>6</sup>, Sebastien Bongard<sup>5</sup>, Clement Buton<sup>9</sup>, Flora Cellier-Holzem<sup>5</sup>, Juncheng Chen<sup>8</sup>, Michael Childress<sup>2</sup>, Nicolas Chotard<sup>9</sup>, Yannick Copin<sup>9</sup>, Parker Fagrelis<sup>11</sup>, Ulrich Feindt<sup>4</sup>, Mathilde Fleury<sup>5</sup>, Dominique Fouchez<sup>1</sup>, Emmanuel Gangler<sup>3</sup>, Brian Hayden<sup>6</sup>, Alex G. Kim<sup>6</sup>, Marek Kowalski<sup>4</sup>, Pierre-Francois Leget<sup>3</sup>, Simona Lombardo<sup>4</sup>, Jakob Nordin<sup>6</sup>, Peter E. Nugent<sup>6</sup>, Reynald Pain<sup>5</sup>, Emmanuel Pecontal<sup>10</sup>, Rui Pereira<sup>9</sup>, Saul Perlmutter<sup>11</sup>, David L. Rabinowitz<sup>12</sup>, James Ren<sup>11</sup>, Mickael Rigault<sup>4</sup>, David Rubin<sup>6</sup>, Karl Runge<sup>6</sup>, Clare Saunders<sup>11</sup>, Richard A. Scalzo<sup>2</sup>, Gerard Smadja<sup>9</sup>, Caroline Sofiatti<sup>11</sup>, Mark Strovink<sup>11</sup>, Nao Suzuki<sup>6</sup>, Charling Tao<sup>8</sup>, Rollin Thomas<sup>6</sup>, Benjamin Weaver<sup>7</sup>  
*Institution(s):* <sup>1.</sup> Aix-Marseille Universite, <sup>2.</sup> Australian National University, <sup>3.</sup> Clermont Universite, <sup>4.</sup> Humboldt-Universitat zu Berlin, <sup>5.</sup> Laboratoire de Physique Nucleaire et des Hautes Energies, <sup>6.</sup> Lawrence Berkeley National Laboratory, <sup>7.</sup> New York University, <sup>8.</sup> Tsinghua University, <sup>9.</sup> Universite de Lyon, <sup>10.</sup> Universite Lyon, <sup>11.</sup> University of California, Berkeley, <sup>12.</sup> Yale University
- 237.11 Correlating Type Ia Supernova Properties with Their Local Environment Using HST Snapshots of Host Galaxies**  
**Author(s):** Benjamin Rose<sup>1</sup>, Peter M. Garnavich<sup>1</sup>  
*Institution(s):* <sup>1.</sup> University of Notre Dame
- 237.12 The SuperNovae Analysis Application (SNAP): A new tool for rapid analysis of SNe light curves and model verification**  
**Author(s):** Amanda J. Bayless<sup>1</sup>  
*Institution(s):* <sup>1.</sup> Southwest Research Institute
- 237.13 Modeling Type IIa Supernova Light Curves**  
**Author(s):** Janie De La Rosa<sup>3</sup>, Peter Roming<sup>2</sup>, Chris Fryer<sup>1</sup>  
*Institution(s):* <sup>1.</sup> Los Alamos National Laboratory, <sup>2.</sup> Southwest Research Institute, <sup>3.</sup> University of Texas at San Antonio
- 237.14 Effects of Metallicity on W7 model spectrum**  
**Author(s):** Malia Jenks<sup>1</sup>, Edward A. Baron<sup>1</sup>  
*Institution(s):* <sup>1.</sup> University of Oklahoma
- 237.15 Fingerprinting Hydrogen in Core-Collapse Supernovae**  
**Author(s):** Sarafina Nance<sup>2</sup>, Jerod Parrent<sup>1</sup>, Alicia Margarita Soderberg<sup>1</sup>  
*Institution(s):* <sup>1.</sup> Harvard Smithsonian Center for Astrophysics, <sup>2.</sup> The University of Texas at Austin
- 237.16 Effects of magnetic fields on the nuclear burning propagation and the Type Ia SNe runaway**  
**Author(s):** Boyan Hristov<sup>1</sup>, David C Collins<sup>2</sup>, Peter Hoeflich<sup>2</sup>, Charles Weatherford<sup>1</sup>  
*Institution(s):* <sup>1.</sup> Florida A&M University, <sup>2.</sup> Florida State University

- 237.17 Thermonuclear Supernova Explosions From Hybrid White Dwarf Progenitors**  
**Author(s):** Donald E. Willcox<sup>1</sup>, Dean Townsley<sup>2</sup>, Alan Calder<sup>1</sup>, Pavel Denissenkov<sup>3</sup>, Falk Herwig<sup>3</sup>  
*Institution(s):* <sup>1</sup> Stony Brook University, <sup>2</sup> University of Alabama, <sup>3</sup> University of Victoria
- 237.18 Neutrino event counts from Type Ia supernova models**  
**Author(s):** Gautam Nagaraj<sup>2</sup>, Kate Scholberg<sup>1</sup>  
*Institution(s):* <sup>1</sup> Duke University, <sup>2</sup> North Carolina State University

## 238 Planetary Nebulae, Supernova Remnants Poster Session

Wednesday, 5:30 pm - 6:30 pm; Exhibit Hall A

- 238.01 Identifying Close Binary Central Stars of PN From the Kepler K2 Mission**  
**Author(s):** George H. Jacoby<sup>1</sup>, Joseph Long<sup>4</sup>, Matthias Kronberger<sup>2</sup>, Orsola De Marco<sup>3</sup>, Todd C. Hillwig<sup>5</sup>  
*Institution(s):* <sup>1</sup> Carnegie Observatories, <sup>2</sup> Deep Sky Hunters, <sup>3</sup> Macquarie University, <sup>4</sup> Space Telescope Science Institute, <sup>5</sup> Valparaiso University
- 238.02 Atomic Data for Nebular Abundance Determinations: Photoionization and Recombination Properties of Xenon Ions**  
**Author(s):** Nicholas C. Sterling<sup>1</sup>, Austin B Kerlin<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of West Georgia
- 238.03 Atomic Data for Nebular Abundance Determinations: Photoionization, Recombination, and Collisional Excitation of Rubidium and Bromine Ions**  
**Author(s):** Austin Kerlin<sup>5</sup>, David A Macaluso<sup>4</sup>, Manuel Bautista<sup>6</sup>, Rene C Bilodeau<sup>3</sup>, Alejandro Aguilar<sup>2</sup>, A. L. David Kilcoyne<sup>2</sup>, Ileana Dumitriu<sup>1</sup>, Nicholas C. Sterling<sup>5</sup>  
*Institution(s):* <sup>1</sup> Hobart and William Smith Colleges, <sup>2</sup> Lawrence Berkeley National Laboratory, <sup>3</sup> University of Connecticut, <sup>4</sup> University of Montana, <sup>5</sup> University of West Georgia, <sup>6</sup> Western Michigan University
- 238.04 Heavy Element Abundances in Planetary Nebulae from Deep Optical Echelle Spectroscopy**  
**Author(s):** Amanda Mashburn<sup>6</sup>, Nicholas C. Sterling<sup>6</sup>, Harriet L. Dinerstein<sup>3</sup>, Kristen Garofali<sup>5</sup>, Rachael Jensema<sup>4</sup>, Amanda Turbyfill<sup>2</sup>, Hannah-Marie N Wieser<sup>1</sup>, Evan C Reed<sup>1</sup>, Seth Redfield<sup>7</sup>  
*Institution(s):* <sup>1</sup> Georgia Institute of Technology, <sup>2</sup> McDonald Observatory, <sup>3</sup> University of Texas, <sup>4</sup> University of Texas-San Antonio, <sup>5</sup> University of Washington, <sup>6</sup> University of West Georgia, <sup>7</sup> Wesleyan University
- 238.05 Discovery and Characterization of Supernova Remnants in M101 with HST**  
**Author(s):** William P. Blair<sup>1</sup>, Knox S. Long<sup>3</sup>, P. Frank Winkler<sup>2</sup>, K. D. Kuntz<sup>1</sup>  
*Institution(s):* <sup>1</sup> Johns Hopkins Univ., <sup>2</sup> Middlebury College, <sup>3</sup> STScI

# WEDNESDAY, 6 JANUARY 2016

- 238.06 An Archival Chandra Study of the Young Core-Collapse Supernova Remnant 1E 0102.2-7219 in the Small Magellanic Cloud**  
**Author(s):** Neslihan Alan<sup>1</sup>, Sangwook Park<sup>2</sup>, Andrew Schenck<sup>2</sup>, selcuk bilir<sup>1</sup>  
*Institution(s):* <sup>1</sup> Istanbul University, <sup>2</sup> University of Texas at Arlington
- 238.07 An Archival X-ray Study of the Large Magellanic Cloud Supernova Remnant N132D**  
**Author(s):** Paul P. Plucinsky<sup>1</sup>, Adam Foster<sup>1</sup>, Terrance Gaetz<sup>1</sup>, Diab H. Jerius<sup>1</sup>, Daniel Patnaude<sup>1</sup>, Richard J. Edgar<sup>1</sup>, Randall K. Smith<sup>1</sup>, William P. Blair<sup>2</sup>  
*Institution(s):* <sup>1</sup> Harvard-Smithsonian, CfA, <sup>2</sup> Johns Hopkins University
- 238.08 New Extended GeV Sources in the Galactic Plane Found in a Search of the Pass 8 Data from Fermi-LAT**  
**Author(s):** Elizabeth A. Hays<sup>2</sup>, Jamie Cohen<sup>3</sup>, Marie-Hélène Grondin<sup>1</sup>, Marianne Lemoine-Goumard<sup>1</sup>  
*Institution(s):* <sup>1</sup> Centre d'Études Nucléaires de Bordeaux Gradignan, IN2P3/CNRS, Université Bordeaux, <sup>2</sup> NASA/GSFC, <sup>3</sup> University of Maryland
- 238.09 The Dual Associations of Fermi Source 3FGL J2015.6+3709**  
**Author(s):** Qiana Hunt<sup>1</sup>  
*Institution(s):* <sup>1</sup> NASA Goddard Space Flight Center
- 238.10 Resolving the hadronic accelerator IC 443 with Fermi-LAT and VERITAS**  
**Author(s):** John W. Hewitt<sup>4</sup>, Elizabeth A. Hays<sup>2</sup>, Hiro Tajima<sup>3</sup>, Julia Schmid<sup>1</sup>  
*Institution(s):* <sup>1</sup> Laboratoire AIM, CEA-IRFU/CNRS/Université Paris Diderot, Service d'Astrophysique, CEA Saclay, <sup>2</sup> NASA/GSFC, <sup>3</sup> Solar-Terrestrial Environment Laboratory, Nagoya University, <sup>4</sup> University of North Florida
- 238.11 STIS Spectra of the Remnant of SN 1885 in M31**  
**Author(s):** Kathryn Weil<sup>1</sup>, Robert A. Fesen<sup>1</sup>, Peter Hoeflich<sup>2</sup>, Andrew James S. Hamilton<sup>3</sup>  
*Institution(s):* <sup>1</sup> Dartmouth College, <sup>2</sup> Florida State University, <sup>3</sup> University of Colorado
- 238.12 X-Ray Ejecta and CSM Distributions in the Galactic Core-Collapse SNR G292.0+1.8**  
**Author(s):** Jayant Bhalerao<sup>1</sup>, Sangwook Park<sup>1</sup>, Andrew Schenck<sup>1</sup>  
*Institution(s):* <sup>1</sup> UT Arlington

## 239 Evolved Stars, Cataclysmic Variables, and Novae Poster Session

Wednesday, 5:30 pm - 6:30 pm; Exhibit Hall A

- 239.01 Photometry of the Variable Bright Red Supergiant Betelgeuse from the Ground and from Space with the BRITE Nano-satellites**  
**Author(s):** Robert Minor<sup>1</sup>, Edward F. Guinan<sup>1</sup>  
*Institution(s):* <sup>1</sup> Villanova University

- 239.02 Out on a Limb: Updates on the Search for X-ray Emission from AGB Stars**  
**Author(s):** Rodolfo Montez<sup>5</sup>, Sofia Ramstedt<sup>4</sup>, Andrea Santiago-Boyd<sup>2</sup>, Joel Kastner<sup>3</sup>, Wouter Vlemmings<sup>1</sup>  
*Institution(s):* <sup>1</sup> Chalmers University, <sup>2</sup> Ithaca College, <sup>3</sup> Rochester Institute of Technology, <sup>4</sup> Uppsala Universitet, <sup>5</sup> Vanderbilt University
- 239.03 Searching for Cool Dust in the Mid-to-Far Infrared: The Mass Loss Histories of the Hypergiants  $\mu$  Cep, VY CMa, IRC +10420, and  $\rho$  Cas**  
**Author(s):** Roberta M. Humphreys<sup>1</sup>  
*Institution(s):* <sup>1</sup> Univ. of Minnesota
- 239.04 A Runaway Red Supergiant in M31**  
**Author(s):** Kate Anne Evans<sup>1</sup>, Philip Massey<sup>2</sup>  
*Institution(s):* <sup>1</sup> California Institute of Technology, <sup>2</sup> Lowell Observatory
- 239.05 HST/COS Observations of the UV-Bright Star Y453 in the Globular Cluster M4 (NGC 6121)**  
**Author(s):** William Van Dyke Dixon<sup>1</sup>, Pierre Chayer<sup>1</sup>, Robert A. Benjamin<sup>2</sup>  
*Institution(s):* <sup>1</sup> Space Telescope Science Institute, <sup>2</sup> University of Wisconsin, Whitewater
- 239.06 An Almost Complete Radio Survey of Magnetic Cataclysmic Variables**  
**Author(s):** Christopher A. Dieck<sup>5</sup>, Paul Everett Barrett<sup>5</sup>, Anthony J. Beasley<sup>1</sup>, Kulinder Pal Singh<sup>4</sup>, David A. Boboltz<sup>2</sup>, Patrick Godon<sup>6</sup>, Paul A. Mason<sup>3</sup>  
*Institution(s):* <sup>1</sup> National Radio Astronomy Observatory, <sup>2</sup> National Science Foundation, <sup>3</sup> New Mexico State University, <sup>4</sup> Tata Institute of Fundamental Research, <sup>5</sup> United States Naval Observatory, <sup>6</sup> Villanova University
- 239.07 Revisiting the HST Fine Guidance Sensor Parallax of SS Cygni**  
**Author(s):** Thomas E. Harrison<sup>1</sup>, Barbara McArthur<sup>2</sup>  
*Institution(s):* <sup>1</sup> New Mexico State Univ., <sup>2</sup> University of Texas
- 239.08 FUSE and HST FUV Spectroscopic Analysis of the Old Novae V533 Her, DI Lac and RR Pic**  
**Author(s):** Edward M. Sion<sup>1</sup>, John J. Ruby<sup>1</sup>, Patrick Godon<sup>1</sup>  
*Institution(s):* <sup>1</sup> Villanova Univ.
- 239.09 The Evolutionary Behavior of Old Novae in their Quiescent Stage: DN Gem, T Aur and HR Lyr**  
**Author(s):** Amanda M. Findlay<sup>1</sup>, Jeffrey Gropp<sup>1</sup>, Connor Hause<sup>1</sup>, Edward M. Sion<sup>1</sup>  
*Institution(s):* <sup>1</sup> Villanova University
- 239.10 Optical Spectroscopy of the Classical Novae V339 Del (2013) and V5668 Sgr (2015 No. 2)**  
**Author(s):** R. Mark Wagner<sup>2</sup>, Charles E. Woodward<sup>5</sup>, Sumner Starrfield<sup>1</sup>, Ilya Ilyin<sup>3</sup>, Klaus G. Strassmeier<sup>3</sup>, Kim Page<sup>4</sup>, Julian P. Osborne<sup>4</sup>, Andrew P. Beardmore<sup>4</sup>  
*Institution(s):* <sup>1</sup> Arizona State University, <sup>2</sup> LBT Observatory, <sup>3</sup> Leibniz-Institute for Astrophysics Potsdam, <sup>4</sup> University of Leicester, <sup>5</sup> University of Minnesota

# WEDNESDAY, 6 JANUARY 2016

**239.11 Simultaneous Photometry and Spectroscopy of the Deeply Absorbing Polar MASTER OT J132104.04+560957.8**

**Author(s):** Taylor Hoyt<sup>2</sup>, Colin Littlefield<sup>1</sup>, Peter M. Garnavich<sup>1</sup>

*Institution(s):* <sup>1</sup> University of Notre Dame, <sup>2</sup> University of Texas at Austin

**239.12 Strong [Fe X] Emission and Deep Optical Eclipses of the Classical Nova V5593 Sgr 2012 No. 5**

**Author(s):** Sumner Starrfield<sup>2</sup>, R. Mark Wagner<sup>4</sup>, Frederick M. Walter<sup>5</sup>, Charles E. Woodward<sup>6</sup>, Greg Schwarz<sup>1</sup>, Joachim Krautter<sup>3</sup>

*Institution(s):* <sup>1</sup> American Astronomical Society, <sup>2</sup> Arizona State University, <sup>3</sup> Landessternwarte, <sup>4</sup> LBTO, <sup>5</sup> SUNY Stony Brook, <sup>6</sup> University of Minnesota

**239.13 HST Observations of the Ejecta of Recurrent Nova T Pyxidis**

**Author(s):** Stephen S. Lawrence<sup>2</sup>, Jennifer L. Sokoloski<sup>1</sup>, Arlin P. S. Crotts<sup>1</sup>

*Institution(s):* <sup>1</sup> Columbia University, <sup>2</sup> Hofstra University

**239.14 Towards Bayesian Machine Learning for Estimating Parameters of Accretion Disk Models for SPH Simulations**

**Author(s):** Amit Goel<sup>1</sup>, Michele Montgomery<sup>1</sup>, Paul Wiegand<sup>1</sup>

*Institution(s):* <sup>1</sup> University of Central Florida

## 240 Star Associations, Star Clusters - Galactic & Extra-galactic Poster Session

Wednesday, 5:30 pm - 6:30 pm; Exhibit Hall A

**240.01 Photometric and Structural Parameters of Globular Clusters Towards the Galactic Bulge: Results from VVV and More**

**Author(s):** Roger Cohen<sup>2</sup>, Francesco Mauro<sup>1</sup>, Christian Moni Bidin<sup>3</sup>, Douglas Geisler<sup>2</sup>

*Institution(s):* <sup>1</sup> Millenium Institute of Astrophysics, <sup>2</sup> U. de Concepcion, <sup>3</sup> Universidad Catolica del Norte

**240.02 Na-O abundances in M53: A Mostly First Generation Globular Cluster**

**Author(s):** Owen M. Boberg<sup>1</sup>, Eileen D. Friel<sup>1</sup>, Enrico Vesperini<sup>1</sup>

*Institution(s):* <sup>1</sup> Indiana Univeristy

**240.03 NGC 6273: Towards Defining A New Class of Galactic Globular Clusters?**

**Author(s):** Christian I. Johnson<sup>2</sup>, Robert Michael Rich<sup>4</sup>, Catherine A. Pilachowski<sup>1</sup>, Nelson Caldwell<sup>2</sup>, Mario L. Mateo<sup>5</sup>, John Ira Bailey<sup>5</sup>, Jeffrey D. Crane<sup>3</sup>

*Institution(s):* <sup>1</sup> Indiana University, <sup>2</sup> Smithsonian Astrophysical Observatory, <sup>3</sup> The Observatories of the Carnegie Institution for Science, <sup>4</sup> University of California, Los Angeles, <sup>5</sup> University of Michigan

**240.04 Uncovered: Progenitors of globular clusters showing off their multiple stellar populations**

**Author(s):** Richard de Grijs<sup>1</sup>, Chengyuan Li<sup>1</sup>, Licai Deng<sup>2</sup>, Aaron M. Geller<sup>3</sup>, Yu Xin<sup>2</sup>, Yi Hu<sup>2</sup>, Claude-Andre Faucher-Giguere<sup>3</sup>

*Institution(s):* <sup>1</sup> Kavli Institute for Astronomy and Astrophysics, Peking University, <sup>2</sup> National Astronomical Observatories, Chinese Academy of Sciences, <sup>3</sup> Northwestern University

- 240.05 Bayesian Analysis of Multiple Populations in Galactic Globular Clusters**  
**Author(s):** Rachel A. Wagner-Kaiser<sup>8</sup>, Ata Sarajedini<sup>8</sup>, Ted von Hippel<sup>3</sup>, David Stenning<sup>5</sup>, Giampaolo Piotto<sup>7</sup>, Antonino Milone<sup>2</sup>, David A van Dyk<sup>4</sup>, Elliot Robinson<sup>1</sup>, Nathan Stein<sup>6</sup>  
*Institution(s):* <sup>1</sup> Argiopo Tech, <sup>2</sup> Australian National University, <sup>3</sup> Embry-Riddle Aeronautical University, <sup>4</sup> Imperial College London, <sup>5</sup> Institut d'Astrophysique de Paris, <sup>6</sup> The Wharton School, University of Pennsylvania, <sup>7</sup> Università di Padova, <sup>8</sup> University of Florida
- 240.06 Searching for Multiple Populations in NGC 6791**  
**Author(s):** Jeffrey M Gerber<sup>2</sup>, Owen M. Boberg<sup>2</sup>, Eileen D. Friel<sup>2</sup>, Michael M Briley<sup>1</sup>  
*Institution(s):* <sup>1</sup> Appalachian State University, <sup>2</sup> Indiana University
- 240.07 A Comparison of the Detailed Chemical Abundances of Globular Clusters in the Milky Way, Andromeda, and Centaurus A Galaxies**  
**Author(s):** Janet E. Colucci<sup>1</sup>, Rebecca Bernstein<sup>1</sup>  
*Institution(s):* <sup>1</sup> Observatories of the Carnegie Institution for Science
- 240.08 Globular Cluster Population of the HST Frontier Field Galaxy J07173724+3744224**  
**Author(s):** Nathan Carlson<sup>2</sup>, Wayne Barkhouse<sup>2</sup>, Cody Rude<sup>1</sup>  
*Institution(s):* <sup>1</sup> MIT Haystack Observatory, <sup>2</sup> Univ. of North Dakota
- 240.09 Large scale structure of the globular cluster population in Coma**  
**Author(s):** Alexander T Gagliano<sup>3</sup>, Conor O'Neill<sup>1</sup>, Juan P. Madrid<sup>2</sup>  
*Institution(s):* <sup>1</sup> Australian Astronomical Observatory, <sup>2</sup> Gemini Observatory, <sup>3</sup> Virginia Polytechnic Institute and State University
- 240.10 A VLA Search for Intermediate-Mass Black Holes in M81's Globular Clusters**  
**Author(s):** J. M. Wrobel<sup>3</sup>, James Miller-Jones<sup>1</sup>, M. J. Middleton<sup>2</sup>  
*Institution(s):* <sup>1</sup> Curtin University, <sup>2</sup> Institute of Astronomy, <sup>3</sup> NSF
- 240.12 Are the Youngsters Home? A Search for Young Clusters in the Merger Remnant NGC 2655**  
**Author(s):** Thomas Bernard Rochais<sup>2</sup>, Barry Rothberg<sup>1</sup>, Olga Kuhn<sup>1</sup>  
*Institution(s):* <sup>1</sup> Large Binocular Telescope Observatory, <sup>2</sup> University of Wyoming

# WEDNESDAY, 6 JANUARY 2016

## 240.13 Bright Young Star Clusters in NGC5253 with LEGUS

**Author(s):** Daniela Calzetti<sup>15</sup>, Kelsey E. Johnson<sup>25</sup>, Angela Adamo<sup>10</sup>, John S. Gallagher<sup>27</sup>, Jennifer E. Andrews<sup>18</sup>, Linda J. Smith<sup>11</sup>, Geoffrey C. Clayton<sup>8</sup>, Janice C. Lee<sup>11</sup>, Elena Sabbi<sup>11</sup>, Leonardo Ubeda<sup>11</sup>, Hwihyun Kim<sup>13</sup>, Jenna E. Ryon<sup>27</sup>, David A. Thilker<sup>7</sup>, Stacey N. Bright<sup>11</sup>, Erik Zackrisson<sup>28</sup>, Robert Kennicutt<sup>21</sup>, Selma E. de Mink<sup>17</sup>, Bradley C. Whitmore<sup>11</sup>, Alessandra Aloisi<sup>11</sup>, Rupali Chandar<sup>14</sup>, Michele Cignoni<sup>11</sup>, David Cook<sup>1</sup>, Daniel A. Dale<sup>26</sup>, Bruce Elmegreen<sup>5</sup>, Debra M. Elmegreen<sup>29</sup>, Aaron S. Evans<sup>25</sup>, Michele Fumagalli<sup>2</sup>, Dimitrios Gouliermis<sup>24</sup>, Kathryn Grasha<sup>15</sup>, Eva Grebel<sup>24</sup>, Mark R. Krumholz<sup>20</sup>, Rene A.M. Walterbos<sup>9</sup>, Aida Wofford<sup>4</sup>, Thomas M. Brown<sup>11</sup>, Carol A. Christian<sup>11</sup>, Claire Dobbs<sup>22</sup>, Artemio Herrero-Davo<sup>3</sup>, Lauren Kahre<sup>9</sup>, Matteo Messa<sup>10</sup>, Preethi Nair<sup>16</sup>, Antonella Nota<sup>11</sup>, Göran Östlin<sup>10</sup>, Anne Pellerin<sup>12</sup>, Elena Sacchi<sup>19</sup>, Daniel Schaerer<sup>23</sup>, Monica Tosi<sup>6</sup>

*Institution(s):* <sup>1.</sup> Caltech, <sup>2.</sup> Durham University, <sup>3.</sup> IAC, <sup>4.</sup> IAP, <sup>5.</sup> IBM, <sup>6.</sup> INAF - University of Bologna, <sup>7.</sup> Johns Hopkins University, <sup>8.</sup> Louisiana State University, <sup>9.</sup> New Mexico State University, <sup>10.</sup> Stockholm University, <sup>11.</sup> STScI, <sup>12.</sup> SUNY - Geneseo, <sup>13.</sup> Texas University, <sup>14.</sup> Toledo University, <sup>15.</sup> Univ. of Massachusetts, <sup>16.</sup> University of Alabama, <sup>17.</sup> University of Amsterdam, <sup>18.</sup> University of Arizona, <sup>19.</sup> University of Bologna, <sup>20.</sup> University of California, <sup>21.</sup> University of Cambridge, <sup>22.</sup> University of Exeter, <sup>23.</sup> University of Geneva, <sup>24.</sup> University of Heidelberg, <sup>25.</sup> University of Virginia, <sup>26.</sup> University of Wyoming, <sup>27.</sup> University of Wisconsin, <sup>28.</sup> Uppsala University, <sup>29.</sup> Vassar College

## 240.14 Applying Machine Learning to Star Cluster Classification

**Author(s):** Kristina Fedorenko<sup>1</sup>, Kathryn Grasha<sup>1</sup>, Daniela Calzetti<sup>1</sup>, Sridhar Mahadevan<sup>1</sup>

*Institution(s):* <sup>1.</sup> University of Massachusetts, Amherst

## 240.15 The Cluster Destruction Rate and the Mass Functions of Luminous Infrared Galaxies

**Author(s):** Sean Linden<sup>1</sup>, Aaron S. Evans<sup>1</sup>

*Institution(s):* <sup>1.</sup> University of Virginia

## 240.16 Tidal Tales: Comparison of Star Formation in Tidal Tails of Minor Mergers

**Author(s):** Karen A. Knierman<sup>1</sup>, Paul A. Scowen<sup>1</sup>, Christopher E. Groppi<sup>1</sup>

*Institution(s):* <sup>1.</sup> School of Earth and Space Exploration - Arizona State University

## 240.17 The Formation of Cluster Populations Through Direct Galaxy Collisions

**Author(s):** Bradley W. Peterson<sup>3</sup>, Beverly J. Smith<sup>1</sup>, Curtis Struck<sup>2</sup>

*Institution(s):* <sup>1.</sup> East Tennessee State University, <sup>2.</sup> Iowa State University, <sup>3.</sup> University of Wisconsin -- Barron County

## 240.18 The Clustering of Young Stellar Cluster Populations in Nearby Galaxies

**Author(s):** Kathryn Grasha<sup>1</sup>, Daniela Calzetti<sup>1</sup>

*Institution(s):* <sup>1.</sup> University of Massachusetts - Amherst

## 240.19 Quantifying the Components of the Field OB Star Population

**Author(s):** Xinyi Chen<sup>2</sup>, M. S. Oey<sup>2</sup>, Joel B. Lamb<sup>1</sup>, Cole Kushner<sup>2</sup>

*Institution(s):* <sup>1.</sup> Nassau Community College, <sup>2.</sup> University of Michigan

- 240.20 Study of the Cygnus Star-Forming Field**  
**Author(s):** Christopher Christopherson<sup>1</sup>, Nadia Kaltcheva<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Wisconsin Oshkosh
- 240.21 Open-Cluster Population of Sh 2-109**  
**Author(s):** Henri LeMieux<sup>1</sup>, Nadia Kaltcheva<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Wisconsin Oshkosh
- 240.22 Extinction in young massive clusters**  
**Author(s):** Guido De Marchi<sup>1</sup>, Nino Panagia<sup>2</sup>  
*Institution(s):* <sup>1</sup> ESA, <sup>2</sup> STScI
- 240.23 A Hectochelle Radial Velocity Survey of Cep OB3b: An ONC like cluster at late gas dispersal phase**  
**Author(s):** Nicole Karnath<sup>6</sup>, Thomas Allen<sup>3</sup>, Jakub Prchlik<sup>1</sup>, Robert A. Gutermuth<sup>4</sup>, Samuel Thomas Megeath<sup>6</sup>, Judith Pipher<sup>5</sup>, Scott J. Wolk<sup>2</sup>  
*Institution(s):* <sup>1</sup> Case Western University, <sup>2</sup> Center for Astrophysics, <sup>3</sup> Lowell Observatory, <sup>4</sup> University of Massachusetts, <sup>5</sup> University of Rochester, <sup>6</sup> University of Toledo
- 240.24 K2 observations of young star clusters**  
**Author(s):** Ann Marie Cody<sup>1</sup>  
*Institution(s):* <sup>1</sup> NASA Ames Research Center
- 240.25 An Initial Census of Eclipsing Binaries in the Pleiades and Hyades in Field 4 of the K2 Mission**  
**Author(s):** John R. Stauffer<sup>3</sup>, Keivan Stassun<sup>4</sup>, Suzanne Aigrain<sup>2</sup>, Lynne Hillenbrand<sup>1</sup>, Trevor J. David<sup>1</sup>, Luisa M. Rebull<sup>3</sup>  
*Institution(s):* <sup>1</sup> Caltech, <sup>2</sup> Oxford University, <sup>3</sup> Spitzer Science Center, <sup>4</sup> Vanderbilt University
- 240.26 An Updated look at the Initial-Final Mass Relation with Five Open Clusters**  
**Author(s):** Paul Canton<sup>2</sup>, Kurtis A. Williams<sup>1</sup>  
*Institution(s):* <sup>1</sup> Texas A&M, <sup>2</sup> University of Oklahoma
- 240.27 BINOCS: The Dynamical Evolution of Binary Populations in Star Clusters**  
**Author(s):** Peter M. Frinchaboy<sup>1</sup>, Benjamin A. Thompson<sup>1</sup>  
*Institution(s):* <sup>1</sup> Texas Christian Univ. (TCU)
- 240.28 Dolidze-35: Results for a Possible Open Cluster**  
**Author(s):** Deborah J. Gullede<sup>1</sup>, Richard A. Borges<sup>1</sup>, Elizabeth Juelfs<sup>1</sup>, J. Allyn Smith<sup>1</sup>, Mary E. Olive<sup>1</sup>, Christopher P. McDonald<sup>1</sup>, Sarah M Williams<sup>1</sup>, Eden M. Cohen<sup>1</sup>, Jason D. Gawel<sup>1</sup>, Bambi A. McCole<sup>1</sup>, Jacob M. Robertson<sup>1</sup>, Tyler Wilson<sup>1</sup>, William J. Young<sup>1</sup>, Spencer L. Buckner<sup>1</sup>, Nic R. Allen<sup>1</sup>, H. Hope Head<sup>2</sup>  
*Institution(s):* <sup>1</sup> Austin Peay State University, <sup>2</sup> NSO

# WEDNESDAY, 6 JANUARY 2016

## 240.29 Neutron Capture Elements in the Open Cluster Chemical Abundance & Mapping (OCCAM) Survey

**Author(s):** Julia O'Connell<sup>3</sup>, Peter M. Frinchaboy<sup>3</sup>, Matthew D. Shetrone<sup>4</sup>, Steven R. Majewski<sup>5</sup>, Gail Zasowski<sup>1</sup>, Fred R. Hearty<sup>2</sup>

*Institution(s):* <sup>1</sup> Johns Hopkins University,, <sup>2</sup> Pennsylvania State University,, <sup>3</sup> Texas Christian University, <sup>4</sup> University of Texas, <sup>5</sup> University of Virginia,

## 240.30 WIYN Open Cluster Study: Lithium in Red Giants of the Open Cluster NGC 2158

**Author(s):** Daniel M Krolkowski<sup>1</sup>, Aaron J. Steinhauer<sup>1</sup>, Constantine P.

Deliyannis<sup>2</sup>, Bruce A. Twarog<sup>3</sup>, Barbara J. Anthony-Twarog<sup>3</sup>

*Institution(s):* <sup>1</sup> State University of New York, College at Geneseo, <sup>2</sup> University of Indiana, <sup>3</sup> University of Kansas

## 241 Pulsars, Neutron Stars and Black Holes Poster Session

Wednesday, 5:30 pm - 6:30 pm; Exhibit Hall A

### 241.01 Atmospheres of Quiescent Low-Mass Neutron Stars

**Author(s):** Platon Karpov<sup>2</sup>, Zachary Medin<sup>1</sup>, Alan Calder<sup>2</sup>, James M. Lattimer<sup>2</sup>

*Institution(s):* <sup>1</sup> Los Alamos National Laboratory, <sup>2</sup> Stony Brook University

### 241.02 Modeling Pulsar Trajectories to Determine Birth Locations

**Author(s):** Brent Shapiro-Albert<sup>3</sup>, Shami Chatterjee<sup>2</sup>, James M. Cordes<sup>2</sup>, Gregory L Hallenbeck<sup>3</sup>, Wouter Vlemmings<sup>1</sup>

*Institution(s):* <sup>1</sup> Chalmers University of Technology, <sup>2</sup> Cornell University, <sup>3</sup> Union College

### 241.03 The Optimization of GBT Pulsar Data for the GBNCC Pulsar Survey

**Author(s):** Ashlee Nicole Gordon<sup>1</sup>

*Institution(s):* <sup>1</sup> National Radio Astronomy Observatory

### 241.04 Precision Pulsar Timing at the DSN

**Author(s):** Walid A. Majid<sup>1</sup>

*Institution(s):* <sup>1</sup> JPL/Caltech

### 241.05 Multiwavelength Observations of the Redback Pulsar J1048+2339, Coincident with the Fermi-LAT Source 3FGL J1048.6+2338

**Author(s):** Julia S. Deneva<sup>1</sup>

*Institution(s):* <sup>1</sup> National Research Council

### 241.06 Shedding Light on the Eclipses of PSR 1748-2446A

**Author(s):** Christopher Bochenek<sup>2</sup>, Paul Demorest<sup>1</sup>

*Institution(s):* <sup>1</sup> National Radio Astronomy Observatory, <sup>2</sup> University of Chicago

### 241.08 High-Cadence Timing Observations of an Exoplanet-Pulsar System, PSR B1257+12

**Author(s):** Rudy Rivera<sup>3</sup>, Aleksander Wolszczan<sup>2</sup>, Andrew Seymour<sup>1</sup>

*Institution(s):* <sup>1</sup> NAIC, <sup>2</sup> Penn State Univ., <sup>3</sup> University of Puerto Rico Mayaguez Campus

- 241.09 VLA Observations of the Magnetar PSR J1745-2900 and Sgr A\***  
**Author(s):** Rebecca Rimai Dising<sup>2</sup>, Farhad Yusef-Zadeh<sup>2</sup>, M. Wardle<sup>1</sup>, Lorant Sjouwerman<sup>5</sup>, Marc Royster<sup>2</sup>, William D. Cotton<sup>4</sup>, Douglas A. Roberts<sup>2</sup>, Craig O. Heinke<sup>3</sup>  
*Institution(s):* <sup>1</sup> Department of Physics and Astronomy, Macquarie University, <sup>2</sup> Department of Physics and Astronomy, Northwestern University, <sup>3</sup> Department of Physics, University of Alberta, <sup>4</sup> National Radio Astronomy Observatory, <sup>5</sup> National Radio Astronomy Observatory
- 241.10 A New High-Frequency Search for Galactic Center Millisecond Pulsars using DSS-43**  
**Author(s):** Cameron Lemley<sup>2</sup>, Thomas Allen Prince<sup>1</sup>, Walid A. Majid<sup>3</sup>, Elena Murchikova<sup>1</sup>  
*Institution(s):* <sup>1</sup> Caltech, <sup>2</sup> Columbia University, <sup>3</sup> JPL
- 241.11 Resonant Compton Physics for Magnetar Astrophysics**  
**Author(s):** Jesse Ickes<sup>1</sup>, Peter L. Gonthier<sup>1</sup>, Matthew Eiles<sup>1</sup>, Matthew G. Baring<sup>2</sup>  
*Institution(s):* <sup>1</sup> Hope College, <sup>2</sup> Rice University
- 241.12 The Local Black Hole Mass Function Derived from the MBH-Pitch Angle and the MBH-Sersic Index Relations**  
**Author(s):** Burcin Mutlu Pakdil<sup>2</sup>, Marc S. Seigar<sup>2</sup>, Benjamin L. Davis<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Arkansas, <sup>2</sup> University of Minnesota Duluth
- 241.13 Contemporaneous Optical and X-ray Observations of the V404 Cygni Outburst**  
**Author(s):** Adria C. Updike<sup>1</sup>, Sidney Finan<sup>1</sup>, Faihan Alfahani<sup>1</sup>  
*Institution(s):* <sup>1</sup> Roger Williams University
- 241.14 Survey for Radio Nebulae Around Ultraluminous X-ray Sources**  
**Author(s):** Neal A. Miller<sup>1</sup>, Martha Nicole Heil<sup>1</sup>, Richard Mushotzky<sup>2</sup>  
*Institution(s):* <sup>1</sup> Stevenson University, <sup>2</sup> University of Maryland
- 241.15 Driving of Accretion Disk Variability by the Disk Dynamo**  
**Author(s):** J. Drew Hogg<sup>1</sup>, Christopher S. Reynolds<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Maryland
- 241.16 Kinetic Study of Radiation-Reaction-Limited Particle Acceleration During the Relaxation of Force-Free Equilibria**  
**Author(s):** Yajie Yuan<sup>1</sup>, Krzysztof Nalewajko<sup>1</sup>, Roger D. Blandford<sup>1</sup>, William E. East<sup>1</sup>, Jonathan Zrake<sup>1</sup>  
*Institution(s):* <sup>1</sup> KIPAC, Stanford University
- 241.17 Sowing Black Hole Seeds: Forming Direct Collapse Black Holes With Realistic Lyman-Werner Radiation Fields in Cosmological Simulations**  
**Author(s):** Kelly Holley-Bockelmann<sup>3</sup>, Glenna Dunn<sup>3</sup>, Jillian M. Bellovary<sup>1</sup>, Charlotte Christensen<sup>2</sup>  
*Institution(s):* <sup>1</sup> AMNH, <sup>2</sup> Grinnell, <sup>3</sup> Vanderbilt University
- 241.18 A Particular Appetite: Cosmological Hydrodynamic Simulations of Preferential Accretion in the Supermassive Black Holes of Milky Way Size Galaxies**  
**Author(s):** Natalie Sanchez<sup>2</sup>, Jillian M. Bellovary<sup>1</sup>, Kelly Holley-Bockelmann<sup>3</sup>  
*Institution(s):* <sup>1</sup> American Museum of Natural History, <sup>2</sup> Fisk University, <sup>3</sup> Vanderbilt University

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- 241.20 Searching For Gaps in AGN Disks Using Data From the Sloan Digital Sky Survey**  
**Author(s):** Ricardo Almeida Nunes<sup>1</sup>, Saavik Ford<sup>1</sup>, Barry McKernan<sup>1</sup>  
*Institution(s):* <sup>1</sup> Borough of Manhattan Community College
- 241.21 AGN from Hell: AGN host galaxy properties & demographics**  
**Author(s):** Rudolf E Baer<sup>1</sup>, Kevin Schawinski<sup>1</sup>, Anna Weigel<sup>1</sup>  
*Institution(s):* <sup>1</sup> ETH Zurich
- 241.22 Investigating saturated versus unsaturated driving of stellar modes by gravitational waves**  
**Author(s):** Susan Blackburn<sup>1</sup>, K.E. Saavik Ford<sup>1</sup>, Barry McKernan<sup>1</sup>  
*Institution(s):* <sup>1</sup> BMCC-CUNY
- 241.23 A Search for Fast Radio Bursts in GALFACTS data**  
**Author(s):** Tyler Cohen<sup>2</sup>, Christopher J. Salter<sup>1</sup>, Tapasi Ghosh<sup>1</sup>  
*Institution(s):* <sup>1</sup> National Astronomy and Ionosphere Center, <sup>2</sup> Stony Brook University

## 242 Dust Poster Session

Wednesday, 5:30 pm - 6:30 pm; Exhibit Hall A

- 242.01 Characterizing Dust Attenuation in Local Star Forming Galaxies**  
**Author(s):** Andrew Battisti<sup>2</sup>, Daniela Calzetti<sup>2</sup>, Ranga-Ram Chary<sup>1</sup>  
*Institution(s):* <sup>1</sup> Caltech, <sup>2</sup> Univeristy of Massachusetts
- 242.02 Extinction Mapping of Nearby Galaxies with LEGUS**  
**Author(s):** Lauren Kahre<sup>2</sup>, Rene A.M. Walterbos<sup>2</sup>, Elena Sabbi<sup>3</sup>, David A. Thilker<sup>1</sup>, Leonardo Ubeda<sup>3</sup>  
*Institution(s):* <sup>1</sup> Dept. of Physics and Astronomy, The John's Hopkins University, <sup>2</sup> New Mexico State University, <sup>3</sup> Space Telescope Science Institute
- 242.03 Covariance between Star Formation Rates and Dust Mass of KINGFISH Galaxies**  
**Author(s):** Randall Rojas Bolivar<sup>2</sup>, Daniela Calzetti<sup>2</sup>, Daniel A. Dale<sup>3</sup>, David Cook<sup>1</sup>  
*Institution(s):* <sup>1</sup> Caltech, <sup>2</sup> University of Massachusetts, <sup>3</sup> University of Wyoming
- 242.04 Herschel Dust Measurements of SDSS Supernovae Host Galaxies**  
**Author(s):** Donald Trinh<sup>1</sup>, Asantha R. Cooray<sup>1</sup>, Hooshang Nayyeri<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of California, Irvine
- 242.05 ZFOURGE: UV to FIR Luminosities and Dust Attenuation Determined from ~4000 K-Selected Galaxies at  $1 < z < 3$**   
**Author(s):** Ben Forrest<sup>1</sup>, Kim-Vy Tran<sup>1</sup>  
*Institution(s):* <sup>1</sup> Texas A&M University
- 242.06 Improving the Pan-STARRs/2MASS 3-D dust map: Regularization for increased resolution and fidelity.**  
**Author(s):** Douglas P. Finkbeiner<sup>1</sup>, Gregory Green<sup>1</sup>, Albert Lee<sup>1</sup>, Edward Ford Schlafly<sup>2</sup>  
*Institution(s):* <sup>1</sup> Harvard-Smithsonian Center for Astrophysics, <sup>2</sup> MPIA

## 242.07 Dust Reddening Variation in the Milky Way

**Author(s):** Albert Lee<sup>1</sup>, Douglas P. Finkbeiner<sup>1</sup>, Gregory Green<sup>1</sup>, Edward Ford Schlafly<sup>2</sup>

*Institution(s):* <sup>1</sup> Harvard University, <sup>2</sup> Max Planck Institute for Astronomy

## 242.08 Milky Way Dust in 3D using Pan-STARRS 1

**Author(s):** Gregory Green<sup>1</sup>, Edward Ford Schlafly<sup>2</sup>, Albert Lee<sup>1</sup>, Douglas P. Finkbeiner<sup>1</sup>

*Institution(s):* <sup>1</sup> Harvard Univ., <sup>2</sup> MPIA

## 242.09 Interstellar Extinction and its Variation in the Galaxy

**Author(s):** Edward Ford Schlafly<sup>3</sup>, Hans-Walter Rix<sup>3</sup>, Douglas P. Finkbeiner<sup>2</sup>, Gregory Green<sup>2</sup>, Albert Lee<sup>2</sup>, Aaron M. Meisner<sup>1</sup>

*Institution(s):* <sup>1</sup> Berkeley National Laboratory, <sup>2</sup> Harvard/CfA, <sup>3</sup> MPIA

## 242.10 Investigation of Reddening in Fields of the SMASH Survey

**Author(s):** Elizabeth A. Juelfs<sup>1</sup>, Knut A. Olsen<sup>2</sup>

*Institution(s):* <sup>1</sup> Austin Peay State University, <sup>2</sup> NOAO

## 243 AGN, QSO, Blazars Poster Session

Wednesday, 5:30 pm - 6:30 pm; Exhibit Hall A

### 243.01 Describing the Gas Kinematics and Excitation of the Inner Kiloparsec of the Post-Starburst Quasar SDSS J170328.95+614109.9

**Author(s):** Pamela Soto Pinto<sup>2</sup>, David Sanmartim<sup>1</sup>

*Institution(s):* <sup>1</sup> SOAR, <sup>2</sup> Universidad de Concepción

### 243.02 The Keck OSIRIS Nearby AGN Survey: distribution and kinematics of molecular gas in the nuclear regions of Seyfert 1s and Seyfert 2s

**Author(s):** Kiana Kade<sup>1</sup>, Erin K. Hicks<sup>1</sup>

*Institution(s):* <sup>1</sup> University of Alaska Anchorage

### 243.03 The Effect of Special Reduction Procedures of IFU Observations from Gemini-NIFS on Dynamical Measurements of Nearby AGN

**Author(s):** Crystal L Pope<sup>1</sup>, D. Michael Crenshaw<sup>1</sup>, Travis C. Fischer<sup>2</sup>

*Institution(s):* <sup>1</sup> Georgia State University, <sup>2</sup> Goddard Space Flight Center

### 243.04 Feeding and Feedback in Nearby AGN based on IFU Observations

**Author(s):** D. Michael Crenshaw<sup>1</sup>, Travis C. Fischer<sup>2</sup>, Steven B. Kraemer<sup>4</sup>, Henrique R. Schmitt<sup>3</sup>, Crystal L Pope<sup>1</sup>, Camilo Machuca<sup>1</sup>, Mitchell Revalski<sup>1</sup>

*Institution(s):* <sup>1</sup> Georgia State Univ., <sup>2</sup> NASA's Goddard Space Flight Center, <sup>3</sup> Naval Research Laboratory, <sup>4</sup> The Catholic University of America

### 243.05 Modeling Host Disk Kinematics of Nearby Active Galactic Nuclei

**Author(s):** Camilo Machuca<sup>1</sup>, D. Michael Crenshaw<sup>1</sup>, Travis C. Fischer<sup>2</sup>

*Institution(s):* <sup>1</sup> Georgia State University, <sup>2</sup> NASA's Goddard Space Flight Center

### 243.06 Mass Outflow in the Narrow Line Region of Markarian 573

**Author(s):** Mitchell Revalski<sup>1</sup>, D. Michael Crenshaw<sup>1</sup>, Travis C. Fischer<sup>2</sup>, Steven B. Kraemer<sup>4</sup>, Henrique R. Schmitt<sup>3</sup>

*Institution(s):* <sup>1</sup> Georgia State University, <sup>2</sup> NASA Goddard Space Flight Center, <sup>3</sup> Naval Research Laboratory, <sup>4</sup> The Catholic University of America

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- 243.07 Kinematic and Physical Constraints on the Outflows in NGC 3516**  
**Author(s):** Jay P. Dunn<sup>2</sup>, Rozhin Parvaresh<sup>2</sup>, D. Michael Crenshaw<sup>3</sup>, Steven B. Kraemer<sup>4</sup>, Jack Gabel<sup>1</sup>  
*Institution(s):* <sup>1</sup> Creighton University, <sup>2</sup> Georgia Perimeter College, <sup>3</sup> Georgia State University, <sup>4</sup> The Catholic University of America
- 243.08 Do Radio Jets Contribute to Driving Ionized Gas Outflows in Moderate Luminosity Type 2 AGN?**  
**Author(s):** Julia Fowler<sup>2</sup>, Anna Sajina<sup>2</sup>, Mark Lacy<sup>1</sup>  
*Institution(s):* <sup>1</sup> NRAO, <sup>2</sup> Tufts University
- 243.09 New Chandra Observations of NGC 4151: Modelling the X-Ray Absorption**  
**Author(s):** Jullianna Denes Couto<sup>2</sup>, Steven Kraemer<sup>2</sup>, T. Jane Turner<sup>3</sup>, D. Michael Crenshaw<sup>1</sup>  
*Institution(s):* <sup>1</sup> Georgia State University, <sup>2</sup> The Catholic University of America, <sup>3</sup> University of Maryland Baltimore County
- 243.10 Intrinsic Absorption in Quasars (AAL & BAL) and its Relation to Outflows, BH Mass, Accretion Rate, Spin, Orientation, and Radio Properties**  
**Author(s):** Robert Bernard Stone<sup>1</sup>, Gordon T. Richards<sup>1</sup>  
*Institution(s):* <sup>1</sup> Drexel University
- 243.11 Constraining the Accretion Mode in LINER 1.9s**  
**Author(s):** Bassem Sabra<sup>2</sup>, Elias Der Sahaguian<sup>2</sup>, Elie Badr<sup>1</sup>  
*Institution(s):* <sup>1</sup> IMEC, <sup>2</sup> Notre Dame University-Louaize
- 243.12 The Properties of Low-Luminosity AGN: Variability, Accretion Rate, Black Hole Mass and Color**  
**Author(s):** Juan Oleas<sup>1</sup>, Stephanie Podjed<sup>1</sup>, Vicki Sarajedini<sup>1</sup>  
*Institution(s):* <sup>1</sup> University Of Florida
- 243.13 Simulations of Accretion Disk Wind Models**  
**Author(s):** Craig L Brooks<sup>1</sup>, Suk Yee Yong<sup>4</sup>, Matthew O'Dowd<sup>2</sup>, Rachel L. Webster<sup>4</sup>, Nicholas Bate<sup>3</sup>  
*Institution(s):* <sup>1</sup> CUNY-Hunter College, <sup>2</sup> CUNY-Lehman College, <sup>3</sup> University of Cambridge, <sup>4</sup> University of Melbourne
- 243.14 Recovering the radial temperature structure of accretion disks around thermal active galactic nuclei**  
**Author(s):** Sathvik Nair<sup>1</sup>, C. Gaskell<sup>3</sup>, Jerry Hong<sup>2</sup>  
*Institution(s):* <sup>1</sup> Leland High School, <sup>2</sup> Palo Alto High School, <sup>3</sup> Univ. Calif. Santa Cruz
- 243.15 The Effect of Realistic Radial Temperature Gradients on Predicted Accretion Disk Sizes of Active Galactic Nuclei: Improving Agreement with Estimated Disk Sizes.**  
**Author(s):** Jerry Hong<sup>2</sup>, C. Gaskell<sup>3</sup>, Sathvik Nair<sup>1</sup>  
*Institution(s):* <sup>1</sup> Leland High School, <sup>2</sup> Palo Alto Senior High School, <sup>3</sup> University of California, Santa Cruz

- 243.16 Cadence Requirements for AGN Accretion Studies with LSST**  
**Author(s):** Jackeline Moreno<sup>1</sup>, Michael S. Vogeley<sup>1</sup>, Gordon T. Richards<sup>1</sup>, Vishal P. Kasliwal<sup>2</sup>  
*Institution(s):* <sup>1</sup> Drexel University, <sup>2</sup> University of Pennsylvania
- 243.17 Can emission line profiles from perturbed accretion disks mimic those from the broad line region of a black hole in a supermassive binary?**  
**Author(s):** Stephanie Meghan Brown<sup>4</sup>, Michael Eracleous<sup>4</sup>, Jessie C. Runnoe<sup>4</sup>, Tamara Bogdanovic<sup>2</sup>, Steinn Sigurdsson<sup>4</sup>, Todd A. Boroson<sup>3</sup>, Jules P. Halpern<sup>1</sup>  
*Institution(s):* <sup>1</sup> Columbia University, <sup>2</sup> Georgia Institute of Technology, <sup>3</sup> Las Cumbres Observatory, <sup>4</sup> The Pennsylvania State University
- 243.18 Implications of Profile Variability in Searches for Supermassive Black Hole Binaries**  
**Author(s):** Alison Pennell<sup>4</sup>, Jessie C. Runnoe<sup>4</sup>, Stephanie Meghan Brown<sup>4</sup>, Michael Eracleous<sup>4</sup>, Tamara Bogdanovic<sup>2</sup>, Todd A. Boroson<sup>3</sup>, Jules P. Halpern<sup>1</sup>  
*Institution(s):* <sup>1</sup> Columbia University, <sup>2</sup> Georgia Tech, <sup>3</sup> LCOGT, <sup>4</sup> The Pennsylvania State University
- 243.19 Searching for the Nearest Extragalactic Binary Black Hole: A Spectroscopic Study of NGC 4736**  
**Author(s):** Annika Gustafsson<sup>2</sup>, Teiler J Kwan<sup>2</sup>, Robert Scott Fisher<sup>2</sup>, Rachel Mason<sup>1</sup>  
*Institution(s):* <sup>1</sup> Gemini Observatory, <sup>2</sup> University of Oregon
- 243.20 Constraining the orbits and masses of a supermassive binary black hole system**  
**Author(s):** Karishma Bansal<sup>4</sup>, Gregory B. Taylor<sup>4</sup>, Robert T. Zavala<sup>3</sup>, Alison B. Peck<sup>1</sup>, Roger W. Romani<sup>2</sup>  
*Institution(s):* <sup>1</sup> NRAO, <sup>2</sup> Stanford University, <sup>3</sup> United States Naval Observatory, <sup>4</sup> UNM
- 243.21 The Binary Black Hole Model for Mrk 231 Can Not Explain the Observed Emission Lines**  
**Author(s):** Karen Leighly<sup>3</sup>, Donald M. Terndrup<sup>2</sup>, Sarah Gallagher<sup>4</sup>, Adrian B. Lucy<sup>1</sup>  
*Institution(s):* <sup>1</sup> Columbia University, <sup>2</sup> The Ohio State University, <sup>3</sup> Univ. of Oklahoma, <sup>4</sup> University of Western Ontario
- 243.22 Searching for Super Massive Binary Black Holes in the VLBA Calibrator Survey**  
**Author(s):** Brittney C. High<sup>1</sup>, Alison B. Peck<sup>1</sup>, Anthony J. Beasley<sup>1</sup>  
*Institution(s):* <sup>1</sup> National Radio Astronomy Observatory
- 243.23 Uncovering Binary Supermassive Black Holes in Merging Galaxy Pairs**  
**Author(s):** Paul McNulty<sup>1</sup>, Shobita Satyapal<sup>1</sup>, Sara L Ellison<sup>3</sup>, Nathan Secrest<sup>2</sup>, Mario Gliozzi<sup>1</sup>, Barry Rothberg<sup>1</sup>  
*Institution(s):* <sup>1</sup> George Mason University, <sup>2</sup> United States Naval Research Laboratory, <sup>3</sup> University of Victoria

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- 243.24 Testing Mergers as a Trigger for Quasars: Host Galaxy Morphologies**  
**Author(s):** Timothy S. Hamilton<sup>1</sup>, Carolin Villforth<sup>2</sup>  
*Institution(s):* <sup>1</sup> Shawnee State Univ., <sup>2</sup> University of Bath
- 243.25 Combining Chandra Observations and Near-Infrared Imaging to Search for Dual AGNs Among Double-Peaked [O III] SDSS AGN**  
**Author(s):** Rosalie C. McGurk<sup>2</sup>, Claire E. Max<sup>3</sup>, Bradford Holden<sup>3</sup>, Gregory A. Shields<sup>4</sup>, Anne Medling<sup>1</sup>  
*Institution(s):* <sup>1</sup> Australian National University, <sup>2</sup> Max Planck Institute for Astronomy, <sup>3</sup> University of California Santa Cruz, <sup>4</sup> University of Texas Austin
- 243.26 SSC Model Fits to Simultaneous Fermi and CAO observations of BL Lac's**  
**Author(s):** Tyler Gordon<sup>1</sup>, Daryl J. Macomb<sup>1</sup>, Jared Hand<sup>1</sup>, Jay P. Norris<sup>1</sup>, Min Long<sup>1</sup>  
*Institution(s):* <sup>1</sup> Boise State University
- 243.27 Unveiling Unidentified Fermi Sources**  
**Author(s):** Lizhong Zhang<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Illinois Urbana-Champaign
- 243.28 Spectral Evolution in High Redshift Quasars from the Final BOSS Sample**  
**Author(s):** Trey Jensen<sup>2</sup>, Julian Bautista<sup>2</sup>, Kyle Dawson<sup>2</sup>, David Harris<sup>2</sup>, Vikrant Kamble<sup>2</sup>, Vivek Mariappan<sup>2</sup>, Nao Suzuki<sup>1</sup>  
*Institution(s):* <sup>1</sup> Kavli Institute for the Physics and Mathematics of the Universe, <sup>2</sup> University of Utah
- 243.29 Luminous, High-z, Type-2 Quasars are Still Missing**  
**Author(s):** Gordon T. Richards<sup>1</sup>, Joseph F Hennawi<sup>2</sup>  
*Institution(s):* <sup>1</sup> Drexel Univ., <sup>2</sup> Max Planck Institute for Astronomy
- 243.30 Extended X-ray and Radio Structures around high-redshift (z~0.5-2) 3CRR sources**  
**Author(s):** Sarunas Nedzinskas<sup>4</sup>, Belinda J. Wilkes<sup>3</sup>, Joanna Kuraszekwicz<sup>3</sup>, Adam Atanas<sup>2</sup>, Mark Birkinshaw<sup>1</sup>, Diana M Worrall<sup>1</sup>  
*Institution(s):* <sup>1</sup> Bristol University, <sup>2</sup> Harvard University, <sup>3</sup> Harvard-Smithsonian Center for Astrophysics, <sup>4</sup> University of Southampton
- 243.31 On Building a 3D Model of the M87 Jet**  
**Author(s):** Kunyang Li<sup>1</sup>, Katie Kosak<sup>1</sup>, Sayali S Avachat<sup>1</sup>, Eric S. Perlman<sup>1</sup>  
*Institution(s):* <sup>1</sup> Florida Institute of Technology
- 243.32 The Spectacular Radio-Near-IR-X-Ray Jet of 3C 111**  
**Author(s):** Devon Clautice<sup>1</sup>, Eric S. Perlman<sup>1</sup>, Markos Georganopoulos<sup>7</sup>, Matthew L. Lister<sup>4</sup>, Francesco Tombesi<sup>6</sup>, Mihai Cara<sup>5</sup>, Herman L. Marshall<sup>3</sup>, Brandon Scott Hogan<sup>4</sup>, Demos Kazanas<sup>2</sup>  
*Institution(s):* <sup>1</sup> Florida Institute of Technology, <sup>2</sup> Goddard Space Flight Center, <sup>3</sup> Massachusetts Institute of Technology, <sup>4</sup> Purdue University, <sup>5</sup> Space Telescope Science Institute, <sup>6</sup> University of Maryland, <sup>7</sup> University of Maryland Baltimore County

- 243.33 Supersonic inflation of the radio lobes of NGC 1052: evidence for non-thermal particle acceleration**  
**Author(s):** Taylor Andrew Morris<sup>2</sup>, Ralph P. Kraft<sup>1</sup>, Christine Jones<sup>1</sup>  
*Institution(s):* <sup>1</sup> Harvard-Smithsonian Center for Astrophysics, <sup>2</sup> Sewanee: The University of the South
- 243.34 Population Studies of Quasars in Infrared and X-Ray Light**  
**Author(s):** Joseph George<sup>1</sup>, Jack Singal<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Richmond
- 243.35 Solving the puzzle of discrepant quasar variability on monthly time scales implied by SDSS and CRTS datasets**  
**Author(s):** Krzysztof Suberlak<sup>3</sup>, Zeljko Ivezić<sup>3</sup>, Chelsea Louise MacLeod<sup>2</sup>, Matthew Graham<sup>1</sup>, John J. Ruan<sup>3</sup>  
*Institution(s):* <sup>1</sup> Center for Data-Driven Discovery, California Institute of Technology, <sup>2</sup> Institute for Astronomy, University of Edinburgh, Royal Observatory, <sup>3</sup> University of Washington
- 243.36 Initial Results from a COS Survey of PG Quasars**  
**Author(s):** Anthony Dinh To<sup>1</sup>, David Rupke<sup>1</sup>, Sylvain Veilleux<sup>2</sup>  
*Institution(s):* <sup>1</sup> Rhodes College, <sup>2</sup> University of Maryland
- 243.37 Bayesian and Profile Likelihood Approaches to Time Delay Estimation for Stochastic Time Series of Gravitationally Lensed Quasars**  
**Author(s):** Hyungsuk Tak<sup>1</sup>, Kaisey Mandel<sup>2</sup>, David A van Dyk<sup>3</sup>, Vinay Kashyap<sup>2</sup>, Xiao-Li Meng<sup>1</sup>, Aneta Siemiginowska<sup>2</sup>  
*Institution(s):* <sup>1</sup> Harvard University, <sup>2</sup> Harvard-Smithsonian Center for Astrophysics, <sup>3</sup> Imperial College London
- 243.38 Jansky VLA Imaging of Heavily Obscured, Luminous Quasars at Redshifts ~2**  
**Author(s):** Adam Trapp<sup>3</sup>, Carol J. Lonsdale<sup>2</sup>, Palavi Patil<sup>3</sup>, Mark Whittle<sup>3</sup>, Mark Lacy<sup>2</sup>, Colin J. Lonsdale<sup>1</sup>  
*Institution(s):* <sup>1</sup> MIT/Haystack, <sup>2</sup> NRAO, <sup>3</sup> University of Virginia
- 243.39 The Pan-STARRS1  $z>6$  quasar survey: More than 100 quasars within the first Gyr of the universe**  
**Author(s):** Fabian Walter<sup>2</sup>, Eduardo Banados<sup>1</sup>, Bram Venemans<sup>2</sup>, Roberto Decarli<sup>2</sup>, Emanuele Farina<sup>2</sup>, Chiara Mazzucchelli<sup>2</sup>, Xiaohui Fan<sup>3</sup>, Kenneth C. Chambers<sup>4</sup>  
*Institution(s):* <sup>1</sup> Carnegie Observatories, <sup>2</sup> MPA, <sup>3</sup> Steward Observatory, <sup>4</sup> University of Hawaii
- 243.40 Quasars in the Time Domain: Supermassive Black Hole Binaries and Extreme Objects**  
**Author(s):** Matthew Graham<sup>1</sup>, Stanislav G. Djorgovski<sup>1</sup>, Daniel Stern<sup>2</sup>, Andrew J. Drake<sup>1</sup>, Ashish A. Mahabal<sup>1</sup>, Eilat Glikman<sup>3</sup>  
*Institution(s):* <sup>1</sup> Caltech, <sup>2</sup> JPL/Caltech, <sup>3</sup> Middlebury College
- 243.41 Blazar Demographics Using Multiwavelength Data**  
**Author(s):** Peiyuan Mao<sup>1</sup>, F. Massaro<sup>1</sup>, C. Megan Urry<sup>1</sup>  
*Institution(s):* <sup>1</sup> Yale University

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- 243.42 Using the H- $\beta$  Emission Line as a Means of Mass Determination for Spiral Galaxy AGNs**  
**Author(s):** Thomas Cameron<sup>1</sup>, Lucus Ratz<sup>1</sup>, Debra L. Burris<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Central Arkansas
- 243.43 The Potential for Cubesats to Determine Black Holes Masses in Nearby Active Galactic Nuclei and Contribute to Other Time Domain Science**  
**Author(s):** Varoujan Gorjian<sup>2</sup>, David R. Ardila<sup>4</sup>, Aaron J. Barth<sup>6</sup>, Siegfried Janson<sup>4</sup>, Christopher S. Kochanek<sup>5</sup>, Matthew Arnold Malkan<sup>7</sup>, Bradley M. Peterson<sup>5</sup>, Darren Rowen<sup>4</sup>, Sara Seager<sup>3</sup>, Evgenya L Shkolnik<sup>1</sup>  
*Institution(s):* <sup>1</sup> Arizona State University, <sup>2</sup> JPL/Caltech, <sup>3</sup> Massachusetts Institute of Technology, <sup>4</sup> The Aerospace Corporation, <sup>5</sup> The Ohio State University, <sup>6</sup> University of California, Irvine, <sup>7</sup> University of California, Los Angeles
- 243.44 Probing the Relationship Between Black Hole Mass and Galaxy Mass for Reverberation-Mapped AGN**  
**Author(s):** Benjamin Ou-Yang<sup>2</sup>, Misty Bentz<sup>2</sup>, Megan C. Johnson<sup>1</sup>  
*Institution(s):* <sup>1</sup> CSIRO, <sup>2</sup> Georgia State University
- 243.45 Searching with the Large Binocular Telescope for Accreting Supermassive Black Holes in Bulgeless Galaxies**  
**Author(s):** Jason Ferguson<sup>2</sup>, Anca Constantin<sup>2</sup>, Shobita Satyapal<sup>1</sup>, Barry Rothberg<sup>1</sup>  
*Institution(s):* <sup>1</sup> George Mason University, <sup>2</sup> James Madison University
- 243.47 Minutes-to-Months Optical Lightcurve of Blazar OJ287 Obtained with the K2 Mission in Summer 2015**  
**Author(s):** Ann E. Wehrle<sup>1</sup>, Michael T. Carini<sup>3</sup>, Paul J. Wiita<sup>2</sup>  
*Institution(s):* <sup>1</sup> Space Science Institute, <sup>2</sup> The College of New Jersey, <sup>3</sup> Western Kentucky University
- 243.48 Observations of WlBRaLS Blazars with K2**  
**Author(s):** Michael T. Carini<sup>1</sup>, Rebecca Brown<sup>1</sup>  
*Institution(s):* <sup>1</sup> Western Kentucky Univ.
- 243.49 Lick Spectroscopy of AGN Candidates in the Kepler Fields**  
**Author(s):** Tran Tsan<sup>1</sup>, Matthew Malkan<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of California, Los Angeles
- 243.50 Characteristics of the optical variability of AGNs as a possible identification tool**  
**Author(s):** Alexander Romelfanger<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of the Pacific
- 243.51 An optical and near-infrared color-magnitude diagram for type I Active Galactic Nuclei**  
**Author(s):** Robert J Palmer<sup>5</sup>, John Gibbs<sup>1</sup>, Varoujan Gorjian<sup>2</sup>, Lee Pruett<sup>3</sup>, Diedre Young<sup>4</sup>, Robert Boyd<sup>5</sup>, Joy Byrd<sup>4</sup>, Jaicie Cheshier<sup>4</sup>, Stephanie Chung<sup>3</sup>, Ruby Clark<sup>1</sup>, Joseph Fernandez<sup>5</sup>, Elyse Gonzales<sup>3</sup>, Anika Kumar<sup>3</sup>, Gillian McGinnis<sup>3</sup>, John Palmer<sup>5</sup>, Luke Perrine<sup>1</sup>, Brittney Phelps<sup>5</sup>, Margaret Reginio<sup>4</sup>, Kristi Richter<sup>3</sup>, Elias Sanchez<sup>1</sup>, Claire Washburn<sup>1</sup>  
*Institution(s):* <sup>1</sup> Glencoe High School, <sup>2</sup> JPL/Caltech, <sup>3</sup> Notre Dame High School, <sup>4</sup> Ridgway Christian High School, <sup>5</sup> Willmar Senior High School

- 243.52 Modeling the SED of LLAGNs**  
**Author(s):** Vaughn Petersen<sup>1</sup>, Helene Flohic<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of the Pacific
- 243.53 Filling The Gap of LINERS' SED**  
**Author(s):** Gerold Curell<sup>1</sup>, Vaughn Petersen<sup>1</sup>, Helene Flohic<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of The Pacific
- 243.54 Mid-IR Observations of AGN**  
**Author(s):** Christopher C. Packham<sup>3</sup>, Almudena Alonso Herrero<sup>2</sup>, Nancy A. Levenson<sup>1</sup>  
*Institution(s):* <sup>1</sup> Gemini Observatory, <sup>2</sup> Instituto de Fisica de Cantabria, <sup>3</sup> University of Texas at San Antonio
- 243.55 Imaging AGN Feedback in NGC 3393 with CHEERS**  
**Author(s):** W. Peter Maksym<sup>1</sup>, Giuseppina Fabbiano<sup>1</sup>, Martin Elvis<sup>1</sup>, Margarita Karovska<sup>1</sup>, Alessandro Paggi<sup>1</sup>, Junfeng Wang<sup>3</sup>, Thaisa Storchi-Bergmann<sup>2</sup>  
*Institution(s):* <sup>1</sup> Harvard-Smithsonian Center for Astrophysics, <sup>2</sup> Universidade Federal do Rio Grande do Sul, <sup>3</sup> Xiamen University
- 243.56 NGC1266: Compton-thick AGN or Ultra-compact Starburst?**  
**Author(s):** Lauranne Lanz<sup>3</sup>, Katherine A. Alatalo<sup>2</sup>, Murray Brightman<sup>1</sup>, Patrick M. Ogle<sup>3</sup>, Philip N. Appleton<sup>3</sup>  
*Institution(s):* <sup>1</sup> California Institute of Technology, <sup>2</sup> Carnegie Observatories, <sup>3</sup> IPAC/California Institute of Technology
- 243.57 Swift monitoring of the "bare" AGN Ark120**  
**Author(s):** Mario Gliozzi<sup>1</sup>  
*Institution(s):* <sup>1</sup> George Mason Univ.
- 243.58 A WISE Test of Links Between Megamaser Activity and Nuclear Obscuration**  
**Author(s):** Catherine Witherspoon<sup>1</sup>, Anca Constantin<sup>1</sup>  
*Institution(s):* <sup>1</sup> James Madison University
- 243.59 GBT spectral monitoring observations of megamaser disk systems**  
**Author(s):** Dominic Pesce<sup>5</sup>, James A. Braatz<sup>3</sup>, James J. Condon<sup>3</sup>, Feng Gao<sup>3</sup>, Christian Henkel<sup>2</sup>, Eugenia Litzinger<sup>4</sup>, Fred K.Y. Lo<sup>3</sup>, Mark J. Reid<sup>1</sup>  
*Institution(s):* <sup>1</sup> Harvard-Smithsonian Center for Astrophysics, <sup>2</sup> Max-Planck-Institut für Radioastronomie, <sup>3</sup> National Radio Astronomy Observatory, <sup>4</sup> Universität Würzburg, <sup>5</sup> University of Virginia
- 243.60 The 2013-2015 Optical Outburst and Historic Light Curve of the Blazar 3C 454.3**  
**Author(s):** Thomas J. Balonek<sup>1</sup>, Zachary Weaver<sup>1</sup>, Nicholas Didio<sup>1</sup>, Leah Jenks<sup>1</sup>, Carolyn Morris<sup>1</sup>, Jovana Zagorac<sup>1</sup>, Brian D'Auteuil<sup>1</sup>, Katherine L. Karnes<sup>1</sup>, Joshua S Reding<sup>1</sup>, Caitlin Rose<sup>3</sup>, Anneliese M Rilinger<sup>4</sup>, Michael T. Lam<sup>2</sup>  
*Institution(s):* <sup>1</sup> Colgate Univ., <sup>2</sup> Cornell Univ., <sup>3</sup> Vassar Coll., <sup>4</sup> Williams Coll
- 243.61 The Significance of Star Formation in Active Galactic Nuclei**  
**Author(s):** Alexander Manzewitsch<sup>1</sup>, Grant D. Thompson<sup>1</sup>  
*Institution(s):* <sup>1</sup> Wingate University

# WEDNESDAY, 6 JANUARY 2016

## 244 Laboratory Astrophysics - Atoms and Plasmas Poster Session

Wednesday, 5:30 pm - 6:30 pm; Exhibit Hall A

- 244.01 Ne+, Ne2+, Ar+, and Ar2+ fine-structure electron-impact excitation data for applications in ultra low temperature plasmas**  
**Author(s):** YE LI<sup>1</sup>, Qianxia Wang<sup>1</sup>, Jonathan Pearce<sup>1</sup>, Michael Pindzola<sup>1</sup>, Stuart Loch<sup>1</sup>, Phillip C. Stancil<sup>3</sup>, Renata Cumbee<sup>3</sup>, Connor Ballance<sup>2</sup>  
*Institution(s):* <sup>1</sup> Auburn University, <sup>2</sup> Queen's University Belfast, <sup>3</sup> University of Georgia
- 244.02 Intensity and Energy Level Analysis of the Vacuum Ultraviolet Spectrum of Four Times Ionize Nickel (Ni V)**  
**Author(s):** Jacob Wolfgang Ward<sup>1</sup>, Gillian Nave<sup>2</sup>  
*Institution(s):* <sup>1</sup> Arizona State University, <sup>2</sup> NIST
- 244.03 New Rovibrationally-resolved Photodissociation Cross Sections of NH, SH+, and SiO for UV Irradiated Environments**  
**Author(s):** Brendan McLaughlin<sup>1</sup>, Phillip C. Stancil<sup>2</sup>, Elizabeth McMillan<sup>2</sup>, Gang Shen<sup>2</sup>, Jim McCann<sup>1</sup>  
*Institution(s):* <sup>1</sup> Queens University Belfast, <sup>2</sup> University of Georgia
- 244.04 Rovibrational CO analysis in PDR models**  
**Author(s):** Phillip C. Stancil<sup>1</sup>, Renata Cumbee<sup>1</sup>, Ziwei Zhang<sup>1</sup>, Kyle M. Walker<sup>1</sup>, Benhui Yang<sup>1</sup>, Gary J. Ferland<sup>2</sup>  
*Institution(s):* <sup>1</sup> Univ. of Georgia, <sup>2</sup> University of Kentucky
- 244.05 Rovibrationally inelastic scattering of CN-H2: Full-dimensional close-coupling study**  
**Author(s):** Benhui Yang<sup>3</sup>, Xiaohong Wang<sup>1</sup>, P. Stancil<sup>3</sup>, J. Bowman<sup>1</sup>, Balakrishnan Naduvalath<sup>4</sup>, Robert C. Forrey<sup>2</sup>  
*Institution(s):* <sup>1</sup> Emory University, <sup>2</sup> Penn State University, Berks Campus, <sup>3</sup> University of Georgia, <sup>4</sup> University of Nevada, Las Vegas
- 244.06 Ritz wavelengths of Fe I, Si II and Ni II for quasar absorption spectroscopy**  
**Author(s):** Gillian Nave<sup>1</sup>  
*Institution(s):* <sup>1</sup> NIST
- 244.07 Hyperfine structure constants of singly ionized manganese obtained from analysis of Fourier Transform spectra**  
**Author(s):** Keeley Townley-Smith<sup>1</sup>, Gillian Nave<sup>2</sup>  
*Institution(s):* <sup>1</sup> Lamar University, <sup>2</sup> National Institute of Standards and Technology
- 244.08 Non-LTE Analysis of Interstellar Line Spectra of SiO**  
**Author(s):** Ziwei Zhang<sup>1</sup>, Phillip C. Stancil<sup>1</sup>  
*Institution(s):* <sup>1</sup> The University of Georgia

- 244.09 Improved Co I log(gf) & hfs data and Abundance Determinations in the Photospheres of the Sun & Metal-poor Star HD 84937**  
**Author(s):** James E. Lawler<sup>3</sup>, Chris Sneden<sup>2</sup>, John J. Cowan<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Oklahoma, <sup>2</sup> University of Texas, <sup>3</sup> University of Wisconsin
- 244.10 New dielectronic recombination rates including below-threshold resonances for Li-like and Be-like systems**  
**Author(s):** Qianxia Wang<sup>1</sup>, Connor Ballance<sup>3</sup>, Michael Pindzola<sup>1</sup>, Randall K. Smith<sup>2</sup>, Adam Foster<sup>2</sup>, John C. Raymond<sup>2</sup>, Connor Favreau<sup>1</sup>, Jim Lauridson<sup>1</sup>, Stuart Loch<sup>1</sup>  
*Institution(s):* <sup>1</sup> Auburn University, <sup>2</sup> Harvard Smithsonian Center for Astrophysics, <sup>3</sup> Queen's University Belfast

## 245 College-Level General Education Practices and Resources Poster Session

Wednesday, 5:30 pm - 6:30 pm; Exhibit Hall A

- 245.01 Teaching Fair Use with Astronomy Imagery**  
**Author(s):** Teresa Wilson<sup>1</sup>  
*Institution(s):* <sup>1</sup> Michigan Technological University
- 245.02 Do Interactive Globes and Games Help Students Learn Planetary Science?**  
**Author(s):** Filis Coba<sup>2</sup>, Stephen Burgin<sup>1</sup>, Declan De Paor<sup>2</sup>, Jennifer Georgen<sup>3</sup>  
*Institution(s):* <sup>1</sup> Department of Education, Old Dominion University, <sup>2</sup> Department of Physics, Old Dominion University, <sup>3</sup> Ocean, Earth, and Atmospheric Sciences, Old Dominion University
- 245.03 Pedagogical Discipline Representations that Facilitate the Learning of Complex Modern Astrophysics Topics**  
**Author(s):** Colin Scott Wallace<sup>4</sup>, Timothy G. Chambers<sup>3</sup>, Edward E. Prather<sup>1</sup>, Julia R. Kamenetzky<sup>1</sup>, Seth D. Hornstein<sup>2</sup>  
*Institution(s):* <sup>1</sup> University of Arizona, <sup>2</sup> University of Colorado Boulder, <sup>3</sup> University of Michigan, <sup>4</sup> University of North Carolina at Chapel Hill
- 245.04 Enhancing ASTRO101 Student Engagement Using Student-Created Science SKETCHES**  
**Author(s):** Timothy F. Slater<sup>2</sup>, Stephanie Slater<sup>1</sup>  
*Institution(s):* <sup>1</sup> CAPER Center for Astronomy & Physics Education Research, <sup>2</sup> University of Wyoming
- 245.05 A New Coherent Science Content Storyline Astronomy Course for Pre-Service Teachers at Penn State**  
**Author(s):** Christopher Palma<sup>1</sup>, Julia Plummer<sup>1</sup>  
*Institution(s):* <sup>1</sup> Penn State Univ.
- 245.06 Teaching ASTRO 101 Students the Art of Scientific Argumentation**  
**Author(s):** Sharon P Schleigh<sup>2</sup>, Stephanie Slater<sup>1</sup>, Timothy F. Slater<sup>3</sup>  
*Institution(s):* <sup>1</sup> CAPER Center for Astronomy & Physics Education Research, <sup>2</sup> East Carolina University, <sup>3</sup> University of Wyoming

# WEDNESDAY, 6 JANUARY 2016

## 245.07 Development of an Online Exoplanet Course for In-Service Teachers

**Author(s):** Daniel Barringer<sup>1</sup>, Christopher Palma<sup>1</sup>

*Institution(s):* <sup>1</sup> Pennsylvania State University

## 245.08 Big Data in AER

**Author(s):** Julia M. Kregenow<sup>1</sup>

*Institution(s):* <sup>1</sup> Penn State University

## 245.09 Discovery & Interaction in Astro 101 Laboratory Experiments

**Author(s):** Frank Patrick Maloney<sup>1</sup>, Philip Maurone<sup>1</sup>, Laurence E. DeWarf<sup>1</sup>

*Institution(s):* <sup>1</sup> Villanova University

## 245.10 Astronomy Fun with Mobile Devices

**Author(s):** Catherine A. Pilachowski<sup>1</sup>, Frank Morris<sup>2</sup>

*Institution(s):* <sup>1</sup> Indiana University, <sup>2</sup> Software Contractor

## 245.11 Automated Estimation of the Orbital Parameters of Jupiter's Moons

**Author(s):** Emma Western<sup>1</sup>, Gerald T. Ruch<sup>1</sup>

*Institution(s):* <sup>1</sup> University of St. Thomas

## 245.12 Discovering Astronomy: An Astro 101 e-book

**Author(s):** Stephen J. Shawl<sup>4</sup>, Gene Byrd<sup>3</sup>, Susana E. Deustua<sup>2</sup>, Michael C. LoPresto<sup>1</sup>

*Institution(s):* <sup>1</sup> Henry Ford College, <sup>2</sup> STSci, <sup>3</sup> University of Alabama, <sup>4</sup> University of Kansas

## 245.13 A Concept-Oriented Custom Lab Manual for Astronomy 101

**Author(s):** Nate McCrady<sup>2</sup>, Emily L. Rice<sup>1</sup>

*Institution(s):* <sup>1</sup> CUNY College of Staten Island, <sup>2</sup> University of Montana

## 245.14 Modifying your Physics and Astronomy Courses to Incorporate Heliophysics - Some Examples

**Author(s):** Rebecca Cebulka<sup>1</sup>, Rebecca Cox<sup>1</sup>, Alvar Rodriguez Garrigues<sup>1</sup>, Laura Hoshino<sup>1</sup>, Cullen Fitzgerald<sup>1</sup>, M Montgomery<sup>1</sup>, Ahlam N. Al-Rawi<sup>1</sup>, Christos Velissaris<sup>1</sup>, Elena Flitsiyani<sup>1</sup>

*Institution(s):* <sup>1</sup> University of Central Florida

## 245.15 Observing Projects in Introductory Astronomy

**Author(s):** M. Suzanne Taylor<sup>1</sup>

*Institution(s):* <sup>1</sup> Western State Colorado University

## 245.16 Astronomy for Everyone: Harvard's Move Toward an All-Inclusive Astronomy Lab and Telescope

**Author(s):** Allyson Bieryla<sup>1</sup>

*Institution(s):* <sup>1</sup> Harvard University

## 246 K-12 Education and Public Outreach Poster Session

Wednesday, 5:30 pm - 6:30 pm; Exhibit Hall A

### 246.01 Cosmic Concepts: A Video Series for Scaffolded Learning

**Author(s):** Bonnie Eisenhamer<sup>1</sup>, Frank Summers<sup>1</sup>, John Maple<sup>1</sup>

*Institution(s):* <sup>1</sup> STScl

- 246.02 Distributing Sloan Digital Sky Survey Plates and Posters as Interactive Teaching Tools**  
**Author(s):** Danielle Skinner<sup>2</sup>, Kate Meredith<sup>3</sup>, Karen Masters<sup>1</sup>, Nick MacDonald<sup>2</sup>  
*Institution(s):* <sup>1</sup> University of Portsmouth, <sup>2</sup> University of Washington, <sup>3</sup> Yerkes Observatory
- 246.03 Authentic Research in the Classroom: NITARP Teachers Connect Astronomy with NGSS.**  
**Author(s):** Lee Pruett<sup>3</sup>, John Gibbs<sup>1</sup>, Robert Palmer<sup>5</sup>, Diedre Young<sup>4</sup>, Varoujan Gorjian<sup>2</sup>  
*Institution(s):* <sup>1</sup> Glencoe High School, <sup>2</sup> JPL/Caltech, <sup>3</sup> Notre Dame High School, <sup>4</sup> Ridgway Christian High School, <sup>5</sup> Willmar Senior High School
- 246.04 BiteScis: Connecting K-12 teachers with science graduate students to produce lesson plans on modern science research**  
**Author(s):** Cara Battersby<sup>1</sup>  
*Institution(s):* <sup>1</sup> Harvard-Smithsonian Center for Astrophysics
- 246.05 NITARP: Effects on Student Participants**  
**Author(s):** Richard Sanchez<sup>1</sup>, Caroline Odden<sup>3</sup>, Garrison Hall<sup>4</sup>, Luisa M. Rebull<sup>2</sup>  
*Institution(s):* <sup>1</sup> Clear Creek Middle School, <sup>2</sup> IPAC/Caltech, <sup>3</sup> Phillips Academy, <sup>4</sup> University of South Carolina, Upstate
- 246.06 Examples from Astronomy for High School Physics**  
**Author(s):** Sergio Dieterich<sup>1</sup>  
*Institution(s):* <sup>1</sup> Department of Terrestrial Magnetism, Carnegie Institution of Washington
- 246.07 Active Astronomy Roadshow Haiti**  
**Author(s):** Silas Laycock<sup>3</sup>, Kathleen Oram<sup>1</sup>, Dayana Alabre<sup>2</sup>, Ralph Douyon<sup>2</sup>  
*Institution(s):* <sup>1</sup> L3 Communications, <sup>2</sup> UMass Haiti Development Studies Center, <sup>3</sup> University of Massachusetts Lowell
- 246.08 Enriching Cross Curriculum Projects with Astronomy for Gifted Students**  
**Author(s):** Debra L. Burris<sup>1</sup>  
*Institution(s):* <sup>1</sup> Univ. of Central Arkansas
- 246.09 Skynet Junior Scholars: Bringing Astronomy to Deaf and Hard of Hearing Youth**  
**Author(s):** Kate Meredith<sup>2</sup>, Kathryn Williamson<sup>1</sup>, Constance Gartner<sup>3</sup>, Vivian L. Hoette<sup>2</sup>, Sue Ann Heatherly<sup>1</sup>  
*Institution(s):* <sup>1</sup> National Radio Astronomy Observatory, <sup>2</sup> University of Chicago Yerkes Observatory, <sup>3</sup> Wisconsin School for the Deaf
- 246.10 Skynet Junior Scholars: From Idea to Enactment--Tales from the Trenches II Implementation with Blind and Low Vision Youth**  
**Author(s):** Jeremiah Beasley<sup>4</sup>, Tim Fahlberg<sup>4</sup>, Vivian L. Hoette<sup>2</sup>, Tina Mekeel<sup>4</sup>, Kate Meredith<sup>2</sup>, Kathryn Williamson<sup>1</sup>, B. Charles Hoette<sup>3</sup>  
*Institution(s):* <sup>1</sup> National Radio Astronomy Observatory, <sup>2</sup> University of Chicago Yerkes Observatory, <sup>3</sup> Williams Bay Lion's Club, <sup>4</sup> Wisconsin Center for the Blind and Visually Impaired

# WEDNESDAY, 6 JANUARY 2016

## 246.11 Sharing Gravity's Microscope: Star Formation and Galaxy Evolution for Underserved Arizonans

**Author(s):** Karen A. Knierman<sup>1</sup>, Jacqueline A. Monkiewicz<sup>1</sup>, Catherine DD Bowman<sup>1</sup>, Wendy Taylor<sup>1</sup>

*Institution(s):*<sup>1</sup> School of Earth and Space Exploration - Arizona State University

## 246.12 Foundations in Science and Mathematics Program for Middle School and High School Students

**Author(s):** Karna Mahadev Desai<sup>1</sup>, Jing Yang<sup>2</sup>, Jason Hemann<sup>3</sup>

*Institution(s):*<sup>1</sup> Astronomy Department, Indiana University Bloomington, <sup>2</sup> Department of Chemistry, Indiana University Bloomington, <sup>3</sup> Department of Computer Science, School of Informatics and Computing, Indiana University Bloomington

## 246.13 The NASA/IPAC Teacher Archive Research Program (NITARP): Updates

**Author(s):** Luisa M. Rebull<sup>1</sup>, Varoujan Gorjian<sup>1</sup>, Gordon K. Squires<sup>1</sup>

*Institution(s):*<sup>1</sup> IPAC/Caltech

## 247 Majors and Graduate Student Education and Professional Development Poster Session

Wednesday, 5:30 pm - 6:30 pm; Exhibit Hall A

### 247.01 The Lowell Observatory Predoctoral Scholar Program

**Author(s):** Gerard van Belle<sup>1</sup>, Lisa A. Prato<sup>1</sup>

*Institution(s):*<sup>1</sup> Lowell Observatory

### 247.02 A Community of Scientists and Educators: The Compass Project at UC Berkeley

**Author(s):** Nathaniel Roth<sup>1</sup>, Josiah Schwab<sup>1</sup>

*Institution(s):*<sup>1</sup> UC Berkeley

### 247.03 The National Astronomy Consortium Summer Student Research Program at NRAO-Socorro: Year 2 structure

**Author(s):** Elisabeth A. Mills<sup>3</sup>, Kartik Sheth<sup>1</sup>, Faye Giles<sup>2</sup>, Laura M. Perez<sup>3</sup>, Demian Arancibia<sup>3</sup>, Sarah Burke-Spolaor<sup>3</sup>

*Institution(s):*<sup>1</sup> NASA, <sup>2</sup> National Radio Astronomy Observatory, <sup>3</sup> National Radio Astronomy Observatory

### 247.04 AstroCom NYC: A National Model for Urban Minority Engagement

**Author(s):** Timothy Paglione<sup>5</sup>, Saavik Ford<sup>3</sup>, Dennis Robbins<sup>4</sup>, Mordecai-Mark Mac Low<sup>1</sup>, Marcel A. Agueros<sup>2</sup>

*Institution(s):*<sup>1</sup> AMNH, <sup>2</sup> Columbia U., <sup>3</sup> CUNY BMCC & AMNH, <sup>4</sup> CUNY Hunter College & AMNH, <sup>5</sup> CUNY York College & AMNH

### 247.05 Indiana University's Innovative Recruitment Initiative: Getting You into IU

**Author(s):** Karna Mahadev Desai<sup>1</sup>, Yolanda Treviño<sup>3</sup>, David L. Daleke<sup>2</sup>, Brandon M. Finlay<sup>4</sup>, Rebecca C. Winkle<sup>5</sup>

*Institution(s):* <sup>1</sup>. Astronomy Department, Indiana University Bloomington, <sup>2</sup>. Department of Biochemistry and Molecular Biology, Indiana University Bloomington, <sup>3</sup>. Office of the Vice President for Diversity, Equity, and Multicultural Affairs, Indiana University Bloomington, <sup>4</sup>. Sociology Department, Indiana University Bloomington, <sup>5</sup>. The University Graduate School, Indiana University Bloomington

## 247.06 Capacity Building in South African Astronomy and Astrophysics

**Author(s):** Charles H. McGruder<sup>9</sup>, Peter Dunsby<sup>7</sup>, Patricia Whitelock<sup>6</sup>, Lawrence Norris<sup>4</sup>, Ketevi Assamagan<sup>1</sup>, Jarita Holbrook<sup>8</sup>, Nia Imara<sup>3</sup>, Hakeem Oluseyi<sup>2</sup>, Thebe Medupe<sup>5</sup>

*Institution(s):* <sup>1</sup>. Brookhaven National Laboratory, <sup>2</sup>. Florida Institute of Technology, <sup>3</sup>. Harvard-Smithsonian Center for Astrophysics, <sup>4</sup>. National Society of Black Physicists, <sup>5</sup>. North-West University, <sup>6</sup>. South African Astronomical Observatory, <sup>7</sup>. University of Cape Town, <sup>8</sup>. University of the Western Cape, <sup>9</sup>. Western Kentucky Univ.

## 247.07 Astronomy education and the Astrophysics Source Code Library

**Author(s):** Alice Allen<sup>1</sup>, Robert J. Nemiroff<sup>2</sup>

*Institution(s):* <sup>1</sup>. Astrophysics Source Code Library, <sup>2</sup>. Michigan Technological University

## 247.08 Utilizing the AAVSO's Variable Star Index (VSX) In Undergraduate Research Projects

**Author(s):** Kristine Larsen<sup>1</sup>

*Institution(s):* <sup>1</sup>. Central Connecticut State University

## 247.09 CAMPARE and Cal-Bridge: Two Institutional Networks Increasing Diversity in Astronomy

**Author(s):** Alexander L. Rudolph<sup>1</sup>, Chris David Impey<sup>3</sup>, Tammy A. Smecker-Hane<sup>2</sup>

*Institution(s):* <sup>1</sup>. Cal Poly Pomona, <sup>2</sup>. UC Irvine, <sup>3</sup>. University of Arizona

## 247.10 Methods of Scientific Research: Teaching Scientific Creativity at Scale

**Author(s):** Dennis Robbins<sup>2</sup>, K.E. Saavik Ford<sup>1</sup>

*Institution(s):* <sup>1</sup>. CUNY BMCC, <sup>2</sup>. CUNY Hunter College

## 247.11 Building Better Bridges: An Evaluation of The Bridge to the Ph.D. Program

**Author(s):** Robyn Ellyn Sanderson<sup>1</sup>, Caroline Lobel<sup>3</sup>, Marcel A. Agueros<sup>1</sup>, Vanessa Anderson<sup>4</sup>, Summer Ash<sup>1</sup>, Valerie Purdie-Vaughns<sup>3</sup>, Rainer Romero-Canyas<sup>3</sup>, Erica Walker<sup>2</sup>

*Institution(s):* <sup>1</sup>. Columbia University, <sup>2</sup>. Department of Mathematics, Science, and Technology, Teachers College, <sup>3</sup>. Department of Psychology, Columbia University, <sup>4</sup>. United States Department of Education

## 247.12 The Undergraduate Research Resources at the Pisgah Astronomical Research Institute

**Author(s):** J. Donald Cline<sup>1</sup>, Michael W. Castelaz<sup>1</sup>

*Institution(s):* <sup>1</sup>. Pisgah Astronomical Research Institute

# WEDNESDAY, 6 JANUARY 2016

## 248 Out-of-School Astronomy Education Practices and Resources for Kids to Grown-Ups Poster Session

Wednesday, 5:30 pm - 6:30 pm; Exhibit Hall A

**248.01 Exploring the Full Spectrum: the Power of Combining Art and Science**

**Author(s):** Sara Camnasio<sup>1</sup>, Enrico Fonda<sup>2</sup>

*Institution(s):* <sup>1</sup> CUNY Hunter College, <sup>2</sup> New York University

**248.02 Expanding the Universe of “Astronomy on Tap” Public Outreach Events**

**Author(s):** Emily L. Rice<sup>2</sup>, Brian Levine<sup>1</sup>, Rachael C. Livermore<sup>13</sup>, Jeffrey M. Silverman<sup>13</sup>, Stephanie M. LaMassa<sup>7</sup>, Amy Tyndall<sup>3</sup>, Demetri Muna<sup>8</sup>, Kristen Garofali<sup>12</sup>, Brett Morris<sup>12</sup>, Nell Byler<sup>12</sup>, Adalyn Fyhrie<sup>11</sup>, Morgan Rehnberg<sup>11</sup>, Quyen N. Hart<sup>9</sup>, Jennifer L. Connelly<sup>10</sup>, Devin W. Silvia<sup>6</sup>, Sarah J. Morrison<sup>5</sup>, Bhaskar Agarwal<sup>14</sup>, Grant Tremblay<sup>14</sup>, Megan E. Schwamb<sup>4</sup>

*Institution(s):* <sup>1</sup> American Museum of Natural History, <sup>2</sup> CUNY College of Staten Island, <sup>3</sup> European Southern Observatory, <sup>4</sup> Institute of Astronomy & Astrophysics, Academia Sinica (ASIAA), <sup>5</sup> Lunar and Planetary Laboratory, University of Arizona, <sup>6</sup> Michigan State University, <sup>7</sup> NASA GSFC, <sup>8</sup> Ohio State University, <sup>9</sup> Regis University, <sup>10</sup> Rochester Institute of Technology, <sup>11</sup> University of Colorado, Boulder, <sup>12</sup> University of Washington, <sup>13</sup> UT Austin, <sup>14</sup> Yale University

**248.03 STARtorialist: Astronomy Fashion & Culture Blog and Reader Survey Results**

**Author(s):** Summer Ash<sup>1</sup>, Emily L. Rice<sup>2</sup>, Paige B. Jarreau<sup>3</sup>

*Institution(s):* <sup>1</sup> Columbia University, <sup>2</sup> CUNY College of Staten Island, <sup>3</sup> Louisiana State University

**248.04 Progressive Research and Outreach at the WestRock Observatory**

**Author(s):** Johnny Eugene Brown<sup>1</sup>, Austin Lantz Caughey<sup>1</sup>, Brendon O’Keeffe<sup>1</sup>, Michael Johnson<sup>1</sup>, Rosa Nina Murphy Williams<sup>1</sup>

*Institution(s):* <sup>1</sup> Columbus State University

**248.05 Skynet Junior Scholars: From Idea to Enactment--Tales from the Trenches I. Implementation in 4-H settings.**

**Author(s):** Jason Burnside<sup>5</sup>, Lynn Feldman<sup>4</sup>, Suzanne Gurton<sup>1</sup>, Sue Ann Heatherly<sup>2</sup>, Vivian L. Hoette<sup>3</sup>, Jenny Murray<sup>5</sup>, Ginger Zastrow<sup>4</sup>

*Institution(s):* <sup>1</sup> Astronomical Society of the Pacific, <sup>2</sup> National Radio Astronomy Observatory, <sup>3</sup> University of Chicago Yerkes Observatory, <sup>4</sup> University of Wisconsin Extension, <sup>5</sup> WVU Extension

**248.06 Skynet Junior Scholars: From Idea to Enactment--Tales from the Trenches III. Implementing SJS in Out-of-School Time Settings**

**Author(s):** Sue Ann Heatherly<sup>5</sup>, Charlene Elyea<sup>6</sup>, Joel Goodman<sup>3</sup>, Suzanne Gurton<sup>1</sup>, Vivian L. Hoette<sup>7</sup>, Geoff Holt<sup>4</sup>, Rick Sanchez<sup>2</sup>

*Institution(s):* <sup>1</sup> Astronomical Society of the Pacific, <sup>2</sup> Clear Creek Middle School, <sup>3</sup> Howard Astronomical League, <sup>4</sup> Madison Metro. School Dist. Planetarium, <sup>5</sup> National Radio Astronomy Observatory, <sup>6</sup> O’Brien County Conservation Board, <sup>7</sup> University of Chicago Yerkes Observatory

## 248.07 Dark Skies, Bright Kids Year 7

**Author(s):** Lauren E. Bittle<sup>1</sup>, Kelsey E. Johnson<sup>1</sup>, H. Jacob Borish<sup>1</sup>, Andrew Burkhardt<sup>1</sup>, Ariel Firebaugh<sup>1</sup>, Danielle Hancock<sup>1</sup>, Christian Rochford Hayes<sup>1</sup>, Sean Linden<sup>1</sup>, Sandra Liss<sup>1</sup>, Allison Matthews<sup>1</sup>, Brian Prager<sup>1</sup>, Matthew Pryal<sup>1</sup>, Kimberly R. Sokal<sup>1</sup>, Nicholas William Troup<sup>1</sup>, Trey Wenger<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Virginia

## 248.08 Kilohoku Ho`okele Wa`a : Astronomy of the Hawaiian Navigators

**Author(s):** Stephanie Slater<sup>1</sup>, Timothy F. Slater<sup>3</sup>, Kalepa C. Baybayan<sup>2</sup>  
*Institution(s):* <sup>1</sup>. CAPER Ctr Phys and Astro Educ Res, <sup>2</sup> University of Hawai`i- Hilo, <sup>3</sup>. University of Wyoming

## 249 Research Opportunities for Students Poster Session

Wednesday, 5:30 pm - 6:30 pm; Exhibit Hall A

### 249.01 A Survey of Light Pollution in the Rogue Valley, Southwest Oregon, by St. Mary's School, Medford, Oregon

**Author(s):** Holly Bensel<sup>1</sup>, Genna Dorrell<sup>1</sup>, James Feng<sup>1</sup>, Sean Hicks<sup>1</sup>, Jason Mars Liu<sup>1</sup>, Steven Liu<sup>1</sup>, Mitchell Moczygemba<sup>1</sup>, Jason Sheng<sup>1</sup>, Leah Sternenbug<sup>1</sup>, Emi Than<sup>1</sup>, Emry Timmons<sup>1</sup>, Jerry Wen<sup>1</sup>, Bella Yaeger<sup>1</sup>, Ruiyang You<sup>1</sup>  
*Institution(s):* <sup>1</sup>. St. Mary's School

### 249.02 Google Classroom and Open Clusters: An Authentic Science Research Project for High School Students

**Author(s):** Chelen H. Johnson<sup>1</sup>, Marcella Linahan<sup>2</sup>, Allison Frances Cuba<sup>2</sup>, Samantha Rose Dickmann<sup>2</sup>, Eleanor B Hogan<sup>1</sup>, Demetra N Karos<sup>1</sup>, Kendall G Kozikowski<sup>1</sup>, Lauren Paige Kozikowski<sup>1</sup>, Samantha Brooks Nelson<sup>1</sup>, Kevin Thomas O'Hara<sup>2</sup>, Brandi Lucia Ropinski<sup>2</sup>, Gabriella Scarpa<sup>1</sup>, Catharine D. Garmany<sup>3</sup>  
*Institution(s):* <sup>1</sup>. Breck School, <sup>2</sup>. Carmel Catholic High School, <sup>3</sup>. NOAO

### 249.03 Suggestions to Gain Deeper Understanding of Magnetic Fields in Astrophysics Classrooms

**Author(s):** Lauren N. Woolsey<sup>1</sup>  
*Institution(s):* <sup>1</sup>. Harvard University

### 249.04 The NSF PAARE Projects at SC State

**Author(s):** Donald K. Walter<sup>5</sup>, Sean D. Brittain<sup>2</sup>, Jennifer Cash<sup>5</sup>, Dieter Hartmann<sup>2</sup>, Kenneth H. Hinkle<sup>4</sup>, Shirley Ho<sup>1</sup>, Steve B. Howell<sup>3</sup>, Jeremy R King<sup>2</sup>, Mark D. Leising<sup>2</sup>, Kenneth J. Mighell<sup>4</sup>, Daniel M. Smith<sup>5</sup>  
*Institution(s):* <sup>1</sup>. Carnegie Mellon University, <sup>2</sup>. Clemson University, <sup>3</sup>. NASA ARC, <sup>4</sup>. NOAO, <sup>5</sup>. South Carolina State Univ.

### 249.05 National Radio Astronomy International Exchange Program (NINE)

**Author(s):** Lory Mitchell Wingate<sup>1</sup>  
*Institution(s):* <sup>1</sup>. National Radio Astronomy Observatory

### 249.06 The APSU 0.5m Telescope: Helping to Transform Undergraduate Education

**Author(s):** Spencer L. Buckner<sup>1</sup>, J. Allyn Smith<sup>1</sup>, Elizabeth Juelfs<sup>1</sup>, Bryan Gaither<sup>1</sup>, Tyler Wilson<sup>1</sup>, Fred Roberts<sup>2</sup>  
*Institution(s):* <sup>1</sup>. Austin Peay State Univ., <sup>2</sup>. Military System Group

# WEDNESDAY, 6 JANUARY 2016

**249.07 Applying the Principles of Systems Engineering and Project Management to Optimize Scientific Research**

**Author(s):** Adria J Peterkin<sup>1</sup>

*Institution(s):*<sup>1</sup> National Radio and Astronomy Observatory

**249.08 The Value of Methodical Management: Optimizing Science Results**

**Author(s):** Linnea Saby<sup>1</sup>

*Institution(s):*<sup>1</sup> National Radio Astronomy Observatory

## 250 Teaching Professional Development for K-12, College, and Other Astronomy Educators Poster Session

Wednesday, 5:30 pm - 6:30 pm; Exhibit Hall A

**250.02 Teacher-Scientist-Communicator-Learner Partnerships: Reimagining Scientists in the Classroom.**

**Author(s):** Jacob Noel-Storr<sup>1</sup>, Michael Terwilliger<sup>1</sup>

*Institution(s):*<sup>1</sup> InsightSTEM, Inc.

**250.03 Best Practices for Effective Poster Design**

**Author(s):** Kimberly Michelle Star Cartier<sup>1</sup>, Ming Zhao<sup>1</sup>, Thomas G. Beatty<sup>1</sup>, Robert C. Morehead<sup>1</sup>, Daniel Jontof-Hutter<sup>1</sup>

*Institution(s):*<sup>1</sup> Pennsylvania State University

**250.04 Fostering Student Awareness in Observatory STEM Careers**

**Author(s):** Alexis Ann Keonaonaokalauae Acohido<sup>1</sup>, Peter D. Michaud<sup>1</sup>

*Institution(s):*<sup>1</sup> Gemini Observatory

**250.05 Promoting undergraduate involvement through the University of Arizona Astronomy Club**

**Author(s):** Allison M. McGraw<sup>1</sup>, Carmen Austin<sup>1</sup>, Matthew Noyes<sup>1</sup>, Jenny Calahan<sup>1</sup>, Jennifer Lautenbach<sup>1</sup>, Andrew Henrici<sup>1</sup>, M. Ryleigh Fitzpatrick<sup>1</sup>, Yancy L. Shirley<sup>1</sup>

*Institution(s):*<sup>1</sup> Steward Observatory

## 300 Henry Norris Russell Lecture: Viewing the Universe with Infrared Eyes: The Spitzer Space Telescope

Thursday, 8:30 am - 9:20 am; Osceola C

Chair: C. Megan Urry (*Yale University*)



**300.01**

**Viewing the Universe with Infrared Eyes: The Spitzer Space Telescope**

**Author(s): Giovanni G. Fazio<sup>1</sup>**

*Institution(s): <sup>1</sup> Harvard-Smithsonian CfA*

**Citation:** For his pioneering work on gamma-ray and infrared instrumentation and for advancing our understanding in many astronomical areas, ranging from near-Earth objects to high-redshift galaxies. Dr. Fazio is internationally recognized as a brilliant innovator and mentor. His leadership in the development of large balloon-borne telescopes for far-infrared astronomical observations paved the way to the recent success of the Spitzer Space Telescope — for which he was the principal investigator of the Infrared Array Camera (IRAC) — which has revolutionized the way we see and study the universe.

## Advising for Advisors

Thursday, 10:00 am - 11:30 am; St. George 108

In this workshop, led by academic career counselor and author Dr. Karen Kelsky, we examine the primary points of confusion for graduate students about the academic and post-academic job markets, and ways that advisors can most effectively help advisees create a realistic plan for building a competitive record for the purposes of post-Ph.D. employment. We'll start with the big-picture context of graduate school, the postdoc and faculty job market, and the importance of post-academic routes for Ph.D.s. Then we will cover common grad student misunderstanding about publishing, grants, conferences, and recommendations, and best practices for advisors to intervene in those. We also will discuss the problem of the "nice" advisor, and how to balance truth-telling and moral support. This session is organized by the AAS Employment Committee.

## 301 Probing Early-type Galaxies

Thursday, 10:00 am - 11:30 am; Sun A

Chair: Julia Comerford (*University of Colorado, Boulder*)

**301.01 Probing Early-Type Galaxy Halos Using Planetary Nebulae**

**Author(s): Michael Merrifield<sup>4</sup>, Magda Arnaboldi<sup>1</sup>, Lodovico Coccato<sup>1</sup>, Ortwin Gerhard<sup>3</sup>, Nicola Napolitano<sup>2</sup>, Claudia Pulsoni<sup>3</sup>**

*Institution(s): <sup>1</sup> ESO, <sup>2</sup> INAF, <sup>3</sup> MPE, <sup>4</sup> Nottingham University*

**301.02D Where stellar halos coexist with intracluster light: a case study of the giant Virgo-central galaxy M87**

**Author(s): Alessia Longobardi<sup>1</sup>**

*Institution(s): <sup>1</sup> Max-Planck-Institut für extraterrestrische Physik*

# THURSDAY, 7 JANUARY 2016

## 301.03 Central stellar mass deficits of early-type galaxies

**Author(s):** Biligun Tsige Dullo<sup>1</sup>, Alister Graham<sup>2</sup>

*Institution(s):* <sup>1</sup> Instituto de Astrofísica de Canarias - IAC, <sup>2</sup> Swinburne University

## 301.04 The X-ray halos of the most MASSIVE galaxies in the Universe

**Author(s):** Andy D. Goulding<sup>5</sup>, Jenny E. Greene<sup>5</sup>, Chung-Pei Ma<sup>6</sup>, Nicholas J. McConnell<sup>2</sup>, John Blakeslee<sup>4</sup>, Akos Bogdan<sup>1</sup>, Jens Thomas<sup>3</sup>

*Institution(s):* <sup>1</sup> Harvard Smithsonian, CfA, <sup>2</sup> IfA Hawaii, <sup>3</sup> MPE, <sup>4</sup> NRC Herzberg, <sup>5</sup> Princeton University, <sup>6</sup> UC Berkeley

## 301.05 Outflows in Sodium Excess Objects

**Author(s):** Jongwon Park<sup>2</sup>, Hyunjin Jeong<sup>1</sup>, Suyoung Yi<sup>2</sup>

*Institution(s):* <sup>1</sup> Korea Astronomy and Space Science Institute, <sup>2</sup> Yonsei University

# 302 Planetary Nebulae and Supernova Remnants

Thursday, 10:00 am - 11:30 am; Sun B

**Chair:** Jeremiah Murphy (*Florida State University*)

## 302.01 Analysis of Co-spatial UV-Optical STIS Spectra of Seven Planetary Nebulae From HST Cycle 19 GO 12600

**Author(s):** Timothy R. Miller<sup>4</sup>, Richard B. C. Henry<sup>4</sup>, Reginald J. Dufour<sup>3</sup>, Karen B. Twitter<sup>6</sup>, Richard A. Shaw<sup>2</sup>, Bruce Balick<sup>5</sup>, Romano Corradi<sup>1</sup>

*Institution(s):* <sup>1</sup> IAC, <sup>2</sup> NOAO, <sup>3</sup> Rice University, <sup>4</sup> University of Oklahoma, <sup>5</sup> University of Washington, <sup>6</sup> Williams College

## 302.02 SN 1987A: Chandra Witnesses the End of an Era

**Author(s):** Kari A. Frank<sup>1</sup>, David N. Burrows<sup>1</sup>

*Institution(s):* <sup>1</sup> Pennsylvania State University

## 302.03 Dynamics of a Type Ia Supernova Remnant: X-ray and Radio Proper Motions in Tycho's SNR

**Author(s):** Brian J. Williams<sup>2</sup>, John M. Blondin<sup>3</sup>, Kazimierz J. Borkowski<sup>3</sup>, Laura Chomiuk<sup>1</sup>, Parviz Ghavamian<sup>4</sup>, John W. Hewitt<sup>5</sup>, Robert Petre<sup>2</sup>, Stephen P. Reynolds<sup>3</sup>

*Institution(s):* <sup>1</sup> Michigan State University, <sup>2</sup> NASA Goddard, <sup>3</sup> North Carolina State University, <sup>4</sup> Towson University, <sup>5</sup> University of North Florida

## 302.04D A Survey For Broadened CO Lines Toward Galactic Supernova Remnants

**Author(s):** Charles Kilpatrick<sup>1</sup>, John H. Bieging<sup>1</sup>, George Rieke<sup>1</sup>

*Institution(s):* <sup>1</sup> University of Arizona

## 302.05 Shocked Gas from the supernova remnant G357.7+0.3

**Author(s):** Jeonghee Rho<sup>4</sup>, John Hewitt<sup>3</sup>, William T. Reach<sup>6</sup>, John H. Bieging<sup>5</sup>, Morten Andersen<sup>1</sup>, Rolf Güsten<sup>2</sup>

*Institution(s):* <sup>1</sup> Gemini Observatory, <sup>2</sup> Max Planck Institut für Radioastronomie, <sup>3</sup> NASA Goddard Space Flight Center, <sup>4</sup> SETI Institute and NASA Ames Research Center, <sup>5</sup> Univ. of Arizona, <sup>6</sup> USRA/SOFIA

## 302.06D Characterizing Supernova Remnant and Molecular Cloud Interaction Sites Using Methanol (CH<sub>3</sub>OH) Masers

**Author(s):** Bridget McEwen<sup>2</sup>, Ylva Pihlstrom<sup>2</sup>, Lorant Sjouwerman<sup>1</sup>

*Institution(s):* <sup>1</sup> National Radio Astronomy Observatory, <sup>2</sup> The University of New Mexico

## 302.07 What We Can Learn From Supernova Remnant Size Distributions

**Author(s):** Benjamin Elwood<sup>1</sup>, Jeremiah Murphy<sup>1</sup>, Mariangelly Diaz<sup>1</sup>

*Institution(s):* <sup>1</sup> Florida State University

## 303 AGN, QSO, Blazars: Dust, Obscuration, and Star Formation

Thursday, 10:00 am - 11:30 am; Sun C

**Chair:** Eric Perlman (*Florida Institute of Technology*)

### 303.01 The star formation-AGN interplay in merging galaxies: insights from hydrodynamical simulations and observations.

**Author(s):** Juan R. Martinez Galarza<sup>4</sup>, Howard Alan Smith<sup>4</sup>, Aaron Weiner<sup>3</sup>, Christopher C. Hayward<sup>1</sup>, Lauranne Lanz<sup>1</sup>, Andreas Zezas<sup>4</sup>, Lee Rosenthal<sup>2</sup>, Matthew Ashby<sup>4</sup>

*Institution(s):* <sup>1</sup> California Institute of Technology, <sup>2</sup> Heidelberg Institute for Theoretical Studies, <sup>3</sup> Rensselaer Polytechnic Institute, <sup>4</sup> Smithsonian Astrophysical Observatory

### 303.02D The Star-Forming Properties of an Ultra-Hard X-ray Selected Sample of AGN

**Author(s):** Thomas Shimizu<sup>1</sup>, Richard Mushotzky<sup>1</sup>

*Institution(s):* <sup>1</sup> University of Maryland, College Park

### 303.03 The relationship between AGN accretion luminosity and host star formation in dusty AGNs

**Author(s):** Yu Sophia Dai<sup>1</sup>, Belinda J. Wilkes<sup>2</sup>, Jacqueline Bergeron<sup>3</sup>, Harry I. Teplitz<sup>1</sup>, Joanna Kuraszkiwicz<sup>2</sup>

*Institution(s):* <sup>1</sup> Caltech, <sup>2</sup> Harvard-Smithsonian CfA, <sup>3</sup> IAP

### 303.04D Dust Obscured AGN are Masquerading as Star Formation in the Early Universe

**Author(s):** Allison Kirkpatrick<sup>2</sup>, Alexandra Pope<sup>2</sup>, Anna Sajina<sup>1</sup>, Eric Roebuck<sup>1</sup>

*Institution(s):* <sup>1</sup> Tufts University, <sup>2</sup> University of Massachusetts

### 303.05 Dust Obscuration and Observable Emission of Active Galactic Nuclei

**Author(s):** Nancy A. Levenson<sup>2</sup>, Kohei Ichikawa<sup>3</sup>, Enrique Lopez-Rodriguez<sup>5</sup>, Robert Nikutta<sup>4</sup>, Christopher C. Packham<sup>5</sup>, Almudena Alonso-Herrero<sup>1</sup>

*Institution(s):* <sup>1</sup> CSIC-UC, <sup>2</sup> Gemini Observatory, <sup>3</sup> NAOJ, <sup>4</sup> PUC, <sup>5</sup> UTSA

### 303.06D The Environments of Obscured Quasars

**Author(s):** Kristen M. Jones<sup>2</sup>, Mark Lacy<sup>1</sup>, Danielle Nielsen<sup>3</sup>

*Institution(s):* <sup>1</sup> National Radio Astronomy Observatory, <sup>2</sup> University of Virginia, <sup>3</sup> University of Wisconsin

# THURSDAY, 7 JANUARY 2016

## 304 Star Formation and Massive Clusters

Thursday, 10:00 am - 11:30 am; Sun D

Chair: Jennifer Johnson (*Ohio State Univ.*)

### 304.01 Star Formation Studies in the Magellanic Clouds with JWST

**Author(s):** Margaret Meixner<sup>2</sup>, Olivia Jones<sup>2</sup>, Omnarayani Nayak<sup>1</sup>, Bram Ochsendorf<sup>1</sup>

*Institution(s):* <sup>1</sup> Johns Hopkins University, <sup>2</sup> STScI

### 304.02D The Effect of Metallicity on the Molecular Gas and Star Formation in the Magellanic Clouds

**Author(s):** Katherine Jameson<sup>4</sup>, Alberto D. Bolatto<sup>4</sup>, Adam K. Leroy<sup>1</sup>, Mark G. Wolfire<sup>4</sup>, Margaret Meixner<sup>2</sup>, Monica Rubio<sup>3</sup>

*Institution(s):* <sup>1</sup> Ohio State University, <sup>2</sup> STScI, <sup>3</sup> Universidad de Chile, <sup>4</sup> University of Maryland

### 304.03 Investigating the Gao & Solomon Relationship with MALT90

**Author(s):** Ian Stephens<sup>1</sup>, James M. Jackson<sup>1</sup>, John Scott Whitaker<sup>1</sup>, Yanett Contreras<sup>3</sup>, Jonathan B. Foster<sup>6</sup>, Andres Guzman<sup>5</sup>, Patricio Sanhueza<sup>4</sup>, Jill Rathborne<sup>2</sup>

*Institution(s):* <sup>1</sup> Boston University, <sup>2</sup> CSIRO Astronomy and Space Science, <sup>3</sup> Leiden Observatory, <sup>4</sup> National Astronomical Observatory of Japan, <sup>5</sup> Universidad de Chile, <sup>6</sup> Yale University

### 304.04 The UV + IR Hybrid Star Formation Rate Across NGC6946

**Author(s):** Rafael T. Eufrazio<sup>1</sup>, Bret Lehmer<sup>2</sup>, Eli Dwek<sup>1</sup>, Richard G. Arendt<sup>1</sup>

*Institution(s):* <sup>1</sup> NASA Goddard Space Flight Center, <sup>2</sup> University of Arkansas

### 304.05D Sizes of Young Massive Clusters in Nearby Galaxies

**Author(s):** Jenna E. Ryon<sup>1</sup>, John S. Gallagher<sup>1</sup>

*Institution(s):* <sup>1</sup> University of Wisconsin - Madison

### 304.06D An Evolutionary Transition of Massive Star Clusters: Emerging Wolf-Rayet Clusters

**Author(s):** Kimberly R. Sokal<sup>2</sup>, Kelsey E. Johnson<sup>2</sup>, Remy Indebetouw<sup>2</sup>, Philip Massey<sup>1</sup>

*Institution(s):* <sup>1</sup> Lowell Observatory, <sup>2</sup> University of Virginia

## 305 Future Prospects in Extrasolar Planet Detection

Thursday, 10:00 am - 11:30 am; Osceola A

Chair: David Ciardi (*Caltech*)

### 305.01 Exoplanet Yield Estimation for Decadal Study Concepts using EXOSIMS

**Author(s):** Rhonda Morgan<sup>3</sup>, Patrick Lowrance<sup>1</sup>, Dmitry Savransky<sup>2</sup>, Daniel Garrett<sup>2</sup>

*Institution(s):* <sup>1</sup> California Institute of Technology, <sup>2</sup> Cornell University, <sup>3</sup> Jet Propulsion Laboratory

- 305.03 The WFIRST Microlensing Survey: Expectations and Unexpectedions**  
**Author(s):** B. Scott Gaudi<sup>1</sup>, Matthew Penny<sup>1</sup>  
*Institution(s):* <sup>1</sup> Ohio State Univ.
- 305.04 Transiting Planets with LSST: Unique Opportunities and Challenges**  
**Author(s):** Michael Lund<sup>3</sup>, Savannah Jacklin<sup>1</sup>, Joshua Pepper<sup>2</sup>, Keivan Stassun<sup>3</sup>  
*Institution(s):* <sup>1</sup> Fisk University, <sup>2</sup> Lehigh University, <sup>3</sup> Vanderbilt University
- 305.05 Period Recoverability of Exoplanets Using LSST: A Yearly Yield Analysis**  
**Author(s):** Savannah Jacklin<sup>1</sup>, Michael Lund<sup>3</sup>, Joshua Pepper<sup>2</sup>, Keivan Stassun<sup>3</sup>  
*Institution(s):* <sup>1</sup> Fisk University, <sup>2</sup> Lehigh University, <sup>3</sup> Vanderbilt University
- 305.06 Direct Exoplanet Imaging with JWST NIRCам: Low-Mass Stars, Low-Mass Planets, and Critical Constraints on Planet Formation**  
**Author(s):** Joshua E. Schlieder<sup>3</sup>, Michael Meyer<sup>1</sup>, Maddalena Reggiani<sup>5</sup>, Sascha Quanz<sup>1</sup>, Charles A. Beichman<sup>2</sup>, Thomas P. Greene<sup>3</sup>, Adam Seth Burrows<sup>4</sup>  
*Institution(s):* <sup>1</sup> ETH Zurich, <sup>2</sup> JPL, <sup>3</sup> NASA Ames Research Center, <sup>4</sup> Princeton University, <sup>5</sup> University of Liege
- 305.07 Post-GAIA astrometry with JWST AMI for planet masses around nearby M dwarfs**  
**Author(s):** Alexandra Greenbaum<sup>1</sup>, Deepashri G. Thatte<sup>2</sup>, Etienne Artigau<sup>3</sup>, Anand Sivaramakrishnan<sup>2</sup>, Andre Martel<sup>2</sup>  
*Institution(s):* <sup>1</sup> Johns Hopkins University, <sup>2</sup> Space Telescope Science Institute, <sup>3</sup> Universite de Montreal
- 305.08 Progress in the Development of Edge Scatter Control for Starshades**  
**Author(s):** L. Suzanne Casement<sup>1</sup>, Steve Warwick<sup>1</sup>, Daniel Smith<sup>1</sup>  
*Institution(s):* <sup>1</sup> Northrop Grumman
- 305.09 Globular Clusters as Cradles of Life and Advanced Civilizations**  
**Author(s):** Rosanne Di Stefano<sup>1</sup>, Alak Ray<sup>2</sup>  
*Institution(s):* <sup>1</sup> Harvard-Smithsonian CfA, <sup>2</sup> Tata Institute of Fundamental Research

## 306 Extrasolar Planets: Observations I

Thursday, 10:00 am - 11:30 am; Osceola B

Chair: Nikole Lewis (*STScI*)

- 306.01D Planet Candidate Validation and Spin-Orbit Misalignments from Doppler Tomography**  
**Author(s):** Marshall C. Johnson<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Texas at Austin
- 306.02 Orbital Architectures of Planet-Hosting Binary Systems**  
**Author(s):** Trent J. Dupuy<sup>2</sup>, Kaitlin M. Kratter<sup>1</sup>  
*Institution(s):* <sup>1</sup> Steward Observatory, <sup>2</sup> University of Texas at Austin

# THURSDAY, 7 JANUARY 2016

**306.03 HST hot-Jupiter transmission spectral survey: from clear to cloudy exoplanets**  
**Author(s):** David K Sing<sup>10</sup>, Jonathan J. Fortney<sup>8</sup>, Nikolay Nikolov<sup>10</sup>, Hannah Wakeford<sup>4</sup>, Tiffany Kataria<sup>10</sup>, Tom M. Evans<sup>10</sup>, Suzanne Aigrain<sup>12</sup>, Gilda E. Ballester<sup>7</sup>, Adam Seth Burrows<sup>5</sup>, Drake Deming<sup>11</sup>, Jean-Michel Desert<sup>9</sup>, Neale Gibson<sup>2</sup>, Gregory W. Henry<sup>6</sup>, Catherine Huitson<sup>9</sup>, Heather Knutson<sup>1</sup>, Alain Lecavelier des Etangs<sup>3</sup>, Frederic Pont<sup>10</sup>, Adam P. Showman<sup>7</sup>, Alfred Vidal-Madjar<sup>3</sup>, Michael W Williamson<sup>6</sup>, Paul A Wilson<sup>3</sup>

*Institution(s):* <sup>1.</sup> California Institute of Technology, <sup>2.</sup> ESO, <sup>3.</sup> IAP, <sup>4.</sup> NASA Goddard Space Flight Center, <sup>5.</sup> Princeton University, <sup>6.</sup> Tennessee State University, <sup>7.</sup> University of Arizona, <sup>8.</sup> University of California, <sup>9.</sup> University of Colorado, <sup>10.</sup> University of Exeter, <sup>11.</sup> University of Maryland, <sup>12.</sup> University of Oxford

**306.04 Reigniting the Debate: First Spectroscopic Evidence for Stratospheres In Hot Jupiters**

**Author(s):** Avi Mandell<sup>3</sup>, Corey Haynes<sup>1</sup>, Nikku Madhusudhan<sup>4</sup>, Drake Deming<sup>5</sup>, Heather Knutson<sup>2</sup>

*Institution(s):* <sup>1.</sup> Astronomy Magazine, <sup>2.</sup> Caltech, <sup>3.</sup> NASA GSFC, <sup>4.</sup> University of Cambridge, <sup>5.</sup> University of Maryland

**306.05 Ground-Based Evidence of Spectroscopic Features in the Atmosphere of HAT-P-26b**

**Author(s):** Kevin B. Stevenson<sup>2</sup>, Jacob Bean<sup>2</sup>, Greg Gilbert<sup>2</sup>, Michael R. Line<sup>1</sup>, Jonathan J. Fortney<sup>1</sup>, Jean-Michel Desert<sup>3</sup>

*Institution(s):* <sup>1.</sup> UC Santa Cruz, <sup>2.</sup> University of Chicago, <sup>3.</sup> University of Colorado

**306.06 Near-IR Spectroscopy of WASP-103b at Secondary Eclipse**

**Author(s):** Kimberly Michelle Star Cartier<sup>1</sup>, Ming Zhao<sup>1</sup>, Jason Wright<sup>1</sup>, Thomas G. Beatty<sup>1</sup>

*Institution(s):* <sup>1.</sup> Pennsylvania State University

**306.07D Frontiers of Exoplanet Atmosphere Characterization**

**Author(s):** Laura Kreidberg<sup>1</sup>

*Institution(s):* <sup>1.</sup> University of Chicago

## 307 Cosmology, CMB, and Dark Matter II

Thursday, 10:00 am - 11:30 am; Miami

Chair: Emory Bunn (*Univ. of Richmond*)

**307.01 PAPER-128 Status Update: Towards a 21cm Power Spectrum Detection**

**Author(s):** Carina Cheng<sup>2</sup>, Danny Jacobs<sup>1</sup>, Saul Aryeh Kohn<sup>3</sup>, Aaron Parsons<sup>2</sup>

*Institution(s):* <sup>1.</sup> Arizona State University, <sup>2.</sup> University of California, Berkeley, <sup>3.</sup> University of Pennsylvania

**307.02D Helium Reionization Simulations: Seeing the Forest for the Trees**

**Author(s):** Paul La Plante<sup>1</sup>

*Institution(s):* <sup>1.</sup> Carnegie Mellon University

**307.03 Eliminating Polarized Leakage as a Systematic for 21 cm Epoch of Reionization Experiments**

**Author(s):** James E. Aguirre<sup>1</sup>

*Institution(s):* <sup>1.</sup> University of Pennsylvania

## 307.04 Extracting Physical Parameters for the First Galaxies from the Cosmic Dawn Global 21-cm Spectrum

**Author(s):** Jack O. Burns<sup>1</sup>, Jordan Mirocha<sup>1</sup>, geraint harker<sup>2</sup>, Keith Tauscher<sup>1</sup>, Abhirup Datta<sup>1</sup>

*Institution(s):*<sup>1</sup> Univ. of Colorado at Boulder, <sup>2</sup> University College London

## 307.05 On detecting halo assembly bias with galaxy populations

**Author(s):** Yen-Ting Lin<sup>1</sup>, Rachel Mandelbaum<sup>2</sup>, Yun-Hsin Huang<sup>5</sup>, Hung-Jin Huang<sup>2</sup>, Neal Dalal<sup>6</sup>, Benedikt Diemer<sup>3</sup>, Andrey Kravtsov<sup>4</sup>

*Institution(s):*<sup>1</sup> Academia Sinica, <sup>2</sup> Carnegie Mellon University, <sup>3</sup> CfA, <sup>4</sup> The University of Chicago, <sup>5</sup> University of Arizona, <sup>6</sup> University of Illinois

## 307.06 Constraints on Cosmological Parameters from the PS1 Spectroscopic SNIa Sample

**Author(s):** Daniel Scolnic<sup>1</sup>

*Institution(s):*<sup>1</sup> University of Chicago

## 307.07 Cosmic Shear Tomography from the Deep Lens Survey

**Author(s):** Myungkook J. Jee<sup>4</sup>, J. Anthony Tyson<sup>3</sup>, Stefan Hilbert<sup>2</sup>, Michael Schneider<sup>1</sup>, Samuel Schmidt<sup>3</sup>, David M. Wittman<sup>3</sup>

*Institution(s):*<sup>1</sup> LLNL, <sup>2</sup> MPA, <sup>3</sup> UC Davis, <sup>4</sup> Yonsei University

## 308 Starburst Galaxies I

Thursday, 10:00 am - 11:30 am; Naples

**Chair:** Charles Liu (*CUNY College of Staten Island*)

### 308.01D Starburst Driven Superbubbles Radiating to 10 K

**Author(s):** Ryan Tanner<sup>1</sup>, Gerald Cecil<sup>1</sup>, Fabian Heitsch<sup>1</sup>

*Institution(s):*<sup>1</sup> University of North Carolina at Chapel Hill

### 308.02 Investigating Starburst Galaxy Emission Line Equivalent Widths

**Author(s):** Helen Meskhidze<sup>1</sup>, Chris T. Richardson<sup>1</sup>

*Institution(s):*<sup>1</sup> Elon University

### 308.03 Evidence against star-forming galaxies as the dominant source of IceCube neutrinos

**Author(s):** Keith Bechtol<sup>1</sup>

*Institution(s):*<sup>1</sup> University of Wisconsin - Madison

### 308.04 NuSTAR Observations of Starburst Galaxies

**Author(s):** Andrew Ptak<sup>3</sup>, Ann E. Hornschemeier<sup>3</sup>, Daniel R. Wik<sup>2</sup>, Mihoko Yukita<sup>2</sup>, Bret Lehmer<sup>7</sup>, Andreas Zezas<sup>5</sup>, Tom Maccarone<sup>6</sup>, Tonia M. Venters<sup>3</sup>, Vallia Antoniou<sup>5</sup>, Fiona Harrison<sup>1</sup>, Daniel Stern<sup>4</sup>

*Institution(s):*<sup>1</sup> Caltech, <sup>2</sup> Johns Hopkins University, <sup>3</sup> NASA/GSFC, <sup>4</sup> NASA/JPL, <sup>5</sup> SAO/CfA, <sup>6</sup> Texas Tech University, <sup>7</sup> University of Arkansas

### 308.05D The Breakdown of Equipartition in the Central Molecular Zones of Starburst Galaxies

**Author(s):** Tova Yoast-Hull<sup>1</sup>, John S. Gallagher<sup>1</sup>, Ellen Gould Zweibel<sup>1</sup>

*Institution(s):*<sup>1</sup> University of Wisconsin-Madison

# THURSDAY, 7 JANUARY 2016

## 309 Circumstellar Debris Disks

Thursday, 10:00 am - 11:30 am; Tampa

Chair: Aki Roberge (NASA GSFC)

### 309.01 Protoplanetary and Debris Disk Morphologies

**Author(s):** Jamie R Lomax<sup>6</sup>, John P. Wisniewski<sup>6</sup>, Carol A Grady<sup>3</sup>, Michael W. McElwain<sup>4</sup>, Jun Hashimoto<sup>6</sup>, Jessica Donaldson<sup>2</sup>, John H. Debes<sup>5</sup>, Eliot Malumuth<sup>1</sup>, Aki Roberge<sup>4</sup>, Alycia J. Weinberger<sup>2</sup>

*Institution(s):* <sup>1.</sup> ADNET Systems, Inc, <sup>2.</sup> Carnegie Institute of Washington, <sup>3.</sup> Eureka Scientific, <sup>4.</sup> NASA/GSFC, <sup>5.</sup> Space Telescope Science Institute, <sup>6.</sup> University of Oklahoma

### 309.02D Comprehensive Census and Analysis of Nearby Debris Disk Stars

**Author(s):** Tara H Cotten<sup>1</sup>

*Institution(s):* <sup>1.</sup> University of Georgia

### 309.03 HST STIS & NICMOS Coronagraphy of Four Debris Disks around Young Solar Analogs

**Author(s):** Marshall D. Perrin<sup>2</sup>, Elodie Choquet<sup>2</sup>, Alexandra Greenbaum<sup>1</sup>, Bin Ren<sup>1</sup>, John H. Debes<sup>2</sup>, Johan Mazoyer<sup>2</sup>, Marie Ygouf<sup>2</sup>, Laurent Pueyo<sup>2</sup>, Jonathan Aguilar<sup>1</sup>, Christine Chen<sup>2</sup>, David A. Golimowski<sup>2</sup>, Dean C. Hines<sup>2</sup>, Mamadou N'Diaye<sup>2</sup>, Glenn Schneider<sup>3</sup>, Remi Soummer<sup>2</sup>, Chris Stark<sup>2</sup>, Schuyler Wolff<sup>1</sup>

*Institution(s):* <sup>1.</sup> Johns Hopkins University, <sup>2.</sup> STScI, <sup>3.</sup> University of Arizona

### 309.04D Using Protoplanetary Disks to Weigh the Youngest Stars and Constrain The Earliest Stages of Stellar Evolution

**Author(s):** Ian Czekala<sup>1</sup>

*Institution(s):* <sup>1.</sup> Harvard-Smithsonian Center for Astrophysics

### 309.05 An MCMC Circumstellar Disks Modeling Tool

**Author(s):** Schuyler Wolff<sup>2</sup>, Marshall D. Perrin<sup>3</sup>, Johan Mazoyer<sup>3</sup>, Elodie Choquet<sup>3</sup>, Remi Soummer<sup>3</sup>, Bin Ren<sup>2</sup>, Laurent Pueyo<sup>3</sup>, John H. Debes<sup>3</sup>, Gaspard Duchene<sup>4</sup>, Christophe Pinte<sup>1</sup>, Francois Menard<sup>1</sup>

*Institution(s):* <sup>1.</sup> Institut de Planetologie et d'Astrophysique de Grenoble (IPAG), <sup>2.</sup> Johns Hopkins University, <sup>3.</sup> Space Telescope Science Institute, <sup>4.</sup> University of California Berkeley

### 309.06 Warm Circumstellar Debris Disks: Dynamical Excitation by Massive External Perturbers?

**Author(s):** Erika Nesvold<sup>1</sup>, Smadar Naoz<sup>2</sup>, Laura Vican<sup>2</sup>, Ben M. Zuckerman<sup>2</sup>, Erika Holmbeck<sup>3</sup>

*Institution(s):* <sup>1.</sup> Department of Terrestrial Magnetism, Carnegie Institution of Washington, <sup>2.</sup> University of California Los Angeles, <sup>3.</sup> University of Notre Dame

## 310 Time-Domain and Applicable Methodologies

Thursday, 10:00 am - 11:30 am; Sanibel

Astroinformatics and Astrostatistics (hereafter AIAS) has received an excellent and growing response during the last few years. This indicates the importance and timeliness

of a much needed interface between astronomy and various branches of applied mathematics and computer science. As the number of large area surveys grow, the diversity in wavebands, apertures, areas covered and cadence grows manifold. Time-domain methodologies are crucial to make sense of variability, for a wide variety of targets, such as binary stars, exoplanets, or distant supernovae and blazars. Unlike the far more regular time-series of the financial markets, astronomers often have to contend with sparse, irregular, heteroskedastic time-series. The methodologies being developed as a response lie on the interface of mathematics/statistics, domain knowledge, and computer science. In order to make the methods available to a wider audience, and increase their applicability in combined datasets, we propose a special session dedicated to time-domain methodologies in astronomy. The session will have: 1) Invited Talks (3 x 20-min) to showcase a cross-section of astronomers using existing, and new, time-domain methods that improve their research. We would like to emphasize the subfields of exoplanets and quasars/blazars. 2) A 30-minute, moderated discussion on: a) How can the community ensure that large projects pay adequate attention to AIAS issues? b) How can funding agencies be encouraged to make available programs that recognize the unique role of AIAS research. The panel will include experts from the field and a representative from a funding agency. 3) A poster session with 10-20 contributed papers disseminating results on time-domain related AIAS. A slide of the poster titles/authors will be available to foster discussion. Conveners: A Mahabal, E Feigelson, E Ford, A Siemiginowska, P Yanamandra-Fisher, and the members of the Steering Committee of the Working Group on A & A (AAS WGAASC).

**Chair: Ashish Mahabal** (*Caltech*)

### **310.01 Beyond statistical descriptions of variability**

**Author(s): Matthew Graham**<sup>1</sup>

*Institution(s):*<sup>1</sup> *Caltech*

### **310.02 LSST Observing Strategy: the Time Delay Challenge, and Cadence Diplomacy**

*Author(s):* Phil Marshall

### **310.03 Time Domain Challenges for Exoplanets**

**Author(s): Rebekah Ilene Dawson**<sup>1</sup>

*Institution(s):*<sup>1</sup> *Pennsylvania State University*

## **311 The RESolved Spectroscopy Of a Local VolumE (RESOLVE) Survey and its Environmental Context (ECO)**

**Thursday, 10:00 am - 11:30 am; Sarasota**

The RESOLVE survey is a volume-limited census of stellar, gas, and dynamical mass as well as star formation and chemical evolution in galaxies and groups spanning  $>53,000$  cubic Mpc of the  $z \sim 0$  cosmic web, complete down to dwarf galaxy masses  $\sim 10^9$  Msun. The ECO catalog provides a much larger "context catalog" for RESOLVE with matched photometry and environment pipelines but without RESOLVE's deep 21cm data and 3D optical spectroscopy. In this session we will present theoretical and observational results related to the first data releases for both RESOLVE and ECO.

**Organizer: Sheila Kannappan** (*Univ. of North Carolina*)

# THURSDAY, 7 JANUARY 2016

## 311.01 RESOLVE and ECO: Survey Design

**Author(s):** Sheila Kannappan<sup>2</sup>, Amanda J. Moffett<sup>2</sup>, Mark A. Norris<sup>2</sup>, Kathleen D. Eckert<sup>2</sup>, David Stark<sup>2</sup>, Andreas A. Berlind<sup>3</sup>, Elaine M. Snyder<sup>2</sup>, Dara J. Norman<sup>1</sup>, Erik A. Hoversten<sup>2</sup>

*Institution(s):* <sup>1</sup> NOAO, <sup>2</sup> Univ. of North Carolina, <sup>3</sup> Vanderbilt

## 311.02 ECO and RESOLVE: Morphology and Disk Growth in Environmental Context

**Author(s):** Amanda J. Moffett<sup>2</sup>, Sheila Kannappan<sup>6</sup>, Andreas A. Berlind<sup>7</sup>, Kathleen D. Eckert<sup>6</sup>, David Stark<sup>3</sup>, David Hendel<sup>1</sup>, Mark A. Norris<sup>5</sup>, Norman A. Grogin<sup>4</sup>

*Institution(s):* <sup>1</sup> Columbia University, <sup>2</sup> ICRAR, University of Western Australia, <sup>3</sup> Kavli IPMU, <sup>4</sup> Space Telescope Science Institute, <sup>5</sup> University of Central Lancashire, <sup>6</sup> University of North Carolina at Chapel Hill, <sup>7</sup> Vanderbilt University

## 311.03 The Mass Census for RESOLVE and ECO

**Author(s):** Kathleen D. Eckert<sup>2</sup>, Sheila Kannappan<sup>2</sup>, David Stark<sup>2</sup>, Amanda J. Moffett<sup>2</sup>, Andreas A. Berlind<sup>3</sup>, Ashley Baker<sup>2</sup>, Claudia Lagos<sup>1</sup>, Mark A Norris<sup>2</sup>

*Institution(s):* <sup>1</sup> International Centre for Radio Astronomy Research, <sup>2</sup> University of North Carolina, Chapel Hill, <sup>3</sup> Vanderbilt University

## 311.04 Mocking the ECO and RESOLVE Surveys: Probing the Environmental Dependencies of Galaxy Properties

**Author(s):** Andreas A. Berlind<sup>6</sup>, Jonathan Florez<sup>4</sup>, Victor Calderon<sup>6</sup>, Manodeep Sinha<sup>1</sup>, Amanda J. Moffett<sup>5</sup>, Kathleen D. Eckert<sup>2</sup>, Sheila Kannappan<sup>2</sup>, David Stark<sup>2</sup>, Ashley Baker<sup>3</sup>

*Institution(s):* <sup>1</sup> Swinburne University, <sup>2</sup> University of North Carolina, <sup>3</sup> University of Pennsylvania, <sup>4</sup> University of Texas, <sup>5</sup> University of Western Australia, <sup>6</sup> Vanderbilt University

## 311.05 The RESOLVE Survey Atomic Gas Census and Environmental Influences on Galaxy Gas Content

**Author(s):** David Stark<sup>5</sup>, Sheila Kannappan<sup>10</sup>, Kathleen D. Eckert<sup>10</sup>, Florez Jonathan<sup>11</sup>, Kirsten Hall<sup>10</sup>, Linda C. Watson<sup>2</sup>, Erik A. Hoversten<sup>10</sup>, Joseph Burchett<sup>9</sup>, David Guynn<sup>10</sup>, Ashley Baker<sup>10</sup>, Amanda J. Moffett<sup>4</sup>, Andreas A. Berlind<sup>11</sup>, Mark A Norris<sup>8</sup>, Martha P. Haynes<sup>1</sup>, Riccardo Giovanelli<sup>1</sup>, Adam K. Leroy<sup>6</sup>, Daniel J. Pisano<sup>12</sup>, Lisa H. Wei<sup>3</sup>, Roberto Gonzalez<sup>7</sup>

*Institution(s):* <sup>1</sup> Cornell University, <sup>2</sup> ESO, <sup>3</sup> Harvard CfA, <sup>4</sup> ICRAR, <sup>5</sup> Kavli IPMU, Japan, <sup>6</sup> Ohio State University, <sup>7</sup> Pontificia Universidad Catlica de Chile, <sup>8</sup> University of Central Lancashire, <sup>9</sup> University of Massachusetts, <sup>10</sup> University of North Carolina, Chapel Hill, <sup>11</sup> Vanderbilt University, <sup>12</sup> West Virginia University

## 311.06 The Photometric and Kinematic Properties of Compact Core Galaxies in the RESOLVE Survey

**Author(s):** Elaine M. Snyder<sup>4</sup>, Ashley Bittner<sup>4</sup>, Sheila Kannappan<sup>4</sup>, Dara J. Norman<sup>2</sup>, Callie Hood<sup>4</sup>, Samantha Brown<sup>1</sup>, Ian P. Dell'Antonio<sup>1</sup>, Kathleen D. Eckert<sup>4</sup>, Christine Ray<sup>3</sup>

*Institution(s):* <sup>1</sup> Brown University, <sup>2</sup> NOAO, <sup>3</sup> Rutgers, The State University of New Jersey, <sup>4</sup> University of North Carolina at Chapel Hill

## 311.07 An Initial Investigation of Active Galaxies in RESOLVE and ECO

**Author(s):** Dara J. Norman<sup>3</sup>, Sheila Kannappan<sup>4</sup>, Ashley Bittner<sup>4</sup>, Aara'L Yarber<sup>1</sup>, Erik A. Hoversten<sup>4</sup>, David Stark<sup>2</sup>

*Institution(s):* <sup>1</sup> Howard University, <sup>2</sup> Kavli IPMU, <sup>3</sup> NOAO, <sup>4</sup> University of North Carolina

## 312 SDSS-IV MaNGA: Mapping Nearby Galaxies at Apache Point Observatory

Thursday, 10:00 am - 11:30 am; Osceola 5

The MaNGA Survey (Mapping Nearby Galaxies at Apache Point Observatory) is one of three core programs in the Sloan Digital Sky Survey-IV (SDSS-IV) and began operations on July 1st, 2014. With successful integral-field spectroscopic observations of nearly 2,000 galaxies now obtained, MaNGA is set to achieve a total sample size of 10,000 galaxies by 2020. Galaxies are selected with stellar masses greater than  $1e9$  Msun and have a median redshift of 0.03, yielding a spatial resolution of 1-2 kpc. MaNGA's wavelength range is 3600-10,000 angstroms at  $R \sim 2200$  and reaches a signal-to-noise of about 5 per resolution element in the galaxy outskirts. Early science investigations have focused on spatially resolving the recent star formation and metal enrichment history of galaxies, understanding the origin of high-ionization gas in early type galaxies, contrasting gas and stellar velocity fields, and studying the host properties of AGN. This session will present highlights of initial scientific results and a general description of the MaNGA project and data products ahead of the first MaNGA public data release in Summer 2016.

**Chair:** Kevin Bundy (*Kavli IPMU, Japan*)

### 312.01 SDSS-IV MaNGA: Project Overview

**Author(s):** Kevin Bundy<sup>1</sup>

*Institution(s):* <sup>1</sup> Kavli IPMU, Japan

### 312.02 SDSS-IV MaNGA: Survey Design and Progress

**Author(s):** Renbin Yan<sup>1</sup>

*Institution(s):* <sup>1</sup> University of Kentucky

### 312.03 SDSS IV MaNGA - The smooth transition between star formation and quiescence and the role of LI(N)ER emission in the $z = 0$ Universe with

**Author(s):** Francesco Belfiore<sup>1</sup>

*Institution(s):* <sup>1</sup> Cambridge University

### 312.04 Suppressing star formation in quiescent galaxies with supermassive black hole winds

**Author(s):** Edmond Cheung<sup>1</sup>, Kevin Bundy<sup>1</sup>

*Institution(s):* <sup>1</sup> Kavli Institute for the Physics and Mathematics of the Universe,

### 312.05 The rotation curves of gas and stars

**Author(s):** Kyle Westfall<sup>1</sup>, Matthew A. Bershady<sup>2</sup>

*Institution(s):* <sup>1</sup> University of Portsmouth, <sup>2</sup> University of Wisconsin-Madison

### 312.06 SDSS IV MaNGA: Gradients in Recent Star Formation Histories as Diagnostics for Galaxy Growth and Death

**Author(s):** Cheng Li<sup>1</sup>

*Institution(s):* <sup>1</sup> Shanghai Astronomical Observatory

# THURSDAY, 7 JANUARY 2016

## 312.07 The Incidence, Geometry, and Kinematics of Extraplanar Gas in MaNGA Galaxies

**Author(s):** Aleksandar M. Diamond-Stanic<sup>1</sup>

*Institution(s):* <sup>1</sup> University of Wisconsin

## 312.08 Exploring MaNGA's kinematic maps

**Author(s):** Anne-Marie Weijmans<sup>1</sup>

*Institution(s):* <sup>1</sup> St. Andrews

## 312.09 Are Bulges and Disks Real? Decomposing Spectral Data Cubes Into Their Astrophysical Components

**Author(s):** Michael Merrifield<sup>2</sup>, Martha Tabor<sup>2</sup>, Alfonso Aragon-Salamanca<sup>2</sup>, Michele Cappellari<sup>3</sup>, Evelyn Johnston<sup>1</sup>

*Institution(s):* <sup>1</sup> European Southern Observatory, <sup>2</sup> Nottingham University, <sup>3</sup> Oxford University

## 312.10 Resolving Galactic Feedback and Gas Accretion in NaI Absorption with MaNGA

**Author(s):** Kate Rubin<sup>1</sup>

*Institution(s):* <sup>1</sup> Harvard-Smithsonian Center for Astrophysics

## 312.11 Indirect Estimates of the Total Gas Content of SDSS-IV/MaNGA Galaxies from Optical Emission Lines

**Author(s):** Christina A. Tremonti<sup>6</sup>, Zachary Pace<sup>6</sup>, Brett Andrews<sup>8</sup>, David R. Law<sup>5</sup>, Cheng Li<sup>4</sup>, Thomas Martinsson<sup>2</sup>, Karen Masters<sup>9</sup>, David Stark<sup>1</sup>, Sebastian Sanchez<sup>7</sup>, Thaisa Storchi-Bergmann<sup>3</sup>

*Institution(s):* <sup>1</sup> Institute of the Physics and Mathematics of the Universe, <sup>2</sup> Instituto de Astrofísica de Canarias, <sup>3</sup> Instituto de Física - UFRGS, <sup>4</sup> Shanghai Astronomical Observatory, <sup>5</sup> Space Telescope Science Institute, <sup>6</sup> Univ. of Wisconsin-Madison, <sup>7</sup> Universidad Nacional Autónoma de México, <sup>8</sup> University of Pittsburgh, <sup>9</sup> University of Portsmouth

## 312.12 Current and Future IFU Instrumentation at the Sloan 2.5 m Telescope

**Author(s):** Niv Drory<sup>1</sup>, Matthew A. Bershadsky<sup>3</sup>, Nick MacDonald<sup>2</sup>

*Institution(s):* <sup>1</sup> MacDonald Observatory, <sup>2</sup> University of Washington, <sup>3</sup> University of Wisconsin

## 312.13 SDSS-IV MaNGA: Data Products, Quality, and Initial Public Release

**Author(s):** David R. Law<sup>2</sup>, Brian Cherinka<sup>1</sup>

*Institution(s):* <sup>1</sup> Johns Hopkins University, <sup>2</sup> STScI

## 313 Research and Professional Development Opportunities for Undergraduate Majors

Thursday, 10:00 am - 11:30 am; Osceola 4

**Chair:** Christopher Palma (*Penn State Univ.*)

## 313.01 The National Astronomy Consortium: Lessons learned from a program to support underrepresented students in pursuing STEM careers

**Author(s):** Elisabeth A. Mills<sup>4</sup>, Kartik Sheth<sup>1</sup>, Faye Giles<sup>3</sup>, Louis-Gregory Strolger<sup>5</sup>, Drew Brisbin<sup>3</sup>, Patricia T. Boyd<sup>2</sup>, Robert A. Benjamin<sup>6</sup>

*Institution(s):* <sup>1</sup>. NASA, <sup>2</sup>. NASA Goddard Space Flight Center, <sup>3</sup>. National Radio Astronomy Observatory, <sup>4</sup>. National Radio Astronomy Observatory, <sup>5</sup>. Space Telescope Science Institute, <sup>6</sup>. University of Wisconsin

### **313.02 Creating Future Stem Leaders: The National Astronomy Consortium:**

**Author(s):** Kartik Sheth<sup>2</sup>, Elisabeth A.C. Mills<sup>3</sup>, Patricia T. Boyd<sup>1</sup>, Louis-Gregory Strolger<sup>4</sup>, Robert A. Benjamin<sup>6</sup>, Drew Brisbin<sup>5</sup>, Faye Giles<sup>3</sup>

*Institution(s):* <sup>1</sup>. Goddard Space Flight Center / NASA, <sup>2</sup>. National Aeronautics & Space Administration (NASA), <sup>3</sup>. NRAO, <sup>4</sup>. Space Telescope Science Institute, <sup>5</sup>. Universidad Diego Portales, <sup>6</sup>. University of Wisconsin- Whitewater

### **313.03 The Pre-Major in Astronomy Program (Pre-MAP): What Makes a Great First Research Project?**

**Author(s):** Breanna A. Binder<sup>1</sup>, Edward Schwieterman<sup>1</sup>

*Institution(s):* <sup>1</sup>. University of Washington

### **313.04 Promoting Inclusivity in STEM through Active Recruiting and Mentoring: The Pre-Major in Astronomy Program (Pre-MAP) at the University of Washington**

**Author(s):** Edward Schwieterman<sup>1</sup>, Breanna A. Binder<sup>1</sup>

*Institution(s):* <sup>1</sup>. University of Washington

### **313.06 The Undergraduate ALFALFA Team: A Collaboration for Undergraduate Research Opportunities and Faculty Development**

**Author(s):** Rebecca A. Koopmann<sup>14</sup>, Thomas J. Balonek<sup>2</sup>, John M. Cannon<sup>9</sup>, Kimberly A. Coble<sup>1</sup>, David W Craig<sup>19</sup>, Adriana Durbala<sup>18</sup>, Rose Finn<sup>10</sup>, Gregory L Hallenbeck<sup>14</sup>, Martha P. Haynes<sup>3</sup>, Sarah Higdon<sup>5</sup>, G. Lyle Hoffman<sup>8</sup>, David A. Kornreich<sup>7</sup>, Mayra E. Lebron<sup>15</sup>, Mary Crone-Odekon<sup>11</sup>, Aileen A. O'Donoghue<sup>12</sup>, Ronald Paul Olowin<sup>13</sup>, Carmen Pantoja<sup>15</sup>, Jessica L. Rosenberg<sup>4</sup>, Parker Troischt<sup>6</sup>, Aparna Venkatesan<sup>16</sup>, Eric M. Wilcots<sup>17</sup>

*Institution(s):* <sup>1</sup>. Chicago State University, <sup>2</sup>. Colgate University, <sup>3</sup>. Cornell University, <sup>4</sup>. George Mason University, <sup>5</sup>. Georgia Southern University, <sup>6</sup>. Hartwick College, <sup>7</sup>. Ithaca College, <sup>8</sup>. Lafayette College, <sup>9</sup>. Macalester College, <sup>10</sup>. Siena College, <sup>11</sup>. Skidmore College, <sup>12</sup>. St. Lawrence University, <sup>13</sup>. St. Mary's College of California, <sup>14</sup>. Union College, <sup>15</sup>. University of Puerto Rico, <sup>16</sup>. University of San Francisco, <sup>17</sup>. University of Wisconsin, <sup>18</sup>. University Wisconsin Stevens Point, <sup>19</sup>. West Texas A&M

### **313.07 The Undergraduate ALFALFA Team: Outcomes for Over 250 Undergraduate Participants**

**Author(s):** Parker Troischt<sup>2</sup>, Rebecca A. Koopmann<sup>3</sup>, Martha P. Haynes<sup>1</sup>

*Institution(s):* <sup>1</sup>. Cornell University, <sup>2</sup>. Hartwick College, <sup>3</sup>. Union College

### **313.08 The Undergraduate ALFALFA Team: Collaborative Research Projects**

**Author(s):** John M. Cannon<sup>2</sup>, Rebecca A. Koopmann<sup>3</sup>, Martha P. Haynes<sup>1</sup>

*Institution(s):* <sup>1</sup>. Cornell University, <sup>2</sup>. Macalester College, <sup>3</sup>. Union College

### **313.09 The Undergraduate ALFALFA Team: A Model for Involving Undergraduates in Large Astronomy Collaborations**

**Author(s):** David W Craig<sup>3</sup>, Rebecca A. Koopmann<sup>2</sup>, Martha P. Haynes<sup>1</sup>

*Institution(s):* <sup>1</sup>. Cornell University, <sup>2</sup>. Union College, <sup>3</sup>. West Texas A&M University

# THURSDAY, 7 JANUARY 2016

## 314 Plenary Talk: The Zwicky Transient Facility

Thursday, 11:40 am - 12:30 pm; Osceola C

Chair: Chryssa Kouveliotou (GWU)



314.01

The Zwicky Transient Facility

Author(s): Shrinivas R. Kulkarni<sup>1</sup>

Institution(s): <sup>1</sup> Caltech

## Career Hour 3: Interviewing: What You Need to Do Before, During, and After to Get the Job

Thursday, 12:30 pm - 1:30 pm; St. George 108

Find out what you need to know and do to get the job from the first moment of contact to the moment you leave the interview. This session is organized by the AAS Employment Committee.

## 315 NSF Town Hall

Thursday, 12:45 pm - 1:45 pm; Sun A

National Science Foundation personnel will discuss status of science programs, budgets, future plans, past and ongoing NRC studies, and other items of interest to the U.S. astronomical community.

Organizer: James Ulvestad (*National Science Foundation*)

## 316 Cosmological Simulations of Galaxies

Thursday, 2:00 pm - 3:30 pm; Sun A

Chair: James Aguirre (*University of Pennsylvania*)

### 316.01 Stochastic evolution of rotations of early type galaxies

Author(s): Hoseung Choi<sup>1</sup>, Suhyoung Yi<sup>1</sup>

Institution(s): <sup>1</sup> Yonsei university

### 316.02D The Importance of Radial Migration to the Evolution of Spiral Galaxies

Author(s): Kathryn J Daniel<sup>1</sup>, Rosemary F. G. Wyse<sup>1</sup>

Institution(s): <sup>1</sup> Johns Hopkins University

### 316.03 Galaxy Interactions with FIRE: Mapping Star Formation

Author(s): Jorge Moreno<sup>1</sup>

Institution(s): <sup>1</sup> Cal Poly Pomona

### 316.04D Emission from the Circumgalactic Medium: Providing New Insights on Galaxy Evolution

Author(s): Lauren Corlies<sup>1</sup>, David Schiminovich<sup>1</sup>

Institution(s): <sup>1</sup> Columbia University

## 316.05 The Non-parametric Concentration of Dark Matter Halos in Cosmological N-body Simulations

**Author(s):** Meagan Lang<sup>1</sup>, Kelly Holley-Bockelmann<sup>2</sup>, Manodeep Sinha<sup>2</sup>  
*Institution(s):* <sup>1</sup> UIUC, <sup>2</sup> Vanderbilt University

## 316.06 The Scylla Multi-Code Comparison Project

**Author(s):** Ariyeh Maller<sup>3</sup>, Kyle Stewart<sup>1</sup>, James Bullock<sup>4</sup>, Jose Oñorbe<sup>2</sup>  
*Institution(s):* <sup>1</sup> California Baptist University, <sup>2</sup> Max-Planck-Institut für Astronomie, <sup>3</sup> The New York City College of Technology, <sup>4</sup> University of California, Irvine

## 317 Binary Stellar Systems, X-ray Binaries I

Thursday, 2:00 pm - 3:30 pm; Sun B

**Chair:** Thomas Maccarone (*Texas Tech University*)

### 317.01 Unveiling the nature of the He II $\lambda 4686$ periodic minima in $\eta$ Carinae

**Author(s):** Mairan Teodoro<sup>14</sup>, Augusto Damineli<sup>3</sup>, Noel Richardson<sup>11</sup>, Anthony F. J. Moffat<sup>11</sup>, Lucas St-Jean<sup>11</sup>, Christopher Michael Post Russell<sup>7</sup>, Theodore R. Gull<sup>7</sup>, Thomas Madura<sup>14</sup>, Karen Pollard<sup>12</sup>, Frederick M. Walter<sup>8</sup>, Adriano Coimbra<sup>5</sup>, Rodrigo Prates<sup>5</sup>, Eduardo Fernández-Lajús<sup>9</sup>, roberto gamen<sup>9</sup>, Gabriel Hicke<sup>10</sup>, William Henrique<sup>10</sup>, Felipe Navarete<sup>3</sup>, Thiago Andrade<sup>3</sup>, Francisco Jablonski<sup>4</sup>, Michael F. Corcoran<sup>14</sup>, Kenji Hamaguchi<sup>1</sup>, Jose H Groh<sup>2</sup>, Desmond John Hillier<sup>13</sup>, Weigelt Gerd<sup>6</sup>  
*Institution(s):* <sup>1</sup> CRESST, <sup>2</sup> Geneva Observatory, <sup>3</sup> IAG/USP, <sup>4</sup> INPE, <sup>5</sup> LNA, <sup>6</sup> Max-Planck-Institut für Radioastronomie, <sup>7</sup> NASA/GSFC, <sup>8</sup> Stony Brook University, <sup>9</sup> Universidad Nacional de La Plata, <sup>10</sup> Universidade Federal de Itajubá, <sup>11</sup> Université de Montréal, <sup>12</sup> University of Canterbury, <sup>13</sup> University of Pittsburgh, <sup>14</sup> USRA

### 317.02D Hydrodynamic Simulations of Close and Contact Binary Systems using Bipolytropes

**Author(s):** Kundan Kadam<sup>1</sup>  
*Institution(s):* <sup>1</sup> Louisiana State University

### 317.03 Cool and Luminous Transients from Mass-Losing Binary Stars

**Author(s):** Ondrej Pejcha<sup>2</sup>, Brian D Metzger<sup>1</sup>, Kengo Tomida<sup>2</sup>  
*Institution(s):* <sup>1</sup> Columbia University, <sup>2</sup> Princeton University

### 317.04D Probing the Structure and Morphology of X-ray and Gamma-ray Binaries Using a Multi-Wavelength, Multi-Mission Approach

**Author(s):** Joel Barry Coley<sup>1</sup>  
*Institution(s):* <sup>1</sup> NASA Goddard

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- 317.05D The search for low-luminosity high-mass X-ray binaries and the study of X-ray populations in the Galactic disk**  
**Author(s):** Francesca Fornasini<sup>8</sup>, John Tomsick<sup>8</sup>, Arash Bodaghee<sup>4</sup>, Farid Rahoui<sup>3</sup>, Roman Krivonos<sup>7</sup>, Jesus Corral-Santana<sup>6</sup>, Hongjun An<sup>5</sup>, Franz E. Bauer<sup>6</sup>, Eric V. Gotthelf<sup>2</sup>, Daniel Stern<sup>1</sup>  
*Institution(s):* <sup>1.</sup> Caltech, <sup>2.</sup> Columbia University, <sup>3.</sup> European Southern Observatory, <sup>4.</sup> Georgia College and State University, <sup>5.</sup> McGill University, <sup>6.</sup> Pontificia Universidad Católica de Chile, <sup>7.</sup> Space Research Institute - Russian Academy of Sciences, <sup>8.</sup> University of California-Berkeley
- 317.06 VERITAS Observations of Gamma-ray Binary Systems**  
**Author(s):** Jamie Holder<sup>1</sup>  
*Institution(s):* <sup>1.</sup> University of Delaware

## 318 AGN, QSO, Blazars: Physics and Models

Thursday, 2:00 pm - 3:30 pm; Sun C

**Chair:** Roopesh Ojha (NASA/GSFC)

- 318.01D Constraining blazar physics with polarization signatures**  
**Author(s):** Haocheng Zhang<sup>3</sup>, Markus Boettcher<sup>2</sup>, Hui Li<sup>1</sup>  
*(s):* <sup>1.</sup> Los Alamos National Laboratory, <sup>2.</sup> North-West University, <sup>3.</sup> Ohio University
- 318.02 A Continuum Framework of the Long-Term Optical/Near-Infrared Color Variability of Blazars**  
**Author(s):** Jedidah Isler<sup>1</sup>, C. Megan Urry<sup>2</sup>, Charles D. Bailyn<sup>2</sup>, Paolo S. Coppi<sup>2</sup>, Imran Hasan<sup>2</sup>, Emily MacPherson<sup>2</sup>, Michelle Buxton<sup>2</sup>  
*Institution(s):* <sup>1.</sup> Vanderbilt University, <sup>2.</sup> Yale University
- 318.03D One-Zone Time Dependent Leptonic and Lepto-Hadronic Modeling of Blazars**  
**Author(s):** Chris Scott Diltz<sup>1</sup>  
*Institution(s):* <sup>1.</sup> Ohio University
- 318.04 Exceptional X-ray Weak Quasars: Implications for Accretion Flows and Emission-Line Formation**  
**Author(s):** W. Niel Brandt<sup>4</sup>, Bin Luo<sup>3</sup>, Patrick B. Hall<sup>10</sup>, Jianfeng Wu<sup>7</sup>, Scott F. Anderson<sup>9</sup>, Gordon Garmire<sup>2</sup>, Robert Gibson<sup>5</sup>, Richard Plotkin<sup>7</sup>, Gordon T. Richards<sup>1</sup>, Donald P. Schneider<sup>4</sup>, Ohad Shemmer<sup>8</sup>, Yue Shen<sup>6</sup>  
*Institution(s):* <sup>1.</sup> Drexel University, <sup>2.</sup> Huntingdon Institute, <sup>3.</sup> Nanjing Univ, <sup>4.</sup> Penn State Univ., <sup>5.</sup> SimpliVity Corp, <sup>6.</sup> University of Illinois, <sup>7.</sup> University of Michigan, <sup>8.</sup> University of North Texas, <sup>9.</sup> University of Washington, <sup>10.</sup> York University
- 318.05 Weak Emission-line Quasars in the Context of a Modified Baldwin Effect**  
**Author(s):** Ohad Shemmer<sup>1</sup>  
*Institution(s):* <sup>1.</sup> University of North Texas
- 318.06D Using diffusion k-means for simple stellar population modeling of low S/N quasar host galaxy spectra**  
**Author(s):** Gregory Mosby<sup>3</sup>, Christina A. Tremonti<sup>3</sup>, Eric Hooper<sup>3</sup>, Marsha J. Wolf<sup>1</sup>, Andrew Sheinis<sup>1</sup>, Joseph Richards<sup>2</sup>  
*Institution(s):* <sup>1.</sup> Australian Astronomical Observatory, <sup>2.</sup> University of California at Berkeley, <sup>3.</sup> University of Wisconsin, Madison

## 319 Star Formation

Thursday, 2:00 pm - 3:30 pm; Sun D

Chair: **Cara Battersby** (*Harvard-Smithsonian Center for Astrophysics*)

### 319.01 Feedback During Massive Star Formation

**Author(s):** Kei Tanaka<sup>2</sup>, Jonathan C. Tan<sup>2</sup>, Yichen Zhang<sup>1</sup>

*Institution(s):* <sup>1</sup> Universidad de Chile, <sup>2</sup> University of Florida

### 319.02D Giant Molecular Cloud Collisions as Triggers of Star Formation

**Author(s):** Benjamin Wu<sup>3</sup>, Jonathan C. Tan<sup>3</sup>, Sven Van Loo<sup>4</sup>, fumitaka nakamura<sup>2</sup>, Simon Bruderer<sup>1</sup>

*Institution(s):* <sup>1</sup> Max Planck Institute for Extraterrestrial Physics, <sup>2</sup> National Astronomical Observatory of Japan, <sup>3</sup> University of Florida, <sup>4</sup> University of Leeds

### 319.03 Quantifying the impact of stellar feedback on molecular clouds

**Author(s):** Ryan Boyden<sup>2</sup>, Eric Koch<sup>1</sup>, Stella Offner<sup>2</sup>

*Institution(s):* <sup>1</sup> University of Alberta, <sup>2</sup> University of Massachusetts Amherst

### 319.04 Boundary-Layer Origin for Jets, and Non-Existence of the Boundary Layer in Young Jet-Producing Protostars

**Author(s):** Peter T. Williams<sup>1</sup>

*Institution(s):* <sup>1</sup> unaffiliated

### 319.05D Protostellar jets and magnetised turbulence with smoothed particle magnetohydrodynamics

**Author(s):** Terrence Tricco<sup>1</sup>

*Institution(s):* <sup>1</sup> University of Toronto

### 319.06 The SOFIA Massive (SOMA) Star Formation Survey

**Author(s):** Jonathan C. Tan<sup>4</sup>, James M. De Buizer<sup>2</sup>, Yichen Zhang<sup>3</sup>, Mengyao Liu<sup>4</sup>, Göran H. L. Sandell<sup>2</sup>, Jan E. Staff<sup>4</sup>, Maria T. Beltrán<sup>1</sup>, Ralph Shuping<sup>2</sup>

*Institution(s):* <sup>1</sup> INAF-Osservatorio Astrofisico di Arcetri, <sup>2</sup> SOFIA-USRA, NASA Ames, <sup>3</sup> Univ. of Chile, <sup>4</sup> University of Florida

### 319.07 MASSES: An SMA Survey of Protostars Aimed at Understanding How Stars Gain Their Mass

**Author(s):** Michael Dunham<sup>1</sup>

*Institution(s):* <sup>1</sup> Smithsonian Astrophysical Observatory

## 320 Science Results from the Stratospheric Observatory for Infrared Astronomy (SOFIA)

Thursday, 2:00 pm - 3:30 pm; Osceola A

The Stratospheric Observatory for Infrared Astronomy (SOFIA) has completed Early Science and two annual observing cycles (Cycles 1 and 2) and at the time of writing, May 2015, has completed three months of Cycle 3 observations. SOFIA has accomplished over 800 science flight hours, which have yielded a wealth of data on diverse targets, including comets, planets, protoplanetary disks, stars, star forming regions, nebulae, the Galactic Center and external galaxies. Over 40 papers with SOFIA results have been published in refereed journals with several more accepted for publication and in

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preparation. The Cycle 4 Call for Proposals was released in early May 2015 soliciting approximately 500 hours of observing via the US queue and a further 80 hours via the German queue. The call offers the entire suite of first and second generation instruments available, including the seven-beam heterodyne array upGREAT providing high resolution spectroscopy and fast mapping in the [CII] 158  $\mu\text{-m}$  line, and the HAWC+ camera and polarimeter. In this special session we wish to present some of the exciting scientific results from SOFIA, and highlight its potential as one of the premier mid- and far-infrared observatories in the coming years. Our proposal is to have six invited talks (12-14 minutes each) that represent the wide range of astronomical fields that SOFIA observations have addressed. The talks will focus on recently obtained data that have not yet been published, and will reflect the diversity of instrumentation available on SOFIA. There will be a short introduction on the status of the Observatory before the science talks. The special session will have a parallel poster session for contributed presentations.

**Organizer: Ravi Sankrit (SOFIA/USRA)**

## 320.01 SOFIA/FORCAST Grism Spectra of Classical Novae

**Author(s): Robert D. Gehrz<sup>2</sup>, Aneurin Evans<sup>1</sup>, Charles E. Woodward<sup>2</sup>, L. A. Helton<sup>3</sup>**

*Institution(s):* <sup>1</sup> Keele University, <sup>2</sup> Univ. of Minnesota, <sup>3</sup> USRA/SOFIA

## 320.02 Nature of the Warm Excess in eps Eri: Asteroid belt or Dragged-in Grains

**Author(s): Kate Y.L. Su<sup>3</sup>, George Rieke<sup>3</sup>, Massimo Marengo<sup>1</sup>, Karl R. Stapelfeldt<sup>2</sup>**

*Institution(s):* <sup>1</sup> Iowa State University, <sup>2</sup> NASA Goddard Space Flight Center, <sup>3</sup> Steward Observatory

## 320.03 Probing the Extended Atmosphere and Wind of Betelgeuse with SOFIA-EXES: Exploiting the Forbidden Fe II Ladder

**Author(s): Graham M Harper<sup>3</sup>, Matthew Richter<sup>2</sup>, Eamon O'Gorman<sup>1</sup>, Curtis DeWitt<sup>2</sup>, Edward F. Guinan<sup>4</sup>**

*Institution(s):* <sup>1</sup> Chalmers Technical University, <sup>2</sup> UC Davis, <sup>3</sup> University of Colorado, <sup>4</sup> Villanova University

## 320.04 GREAT high spectral resolution [OI] 4.7 THz observations of protoplanetary disks and other sources

**Author(s): Goran H. L. Sandell<sup>1</sup>**

*Institution(s):* <sup>1</sup> SOFIA-USRA, NASA Ames Research Center

## 320.05 FIRST results of FIFI-LS Far Infrared Spectroscopic Imaging of Local Galaxies

**Author(s): Suzanne C. Madden<sup>1</sup>, Alfred Krabbe<sup>3</sup>, Simon Beckmann<sup>3</sup>, Aaron Bryant<sup>4</sup>, Sebastian Colditz<sup>3</sup>, Christian Fischer<sup>3</sup>, Fabio Fumi<sup>4</sup>, Norbert Geis<sup>6</sup>, Thomas Henning<sup>5</sup>, Rainer Honle<sup>4</sup>, Christoph Iserlohe<sup>3</sup>, Randolf Klein<sup>7</sup>, Leslie Looney<sup>2</sup>, Albrecht Poglitsch<sup>6</sup>, Walfried Raab<sup>6</sup>, Felix Rebell<sup>4</sup>, William D. Vacca<sup>7</sup>**

*Institution(s):* <sup>1</sup> CEA, Saclay, France, <sup>2</sup> Department of Astronomy, University of Illinois, <sup>3</sup> Deutsches SOFIA Institut, <sup>4</sup> Institute of Space Systems, University of Stuttgart, <sup>5</sup> Max Planck Institute for Astronomy, <sup>6</sup> Max Planck Institute for Extraterrestrial Physics, <sup>7</sup> SOFIA, USRA

## 320.06 Pluto's Atmosphere from the 29 June 2015 Occultation: SOFIA Airborne Results

**Author(s):** Michael J. Person<sup>1</sup>

*Institution(s):*<sup>1</sup> MIT

## 321 Extrasolar Planets: Observations II

Thursday, 2:00 pm - 3:30 pm; Osceola B

**Chair:** L. Casement (*Northrop Grumman*)

### 321.01 Planet Diversity Yields with Space-based Direct Imaging Telescopes

**Author(s):** Shawn Domagal-Goldman<sup>1</sup>, Ravi Kumar Kopparapu<sup>1</sup>, Eric Hébrard<sup>1</sup>, Chris Stark<sup>2</sup>, Tyler D Robinson<sup>3</sup>, Aki Roberge<sup>1</sup>, Avi Mandell<sup>1</sup>, Michael W. McElwain<sup>1</sup>, Mark Clampin<sup>1</sup>, Victoria Meadows<sup>4</sup>, Giada Arney<sup>4</sup>

*Institution(s):*<sup>1</sup> NASA Goddard Space Flight Center, <sup>2</sup> Space Telescope Science Institute, <sup>3</sup> University of California, Santa Cruz, <sup>4</sup> University of Washington

### 321.02 Colors of Alien Worlds from Direct Imaging Exoplanet Missions

**Author(s):** Renyu Hu<sup>1</sup>

*Institution(s):*<sup>1</sup> Jet Propulsion Laboratory

### 321.03 Infrared Polarimetry of Self-Luminous Exoplanets with the Gemini Planet Imager

**Author(s):** Rebecca M. Jensen-Clem<sup>1</sup>, Max Millar-Blanchaer<sup>8</sup>, Dimitri Mawet<sup>1</sup>, James R. Graham<sup>5</sup>, Heather Knutson<sup>1</sup>, Sloane Wiktorowicz<sup>6</sup>, Marshall D. Perrin<sup>3</sup>, Bruce Macintosh<sup>4</sup>, Sasha Hinkley<sup>7</sup>, J. Kent Wallace<sup>2</sup>

*Institution(s):*<sup>1</sup> Caltech, <sup>2</sup> Jet Propulsion Laboratory, <sup>3</sup> Space Telescope Science Institute, <sup>4</sup> Stanford University, <sup>5</sup> University of California, Berkeley, <sup>6</sup> University of California, Santa Cruz, <sup>7</sup> University of Exeter, <sup>8</sup> University of Toronto

### 321.04 The Gemini Planet Imager Exoplanet Survey and the discovery of the young Jupiter analog 51 Eridani b

**Author(s):** Bruce Macintosh<sup>1</sup>

*Institution(s):*<sup>1</sup> Stanford University

### 321.05 A Ground-Based Albedo Upper Limit for HD 189733b from Polarimetry

**Author(s):** Sloane Wiktorowicz<sup>4</sup>, Larissa Nofi<sup>6</sup>, Daniel Jontof-Hutter<sup>3</sup>, Pushkar Kopparla<sup>1</sup>, Gregory P. Laughlin<sup>5</sup>, Ninos Hermis<sup>5</sup>, Yuk Yung<sup>1</sup>, Mark R. Swain<sup>2</sup>

*Institution(s):*<sup>1</sup> California Institute of Technology, <sup>2</sup> Jet Propulsion Laboratory, <sup>3</sup> Pennsylvania State University, <sup>4</sup> The Aerospace Corporation, <sup>5</sup> University of California, Santa Cruz, <sup>6</sup> University of Hawaii

### 321.06 Revisiting HD 189733b's non-LTE Emission

**Author(s):** Robert T. Zellem<sup>1</sup>, Mark R. Swain<sup>1</sup>, Pierre Drossart<sup>2</sup>, Aishwarya Iyer<sup>1</sup>

*Institution(s):*<sup>1</sup> Jet Propulsion Laboratory - California Institute of Technology, <sup>2</sup> Observatoire Paris—Site de Meudon, France

### 321.07 The Nature of the Super-Earth 55 Cancri e

**Author(s):** Diana Dragomir<sup>2</sup>, Jaymie Matthews<sup>1</sup>

*Institution(s):*<sup>1</sup> University of British Columbia, <sup>2</sup> University of Chicago

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## 321.08 A Statistical Characterization of Reflection and Refraction in the Atmospheres of sub-Saturn Kepler Planet Candidates

**Author(s):** Holly A. Sheets<sup>1</sup>, Drake Deming<sup>1</sup>, Giada Arney<sup>2</sup>, Victoria Meadows<sup>2</sup>  
*Institution(s):* <sup>1</sup> University of Maryland, <sup>2</sup> University of Washington

## 322 Dust, Grains, and Pebbles in Protoplanetary Disks

Thursday, 2:00 pm - 3:30 pm; Miami

**Chair:** Michelle Creech-Eakman (*New Mexico Tech.*)

### 322.02 Constraining Collisional Models of Planetesimals in Debris Disks

**Author(s):** Meredith A. MacGregor<sup>1</sup>, David J. Wilner<sup>2</sup>, A. Meredith Hughes<sup>6</sup>, Amy Steele<sup>5</sup>, Luca Ricci<sup>2</sup>, Sean M. Andrews<sup>2</sup>, Claire J. Chandler<sup>3</sup>, Sarah Tahl Maddison<sup>4</sup>  
*Institution(s):* <sup>1</sup> Harvard University, <sup>2</sup> Harvard-Smithsonian Center for Astrophysics, <sup>3</sup> National Radio Astronomy Observatory, <sup>4</sup> Swinburne University of Technology, <sup>5</sup> University of Maryland, <sup>6</sup> Wesleyan University

### 322.03D The Role of Disk Volatile Chemistry and Dynamics in Shaping the Compositions of Nascent Planets

**Author(s):** Ana-Maria Piso<sup>1</sup>, Karin I. Oberg<sup>1</sup>, Tilman Birnstiel<sup>1</sup>, Ruth Murray-Clay<sup>2</sup>  
*Institution(s):* <sup>1</sup> Harvard Univ., <sup>2</sup> UCSB

### 322.04 Pebble Formation, Evolution and Accretion for Inside-Out Planet Formation

**Author(s):** Xiao Hu<sup>3</sup>, Jonathan C. Tan<sup>3</sup>, Zhaohuan Zhu<sup>2</sup>, Sourav Chatterjee<sup>1</sup>  
*Institution(s):* <sup>1</sup> Northwestern University, <sup>2</sup> Princeton University, <sup>3</sup> University of Florida

### 322.05 Generating potassium abundance variations in the Solar Nebula

**Author(s):** Alexander Hubbard<sup>1</sup>  
*Institution(s):* <sup>1</sup> American Museum of Natural History

## 323 Starburst Galaxies II

Thursday, 2:00 pm - 3:30 pm; Naples

**Chair:** Juan Rafael Martinez-Galarza (*Smithsonian Astrophysical Observatory*)

### 323.01 Exploring the overabundance of ultraluminous X-ray sources in metal- and dust-poor local Lyman break analogs

**Author(s):** Antara Basu-Zych<sup>2</sup>, Bret Lehmer<sup>4</sup>, Tassos Fragos<sup>1</sup>, Ann E. Hornschemeier<sup>2</sup>, Andreas Zezas<sup>5</sup>, Mihoko Yukita<sup>3</sup>, Andrew Ptak<sup>2</sup>  
*Institution(s):* <sup>1</sup> Geneva Observatory, <sup>2</sup> Goddard Space Flight Center, <sup>3</sup> Johns Hopkins University, <sup>4</sup> University of Arkansas, <sup>5</sup> University of Crete

### 323.03D Gas, Dust, and Quenching in Dusty Star-Forming Galaxies in the Early Universe

**Author(s):** Justin Spilker<sup>1</sup>, Daniel P. Marrone<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Arizona

- 323.04 Highest redshift neutral hydrogen image in emission: A CHILES detection of a starbursting spiral**  
**Author(s):** Ximena Fernandez<sup>3</sup>, Jacqueline H. Van Gorkom<sup>1</sup>, Hansung Gim<sup>4</sup>, Min Su Yun<sup>4</sup>, Emmanuel Momjian<sup>2</sup>  
*Institution(s):* <sup>1</sup> Columbia University, <sup>2</sup> NRAO, <sup>3</sup> Rutgers, the State University of New Jersey, <sup>4</sup> University of Massachusetts
- 323.05D A High Resolution, Unobscured View of the Active Regions in (Ultra) Luminous Infrared Galaxies from a VLA 33 GHz Survey**  
**Author(s):** Loreto Barcos-Muñoz<sup>10</sup>, Adam K. Leroy<sup>7</sup>, Aaron S. Evans<sup>10</sup>, Lee Armus<sup>2</sup>, James J. Condon<sup>4</sup>, Joseph M. Mazzarella<sup>2</sup>, David S. Meier<sup>5</sup>, Emmanuel Momjian<sup>4</sup>, Eric J. Murphy<sup>2</sup>, Juergen Ott<sup>4</sup>, George C. Privon<sup>8</sup>, Ashley Reichardt<sup>6</sup>, Kazushi Sakamoto<sup>1</sup>, David B. Sanders<sup>9</sup>, Eva Schinnerer<sup>3</sup>, Sabrina Stierwalt<sup>10</sup>, Jason A. Surace<sup>2</sup>, Todd A. Thompson<sup>7</sup>, Fabian Walter<sup>3</sup>  
*Institution(s):* <sup>1</sup> Academia Sinica, <sup>2</sup> Caltech, <sup>3</sup> MPIA, <sup>4</sup> National Radio Astronomy Observatory, <sup>5</sup> New Mexico Institute of Technology, <sup>6</sup> NRAO - REU, <sup>7</sup> The Ohio State University, <sup>8</sup> Universidad de Concepcion, <sup>9</sup> University of Hawaii, <sup>10</sup> University of Virginia
- 323.06 Feedback from starbursts: 30 Dorado as a case study**  
**Author(s):** Q. Daniel Wang<sup>1</sup>, Seunghwan Lim<sup>1</sup>  
*Institution(s):* <sup>1</sup> Univ. of Massachusetts

## 324 Catalogs, Surveys, and Data Viewing

Thursday, 2:00 pm - 3:30 pm; Tampa

**Chair: J. Allyn Smith** (*Austin Peay State Univ.*)

- 324.01 Introducing Nightlight: A New, Modern FITS Viewer**  
**Author(s):** Demitri Muna<sup>1</sup>  
*Institution(s):* <sup>1</sup> Ohio State University
- 324.02 Synthesizing Understanding from Data with yt**  
**Author(s):** Matthew Turk<sup>1</sup>  
*Institution(s):* <sup>1</sup> NCSA & University of Illinois
- 324.03 Probing the high energy sky above 10 GeV with the Fermi Large Area Telescope**  
**Author(s):** Jeremy S Perkins<sup>1</sup>  
*Institution(s):* <sup>1</sup> NASA/GSFC
- 324.04 The Grism Lens-Amplified Survey from Space (GLASS): Dissecting reionization,  $z \sim 2$  galaxies, and dense environments**  
**Author(s):** Tommaso Treu<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of California
- 324.05 The Discovery of Transient Phenomena by NASA's K2 Mission**  
**Author(s):** Knicole D. Colón<sup>1</sup>  
*Institution(s):* <sup>1</sup> NASA Ames Research Center

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## 324.06 What is WorldWide Telescope, and Why Should Researchers Care?

**Author(s):** Alyssa A. Goodman<sup>1</sup>

*Institution(s):* <sup>1</sup> Harvard-Smithsonian, CfA

## 324.07 The Pan-STARRS Surveys

**Author(s):** Kenneth C. Chambers<sup>1</sup>

*Institution(s):* <sup>1</sup> Univ. of Hawaii

## 324.08 The VLA Sky Survey (VLASS): Technical Implementation Plans and Progress

**Author(s):** Steven T. Myers<sup>3</sup>, Casey J. Law<sup>4</sup>, Stefi Alison Baum<sup>5</sup>, Claire J. Chandler<sup>3</sup>, Shami Chatterjee<sup>1</sup>, Mark Lacy<sup>3</sup>, Eric J. Murphy<sup>2</sup>

*Institution(s):* <sup>1</sup> Cornell University, <sup>2</sup> IPAC, <sup>3</sup> NRAO, <sup>4</sup> UC Berkeley, <sup>5</sup> University of Manitoba

## 324.09 The VLA Sky Survey (VLASS): Description and Science Goals

**Author(s):** Mark Lacy<sup>3</sup>, Stefi Alison Baum<sup>4</sup>, Claire J. Chandler<sup>3</sup>, Shami Chatterjee<sup>1</sup>, Eric J. Murphy<sup>2</sup>, Steven T. Myers<sup>3</sup>

*Institution(s):* <sup>1</sup> Cornell University, <sup>2</sup> IPAC, <sup>3</sup> NRAO, <sup>4</sup> University of Manitoba

## 325 Climate Change for Astronomers

Thursday, 2:00 pm - 3:30 pm; Sanibel

This special session, hosted by the AAS Sustainability Committee, aims to engage astronomers in a discussion about climate change. We'll hear some of the latest news on climate change science from Prof. Don Chambers (U. South Florida), an expert on ocean dynamics and lead author of the UN's IPCC climate assessment; and we'll learn -- and practice -- proven tools and techniques for teaching our undergraduate students and the public about how the greenhouse effect works, how climate change happens and what are some of its consequences both projected and already observed.

**Organizer:** James Lowenthal (*Smith College*)

## 325.01 Ocean Observations of Climate Change

**Author(s):** Don Chambers<sup>1</sup>

*Institution(s):* <sup>1</sup> University of South Florida

## 326 The Milky Way, Halo Substructure

Thursday, 2:00 pm - 3:30 pm; Sarasota

**Chair:** Andreas Kupper (*Columbia University*)

## 326.01 Constraining the Milky Way Mass Profile via HST Proper Motions

**Author(s):** S. Tony Sohn<sup>1</sup>, Roeland P. Van Der Marel<sup>2</sup>

*Institution(s):* <sup>1</sup> Johns Hopkins University, <sup>2</sup> STScI

## 326.02D The Milky Way in Stereo: Constraints on the Galactic Gravitational Potential from Multiple Stellar Streams

**Author(s):** Ana Bonaca<sup>4</sup>, Marla C. Geha<sup>4</sup>, David W. Hogg<sup>2</sup>, Andreas Hans Wilhelm Kupper<sup>1</sup>, Kathryn V. Johnston<sup>1</sup>, Juerg Diemand<sup>3</sup>

*Institution(s):* <sup>1</sup> Columbia University, <sup>2</sup> New York University, <sup>3</sup> University of Zurich, <sup>4</sup> Yale University

## 326.03 HALO7D: Disentangling the Milky Way Accretion History with Observations in 7 Dimensions

**Author(s):** Emily C. Cunningham<sup>4</sup>, Alis Deason<sup>2</sup>, Puragra Guhathakurta<sup>4</sup>, Constance M. Rockosi<sup>4</sup>, Roeland P. Van Der Marel<sup>3</sup>, S. Tony Sohn<sup>1</sup>

*Institution(s):* <sup>1</sup> Johns Hopkins University, <sup>2</sup> Stanford University, <sup>3</sup> STScI, <sup>4</sup> UC Santa Cruz

## 326.04D Chaos and stellar streams

**Author(s):** Adrian M. Price-Whelan<sup>1</sup>, Kathryn V. Johnston<sup>1</sup>, Monica Valluri<sup>3</sup>, Sarah Pearson<sup>1</sup>, Andreas Hans Wilhelm Kupper<sup>1</sup>, David W. Hogg<sup>2</sup>

*Institution(s):* <sup>1</sup> Columbia University, <sup>2</sup> New York University, <sup>3</sup> University of Michigan

## 326.05 Exploring the SHARDS of Disrupted Milky Way Satellites with LAMOST

**Author(s):** Jeffrey L. Carlin<sup>2</sup>, Chao Liu<sup>1</sup>, Heidi Jo Newberg<sup>2</sup>, Licai Deng<sup>1</sup>

*Institution(s):* <sup>1</sup> National Astronomical Observatories, Chinese Academy of Sciences, <sup>2</sup> Rensselaer Polytechnic Institute

## 326.06D Exploring Milky Way Halo Substructures with Large-Area Sky Surveys

**Author(s):** Ting Li<sup>1</sup>

*Institution(s):* <sup>1</sup> Texas AandM University

## 327 Astrophysical Constraints of Dark Matter Properties

Thursday, 2:00 pm - 3:30 pm; Osceola 5

The nature of the dark matter that fills the universe remains a profound puzzle, more than eighty years since its existence was inferred through its gravitational signature. Today, we have a robust census of the amount and the large-scale distribution of dark matter, from the present to early times in the universe. Also, experiments for direct detection and particle collider production of dark matter reach levels of sensitivity that already constrain popular classes of candidates. Each candidate class has implications on astronomical scales. There are many paths being actively pursued, from (astronomically) small and local scales, to horizon-scale and at very early cosmic epochs. Pursuing multiple aspects of dark matter properties motivates hugely diverse missions and instrumentation, including but not limited to ALMA, SKA, JWST, Euclid, LSST, and WFIRST, even as insights continue from existing platforms. In parallel with observational progress, the theoretical and numerical repertoire is rapidly moving beyond the canonical and generic "cold" dark matter scenario, to explore the astronomical-scale implications of very specific classes of dark matter particle candidates, reaching into more nuanced connections across astrophysics and particle physics. The time is right for a community-wide discussion on the specific physical properties of dark matter that may be measured or constrained through diverse astronomical observations. The theme of this AAS Special Session is to frame, and to give proposed answers to two classes of questions. \* First, which are the particle properties that are most sensible to discuss in the context of astronomical observations and constraints, that are not restrictive to a pre-determined class of candidate. These may include some parametrization of the "temperature," a static or velocity-dependent self-interaction cross section, and the matter power spectrum roll-off scale. \* Second, what are meaningful "figures of merit" that could be

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used across different astronomical probes that are also useful in the language of particle physics, to encourage communication as limits from direct and production lines of work improve or achieve success.

**Organizer: Leonidas Moustakas (JPL/Caltech)**

## 327.01 Astrophysical Constraints of Dark Matter Properties

**Author(s):** Leonidas A. Moustakas<sup>4</sup>, Tom Abel<sup>8</sup>, Alyson Brooks<sup>7</sup>, Matthew Buckley<sup>7</sup>, James Bullock<sup>11</sup>, Michelle Collins<sup>14</sup>, Francis-Yan Cyr-Racine<sup>3</sup>, William Dawson<sup>5</sup>, Alex Drlica-Wagner<sup>2</sup>, Jennifer Gaskins<sup>13</sup>, Manoj Kaplinghat<sup>11</sup>, Charles R. Keeton<sup>7</sup>, Stacy Kim<sup>6</sup>, Annika Peter<sup>6</sup>, Justin Read<sup>14</sup>, Joshua D. Simon<sup>1</sup>, Rachel S. Somerville<sup>7</sup>, Erik Jon Tollerud<sup>10</sup>, Tommaso Treu<sup>12</sup>, Risa H. Wechsler<sup>9</sup>  
*Institution(s):* <sup>1</sup> Carnegie Observatories, <sup>2</sup> FNAL, <sup>3</sup> Harvard University, <sup>4</sup> JPL/Caltech, <sup>5</sup> LLNL, <sup>6</sup> Ohio State University, <sup>7</sup> Rutgers University, <sup>8</sup> SLAC/Stanford, <sup>9</sup> Stanford University, <sup>10</sup> STScI, <sup>11</sup> UC, Irvine, <sup>12</sup> UCLA, <sup>13</sup> University of Amsterdam, <sup>14</sup> University of Surrey

## 327.02 Astronomical Insights into Dark Matter Particle Constraints

**Author(s):** William Dawson<sup>2</sup>, Joshua D. Simon<sup>1</sup>, Justin Read<sup>6</sup>, James Bullock<sup>4</sup>, Charles R. Keeton<sup>3</sup>, Tommaso Treu<sup>5</sup>  
*Institution(s):* <sup>1</sup> Carnegie Observatories, <sup>2</sup> Lawrence Livermore Nat. Lab, <sup>3</sup> Rutgers University, <sup>4</sup> UC, Irvine, <sup>5</sup> UCLA, <sup>6</sup> University of Surrey

## 327.03 The Present View of Experimental Dark Matter Particle Properties

**Author(s):** Matthew Buckley<sup>3</sup>, Manoj Kaplinghat<sup>4</sup>, Jennifer Gaskins<sup>5</sup>, Annika Peter<sup>2</sup>, Stacy Kim<sup>2</sup>, Leonidas A. Moustakas<sup>1</sup>  
*Institution(s):* <sup>1</sup> JPL/Caltech, <sup>2</sup> Ohio State University, <sup>3</sup> Rutgers University, <sup>4</sup> UC, Irvine, <sup>5</sup> University of Amsterdam

## 327.04 The Future of Astronomical Dark Matter Probes

**Author(s):** Annika Peter<sup>3</sup>, Stacy Kim<sup>3</sup>, Francis-Yan Cyr-Racine<sup>2</sup>, Alex Drlica-Wagner<sup>1</sup>  
*Institution(s):* <sup>1</sup> FNAL, <sup>2</sup> Harvard University, <sup>3</sup> Ohio State University

## 327.05 Astronomical Metrics for Characterizing Dark Matter

**Author(s):** Jennifer Gaskins<sup>6</sup>, Annika Peter<sup>3</sup>, Leonidas A. Moustakas<sup>2</sup>, Francis-Yan Cyr-Racine<sup>1</sup>, Matthew Buckley<sup>4</sup>, Alyson Brooks<sup>4</sup>, Erik Jon Tollerud<sup>5</sup>, Michelle Collins<sup>7</sup>, Stacy Yeonchi Kim<sup>3</sup>  
*Institution(s):* <sup>1</sup> Harvard University, <sup>2</sup> JPL/Caltech, <sup>3</sup> Ohio State University, <sup>4</sup> Rutgers University, <sup>5</sup> STScI, <sup>6</sup> University of Amsterdam, <sup>7</sup> University of Surrey

## 327.06 Future Observations and Simulations for Dark Matter

**Author(s):** Erik Jon Tollerud<sup>4</sup>, Michelle Collins<sup>6</sup>, Alyson Brooks<sup>2</sup>, Risa H. Wechsler<sup>3</sup>, William Dawson<sup>1</sup>, Charles R. Keeton<sup>2</sup>, Justin Read<sup>6</sup>, James Bullock<sup>5</sup>, Rachel S. Somerville<sup>2</sup>  
*Institution(s):* <sup>1</sup> LLNL, <sup>2</sup> Rutgers University, <sup>3</sup> Stanford University, <sup>4</sup> STScI, <sup>5</sup> UC, Irvine, <sup>6</sup> University of Surrey

## 327.07 A Plan for Astrophysical Constraints of Dark Matter Properties

**Author(s):** Michelle Collins<sup>4</sup>, Stacy Yeonchi Kim<sup>2</sup>, Tom Abel<sup>3</sup>, Leonidas A. Moustakas<sup>1</sup>

*Institution(s):* <sup>1</sup> JPL/Caltech, <sup>2</sup> Ohio State University, <sup>3</sup> Stanford University, <sup>4</sup> University of Surrey

## 328 Teaching Practices for Undergraduates and Majors

Thursday, 2:00 pm - 3:30 pm; Osceola 4

**Chair:** Susana Deustua (*Space Telescope Science Institute*)

### 328.01 Providing Real Research Opportunities to Undergraduates

**Author(s):** Darin Ragozzine<sup>1</sup>

*Institution(s):* <sup>1</sup> Florida Institute of Technology

### 328.02 Online Planetary Science Courses at Athabasca University

**Author(s):** Martin Connors<sup>1</sup>, Ken Muniyikwa<sup>1</sup>, Christy Bredeson<sup>1</sup>

*Institution(s):* <sup>1</sup> Athabasca University

### 328.03 Balloon and Button Spectroscopy: A Hands-On Approach to Light and Matter

**Author(s):** Joseph Ribaud<sup>1</sup>

*Institution(s):* <sup>1</sup> Utica College

### 328.04 SCALE-UP Your Astronomy and Physics Undergraduate Courses to Incorporate Heliophysics

**Author(s):** Ahlam N. Al-Rawi<sup>1</sup>, Amnada Cox<sup>1</sup>, Luara Hoshino<sup>1</sup>, Cullen Fitzgerald<sup>1</sup>, Rebecca Cebulka<sup>1</sup>, Alvar Rodriguez Garrigues<sup>1</sup>, Michele Montgomery<sup>1</sup>, Chris Velissaris<sup>1</sup>, Elena Flitsyan<sup>1</sup>

*Institution(s):* <sup>1</sup> UCF

### 328.05 Astronomy, Visual Literacy, and Liberal Arts Education

**Author(s):** Anthony Crider<sup>1</sup>

*Institution(s):* <sup>1</sup> Elon Univ.

### 328.06 Teaching Introductory Astronomy “Open and Out” & Looking Forward to the 2017 Solar Eclipse

**Author(s):** I-Wen Mike Chu<sup>1</sup>, Jeff Cronkhite<sup>1</sup>

*Institution(s):* <sup>1</sup> Montgomery College

### 328.07 Enriching Student Learning of Astronomy in Online Courses via Hybrid Texts

**Author(s):** M Montgomery<sup>1</sup>

*Institution(s):* <sup>1</sup> Valencia College

### 328.08 Pushing Stellarium to the Limit for Astronomy Distance Education

**Author(s):** Martin Connors<sup>1</sup>

*Institution(s):* <sup>1</sup> Athabasca University

### 328.09 OrbitMaster: An Online Tool for Investigating Solar System Dynamics and Visualizing Orbital Uncertainties in the Undergraduate Classroom

**Author(s):** Andrew W. Puckett<sup>2</sup>, Travis A. Rector<sup>4</sup>, Ron Baalke<sup>3</sup>, Osamu Ajiki<sup>1</sup>

*Institution(s):* <sup>1</sup> AstroArts Inc, <sup>2</sup> Columbus State University, <sup>3</sup> NASA/JPL, <sup>4</sup> Univ. of Alaska Anchorage

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## The Guest Investigator Program for TESS

Thursday, 2:00 pm - 3:30 pm; Orange Blossom Ballroom

The Transiting Exoplanet Survey Satellite (TESS) will support community research with data from the mission through the Guest Investigator Program. At this splinter meeting, we will present the overall plans for the program, and solicit community feedback.

## 329 2014 Helen B. Warner Prize: The Past, Present, and Future of Statistical Cosmology

Thursday, 3:40 pm - 4:30 pm; Osceola C

Chair: C. Megan Urry (*Yale University*)



329.01

**The Past, Present, and Future of Statistical Cosmology**

**Author(s): Christopher M. Hirata<sup>1</sup>**

*Institution(s): <sup>1</sup>The Ohio State University*

**Citation:** For his remarkable theoretical and observational cosmological work, particularly that connected with weak gravitational lensing which is one of the most important ways of assessing the distribution of mass in the universe. The Committee also recognizes his work on cosmological recombination, structure formation, and dark energy/cosmic acceleration, and the extraordinary depth of understanding he brings to these subjects. His work is facilitating the next generation of important cosmological experiments.

## 330 Plenary Talk: Observing the Non-Thermal Universe with the Highest Energy Photons

Thursday, 4:30 pm - 5:20 pm; Osceola C

Chair: Chryssa Kouveliotou (*GWU*)



330.01

**Observing the Non-Thermal Universe with the Highest Energy Photons**

**Author(s): Brenda L. Dingus<sup>1</sup>**

*Institution(s): <sup>1</sup>LANL*

## TMT Thermal IR Science & Instrumentation Workshop

Thursday, 5:30 pm - 7:30 pm; St. George 108

For several years, a group based mostly in the USA and Japan have been exploring the science cases for a mid-IR (~7.5-25 $\mu$ m) camera for the TMT focussed on imaging, low and high-spectral resolution (~R100,000) spectroscopy. In preparation for an anticipated call for proposals for TMT second generation instrumentation, we are exploring additional science cases made possible by incorporating 3-5 $\mu$ m imaging, low and high-

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spectral resolution  $\sim R100,000$  spectroscopy. We wish to engage the USA and Canadian astronomers as fully as possible in this process, and through this workshop we welcome discussion and subsequent science case submission that will help guide the technical drivers for such an instrument. We welcome short ( $\sim 15$  minute) presentations from interested persons, and we will review the instrument status and currently planned capabilities.

**Organizer: Christopher Packham** (*University of Texas at San Antonio*)

## AAS Publishing 101: What's New and Great

**Thursday, 5:30 pm - 6:30 pm; St. George 102**

Updates on what's new and great at AAS Publishing.

**Organizer: Julie Steffen** (*AAS*)

## Star Party

**Thursday, 6:00 pm - 10:00 pm, Transportation Loop Adjacent to Exhibit Hall F**

## 331 NRAO Town Hall

**Thursday, 6:30 pm - 8:30 pm; Sun A**

This Town Hall will inform the AAS membership about the status of science, science operations, and development programs at the National Radio Astronomy Observatory (NRAO). The NRAO Town Hall will include a reception that will be followed by a presentation by NRAO Director Tony Beasley that will update the membership regarding: (a) scientific opportunities and technical development at the Atacama Large Millimeter/submillimeter Array (ALMA), the Very Large Array (VLA), the Green Bank Telescope (GBT), and the Very Long Baseline Array (VLBA); (b) recent science results from across the community and the Observatory; and (c) scientific and technical planning for the next generation of radio astronomy research facilities. The NRAO Town Hall will include at least 30 minutes for discussion and answering audience questions.

**Chair: Anthony Beasley** (*National Radio Astronomy Observatory*)

## 332 LSST Town Hall

**Thursday, 6:30 pm - 7:30 pm; Sun D**

The LSST Town Hall will bring updates to the community on the activities and policies of the LSST Project, LSST Corporation, and LSST Science Collaborations. This town hall will emphasize (i) elucidating the complementary missions of these three entities, (ii) highlighting ways for community members to get involved in LSST now, and (iii) soliciting community feedback. All US and Chilean scientists, and a growing list of scientists affiliated with international partners, are invited to contribute to the development of the LSST observing strategy and other pre-cursor scientific activities. This broad astronomical community will have equal access to LSST transient alerts, data products and software once operations begin.

POSTER SESSIONS

333 The RESolved Spectroscopy Of a Local VolumE (RESOLVE) Survey and its Environmental Context (ECO) Poster Session

Thursday, 5:30 pm - 6:30 pm; Exhibit Hall A

333.01 Exploring the Origin of HI Profile Asymmetries in the RESOLVE Survey

**Author(s):** David Stark<sup>2</sup>, Sheila Kannappan<sup>4</sup>, Kathleen D. Eckert<sup>4</sup>, Kirsten Hall<sup>4</sup>, Martha P. Haynes<sup>1</sup>, Joseph Burchett<sup>3</sup>, Daniel J. Pisano<sup>5</sup>  
*Institution(s):* <sup>1</sup> Cornell University, <sup>2</sup> Kavli IPMU, Japan, <sup>3</sup> University of Massachusetts, <sup>4</sup> University of North Carolina, Chapel Hill, <sup>5</sup> West Virginia University

333.02 Probing Cosmic Gas Accretion with RESOLVE and ECO

**Author(s):** Sheila Kannappan<sup>2</sup>, Kathleen D. Eckert<sup>2</sup>, David Stark<sup>1</sup>, Claudia Lagos<sup>3</sup>, Zachary Nasipak<sup>2</sup>, Amanda J. Moffett<sup>3</sup>, Ashley Baker<sup>2</sup>, Andreas A. Berling<sup>4</sup>, Erik A. Hoversten<sup>2</sup>, Mark A. Norris<sup>2</sup>  
*Institution(s):* <sup>1</sup> Kavli IPMU, <sup>2</sup> Univ. of North Carolina, <sup>3</sup> University of Western Australia, <sup>4</sup> Vanderbilt

333.03 Detailed Analysis of Starburst and AGN Activity in Blue E/S0 Galaxies in RESOLVE

**Author(s):** Ashley Bittner<sup>5</sup>, Elaine M. Snyder<sup>5</sup>, Sheila Kannappan<sup>5</sup>, Dara J. Norman<sup>4</sup>, Mark A Norris<sup>3</sup>, Amanda J. Moffett<sup>1</sup>, Erik A. Hoversten<sup>5</sup>, David Stark<sup>2</sup>  
*Institution(s):* <sup>1</sup> ICRAR, <sup>2</sup> IPMU, <sup>3</sup> Max Planck Institute for Astronomy, <sup>4</sup> NOAO, <sup>5</sup> University of North Carolina at Chapel Hill

333.04 Status of The Dynamical Census of Galaxies and Groups in the RESOLVE Survey

**Author(s):** Kathleen D. Eckert<sup>4</sup>, Sheila Kannappan<sup>4</sup>, Kirsten Hall<sup>4</sup>, Amanda J. Moffett<sup>4</sup>, Mark A Norris<sup>4</sup>, David Stark<sup>4</sup>, Erik A. Hoversten<sup>4</sup>, Elaine M. Snyder<sup>4</sup>, Ashley Bittner<sup>4</sup>, Dara J. Norman<sup>1</sup>, Elizabeth Nalumina<sup>3</sup>, Steve Crawford<sup>2</sup>, Petri Vaisanen<sup>2</sup>, Ashley Baker<sup>4</sup>, Andreas A. Berling<sup>5</sup>, Daniel Rosenberg<sup>4</sup>, Ryan William Beauchemin<sup>4</sup>, Charles Bonfield<sup>4</sup>  
*Institution(s):* <sup>1</sup> National Optical Astronomy Observatory, <sup>2</sup> South African Astronomical Observatory, <sup>3</sup> University of Cape Town, <sup>4</sup> University of North Carolina, Chapel Hill, <sup>5</sup> Vanderbilt University

333.05 Simulating Compact Elliptical Galaxy Formation by Tidal Stripping for Comparison to the RESOLVE Survey

**Author(s):** Christine Ray<sup>1</sup>, Elaine M. Snyder<sup>1</sup>, Sheila Kannappan<sup>1</sup>, Manodeep Sinha<sup>2</sup>  
*Institution(s):* <sup>1</sup> University of North Carolina, <sup>2</sup> Vanderbilt University

## 334 SDSS-IV MaNGA: Mapping Nearby Galaxies at Apache Point Observatory Poster Session

Thursday, 5:30 pm - 6:30 pm; Exhibit Hall A

### 334.01 MaNGA: Target selection and Optimization

**Author(s):** David Wake<sup>1</sup>

*Institution(s):* <sup>1</sup> University of Wisconsin-Madison

### 334.02 The power spectra of non-circular motions in disk galaxies

**Author(s):** Kyle Westfall<sup>1</sup>, Anna S. E. Laws<sup>2</sup>

*Institution(s):* <sup>1</sup> University of Portsmouth, <sup>2</sup> University of Southampton

### 334.03 Identifying Extraplanar Diffuse Ionized Gas in a Sample of MaNGA Galaxies

**Author(s):** Ryan J Hubbard<sup>1</sup>, Aleksandar M. Diamond-Stanic<sup>2</sup>

*Institution(s):* <sup>1</sup> Howard University, <sup>2</sup> University of Wisconsin-Madison

### 334.04 The Impact of Diffuse Ionized Gas on Emission-line Ratios and Gas Metallicity Measurements

**Author(s):** Kai Zhang<sup>1</sup>, Renbin Yan<sup>1</sup>

*Institution(s):* <sup>1</sup> University of Kentucky

## 335 Opening a New Window on Cosmological Structure with Intensity Mapping Poster Session

Thursday, 5:30 pm - 6:30 pm; Exhibit Hall A

### 335.01 Advances In Cryogenic Monolithic Millimeter-wave Integrated Circuit (MMIC) Low Noise Amplifiers For CO Intensity Mapping and ALMA Band 2

**Author(s):** Lorene Samoska<sup>2</sup>, Kieran Cleary<sup>1</sup>, Sarah E. Church<sup>4</sup>, David Cuadrado-Calle<sup>5</sup>, Andy Fung<sup>2</sup>, todd gailer<sup>2</sup>, rohit gawande<sup>2</sup>, Pekka Kangaslahti<sup>2</sup>, Richard Lai<sup>3</sup>, Charles R. Lawrence<sup>2</sup>, Anthony C. S. Readhead<sup>1</sup>, Stephen Sarkozy<sup>3</sup>, Michael D. Seiffert<sup>2</sup>, Matthew Sieth<sup>4</sup>

*Institution(s):* <sup>1</sup> California Institute of Technology, <sup>2</sup> Jet Propulsion Laboratory, <sup>3</sup> Northrop Grumman Corp., <sup>4</sup> Stanford University, <sup>5</sup> University of Manchester

### 335.02 Connecting CO Intensity Mapping to $z > 2$ Galaxies

**Author(s):** Tony Y. Li<sup>1</sup>, Risa H. Wechsler<sup>1</sup>, Kiruthika Deveraj<sup>1</sup>, Sarah E. Church<sup>1</sup>

*Institution(s):* <sup>1</sup> Stanford University

### 335.03 Intensity Mapping of the History of Stellar Emission with the Cosmic Infrared Background Experiment-2

**Author(s):** Alicia E. Lanz<sup>1</sup>, Toshiaki Arai<sup>2</sup>, John Battle<sup>1</sup>, James Bock<sup>1</sup>, Asantha R. Cooray<sup>8</sup>, Viktor Hristov<sup>1</sup>, Phillip Korngut<sup>1</sup>, Dae Hee Lee<sup>3</sup>, Peter Mason<sup>1</sup>, Toshio Matsumoto<sup>2</sup>, Shuji Matsuura<sup>4</sup>, Yosuke Onishi<sup>2</sup>, Mai Shirahata<sup>5</sup>, Kohji Tsumurai<sup>7</sup>, Takehiko Wada<sup>2</sup>, Michael B. Zemcov<sup>6</sup>

*Institution(s):* <sup>1</sup> California Institute of Technology, <sup>2</sup> Japan Aerospace Exploration Agency, <sup>3</sup> Korea Astronomy and Space Science Institute (KASI), <sup>4</sup> Kwansai Gakuin University, <sup>5</sup> National Astronomical Observatory of Japan (NAOJ), <sup>6</sup> Rochester Institute of Technology, <sup>7</sup> Tohoku University, <sup>8</sup> University of California, Irvine

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## 335.04 Measuring Galaxy Clustering and the Evolution of [C II] Mean Intensity with Far-IR Line Intensity Mapping during $0.5 < z < 1.5$

**Author(s):** Bade Uzgil<sup>2</sup>, James E. Aguirre<sup>2</sup>, Charles Bradford<sup>1</sup>, Adam Lidz<sup>2</sup>  
*Institution(s):* <sup>1</sup> Jet Propulsion Laboratory, <sup>2</sup> University of Pennsylvania

## 336 Science Results from the Stratospheric Observatory for Infrared Astronomy (SOFIA) Poster Session

Thursday, 5:30 pm - 6:30 pm; Exhibit Hall A

### 336.01 31.5 $\mu$ m imaging observations of AGN using SOFIA/FORCAST

**Author(s):** Lindsay Fuller<sup>1</sup>, Enrique Lopez-Rodriguez<sup>1</sup>, Christopher C. Packham<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Texas at San Antonio

### 336.02 SOFIA-FORCAST Imaging of Giant HII Regions in Our Galaxy

**Author(s):** James M. De Buizer<sup>1</sup>  
*Institution(s):* <sup>1</sup> SOFIA/USRA

### 336.03 SOFIA/FORCAST Spectroscopy of NGC 7009, the Saturn Nebula

**Author(s):** Ravi Sankrit<sup>5</sup>, Marcelo L Leal-Ferreira<sup>1</sup>, Isabel Aleman<sup>1</sup>, Sean W. J. Colgan<sup>2</sup>, Janet P. Simpson<sup>4</sup>, Xander Tielens<sup>1</sup>, Yiannis G Tsamis<sup>3</sup>  
*Institution(s):* <sup>1</sup> Leiden University, <sup>2</sup> NASA/Ames, <sup>3</sup> Nature Publishing Group, <sup>4</sup> Seti Institute, <sup>5</sup> SOFIA Science Center/USRA

### 336.04 Estimating the Internal Luminosities of Protostars with SOFIA/FORCAST

**Author(s):** Tracy L. Huard<sup>2</sup>, Susan Terebey<sup>1</sup>  
*Institution(s):* <sup>1</sup> Cal. State Univ. at Los Angeles, <sup>2</sup> Univ. of Maryland

### 336.05 Massive Protostellar Outflows - Views from ALMA and SOFIA

**Author(s):** Mengyao Liu<sup>4</sup>, Jonathan C. Tan<sup>4</sup>, James M. De Buizer<sup>2</sup>, Shuo Kong<sup>4</sup>, Yichen Zhang<sup>4</sup>, Göran H. L. Sandell<sup>2</sup>, Ralph Shuping<sup>3</sup>, Maria T. Beltrán<sup>1</sup>  
*Institution(s):* <sup>1</sup> Arcetri Observatory, <sup>2</sup> SOFIA/USRA, <sup>3</sup> Space Science Institute, <sup>4</sup> University of Florida

### 336.06 Dust in the Winds of Proto-planetary Nebulae: RV Tauri Stars and SRD Variables

**Author(s):** Robert D. Gehrz<sup>2</sup>, Ryan Arneson<sup>2</sup>, L. Andrew Helton<sup>4</sup>, Charles E. Woodward<sup>3</sup>, Dinesh Shenoy<sup>2</sup>, Aneurin Evans<sup>1</sup>  
*Institution(s):* <sup>1</sup> Keele University, <sup>2</sup> Minnesota Institute for Astrophysics, <sup>3</sup> Univ. of Minnesota, <sup>4</sup> USRA/SOFIA

### 336.07 The Orion Nebula in the Far-Infrared: FIFI-LS/SOFIA Mapped the PDR

**Author(s):** Randolph Klein<sup>1</sup>  
*Institution(s):* <sup>1</sup> USRA-SOFIA

### 336.08 SOFIA-EXES: Probing the Thermal Structure of M Supergiant Wind Acceleration Zones

**Author(s):** Graham M Harper<sup>2</sup>, Eamon O'Gorman<sup>1</sup>, Edward F. Guinan<sup>3</sup>  
*Institution(s):* <sup>1</sup> Chalmers University of Technology, <sup>2</sup> University of Colorado, <sup>3</sup> Villanova University

- 336.09 LkHa101, an extreme emission line star with a disk and illuminating an HII region**  
**Author(s):** Goran H. L. Sandell<sup>2</sup>, William D. Vacca<sup>2</sup>, Stuartt Corder<sup>1</sup>  
*Institution(s):* <sup>1</sup> ALMA, <sup>2</sup> SOFIA-USRA, NASA Ames Research Center
- 336.10 Mid-infrared high resolution spectrometer for SOFIA**  
**Author(s):** Alexander Kutyrev<sup>4</sup>, Samuel H. Moseley<sup>4</sup>, Edwin A. Bergin<sup>6</sup>, Gordon Bjoraker<sup>4</sup>, Gary J. Melnick<sup>1</sup>, David A. Neufeld<sup>3</sup>, Klaus Pontoppidan<sup>5</sup>, Aki Roberge<sup>4</sup>, Gordon J. Stacey<sup>2</sup>, Dan M. Watson<sup>7</sup>, Edward Wollack<sup>4</sup>  
*Institution(s):* <sup>1</sup> CfA, <sup>2</sup> Cornell University, <sup>3</sup> JHU, <sup>4</sup> NASA's GSFC, <sup>5</sup> STScI, <sup>6</sup> University of Michigan, <sup>7</sup> University of Rochester
- 336.11 FORCAST/SOFIA Observations of MWC 297: Constraints on Disk Inclination**  
**Author(s):** William D. Vacca<sup>1</sup>, Goeran Sandell<sup>1</sup>, Richard L. Plambeck<sup>2</sup>  
*Institution(s):* <sup>1</sup> SOFIA-USRA, <sup>2</sup> UC Berkeley

## 337 Astrophysical Constraints of Dark Matter Properties Poster Session

Thursday, 5:30 pm - 6:30 pm; Exhibit Hall A

- 337.01 Searching for Dwarf Spheroidal Galaxies with DES and the Fermi-LAT**  
**Author(s):** Alex Drlica-Wagner<sup>1</sup>  
*Institution(s):* <sup>1</sup> Fermilab
- 337.02 Search for Gamma-ray Emission from Dark Matter Annihilation in the Magellanic Clouds with the Fermi Large Area Telescope**  
**Author(s):** Matthew Buckley<sup>4</sup>, Eric Charles<sup>5</sup>, Regina Caputo<sup>7</sup>, Jennifer Gaskins<sup>2</sup>, Alyson Brooks<sup>4</sup>, Pierrick Martin<sup>3</sup>, Alex Drlica-Wagner<sup>1</sup>, Geng Zhao<sup>6</sup>  
*Institution(s):* <sup>1</sup> Fermilab, <sup>2</sup> GRAPPA, <sup>3</sup> Institut de Recherche en Astrophysique et Planetologie, <sup>4</sup> Rutgers University, <sup>5</sup> SLAC, <sup>6</sup> Stanford, <sup>7</sup> UCSC
- 337.03 Constraining Self-Interacting Dark Matter: Insights from Equal Mass Mergers of Galaxy Clusters**  
**Author(s):** Stacy Yeonchi Kim<sup>1</sup>, Annika Peter<sup>1</sup>  
*Institution(s):* <sup>1</sup> The Ohio State University
- 337.04 The dark matter content of Local Group dwarf spheroidals**  
**Author(s):** Michelle Collins<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Surrey
- 337.05 Diversity of Galactic Rotation Curves and Self-interacting Dark Matter**  
**Author(s):** Andrew Pace<sup>1</sup>, Kevin Andrade<sup>1</sup>, Manoj Kaplinghat<sup>1</sup>, Sean Tulin<sup>3</sup>, Hai-bo Yu<sup>2</sup>  
*Institution(s):* <sup>1</sup> University of California, Irvine, <sup>2</sup> University of California, Riverside, <sup>3</sup> York University
- 337.06 The Aspen Framework for Dark Matter Substructure Inference from Strong Gravitational Lensing Observations**  
**Author(s):** Leonidas A. Moustakas<sup>2</sup>, Francis-Yan Cyr-Racine<sup>1</sup>, Charles R. Keeton<sup>3</sup>  
*Institution(s):* <sup>1</sup> Harvard University, <sup>2</sup> JPL/Caltech, <sup>3</sup> Rutgers University

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## 337.07 Assessing Astrophysical Uncertainties in Direct Detection Experiments Using Galaxy Simulations

**Author(s):** Alyson Brooks<sup>1</sup>, Jonathan Sloane<sup>1</sup>, Matthew Buckley<sup>1</sup>

*Institution(s):* <sup>1</sup> Rutgers University

## 337.08 Inference of Dim Gamma-Ray Point Sources Using Probabilistic Catalogues

**Author(s):** Tansu Daylan<sup>1</sup>, Stephen Portillo<sup>1</sup>, Douglas P. Finkbeiner<sup>1</sup>

*Institution(s):* <sup>1</sup> Harvard University

## 337.09 A Probabilistic Catalogue of Unresolved High Latitude Fermi LAT Sources

**Author(s):** Stephen Portillo<sup>1</sup>, Tansu Daylan<sup>1</sup>, Douglas P. Finkbeiner<sup>1</sup>

*Institution(s):* <sup>1</sup> Harvard University

## 338 Relativistic Astrophysics, Gravitational Lenses & Waves Poster Session

Thursday, 5:30 pm - 6:30 pm; Exhibit Hall A

### 338.01 Gravitational Lens Modeling of Fields Containing Multiple Projected Cluster-Scale Halos

**Author(s):** Catie Ann Raney<sup>4</sup>, Kenneth C Wong<sup>3</sup>, Keiichi Umetsu<sup>1</sup>, Charles R. Keeton<sup>4</sup>, S. Mark Ammons<sup>2</sup>, Ann I Zabludoff<sup>5</sup>, K. Decker French<sup>5</sup>

*Institution(s):* <sup>1</sup> Institute of Astronomy and Astrophysics, Academia Sinica (ASIAA), <sup>2</sup> Lawrence Livermore National Laboratory, <sup>3</sup> National Astronomical Observatory of Japan, <sup>4</sup> Rutgers, the State University of New Jersey, <sup>5</sup> Steward Observatory, University of Arizona

### 338.02 Quantifying Environmental and Line-of-Sight Effects in Models of Strong Gravitational Lens Systems

**Author(s):** Charles R. Keeton<sup>3</sup>, Curtis McCully<sup>1</sup>, Kenneth C. Wong<sup>2</sup>, Ann I. Zabludoff<sup>4</sup>

*Institution(s):* <sup>1</sup> LCOGT, <sup>2</sup> NAOJ, <sup>3</sup> Rutgers Univ., <sup>4</sup> Univ. Arizona

### 338.03 Prediction of Black Hole and Neutron Star Mesolensing Events

**Author(s):** Alex Harding<sup>3</sup>, Rosanne Di Stefano<sup>1</sup>, Johnson Urama<sup>2</sup>, Dang Pham<sup>1</sup>

*Institution(s):* <sup>1</sup> Harvard-Smithsonian Center for Astrophysics, <sup>2</sup> University of Nigeria Nsukka, <sup>3</sup> University of Southampton

### 338.04 Using the LCOGT Network To Measure a High-Precision Time Delay in the Four-Image Gravitational Lens HE0435-1223

**Author(s):** Todd A. Boroson<sup>1</sup>, Leonidas A. Moustakas<sup>2</sup>, Andrew Romero-Wolf<sup>2</sup>, Curtis McCully<sup>1</sup>

*Institution(s):* <sup>1</sup> LCOGT, <sup>2</sup> NASA/JPL

### 338.05 Can Palomar Transient Factory Survey Data Be Used to Confirm Gravitationally Lensed Quasar Candidates?

**Author(s):** Isaac Spitzer<sup>1</sup>, Robert Quimby<sup>1</sup>

*Institution(s):* <sup>1</sup> San Diego State University

- 338.06 Strong Lens Models for 10 Galaxy Clusters from the Sloan Giant Arcs Survey**  
**Author(s):** Samuel Dunham<sup>6</sup>, Keren Sharon<sup>6</sup>, Matthew Bayliss<sup>1</sup>, Hakon Dahle<sup>7</sup>, Michael Florian<sup>4</sup>, Michael Gladders<sup>4</sup>, Traci Johnson<sup>6</sup>, Katherine Murray<sup>6</sup>, Jane R. Rigby<sup>2</sup>, Katherine E. Whitaker<sup>5</sup>, Eva Wuyts<sup>3</sup>  
*Institution(s):* <sup>1</sup> Colby College, <sup>2</sup> Goddard Space Flight Center, <sup>3</sup> Max Planck Institute for Extraterrestrial Physics, <sup>4</sup> University of Chicago, <sup>5</sup> University of Massachusetts, <sup>6</sup> University of Michigan, <sup>7</sup> University of Oslo
- 338.07 Characterizing the zone of influence of dark matter clumps on image positions and flux ratios in gravitational lensing systems**  
**Author(s):** Jyothiraj Johnson<sup>1</sup>, Charles R. Keeton<sup>2</sup>, Sean Brennan<sup>2</sup>  
*Institution(s):* <sup>1</sup> Hunter College, <sup>2</sup> Rutgers University
- 338.08 Advanced LIGO and Multi-Messenger Transient Searches**  
**Author(s):** Peter S. Shawhan<sup>1</sup>  
*Institution(s):* <sup>1</sup> Univ. of Maryland
- 338.09 Tracking Spectral Noise Lines in Advanced LIGO Data**  
**Author(s):** Gillian Dora Beltz-Mohrmann<sup>2</sup>, Alan J. Weinstein<sup>1</sup>, Jonah Kanner<sup>1</sup>  
*Institution(s):* <sup>1</sup> California Institute of Technology, <sup>2</sup> Wellesley College
- 338.10 Towards Observational Astronomy of Jets in Active Galaxies from General Relativistic Magnetohydrodynamic Simulations**  
**Author(s):** Richard Anantua<sup>1</sup>  
*Institution(s):* <sup>1</sup> Stanford University
- 338.11 New Constraints on Quantum Gravity from X-ray and Gamma-Ray Observations $\alpha$**   
**Author(s):** Eric S. Perlman<sup>1</sup>, Saul A. Rappaport<sup>2</sup>, Wayne A. Christiansen<sup>4</sup>, Jack Ng<sup>4</sup>, John DeVore<sup>5</sup>, David A. Pooley<sup>3</sup>  
*Institution(s):* <sup>1</sup> Florida Institute of Technology, <sup>2</sup> Massachusetts Institute of Technology, <sup>3</sup> Trinity University, <sup>4</sup> University of North Carolina, <sup>5</sup> Visidyne, Inc.
- 338.12 Telescope Technology Development Results for a Space-Based Gravitational-Wave Observatory**  
**Author(s):** Jeffrey C. Livas<sup>1</sup>, Shannon R Sankar<sup>1</sup>  
*Institution(s):* <sup>1</sup> NASA Goddard Space Flight Center
- 338.13 Potential Usefulness of Flash-Induced Superluminal Light-Echo Pairs**  
**Author(s):** Robert J. Nemiroff<sup>1</sup>, Qi Zhong<sup>1</sup>  
*Institution(s):* <sup>1</sup> Michigan Technological Univ.
- 338.14 Light Echoes from Linear Filaments in Astronomical Settings**  
**Author(s):** Qi Zhong<sup>1</sup>, Robert J. Nemiroff<sup>1</sup>  
*Institution(s):* <sup>1</sup> Michigan Technological University
- 338.15 Black Hole Science using Current and Future Pulsar Timing Array Constraints on Continuous Gravitational Waves**  
**Author(s):** Katharine Schutz<sup>1</sup>, Chung-Pei Ma<sup>1</sup>  
*Institution(s):* <sup>1</sup> UC Berkeley

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## 338.16 Determining Reliability of Existing Gravitational Waveforms in Parameter Estimation for Binary Black Holes

**Author(s):** Cesar Bustos<sup>1</sup>, Ben Sandeen<sup>2</sup>, Shriram Chennakesavalu<sup>2</sup>, Tyson Littenberg<sup>1</sup>, Ben Farr<sup>3</sup>, Vassiliki Kalogera<sup>2</sup>

*Institution(s):* <sup>1</sup> Northeastern Illinois University, <sup>2</sup> Northwestern University, <sup>3</sup> University of Chicago

## 338.17 Simulating magnetospheres with numerical relativity: The GiRaFFE code

**Author(s):** Maria Babiuc-Hamilton<sup>1</sup>, Zach Etienne<sup>2</sup>

*Institution(s):* <sup>1</sup> Marshall University, <sup>2</sup> West Virginia University

## 339 Intergalactic Medium, QSO Absorption Line Systems Poster Session

Thursday, 5:30 pm - 6:30 pm; Exhibit Hall A

### 339.01 Connecting the Silicate Dust and Gas Properties of Distant Galaxies Using Quasar Absorption Systems

**Author(s):** Monique C. Aller<sup>1</sup>, Varsha P. Kulkarni<sup>5</sup>, Donald G. York<sup>4</sup>, Daniel E. Welty<sup>4</sup>, Giovanni Vladilo<sup>3</sup>, Debopam Som<sup>5</sup>, Kyle Lackey<sup>5</sup>, Eli Dwek<sup>2</sup>, Nassim Beiranvand<sup>5</sup>, Sean Morrison<sup>5</sup>

*Institution(s):* <sup>1</sup> Georgia Southern University, <sup>2</sup> NASA-GSFC, <sup>3</sup> Osservatorio Astronomico di Trieste, <sup>4</sup> University of Chicago, <sup>5</sup> University of South Carolina

### 339.02 The Lyman continuum escape fraction of low mass star-forming galaxies at $z \sim 1$ .

**Author(s):** Michael J. Rutkowski<sup>8</sup>, Claudia Scarlata<sup>8</sup>, Francesco Haardt<sup>7</sup>, Brian D. Siana<sup>6</sup>, Marc Rafelski<sup>2</sup>, Alaina L. Henry<sup>2</sup>, Matthew Hayes<sup>4</sup>, Mara Salvato<sup>3</sup>, Anthony Pahl<sup>8</sup>, Vihang Mehta<sup>8</sup>, Melanie Beck<sup>8</sup>, Matthew Arnold Malkan<sup>5</sup>, Harry I. Teplitz<sup>1</sup>

*Institution(s):* <sup>1</sup> CalTech, <sup>2</sup> GSFC, <sup>3</sup> MPE-Garching, <sup>4</sup> Stockholm University, <sup>5</sup> UC-Los Angeles, <sup>6</sup> UC-Riverside, <sup>7</sup> Universita dell'Insubria, <sup>8</sup> University of Minnesota

### 339.03 Time-Resolved Spectral Analysis of Blazar 0716+714

**Author(s):** Rosamaria Diaz<sup>1</sup>, Gerald Harp<sup>2</sup>

*Institution(s):* <sup>1</sup> California State Polytechnic University, Pomona, <sup>2</sup> SETI Institute

### 339.04 The Partial Project: An XQ-100 Survey of pLLSs at $z \sim 3$

**Author(s):** Joseph Ribaldo<sup>3</sup>, Jason X. Prochaska<sup>2</sup>, John O'Meara<sup>1</sup>

*Institution(s):* <sup>1</sup> Saint Michael's College, <sup>2</sup> UC Santa Cruz, <sup>3</sup> Utica College

### 339.05 Cosmic Dawn Science Interest Group

**Author(s):** T. Joseph W. Lazio<sup>1</sup>

*Institution(s):* <sup>1</sup> Jet Propulsion Laboratory, California Institute of Technology

### 339.06 A Detailed Analysis of the Multi-Velocity Components of strong HI-selected absorbers in the Halos of $z \sim 0.5$ Galaxies

**Author(s):** Brittany Vanderhoof<sup>2</sup>, Joseph Ribaldo<sup>2</sup>, Nicolas Lehner<sup>1</sup>, J. Christopher Howk<sup>1</sup>

*Institution(s):* <sup>1</sup> University of Notre Dame, <sup>2</sup> Utica College

- 339.07 The Quasar 2175 \AA\ Dust Absorbers in the Sloan Digital Sky Survey Data Release Twelve**  
**Author(s):** Yinan Zhao<sup>4</sup>, Jian Ge<sup>4</sup>, Jingzhe Ma<sup>4</sup>, Teng Hu<sup>4</sup>, Shaohua Zhang<sup>4</sup>, Peng Jiang<sup>5</sup>, Jason X. Prochaska<sup>3</sup>, Hongyan Zhou<sup>1</sup>, Tuo Ji<sup>1</sup>, W. Niel Brandt<sup>2</sup>  
*Institution(s):* <sup>1</sup> Polar Research Institute of China, <sup>2</sup> The Pennsylvania State University, <sup>3</sup> UCO/Lick Observatory, <sup>4</sup> University of Florida, <sup>5</sup> University of Sciences and Technology of China
- 339.08 A Bayesian Method For Finding Galaxies That Cause Quasar Absorption Lines**  
**Author(s):** Emileigh Suzanne Shoemaker<sup>1</sup>, David Andrew Laubner<sup>1</sup>, Jennifer E. Scott<sup>1</sup>  
*Institution(s):* <sup>1</sup> Towson University
- 339.10 Magnetic Turbulence and Line Broadening in Simulations of Lyman-Alpha Absorption**  
**Author(s):** Alex Gurvich<sup>1</sup>, Blakesley K. Burkhart<sup>2</sup>, Simeon Bird<sup>2</sup>  
*Institution(s):* <sup>1</sup> Carnegie Mellon University, <sup>2</sup> Harvard Center for Astrophysics

## 340 Gamma Ray Bursts Poster Session

Thursday, 5:30 pm - 6:30 pm; Exhibit Hall A

- 340.01 Enhancing Fermi's Capability for Time Domain Astrophysics**  
**Author(s):** Julie E. McEnery<sup>1</sup>  
*Institution(s):* <sup>1</sup> NASA's GSFC
- 340.02 On the Redshift Distribution of Gamma-ray Bursts in the SWIFT ERA: Revisited**  
**Author(s):** Vedant Mehta<sup>1</sup>, Truong V. Le<sup>1</sup>  
*Institution(s):* <sup>1</sup> Berry College
- 340.03 Gamma Ray Burst 150518a measured at different wavelengths**  
**Author(s):** Elizabeth Ann Apala<sup>1</sup>, Alicia Margarita Soderberg<sup>2</sup>, Michael West<sup>3</sup>  
*Institution(s):* <sup>1</sup> East Central University, <sup>2</sup> Harvard University, <sup>3</sup> Lowell Observatory
- 340.04 Radio and X-ray observations of the Ultra-long GRB 150518A**  
**Author(s):** Louis Johnson<sup>2</sup>, Atish Kamble<sup>1</sup>, Raffaella Margutti<sup>1</sup>, Alicia Margarita Soderberg<sup>1</sup>  
*Institution(s):* <sup>1</sup> Harvard-Smithsonian Center for Astrophysics, <sup>2</sup> University of the Pacific

## 341 The Milky Way, The Galactic Center Poster Session

Thursday, 5:30 pm - 6:30 pm; Exhibit Hall A

- 341.01 Understanding the Formation of Young Stars in the Central 0.5 pc of the Galaxy: Methods for Extending the IMF to 16 mag**  
**Author(s):** Hannah Lewis<sup>1</sup>, Andrea M. Ghez<sup>2</sup>, Tuan Do<sup>2</sup>, Samantha Chappell<sup>2</sup>, Jessica R. Lu<sup>3</sup>  
*Institution(s):* <sup>1</sup> St. Mary's College of Maryland, <sup>2</sup> University of California, Los Angeles, <sup>3</sup> University of Hawaii

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- 341.02 Studying Star Formation in the Central Molecular Zone using 22 GHz Water and 6.7 GHz Methanol Masers**  
**Author(s):** Matthew Rickert<sup>3</sup>, Farhad Yusef-Zadeh<sup>3</sup>, Juergen Ott<sup>1</sup>, David S. Meier<sup>2</sup>  
*Institution(s):* <sup>1</sup> National Radio Astronomy Observatory (NRAO), <sup>2</sup> New Mexico Institute of Mining and Technology, <sup>3</sup> Northwestern University
- 341.03 Hidden Star Formation in High-Velocity Gas Clouds in Clump 2 near the Edge of the CMZ**  
**Author(s):** Volker Tolls<sup>1</sup>, Howard Alan Smith<sup>1</sup>, Antony A. Stark<sup>1</sup>, Christopher L. Martin<sup>2</sup>  
*Institution(s):* <sup>1</sup> Harvard-Smithsonian, CfA, <sup>2</sup> The Kavli Foundation
- 341.04 Using Formaldehyde to Create High Resolution Temperature Maps of CMZ Clouds**  
**Author(s):** Jimmy Castaño<sup>1</sup>  
*Institution(s):* <sup>1</sup> Harvard College
- 341.05 GBT Search for HI Clouds Tracing the Nuclear Wind of the Milky Way**  
**Author(s):** Kevin Corneilus Harrington<sup>3</sup>, Felix J. Lockman<sup>2</sup>, Naomi M. McClure-Griffiths<sup>1</sup>, Alyson Ford<sup>2</sup>, Ryan Endsley<sup>4</sup>  
*Institution(s):* <sup>1</sup> Australian National University, <sup>2</sup> NRAO, <sup>3</sup> University of Massachusetts-Amherst, <sup>4</sup> Washington University in St. Louis
- 341.06 Widespread Hot Ammonia in the Central Kiloparsec of the Milky Way**  
**Author(s):** Tierra Candelaria<sup>2</sup>, Elisabeth Mills<sup>2</sup>, David S. Meier<sup>3</sup>, Juergen Ott<sup>2</sup>, Jeffrey Gary Mangum<sup>2</sup>, Karl Menten<sup>1</sup>, Peter Schilke<sup>5</sup>, Christian Henkel<sup>1</sup>, John Black<sup>4</sup>  
*Institution(s):* <sup>1</sup> Max Planck Institute of Radio Astronomy, <sup>2</sup> National Radio Astronomy Observatory, <sup>3</sup> New Mexico Institute of Mining and Technology, <sup>4</sup> University of Chalmers, <sup>5</sup> University of Koln
- 341.07 Dust Temperatures in the Galactic Center Lobe**  
**Author(s):** Luis G. Chinchilla-Garcia<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of California, Los Angeles
- 341.08 First Results from the SMA Legacy Survey of the Central Molecular Zone**  
**Author(s):** Cara Battersby<sup>1</sup>  
*Institution(s):* <sup>1</sup> Harvard-Smithsonian Center for Astrophysics
- 341.09 Estimating Circumnuclear Disk temperatures using ALMA data**  
**Author(s):** Kevin Gima<sup>10</sup>, Elisabeth A. Mills<sup>7</sup>, Viviana A. Rosero<sup>7</sup>, Hanyu Baobab Liu<sup>2</sup>, Nanase Harada<sup>1</sup>, Miguel A Requena Torres<sup>6</sup>, Mark Morris<sup>8</sup>, Denise Riquelme<sup>6</sup>, Jun-Hui Zhao<sup>4</sup>, Lydia Moser<sup>9</sup>, Sergio Martin<sup>3</sup>, Paul T. P. Ho<sup>1</sup>, Adam Ginsburg<sup>2</sup>, M. Wardle<sup>5</sup>, Rolf Guesten<sup>6</sup>  
*Institution(s):* <sup>1</sup> Academia Sinica Institute of Astronomy and Astrophysics, <sup>2</sup> European Southern Observatory, <sup>3</sup> European Southern Observatory, <sup>4</sup> Harvard-Smithsonian, CfA, <sup>5</sup> Macquarie University, <sup>6</sup> Max Planck Institute for Radio Astronomy, <sup>7</sup> New Mexico Tech, <sup>8</sup> University of California, Los Angeles, <sup>9</sup> University of Koeln, <sup>10</sup> University of Maryland, College Park

- 341.10 De-cloaking the Galactic Center**  
**Author(s):** Richard Deno Stelter<sup>1</sup>, Stephen S. Eikenberry<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Florida
- 341.11 Tracing the Galactic Center using Bremsstrahlung, Synchrotron, and Thermal Emission**  
**Author(s):** Junellie Gonzalez Quiles<sup>2</sup>, Eli Dwek<sup>1</sup>, Johannes Staguhn<sup>1</sup>, Richard G. Arendt<sup>1</sup>  
*Institution(s):* <sup>1</sup> NASA Goddard Space Flight Center, <sup>2</sup> University of Maryland, College Park
- 341.12 Orbital kinematics of edge-on bars with and without supermassive black holes**  
**Author(s):** Caleb Abbott<sup>3</sup>, Monica Valluri<sup>3</sup>, Juntao Shen<sup>1</sup>, Victor P. Debattista<sup>2</sup>  
*Institution(s):* <sup>1</sup> Shanghai Astronomical Observatory, <sup>2</sup> University of Central Lancashire, <sup>3</sup> University of Michigan
- 341.13 The Monte Carlo Milky Way: reverse engineering the dense gas structure of the Galaxy with ATLASGAL**  
**Author(s):** Charles C. Figura<sup>2</sup>, James S Urquhart<sup>1</sup>  
*Institution(s):* <sup>1</sup> Max Planck Institute for Radio Astronomy, <sup>2</sup> Wartburg College
- 341.14 Probing Metallicity across the Milky Way Disk with the VLA**  
**Author(s):** Jonathan Barnes<sup>1</sup>, Dana S. Balser<sup>2</sup>, Trey Wenger<sup>3</sup>  
*Institution(s):* <sup>1</sup> Cal State University LA, <sup>2</sup> NRAO, <sup>3</sup> UVA
- 341.15 Extreme Runaway Dwarf Carbon Stars**  
**Author(s):** Kathryn A. Plant<sup>1</sup>, Bruce H. Margon<sup>1</sup>, Puragra Guhathakurta<sup>1</sup>, Gregory P. Laughlin<sup>1</sup>, Jeffrey A. Munn<sup>2</sup>  
*Institution(s):* <sup>1</sup> University of California, Santa Cruz, <sup>2</sup> USNO
- 341.16 Carbon Abundance Plateaus among Carbon-Enhanced Metal-Poor Stars**  
**Author(s):** Jinmi Yoon<sup>1</sup>, Siyu He<sup>2</sup>, Vinicius Placco<sup>1</sup>, Daniela Carollo<sup>1</sup>, Timothy C. Beers<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Notre Dame, <sup>2</sup> Xi'an Jiao Tong University
- 341.17 Preliminary Results of Detailed Chemical Abundance Analysis of Milky Way Satellite Galaxy Reticulum II Discovered in the Dark Energy Survey**  
**Author(s):** Daniel Nagasawa<sup>1</sup>, Jennifer L. Marshall<sup>1</sup>, Ting Li<sup>1</sup>  
*Institution(s):* <sup>1</sup> Texas A&M University
- 341.18 Uncovering debris in the Milky Way**  
**Author(s):** Gregory R. Ruchti<sup>1</sup>, Justin Read<sup>2</sup>  
*Institution(s):* <sup>1</sup> Lund University, <sup>2</sup> University of Surrey
- 341.19 Using A New Model for Main Sequence Turnoff Absolute Magnitudes to Measure Stellar Streams in the Milky Way Halo**  
**Author(s):** Jake Weiss<sup>1</sup>, Heidi Jo Newberg<sup>1</sup>, Matthew Arsenault<sup>1</sup>, Torrin Bechtel<sup>5</sup>, Travis Desell<sup>4</sup>, Matthew Newby<sup>3</sup>, Jeffery M. Thompson<sup>2</sup>  
*Institution(s):* <sup>1</sup> Rensselaer Polytechnic Institute, <sup>2</sup> Southern Vermont College, <sup>3</sup> Temple University, <sup>4</sup> University of North Dakota, <sup>5</sup> University of Wisconsin-Madison

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## 341.20 Inferring the Gravitational Potential of the Milky Way

**Author(s):** Casey Chu<sup>1</sup>, Yoram Lithwick<sup>2</sup>, Fabio Antonini<sup>2</sup>

*Institution(s):* <sup>1</sup> Harvey Mudd College, <sup>2</sup> Northwestern University

## 342 Evolution of Galaxies Poster Session

Thursday, 5:30 pm - 6:30 pm; Exhibit Hall A

### 342.01 Modeling Galaxy CO Simulations as an Observer

**Author(s):** Julia R. Kamenetzky<sup>3</sup>, George C. Privon<sup>2</sup>, Desika Narayanan<sup>1</sup>

*Institution(s):* <sup>1</sup> Haverford College, <sup>2</sup> Universidad de Concepción, <sup>3</sup> University of Arizona

### 342.02 Comparing Simulations of Galaxy Halos

**Author(s):** Francisco Holguin<sup>2</sup>, Ariyeh Maller<sup>1</sup>

*Institution(s):* <sup>1</sup> AMNH, <sup>2</sup> MIT

### 342.03 A Semi-Analytic Study of Feedback Processes and Metallicity Profiles in Disc Galaxies

**Author(s):** Nathan Ross Sandford<sup>1</sup>, Yu Lu<sup>2</sup>

*Institution(s):* <sup>1</sup> Pomona College, <sup>2</sup> The Observatories, The Carnegie Institution for Science

### 342.04 Matching High-z Observations of Damped Ly- $\alpha$ Absorption Systems

**Author(s):** Jacob Hamer<sup>1</sup>, Ariyeh Maller<sup>2</sup>, Rachel S. Somerville<sup>3</sup>

*Institution(s):* <sup>1</sup> CUNY Macaulay Honors College at Hunter College, <sup>2</sup> CUNY New York City College of Technology, <sup>3</sup> Rutgers University

### 342.05 Machine Learning and Cosmological Simulations

**Author(s):** Harshil Kamdar<sup>1</sup>, Matthew Turk<sup>1</sup>, Robert Brunner<sup>1</sup>

*Institution(s):* <sup>1</sup> University of Illinois at Urbana-Champaign

### 342.06 Constraining the Satellite Quenching Timescale at $z < 1.5$

**Author(s):** M. Katy Rodriguez Wimberly<sup>1</sup>, Michael Cooper<sup>2</sup>

*Institution(s):* <sup>1</sup> California University State, Long Beach, <sup>2</sup> University of California, Irvine

### 342.07 SurveySim: a new MCMC code to explore the evolution of the IR luminosity function

**Author(s):** Matteo Bonato<sup>3</sup>, Noah Kurinsky<sup>2</sup>, Anna Sajina<sup>3</sup>, Allison Kirkpatrick<sup>4</sup>, Alexandra Pope<sup>4</sup>, Andrea Silva<sup>3</sup>, Lin Yan<sup>1</sup>

*Institution(s):* <sup>1</sup> California Institute of Technology, <sup>2</sup> Stanford University, <sup>3</sup> Tufts University, <sup>4</sup> University of Massachusetts Amherst

### 342.08 Galaxy Transformation from Flyby Encounters

**Author(s):** Christina E Davis<sup>1</sup>, Kelly Holley-Bockelmann<sup>1</sup>

*Institution(s):* <sup>1</sup> Vanderbilt University

### 342.09 Ram Pressure Stripping: The Long Goodbye

**Author(s):** Stephanie Tonnesen<sup>1</sup>, Yu Lu<sup>1</sup>, Andrew Benson<sup>1</sup>, Annika Peter<sup>2</sup>, Michael Boylan-Kolchin<sup>3</sup>, Andrew R. Wetzel<sup>1</sup>, Daniel R. Weisz<sup>4</sup>

*Institution(s):* <sup>1</sup> Carnegie Observatories, <sup>2</sup> Ohio State University, <sup>3</sup> University of Texas at Austin, <sup>4</sup> University of Washington

- 342.10 Galactic Bridges in Pairs**  
**Author(s):** Brianna Thierjung<sup>1</sup>  
*Institution(s):* <sup>1</sup> Cal Poly Pomona
- 342.11 Interaction Induced Size Evolution in Galaxies**  
**Author(s):** Francisco Javier Mercado<sup>1</sup>  
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- 342.12 Source of the Stellar Age-Velocity Dispersion Relation in Simulated Galaxies**  
**Author(s):** Drew Wills<sup>1</sup>, Charlotte Christensen<sup>1</sup>  
*Institution(s):* <sup>1</sup> Grinnell College
- 342.13 Target Selection for the Arcibo Pisces-Perseus Supercluster Survey (APPSS)**  
**Author(s):** David W Craig<sup>6</sup>, Aileen A. O'Donoghue<sup>3</sup>, Martha P. Haynes<sup>1</sup>, Jessica L. Rosenberg<sup>2</sup>, Aparna Venkatesan<sup>5</sup>, Gregory L Hallenbeck<sup>4</sup>, Michael Jones<sup>1</sup>, Rebecca A. Koopmann<sup>4</sup>  
*Institution(s):* <sup>1</sup> Cornell University, <sup>2</sup> George Mason University, <sup>3</sup> St. Lawrence University, <sup>4</sup> Union College, <sup>5</sup> University of San Francisco, <sup>6</sup> West Texas A&M University
- 342.14 Cleaning HI Spectra Contaminated by GPS RFI**  
**Author(s):** Kamin Sylvia<sup>1</sup>, Gregory L Hallenbeck<sup>1</sup>  
*Institution(s):* <sup>1</sup> Union College
- 342.15 Extending ALFALFA: Reducing L-Band Wide Observations of Optically Selected Galaxies**  
**Author(s):** Evan Smith<sup>2</sup>, Aileen A. O'Donoghue<sup>2</sup>, Martha P. Haynes<sup>1</sup>, Rebecca A. Koopmann<sup>3</sup>  
*Institution(s):* <sup>1</sup> Cornell University, <sup>2</sup> St. Lawrence University, <sup>3</sup> Union College
- 342.16 HI Gas in Large-Scale Filaments as Measured by ALFALFA**  
**Author(s):** Skye Elliott<sup>1</sup>, An Phi<sup>1</sup>, Ebrahim Shah<sup>1</sup>, Jack Livecchi<sup>1</sup>, Yang Yu<sup>1</sup>, Graeme Gengras<sup>1</sup>, Pierre-Francois Wolfe<sup>1</sup>, Mary Crone-Odekon<sup>1</sup>, Mario Hyman<sup>1</sup>  
*Institution(s):* <sup>1</sup> Skidmore College
- 342.17 HI Gas in Early Type Galaxies as Measured by ALFALFA**  
**Author(s):** Wendy Collins<sup>1</sup>, Ryan Morrison<sup>1</sup>, Jarred Green<sup>1</sup>, Mark Raskin<sup>1</sup>, Connor Crawford<sup>1</sup>, August Bommer-Lawson<sup>1</sup>, Joshua Hannan<sup>1</sup>, Mary Crone-Odekon<sup>1</sup>  
*Institution(s):* <sup>1</sup> Skidmore College
- 342.18 Surface Brightness Profiles and Star Formation Rates of Galaxies in NRGb054**  
**Author(s):** Ellen Hansen<sup>1</sup>, Rebecca A. Koopmann<sup>2</sup>, Brendan Miller<sup>1</sup>, Adriana Durbala<sup>3</sup>, Garrett Fitzgerald<sup>2</sup>  
*Institution(s):* <sup>1</sup> The College of St. Scholastica, <sup>2</sup> Union College, <sup>3</sup> University Wisconsin- Stevens Point
- 342.19 H-alpha Observations of MKW10**  
**Author(s):** Harold Johnson<sup>1</sup>, Kimberly A. Coble<sup>1</sup>, Rebecca A. Koopmann<sup>2</sup>, Adriana Durbala<sup>3</sup>  
*Institution(s):* <sup>1</sup> Chicago State University, <sup>2</sup> Union College, <sup>3</sup> University Wisconsin Stevens Point

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## 342.20 The Power of Wide Field HI Surveys: ALFALFA Imaging of Massive Tidal Features in the Leo Cloud of Galaxies

**Author(s):** Luke Leisman<sup>1</sup>, Martha P. Haynes<sup>1</sup>, Riccardo Giovanelli<sup>1</sup>  
*Institution(s):* <sup>1</sup> Cornell University

## 342.21 Studying the Structure and Dynamics of the Subcomponents of the Milky Way

**Author(s):** Margaret Wang<sup>2</sup>, Arin Mukherjee<sup>4</sup>, Jimmy Lin<sup>1</sup>, Puragra Guhathakurta<sup>10</sup>, Mark A. Fardal<sup>9</sup>, S. Tony Sohn<sup>3</sup>, Emily Cunningham<sup>10</sup>, Alis J. Deason<sup>6</sup>, Elisa Toloba<sup>8</sup>, Shruti Keoliya<sup>5</sup>, Roeland P. Van Der Marel<sup>7</sup>, Constance M. Rockosi<sup>10</sup>

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## 342.22 Studying the Structure and Dynamics of the Subcomponents of the Andromeda Galaxy

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## 342.23 Discovery of Remote Globular Cluster Satellites of M87

**Author(s):** Lea Sparkman<sup>1</sup>, Rachel Guo<sup>3</sup>, Elisa Toloba<sup>5</sup>, Puragra Guhathakurta<sup>6</sup>, Eric W Peng<sup>4</sup>, Laura Ferrarese<sup>2</sup>, Patrick Cote<sup>2</sup>

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## 342.24 Predicting Intrinsic mid-IR to optical flux ratios for galaxies of different types using Spectral Synthesis Models of Composite Stellar Populations

**Author(s):** Duho Kim<sup>1</sup>, Rolf A Jansen<sup>1</sup>, Rogier A. Windhorst<sup>1</sup>  
*Institution(s):* <sup>1</sup> Arizona State University

## 342.25 Ultraviolet to Infrared SED (Spectral Energy Distribution) Analysis of Nearby Late-Stage Merging Galaxies Using CIGALE

**Author(s):** Aaron Weiner<sup>1</sup>, Matthew Ashby<sup>1</sup>, Juan Rafael Martinez-Galarza<sup>1</sup>, Christopher C. Hayward<sup>1</sup>, Chao-Ling Hung<sup>1</sup>, Lauranne Lanz<sup>1</sup>, Lee Rosenthal<sup>1</sup>, Howard Alan Smith<sup>1</sup>, Steven P. Willner<sup>1</sup>, Andreas Zezas<sup>1</sup>

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## 342.26 CSS Object Found in Galaxy Merger 1015+364 at 2.3 and 8.5 Hz

**Author(s):** Antonio J Porras<sup>1</sup>, Sarah Burke-Spolaor<sup>1</sup>  
*Institution(s):* <sup>1</sup> National Radio Astronomy Observatory

## 342.27 Low-level supermassive black hole activity and star formation in isolated ellipticals

**Author(s):** Charlotte Martinkus<sup>1</sup>, Brendan Miller<sup>1</sup>, Elena Gallo<sup>2</sup>  
*Institution(s):* <sup>1</sup> Macalester College, <sup>2</sup> University of Michigan

- 342.28 Bivariate mass-size relation as a function of morphology as determined by Galaxy Zoo 2 crowdsourced visual classifications**  
**Author(s):** Melanie Beck<sup>1</sup>, Claudia Scarlata<sup>1</sup>, Lucy Fortson<sup>1</sup>, Kyle Willett<sup>1</sup>, Melanie Galloway<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Minnesota
- 342.29 Inside-Out or Outside-In? Metallicity Gradients in Low Surface Brightness Galaxies in the MUSCEL Program**  
**Author(s):** Jason Young<sup>1</sup>, Rachel Kuzio de Naray<sup>2</sup>, Sharon Xuesong Wang<sup>3</sup>  
*Institution(s):* <sup>1</sup> Amherst College, <sup>2</sup> Georgia State University, <sup>3</sup> Pennsylvania State Univ.
- 342.30 Large-scale environmental dependence of gas-phase metallicity in dwarf galaxies**  
**Author(s):** Kelly Douglass<sup>1</sup>, Michael S. Vogeley<sup>1</sup>  
*Institution(s):* <sup>1</sup> Drexel University
- 342.31 A Direct Comparison of HI and Ly $\alpha$  Morphologies in Two LARS Galaxies**  
**Author(s):** Kathleen Fitzgibbon<sup>1</sup>, John M. Cannon<sup>1</sup>, Emily Freeland<sup>2</sup>, Matthew Hayes<sup>2</sup>, Göran Östlin<sup>2</sup>  
*Institution(s):* <sup>1</sup> Macalester College, <sup>2</sup> Stockholm University
- 342.32 Understanding the Physical Conditions in Local Analogs of High-Redshift Starburst Galaxies**  
**Author(s):** Renée Spiewak<sup>2</sup>, Dawn Erb<sup>2</sup>, Christina A. Tremonti<sup>1</sup>, Danielle Berg<sup>2</sup>  
*Institution(s):* <sup>1</sup> Univ. of Wisconsin-Madison, <sup>2</sup> Univ. of Wisconsin-Milwaukee
- 342.33 Environmentally driven star formation during a super galaxy group merger**  
**Author(s):** Jonathan Monroe<sup>1</sup>, Kim-Vy Tran<sup>1</sup>, Anthony H. Gonzalez<sup>2</sup>  
*Institution(s):* <sup>1</sup> Texas A&M, <sup>2</sup> Univ. of Florida
- 342.34 Emission Line Science in the Faint Infrared Grism Survey (FIGS) Sample**  
**Author(s):** Mark David Smith<sup>1</sup>, Sangeeta Malhotra<sup>1</sup>, John Pharo<sup>1</sup>, James E. Rhoads<sup>1</sup>  
*Institution(s):* <sup>1</sup> Arizona State University
- 342.35 Galaxies Unveiled: Rest-frame UV Clumps at  $0.5 \leq z \leq 1.5$**   
**Author(s):** Emmaris Soto<sup>5</sup>, Duilia F. De Mello<sup>5</sup>, Jonathan P. Gardner<sup>2</sup>, Harry I. Teplitz<sup>1</sup>, Nicholas A. Bond<sup>2</sup>, Marc Rafelski<sup>2</sup>, Swara Ravindranath<sup>4</sup>, Claudia Scarlata<sup>6</sup>, Norman A. Grogan<sup>4</sup>, Anton M. Koekemoer<sup>4</sup>, Peter Kurczynski<sup>3</sup>  
*Institution(s):* <sup>1</sup> IPAC, <sup>2</sup> NASA Goddard Space Flight Center, <sup>3</sup> Rutgers University, <sup>4</sup> STScI, <sup>5</sup> The Catholic Univ. of America, <sup>6</sup> University of Minnesota
- 342.36 Emission line galaxy pairs up to  $z=1.5$  from the WISP survey**  
**Author(s):** Harry I. Teplitz<sup>1</sup>, Yu Sophia Dai<sup>1</sup>, Matthew Arnold Malkan<sup>9</sup>, Claudia Scarlata<sup>5</sup>, James W. Colbert<sup>1</sup>, Hakim Atek<sup>2</sup>, Micaela B. Bagley<sup>5</sup>, Ivano Baronchelli<sup>5</sup>, Alejandro Bedregal<sup>7</sup>, Melanie Beck<sup>5</sup>, Andrew Bunker<sup>6</sup>, Alberto Dominguez<sup>8</sup>, Nimish P. Hathi<sup>4</sup>, Alaina L. Henry<sup>3</sup>, Vihang Mehta<sup>5</sup>, Anthony Pahl<sup>5</sup>, Marc Rafelski<sup>3</sup>, Nathaniel Ross<sup>9</sup>, Michael J. Rutkowski<sup>5</sup>, Brian D. Siana<sup>8</sup>  
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## 342.37 AGN contribution to the total IR luminosity in Herschel selected galaxies out to $z \sim 1.5$

**Author(s):** Ivano Baronchelli<sup>7</sup>, Claudia Scarlata<sup>7</sup>, Giulia Rodighiero<sup>8</sup>, Stefano Berta<sup>3</sup>, Christopher Sedgwick<sup>5</sup>, Mattia Vaccari<sup>9</sup>, Alberto Franceschini<sup>8</sup>, Tanya Urrutia<sup>2</sup>, Matthew Arnold Malkan<sup>1</sup>, Mara Salvato<sup>4</sup>, Matteo Bonato<sup>6</sup>, Stephen Serjeant<sup>5</sup>, Chris Pearson<sup>5</sup>, Lucia Marchetti<sup>5</sup>

*Institution(s):* <sup>1.</sup> Department of Physics and Astronomy, UCLA, <sup>2.</sup> Leibniz Institut für Astrophysik, <sup>3.</sup> Max Planck Institut fuer Extraterrestrische Physik, <sup>4.</sup> Max Planck Institute for Plasma Physics, <sup>5.</sup> Open University, <sup>6.</sup> Tuft University, <sup>7.</sup> University of Minnesota, <sup>8.</sup> University of Padua, <sup>9.</sup> University of Western Cape

## 342.38 The Mass-Size Relation of Quenched, Quiescent Galaxies in the WISP Survey

**Author(s):** Anthony Pahl<sup>5</sup>, Claudia Scarlata<sup>5</sup>, Michael J. Rutkowski<sup>5</sup>, Anita Zanella<sup>5</sup>, Micaela B. Bagley<sup>5</sup>, James W. Colbert<sup>2</sup>, Ivano Baronchelli<sup>5</sup>, Alaina L. Henry<sup>1</sup>, Nimish P. Hathi<sup>3</sup>, Harry I. Teplitz<sup>2</sup>, Marc Rafelski<sup>1</sup>, Yu Sophia Dai<sup>2</sup>, Matthew Arnold Malkan<sup>4</sup>, Vihang Mehta<sup>5</sup>, Melanie Beck<sup>3</sup>

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## 342.39 Galaxy Classification: Citizen Scientists versus Experts

**Author(s):** Stefan J. Kautsch<sup>2</sup>, Richard Vazquez<sup>2</sup>, Chau Phung<sup>2</sup>, Michael VanHilst<sup>2</sup>, Victor H. Castro<sup>2</sup>, Dmitry Bizyaev<sup>1</sup>

*Institution(s):* <sup>1.</sup> Apache Point Observatory, <sup>2.</sup> Nova Southeastern University

## 342.40 Galaxy Zoo Hubble: First results of the redshift evolution of disk fraction in the red sequence

**Author(s):** Melanie Galloway<sup>1</sup>, Kyle Willett<sup>1</sup>, Lucy Fortson<sup>1</sup>, Claudia Scarlata<sup>1</sup>, Melanie Beck<sup>1</sup>

*Institution(s):* <sup>1.</sup> University of Minnesota

## 342.41 Galaxy Zoo Hubble: Crowdsourced Morphologies for 169,944 Galaxies at $0 < z < 2.5$

**Author(s):** Kyle Willett<sup>3</sup>, Melanie Galloway<sup>3</sup>, Lucy Fortson<sup>3</sup>, Steven Bamford<sup>4</sup>, Karen Masters<sup>6</sup>, Chris Lintott<sup>5</sup>, Brooke Simmons<sup>5</sup>, Edmond Cheung<sup>2</sup>, Kevin Schawinski<sup>1</sup>, Claudia Scarlata<sup>3</sup>, Melanie Beck<sup>3</sup>

*Institution(s):* <sup>1.</sup> ETH Zurich, <sup>2.</sup> Kavli IPMU, <sup>3.</sup> University of Minnesota, <sup>4.</sup> University of Nottingham, <sup>5.</sup> University of Oxford, <sup>6.</sup> University of Portsmouth

## 342.42 Galaxy Zoo CANDELS Data Release I: Morphologies of $\sim 50,000$ Galaxies With $z \leq 3$ in Deep Hubble Legacy Fields

**Author(s):** Brooke Simmons<sup>5</sup>, Chris Lintott<sup>5</sup>, Karen Masters<sup>6</sup>, Kyle Willett<sup>4</sup>, Jeyhan S. Kartaltepe<sup>1</sup>, Henry Closson Ferguson<sup>2</sup>, Sandra M. Faber<sup>3</sup>

*Institution(s):* <sup>1.</sup> Rochester Institute of Technology, <sup>2.</sup> Space Telescope Science Institute, <sup>3.</sup> UCO/Lick Observatories, <sup>4.</sup> University of Minnesota, <sup>5.</sup> University of Oxford, <sup>6.</sup> University of Portsmouth

## 342.43 AGN in Infrared Galaxies and the Evolving BPT Diagram: Results from the FMOS-COSMOS Survey

**Author(s):** Jeyhan S. Kartaltepe<sup>1</sup>

*Institution(s):* <sup>1.</sup> Rochester Institute of Technology

- 342.44 Co-evolution of Extreme Star Formation and Quasar: hints from Herschel and the Sloan Digital Sky Survey**  
**Author(s):** Zhiyuan Ma<sup>1</sup>, Haojing Yan<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Missouri-Columbia
- 342.45 Interpreting the IR SED of  $z \sim 0.3-2.8$  IR-Luminous Galaxies and AGN Using Hydrodynamic Simulations**  
**Author(s):** Eric John Roebuck<sup>3</sup>, Anna Sajina<sup>3</sup>, Christopher C. Hayward<sup>1</sup>, Alexandra Pope<sup>4</sup>, Allison Kirkpatrick<sup>4</sup>, Lars E. Hernquist<sup>2</sup>, Lin Yan<sup>1</sup>  
*Institution(s):* <sup>1</sup> California Institute of Technology, <sup>2</sup> Harvard University, <sup>3</sup> Tufts University, <sup>4</sup> University of Massachusetts Amherst
- 342.46 The faint end slope of the UV LF at  $z \sim 2$  from the Hubble UV Ultra Deep Field**  
**Author(s):** Vihang Mehta<sup>4</sup>, Claudia Scarlata<sup>4</sup>, Marc Rafelski<sup>1</sup>, Timothy Gburek<sup>3</sup>, Harry I. Teplitz<sup>2</sup>, Anahita Alavi<sup>3</sup>, Brian D. Siana<sup>3</sup>, Steven L. Finkelstein<sup>5</sup>  
*Institution(s):* <sup>1</sup> Goddard Space Flight Center, <sup>2</sup> Infrared Processing and Analysis Center, <sup>3</sup> University of California, <sup>4</sup> University of Minnesota, <sup>5</sup> University of Texas
- 342.48 A Catalog of  $z=3.1$  Lyman Alpha Emitting Galaxies Discovered in Narrow-band Imaging of MUSYC 1030+05**  
**Author(s):** Holly Christenson<sup>2</sup>, Nakul Gangolli<sup>1</sup>, Catie Ann Raney<sup>1</sup>, Jean P. Walker<sup>1</sup>, Eric J. Gawiser<sup>1</sup>  
*Institution(s):* <sup>1</sup> Rutgers, the State University of New Jersey, <sup>2</sup> Western Washington University
- 342.49 Gas Content and Star Formation Efficiency of Massive Main Sequence Galaxies at  $z \sim 3-4$**   
**Author(s):** Eva Schinnerer<sup>4</sup>, Brent Groves<sup>2</sup>, Alexander Karim<sup>1</sup>, Mark T. Sargent<sup>6</sup>, Pascal Oesch<sup>7</sup>, Olivier Le Fevre<sup>3</sup>, Lidia Tasca<sup>3</sup>, Benjamin Magnelli<sup>1</sup>, Paolo Cassata<sup>5</sup>, Vernesa Smolcic<sup>8</sup>  
*Institution(s):* <sup>1</sup> ALFA, <sup>2</sup> Australia National University, <sup>3</sup> LAM, <sup>4</sup> MPIA, <sup>5</sup> Universidad de Valparaiso, <sup>6</sup> University of Sussex, <sup>7</sup> Yale University, <sup>8</sup> Zagreb University
- 342.50 Evidence for the Suppression of Star-Formation in the Centers of Massive Galaxies at  $z=4$**   
**Author(s):** INTAE JUNG<sup>1</sup>, Steven L. Finkelstein<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Texas at Austin
- 342.51 A Systematic Investigation of Cold Gas and Dust in "Normal" Star-Forming Galaxies and Starbursts at Redshifts 5-6**  
**Author(s):** Dominik A. Riechers<sup>1</sup>, Chris Luke Carilli<sup>3</sup>, Peter L. Capak<sup>2</sup>  
*Institution(s):* <sup>1</sup> Cornell University, <sup>2</sup> IPAC/Caltech, <sup>3</sup> NRAO
- 342.52 A Search for  $z > 6.5$  Lyman-alpha Emitting Galaxies with WISP**  
**Author(s):** Micaela B. Bagley<sup>7</sup>, Claudia Scarlata<sup>7</sup>, Yu Sophia Dai<sup>1</sup>, Marc Rafelski<sup>4</sup>, Ivano Baronchelli<sup>7</sup>, James W. Colbert<sup>1</sup>, Alberto Dominguez<sup>2</sup>, Nimish P. Hathi<sup>3</sup>, Alaina L. Henry<sup>4</sup>, Matthew Arnold Malkan<sup>5</sup>, Crystal L. Martin<sup>6</sup>, Vihang Mehta<sup>7</sup>, Anthony Pahl<sup>7</sup>, Nathaniel Ross<sup>5</sup>, Michael J. Rutkowski<sup>7</sup>, Harry I. Teplitz<sup>1</sup>  
*Institution(s):* <sup>1</sup> California Institute of Technology, <sup>2</sup> Clemson University, <sup>3</sup> Laboratoire d'Astrophysique de Marseille, <sup>4</sup> NASA Goddard, <sup>5</sup> UC, Los Angeles, <sup>6</sup> UC, Santa Barbara, <sup>7</sup> University of Minnesota

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## 342.53 A Sneak Peek at the JWST Era: Observing Galaxies Below the Hubble Limit with Gravitational Lensing

**Author(s):** Rachael C. Livermore<sup>1</sup>

*Institution(s):* <sup>1</sup> University of Texas at Austin

## 342.54 Exploring the Escape of Hydrogen Ionizing Photons from Local Galaxies

**Author(s):** Jesse A Davis<sup>1</sup>, Jessica L. Rosenberg<sup>1</sup>, Aparna Venkatesan<sup>4</sup>, John M. Cannon<sup>3</sup>, John Joseph Salzer<sup>2</sup>

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## 343 Circumstellar and Debris Disks Poster Session

Thursday, 5:30 pm - 6:30 pm; Exhibit Hall A

### 343.01 Investigations of the Circumstellar Disk Fraction as a Function of Mass in Young Embedded Clusters in Orion B

**Author(s):** Matthew De Furio<sup>1</sup>, Elizabeth A. Lada<sup>1</sup>, Naibi Marinas<sup>1</sup>

*Institution(s):* <sup>1</sup> University of Florida

### 343.02 PRISM Polarimetry of Massive Stars

**Author(s):** Brennan Kerkstra<sup>1</sup>, Jamie R Lomax<sup>3</sup>, Karen S. Bjorkman<sup>4</sup>, Jon Eric Bjorkman<sup>4</sup>, Brian Skiff<sup>2</sup>, Kevin R. Covey<sup>5</sup>, John P. Wisniewski<sup>3</sup>

*Institution(s):* <sup>1</sup> Central Michigan University, <sup>2</sup> Lowell Observatory, <sup>3</sup> University of Oklahoma, <sup>4</sup> University of Toledo, <sup>5</sup> Western Washington University

### 343.03 Time Monitoring Variability of Classical Be Stars

**Author(s):** Benjmin Kuhn<sup>1</sup>, Joshua A. Eisner<sup>2</sup>, Jordan Stone<sup>2</sup>

*Institution(s):* <sup>1</sup> San Diego State University, <sup>2</sup> University of Arizona

### 343.04 Searching for Disk Truncation in the Be Star Gamma Cassiopeiae

**Author(s):** Allison Danielle Bratcher<sup>3</sup>, Jon Eric Bjorkman<sup>3</sup>, Richard Ignace<sup>1</sup>, Lynn D. Matthews<sup>2</sup>

*Institution(s):* <sup>1</sup> East Tennessee State University, <sup>2</sup> Massachusetts Institute of Technology Haystack Observatory, <sup>3</sup> University of Toledo

### 343.05 ALMA Early Science Observations of Outbursting Stellar Systems: Disk Masses for FU Ori and EXor Objects

**Author(s):** Lucas A. Cieza<sup>6</sup>, Jose Luis Prieto<sup>6</sup>, Zhaohuan Zhu<sup>3</sup>, John J. Tobin<sup>2</sup>, Jonathan P. Williams<sup>7</sup>, Antonio Hales<sup>1</sup>, Simon Casassus<sup>4</sup>, David Principe<sup>6</sup>, Matthias R. Schreiber<sup>5</sup>

*Institution(s):* <sup>1</sup> ALMA, <sup>2</sup> Leiden University, <sup>3</sup> Princeton University, <sup>4</sup> Universidad de Chile, <sup>5</sup> Universidad de Valparaiso, <sup>6</sup> Universidad Diego Portales, <sup>7</sup> University of Hawaii

### 343.06 Numerical 3D Hydrodynamics Study of Gravitational Instabilities in a Circumbinary Disk

**Author(s):** Karna Mahadev Desai<sup>2</sup>, Thomas Y. Steiman-Cameron<sup>2</sup>, Scott Michael<sup>2</sup>, Kai Cai<sup>1</sup>, Richard H. Durisen<sup>2</sup>

*Institution(s):* <sup>1</sup> College of DuPage, <sup>2</sup> Indiana University Bloomington

- 343.07 Constraining magnetic fields morphologies using mid-IR polarization: observations and modeling**  
**Author(s):** Han Zhang<sup>2</sup>, Dan Li<sup>2</sup>, Eric Pantin<sup>1</sup>, Charles M. Telesco<sup>2</sup>  
*Institution(s):* <sup>1</sup> Service d'Astrophysique CEA Saclay, <sup>2</sup> University of Florida
- 343.08 Modeling Observable Signatures of Protoplanetary Disks: Combining Hydrodynamic Simulations with Radiative Transfer Methods**  
**Author(s):** Dylan Kloster<sup>1</sup>, Hannah Jang-Condell<sup>1</sup>, David Kasper<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Wyoming
- 343.09 Radiative Transfer Modeling in Proto-planetary Disks**  
**Author(s):** David Kasper<sup>1</sup>, Hannah Jang-Condell<sup>1</sup>, Dylan Kloster<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Wyoming
- 343.10 Decoding Debris System Substructures: Imprints of Planets/Planetesimals and Signatures of Extrinsic Influences on Material in Ring-Like Disks**  
**Author(s):** C. A. Grady<sup>3</sup>, Glenn Schneider<sup>10</sup>, Joseph Carson<sup>2</sup>, John H. Debes<sup>8</sup>, Andras Gaspar<sup>10</sup>, Thomas Henning<sup>5</sup>, Dean C. Hines<sup>8</sup>, Philip Hinz<sup>10</sup>, Hannah Jang-Condell<sup>13</sup>, Marc J. Kuchner<sup>7</sup>, Amaya Moro-Martin<sup>8</sup>, Marshall D. Perrin<sup>8</sup>, T. J. Rodigas<sup>1</sup>, Gene Serabyn<sup>4</sup>, Murray D. Silverstone<sup>9</sup>, Christopher C. Stark<sup>8</sup>, Motohide Tamura<sup>6</sup>, Alycia J. Weinberger<sup>1</sup>, John P. Wisniewski<sup>11</sup>, Mihoko Konishi<sup>12</sup>  
*Institution(s):* <sup>1</sup> Carnegie Institution of Washington, <sup>2</sup> College of Charleston, <sup>3</sup> Eureka Scientific, <sup>4</sup> JPL, <sup>5</sup> MPIA, <sup>6</sup> NAOJ, <sup>7</sup> NASA's Goddard Space Flight Center, <sup>8</sup> Space Telescope Science Institute, <sup>9</sup> University of Alabama, <sup>10</sup> University of Arizona, <sup>11</sup> University of Oklahoma, <sup>12</sup> University of Osaka, <sup>13</sup> University of Wyoming
- 343.11 Millimeter Resolved Observations of the HD 181327 Debris Disk**  
**Author(s):** Amy Steele<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Maryland
- 343.12 Analyzing the Distribution and Chemical Evolution of Major Nitrogen Carriers within Protoplanetary Disks**  
**Author(s):** Jamila Pegues<sup>1</sup>  
*Institution(s):* <sup>1</sup> Princeton University
- 343.14 Does Fomalhaut A Have an Asteroid-belt Analog?**  
**Author(s):** Kate Y.L. Su<sup>4</sup>, George Rieke<sup>4</sup>, Denis Defrere<sup>4</sup>, Kuo-Song Wang<sup>1</sup>, Shih-Ping Lai<sup>3</sup>, David J. Wilner<sup>2</sup>, Rik van Lieshout<sup>5</sup>, Chin-Fei Lee<sup>1</sup>  
*Institution(s):* <sup>1</sup> ASIAA, <sup>2</sup> Harvard-Smithsonian Center for Astrophysics, <sup>3</sup> National Tsing Hua Univ, <sup>4</sup> Steward Observatory, <sup>5</sup> University of Amsterdam
- 343.15 Tracing neutral FeI gas evaporating from exocomets in the beta Pictoris disk**  
**Author(s):** Barry Welsh<sup>2</sup>, Sharon Lynn Montgomery<sup>1</sup>, Richard DeMark<sup>1</sup>, Joshua Price<sup>1</sup>  
*Institution(s):* <sup>1</sup> Clarion University, <sup>2</sup> UC, Berkeley

# THURSDAY, 7 JANUARY 2016

## 344 Binary Stellar Systems, X-ray Binaries Poster Session

Thursday, 5:30 pm - 6:30 pm; Exhibit Hall A

**344.01 Characteristics of the Eclipsing Triple System EPIC 202062176**

**Author(s):** Kathryn Victoria Lester<sup>1</sup>, Douglas R. Gies<sup>1</sup>, Zhao Guo<sup>1</sup>

*Institution(s):* <sup>1</sup> Georgia State University

**344.03 The NP Draconii Multiple Star System**

**Author(s):** Michael W. Castelaz<sup>1</sup>, Thurburn Barker<sup>5</sup>, Abby McNaughton<sup>3</sup>, Rachel Robertson<sup>4</sup>, Matt Smith<sup>2</sup>

*Institution(s):* <sup>1</sup> Brevard College, <sup>2</sup> E. A. Laney High School, <sup>3</sup> Enloe High School, <sup>4</sup> Memorial High School, <sup>5</sup> Pisgah Astronomical Research Inst.

**344.04 The first multi-color photometric study of the short-period contact Eclipsing Binary DE Lyn**

**Author(s):** Amanda Hashimoto<sup>1</sup>, Liyun Zhang<sup>2</sup>, Xianming L. Han<sup>1</sup>, Lu Hongpeng<sup>2</sup>, Daimei Wang<sup>2</sup>

*Institution(s):* <sup>1</sup> Butler University, <sup>2</sup> Guizhou University

**344.05 Observations and Analysis of Eclipsing Binary System SDSS**

**J160036.83+272117.8**

**Author(s):** Robert Wilson<sup>1</sup>, Keaton Bell<sup>1</sup>, Michael H. Montgomery<sup>1</sup>, Donald E. Winget<sup>1</sup>

*Institution(s):* <sup>1</sup> University of Texas at Austin

**344.06 Characterizing a Subset of Kepler Eclipsing Binaries Observed with SDSS/APOGEE**

**Author(s):** Jonathan Anselmo Delgado-Naegele<sup>1</sup>, Joni Clark<sup>1</sup>, James Lindsey Vesper<sup>1</sup>, Jason Jackiewicz<sup>1</sup>, Paul A. Mason<sup>1</sup>

*Institution(s):* <sup>1</sup> New Mexico State University

**344.07 An atlas of long-term AAVSO light curves of symbiotic stars**

**Author(s):** Fred Ringwald<sup>1</sup>, Lorin G. Zozaya<sup>1</sup>

*Institution(s):* <sup>1</sup> California State University, Fresno

**344.08 A Characterization of 9,851 Contact Binaries in the CRTS Variable Sources Catalog**

**Author(s):** Franklin Marsh<sup>1</sup>, Thomas Allen Prince<sup>1</sup>, Ashish A. Mahabal<sup>1</sup>, Eric Christopher Bellm<sup>1</sup>

*Institution(s):* <sup>1</sup> California Institute of Technology

**344.09 Pseudosynchronization of Heartbeat Stars**

**Author(s):** Mara Zimmerman<sup>1</sup>, Susan E. Thompson<sup>4</sup>, Kelly Hambleton<sup>6</sup>, Jim Fuller<sup>2</sup>, Avi Shporer<sup>3</sup>, Howard T. Isaacson<sup>5</sup>, Andrew Howard<sup>7</sup>, Donald Kurtz<sup>6</sup>

*Institution(s):* <sup>1</sup> Juniata College, <sup>2</sup> Kalvi Institute for Theoretical Physics, <sup>3</sup> NASA's Jet Propulsion Laboratory, <sup>4</sup> SETI Institute, <sup>5</sup> University of California Berkley, <sup>6</sup> University of Central Lancashire, <sup>7</sup> University of Hawaii

- 344.10 Multiyear measurements of Position Angle and Separation of selected binary stars from the Washington Double Star Catalog**  
**Author(s):** Rafael J. Muller<sup>1</sup>, Juan C Cersosimo<sup>1</sup>, Andy J Lopez<sup>1</sup>, Nelson Vergara<sup>1</sup>, Brian Torres<sup>1</sup>, Lizyan Mendoza<sup>1</sup>, Deliris Ortiz<sup>1</sup>, Yashira Del Valle<sup>1</sup>, Gabriela Espinosa<sup>1</sup>, Marjory Reyes<sup>1</sup>  
*Institution(s):* <sup>1</sup> Univ. of Puerto Rico, Humacao
- 344.11 Simplified Simulation of Mass Transfer in Double White Dwarf Systems**  
**Author(s):** Sara Vannah<sup>2</sup>, Juhan Frank<sup>1</sup>  
*Institution(s):* <sup>1</sup> Louisiana State University, <sup>2</sup> Wellesley College
- 344.12 New Long-Period Hot Subdwarf Binaries from the Hobby-Eberly Telescope**  
**Author(s):** Thomas Boudreaux<sup>1</sup>, Brad Barlow<sup>1</sup>, Richard A. Wade<sup>2</sup>  
*Institution(s):* <sup>1</sup> High Point University, <sup>2</sup> Pennsylvania State University
- 344.13 Eclipsing Binary B-Star Mass Determinations**  
**Author(s):** Amanda Townsend<sup>1</sup>, Stephen S. Eikenberry<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Florida
- 344.14 Investigating the Wolf-Rayet + Black Hole Binary NGC 300 X-1 With Chandra and Hubble**  
**Author(s):** Jacob Gross<sup>2</sup>, Breanna A. Binder<sup>2</sup>, Benjamin F. Williams<sup>2</sup>, Silas Laycock<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Massachusetts Lowell, <sup>2</sup> University of Washington
- 344.15 NuSTAR observations of M31: globular cluster candidates found to be Z sources**  
**Author(s):** Thomas J. Maccarone<sup>4</sup>, Mihoko Yukita<sup>2</sup>, Ann E. Hornschemeier<sup>2</sup>, Bret Lehmer<sup>5</sup>, Vallia Antoniou<sup>1</sup>, Andrew Ptak<sup>2</sup>, Daniel R. Wik<sup>2</sup>, Andreas Zezas<sup>6</sup>, Patricia T. Boyd<sup>2</sup>, Jamie A. Kennea<sup>3</sup>, Kim Page<sup>7</sup>, Michael Eracleous<sup>3</sup>, Benjamin F. Williams<sup>8</sup>  
*Institution(s):* <sup>1</sup> Harvard-Smithsonian, <sup>2</sup> NASA Goddard, <sup>3</sup> Penn State, <sup>4</sup> Texas Tech University, <sup>5</sup> University of Arkansas, <sup>6</sup> University of Crete, <sup>7</sup> University of Leicester, <sup>8</sup> University of Washington
- 344.16 NuSTAR and Swift observations of the black hole binary GS 1354-64**  
**Author(s):** Adham M El-Batal<sup>1</sup>, Jon M. Miller<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Michigan
- 344.17 Calibration of H-alpha/H-beta Indexes for Emission Line Objects**  
**Author(s):** Eric G. Hintz<sup>1</sup>, Michael D. Joner<sup>1</sup>  
*Institution(s):* <sup>1</sup> Brigham Young Univ.
- 344.18 The Reflection Effect in Eclipsing Binaries**  
**Author(s):** Jeffrey D. Gropp<sup>1</sup>, Andrej Prsa<sup>1</sup>  
*Institution(s):* <sup>1</sup> Villanova University
- 344.19 Modeling and Determining the Uncertainties of M-type Stars in Occulting Stellar Light Curves**  
**Author(s):** Griffin Werner<sup>1</sup>  
*Institution(s):* <sup>1</sup> Villanova University

# THURSDAY, 7 JANUARY 2016

- 344.20 To  $v_{\infty}$  and Beyond! The He I absorption variability across the 2014.6 periastron passage of the supermassive binary  $\eta$  Carinae**  
**Author(s):** Thomas Madura<sup>7</sup>, Noel Richardson<sup>10</sup>, Lucas St-Jean<sup>8</sup>, Anthony F. J. Moffat<sup>8</sup>, Theodore R. Gull<sup>3</sup>, Augusto Damineli<sup>2</sup>, Mairan Teodoro<sup>11</sup>, Michael F. Corcoran<sup>7</sup>, Frederick M. Walter<sup>6</sup>, Nicola Clementel<sup>5</sup>, Jose H Groh<sup>1</sup>, Kenji Hamaguchi<sup>3</sup>, Desmond John Hillier<sup>9</sup>, Christopher Michael Post Russell<sup>4</sup>  
*Institution(s):* <sup>1.</sup> Geneva Observatory, <sup>2.</sup> IAG-USP, <sup>3.</sup> NASA GSFC, <sup>4.</sup> Oak Ridge Associated Universities (ORAU)/NASA GSFC, <sup>5.</sup> SAAO, <sup>6.</sup> Stony Brook University, <sup>7.</sup> Universities Space Research Association, <sup>8.</sup> University of Montreal, <sup>9.</sup> University of Pittsburgh, <sup>10.</sup> University of Toledo, <sup>11.</sup> Western Michigan University
- 344.21 Mapping the latitude dependence of the primary stellar wind of eta Carinae using the spectrum reflected on the Homunculus nebula**  
**Author(s):** Rachel Odessey<sup>1</sup>  
*Institution(s):* <sup>1.</sup> Scripps College
- 344.22 The Production of HMXBs in Star Clusters**  
**Author(s):** Paula Johns<sup>2</sup>, Rupali Chandar<sup>2</sup>, Blagoy Rangelov<sup>1</sup>  
*Institution(s):* <sup>1.</sup> The George Washington University, <sup>2.</sup> The University of Toledo

## 345 Formation and Evolution of Stars and Stellar Systems Poster Session

Thursday, 5:30 pm - 6:30 pm; Exhibit Hall A

- 345.01 The Pan-STARRS 1 Parallax and Proper Motion Catalog**  
**Author(s):** Christopher Z. Waters<sup>1</sup>, Eugene A. Magnier<sup>1</sup>  
*Institution(s):* <sup>1.</sup> Institute for Astronomy
- 345.02 A uniform catalog of candidate IR-excess and optically variable Young Stellar Objects (YSOs) across the full Orion complex: Aiding target selection for the APOGEE-2 Young Cluster Program**  
**Author(s):** J'Neil Cottle<sup>15</sup>, Kevin R. Covey<sup>15</sup>, Edward Ford Schlafly<sup>5</sup>, Hector G. Arce<sup>16</sup>, Jura Borissova<sup>11</sup>, Juan Jose Downes<sup>3</sup>, Eric Feigelson<sup>7</sup>, Konstantin V. Getman<sup>7</sup>, Jinyoung Serena Kim<sup>12</sup>, Alexandre Roman-Lopes<sup>10</sup>, Carlos G. Roman-Zuniga<sup>9</sup>, Guy S. Stringfellow<sup>2</sup>, Jason E. Ybarra<sup>1</sup>, S. Drew Chojnowski<sup>6</sup>, Peter M. Frinchaboy<sup>8</sup>, Fred R. Hearty<sup>7</sup>, Steven R. Majewski<sup>13</sup>, Michael F. Skrutskie<sup>13</sup>, Keivan Stassun<sup>14</sup>, John C. Wilson<sup>13</sup>, Gail Zasowski<sup>4</sup>  
*Institution(s):* <sup>1.</sup> Bridgewater College, <sup>2.</sup> CASA, University of Colorado - Boulder, <sup>3.</sup> Centro de Investigaciones de Astronomia, <sup>4.</sup> Johns Hopkins University, <sup>5.</sup> Max-Planck-Institut fur Astronomie, <sup>6.</sup> New Mexico State University, <sup>7.</sup> Penn State University, <sup>8.</sup> Texas Christian University, <sup>9.</sup> UNAM - Ensenada, <sup>10.</sup> Universidad de La Serena, <sup>11.</sup> Universidad de Valparaiso, <sup>12.</sup> University of Arizona, <sup>13.</sup> University of Virginia, <sup>14.</sup> Vanderbilt University, <sup>15.</sup> Western Washington University, <sup>16.</sup> Yale University
- 345.03 Where the old neighbors go: kinematics of 150,000 nearby metal-poor stars in the SUPERBLINK proper motion survey.**  
**Author(s):** Sebastien Lepine<sup>1</sup>  
*Institution(s):* <sup>1.</sup> Georgia State University

- 345.04 WTF- and A- Stars: Spectroscopic Analysis of Kepler Light Curves**  
**Author(s):** Miona Grae Short<sup>1</sup>, David R. Soderblom<sup>1</sup>  
*Institution(s):* <sup>1</sup> STScI
- 345.05 Help, my star is on fire – Carbon burning flames in SAGB stars.**  
**Author(s):** Robert Farmer<sup>1</sup>, Carl Fields<sup>1</sup>, Francis Timmes<sup>1</sup>  
*Institution(s):* <sup>1</sup> Arizona State University
- 345.06 Chlorine Abundances in Cool Stars**  
**Author(s):** Zachary Maas<sup>1</sup>, Catherine A. Pilachowski<sup>1</sup>  
*Institution(s):* <sup>1</sup> Indiana University Bloomington
- 345.07 La and Eu Abundances in Metal-poor Halo Stars**  
**Author(s):** Harrison Cardillo<sup>1</sup>, Debra L. Burris<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Central Arkansas
- 345.08 Fe-Group Elements in the Metal-Poor Star HD 84937: Abundances and their Implications**  
**Author(s):** Chris Sneden<sup>3</sup>, John J. Cowan<sup>5</sup>, Chiaki Kobayashi<sup>4</sup>, Marco Pignatari<sup>1</sup>, James E. Lawler<sup>6</sup>, Elizabeth Den Hartog<sup>6</sup>, Michael P. Wood<sup>2</sup>  
*Institution(s):* <sup>1</sup> Hungarian Academy of Sciences, <sup>2</sup> NIST, <sup>3</sup> Univ. of Texas, <sup>4</sup> University of Hertfordshire, <sup>5</sup> University of Oklahoma, <sup>6</sup> University of Wisconsin-Madison
- 345.09 Carbon and Oxygen Isotopic Ratios for Miras**  
**Author(s):** Kenneth H. Hinkle<sup>2</sup>, Thomas Lebzelter<sup>3</sup>, Oscar Straniero<sup>1</sup>  
*Institution(s):* <sup>1</sup> INAF, Osservatorio Astronomico di Collurania, <sup>2</sup> NOAO, <sup>3</sup> University of Vienna
- 345.10 Discovering New R Coronae Borealis Stars**  
**Author(s):** Geoffrey C. Clayton<sup>2</sup>, Patrick Tisserand<sup>1</sup>, Douglas L. Welch<sup>3</sup>, Amy LeBleu<sup>2</sup>  
*Institution(s):* <sup>1</sup> Institut d'Astrophysique de Paris, <sup>2</sup> Louisiana State Univ., <sup>3</sup> McMaster University
- 345.11 Stellar Properties of Pulsating B Star Candidates in the Kepler Field**  
**Author(s):** Steven Waskie<sup>1</sup>, M. Virginia McSwain<sup>1</sup>  
*Institution(s):* <sup>1</sup> Lehigh Univ.
- 345.12 The PTI Giant Star Angular Size Survey: Effective Temperatures & Linear Radii**  
**Author(s):** Gerard van Belle<sup>3</sup>, Gennady Pilyavsky<sup>1</sup>, Kaspar von Braun<sup>3</sup>, David R. Ciardi<sup>2</sup>  
*Institution(s):* <sup>1</sup> Arizona State University, <sup>2</sup> Caltech, <sup>3</sup> Lowell Observatory
- 345.13 VISION: A Six-Telescope Fiber-Fed Visible Light Beam Combiner for the Navy Precision Optical Interferometer**  
**Author(s):** Eugenio Garcia<sup>2</sup>, Matthew W. Muterspaugh<sup>4</sup>, Gerard van Belle<sup>2</sup>, John D. Monnier<sup>5</sup>, Keivan Stassun<sup>6</sup>, Askari Ghasempour<sup>1</sup>, Samuel Swihart<sup>3</sup>  
*Institution(s):* <sup>1</sup> HORIBA Scientific, <sup>2</sup> Lowell Observatory, <sup>3</sup> Michigan State University, <sup>4</sup> Tennessee State University, <sup>5</sup> University of Michigan, <sup>6</sup> Vanderbilt University

# THURSDAY, 7 JANUARY 2016

- 345.14 The EREBOS Project: Time-Series Photometry of New HW Vir Binaries from the OGLE Survey**  
**Author(s):** Rodrigo Catalan-Hurtado<sup>1</sup>, Brad Barlow<sup>1</sup>  
*Institution(s):* <sup>1</sup> High Point University
- 345.15 On the Recovery of Stellar Parameters from Eclipsing Binary Data**  
**Author(s):** Douglas Klink<sup>3</sup>, Jonathan Swift<sup>3</sup>, Philip Steven Muirhead<sup>1</sup>, John A. Johnson<sup>2</sup>, Eunkyu Han<sup>1</sup>, Yutong Shan<sup>2</sup>  
*Institution(s):* <sup>1</sup> Boston University, <sup>2</sup> Harvard University, <sup>3</sup> The Thacher School
- 345.16 Properties of K/M Dwarf Eclipsing Binaries**  
**Author(s):** Andrew Riddle<sup>1</sup>, Adam L. Kraus<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Texas at Austin
- 345.17 Blue Straggler-White Dwarf Binaries in Galactic field**  
**Author(s):** Gemunu B Ekanayake<sup>1</sup>, Ronald J. Wilhelm<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Kentucky
- 345.18 Open Clusters Ages from Giant Star Sizes**  
**Author(s):** Russel J. White<sup>1</sup>, Jeremy Jones<sup>1</sup>, Samuel N. Quinn<sup>1</sup>, Tabettha S. Boyajian<sup>2</sup>  
*Institution(s):* <sup>1</sup> Georgia State University, <sup>2</sup> Yale University
- 345.19 Near-infrared Photometry of the Open Cluster NGC 2420**  
**Author(s):** Neda Hejazi<sup>1</sup>, Michael M. De Robertis<sup>3</sup>, Peter C. Dawson<sup>2</sup>  
*Institution(s):* <sup>1</sup> Georgia State University, <sup>2</sup> Trent University, <sup>3</sup> York University
- 345.20 Sub-subgiants in Old Open Cluster NGC 6791**  
**Author(s):** Katelyn E. Milliman<sup>2</sup>, Emily Leiner<sup>2</sup>, Robert D. Mathieu<sup>2</sup>, Benjamin M. Tofflemire<sup>2</sup>, Imants Platais<sup>1</sup>  
*Institution(s):* <sup>1</sup> Johns Hopkins University, <sup>2</sup> University of Wisconsin-Madison
- 345.21 CN Band Photometry in the Globular Cluster M71**  
**Author(s):** William P. Bowman<sup>1</sup>, Catherine A. Pilachowski<sup>1</sup>  
*Institution(s):* <sup>1</sup> Indiana University - Bloomington
- 345.22 Investigating the Consistency of Stellar Evolution Models with Globular Cluster Observations via the Red Giant Branch Bump**  
**Author(s):** Meridith Joyce<sup>1</sup>, Brian Chaboyer<sup>1</sup>  
*Institution(s):* <sup>1</sup> Dartmouth College
- 345.23 The Rapid Brightening of Eta Carinae**  
**Author(s):** John C. Martin<sup>2</sup>, Kris Davidson<sup>3</sup>, Andrea Mehner<sup>1</sup>, Roberta M. Humphreys<sup>3</sup>  
*Institution(s):* <sup>1</sup> European Southern Observatory, <sup>2</sup> University of Illinois Springfield, <sup>3</sup> University of Minnesota
- 345.24 Recovery from a Giant Eruption: The Case of Eta Car**  
**Author(s):** Kris Davidson<sup>2</sup>, Andrea Mehner<sup>1</sup>, John C. Martin<sup>3</sup>, Roberta M. Humphreys<sup>2</sup>  
*Institution(s):* <sup>1</sup> ESO, <sup>2</sup> Univ. of Minnesota, <sup>3</sup> University of Illinois

## 345.25 Are MWC349 A and B a Physical Binary?

**Author(s):** Patrick Drew<sup>3</sup>, Vladimir Streltnitski<sup>2</sup>, Howard Alan Smith<sup>1</sup>  
*Institution(s):* <sup>1</sup> Harvard CfA, <sup>2</sup> Maria Mitchell Observatory, <sup>3</sup> University of Massachusetts Amherst

## 345.26 Integrated Spectrophotometric Properties of Multiple Stellar Populations

**Author(s):** Hyun-chul Lee<sup>1</sup>, Charles Cartwright<sup>1</sup>  
*Institution(s):* <sup>1</sup> The University of Texas Rio Grande Valley

## 345.27 Deep HST/ACS Photometry of an Arc of Young Stars in the Southern Halo of M82

**Author(s):** Chutipong Suwannajak<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Florida

## 346 Star Formation Poster Session

Thursday, 5:30 pm - 6:30 pm; Exhibit Hall A

### 346.01 [NII] 205 $\mu$ M Line Emission Detection in High Red-shift Galaxies

**Author(s):** Michelle Nowling<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Houston

### 346.02 Herschel+Hubble Observations of a Multiply-Lensed Sub-millimeter Galaxy at $z \sim 3$

**Author(s):** Hooshang Nayyeri<sup>3</sup>, Asantha R. Cooray<sup>3</sup>, Jae Alyson B. Calanog<sup>3</sup>, Dominik A. Riechers<sup>1</sup>, David T. Frayer<sup>2</sup>  
*Institution(s):* <sup>1</sup> Cornell University, <sup>2</sup> NRAO, <sup>3</sup> UC Irvine

### 346.03 Star Clusters in Early-Type Galaxies

**Author(s):** Sidney David Vetens<sup>1</sup>, Alison Faye Crocker<sup>1</sup>  
*Institution(s):* <sup>1</sup> Reed College

### 346.04 Runaway Stars as a Possible Source of the Elliptical Ring Structure in NGC 7538

**Author(s):** Jason Arakawa<sup>1</sup>, Cassandra Fallscheer<sup>1</sup>, James Di Francesco<sup>2</sup>  
*Institution(s):* <sup>1</sup> Central Washington University, <sup>2</sup> NRC-Herzberg

### 346.05 The Circumnuclear Starburst Ring in NGC 1097

**Author(s):** Beverly Thackeray-Lacko<sup>1</sup>, Sabrina Stierwalt<sup>2</sup>, Kartik Sheth<sup>2</sup>  
*Institution(s):* <sup>1</sup> California State University, San Bernardino, <sup>2</sup> NRAO

### 346.06 Star Formation and Dense Gas in Galaxy Mergers from the VIXENS Survey

**Author(s):** Amanda L. Heiderman<sup>1</sup>  
*Institution(s):* <sup>1</sup> The University of Virginia

### 346.07 Narrow-band Imaging of Massive Star-Forming Regions: Tracing Outflows and the Rate of Star-Formation

**Author(s):** Kendall Hall<sup>1</sup>, Sarah Willis<sup>2</sup>, Joseph L. Hora<sup>2</sup>  
*Institution(s):* <sup>1</sup> California State University, Fresno, <sup>2</sup> Smithsonian Astrophysical Observatory

# THURSDAY, 7 JANUARY 2016

## 346.08 Connecting the Dense Gas and Young Stars in the CARMA Large Area Star Formation Survey

**Author(s):** Lee G. Mundy<sup>4</sup>, Shaye Storm<sup>4</sup>, Leslie Looney<sup>3</sup>, Katherine I Lee<sup>1</sup>, Manuel Fernandez Lopez<sup>3</sup>, Eve C. Ostriker<sup>2</sup>, Che-Yu Chen<sup>5</sup>

*Institution(s):* <sup>1</sup> Center for Astrophysics, <sup>2</sup> Princeton University, <sup>3</sup> University of Illinois, <sup>4</sup> University of Maryland, <sup>5</sup> University of Virginia

## 346.09 Star Formation Rate in The Solar Neighborhood and Beyond

**Author(s):** Bridget Kayitesi<sup>1</sup>, Amanda L. Heiderman<sup>1</sup>

*Institution(s):* <sup>1</sup> National Radio Astronomy Observatory

## 346.10 Census of High- and Medium-mass Protostars (CHaMP) Survey: Continuum Emission Parameter Maps and Protostellar Clump Evolution

**Author(s):** Rebecca Pitts<sup>1</sup>, Peter John Barnes<sup>1</sup>

*Institution(s):* <sup>1</sup> University of Florida

## 346.11 A Survey For Embedded Clusters in the Large Magellanic Cloud

**Author(s):** Krista Romita<sup>1</sup>, Elizabeth A. Lada<sup>1</sup>, Maria-Rosa Cioni<sup>2</sup>

*Institution(s):* <sup>1</sup> University of Florida, <sup>2</sup> University of Potsdam

## 346.12 Comparing Herschel dust emission structures, magnetic fields observed by Planck, and dynamics: high-latitude star forming cloud L1642

**Author(s):** Johanna Malinen<sup>1</sup>

*Institution(s):* <sup>1</sup> Florida State University

## 346.13 Bondi-like Accretion in Magnetized Supersonic Isothermal Turbulence

**Author(s):** Kaylan J Burleigh<sup>1</sup>, Christopher F. McKee<sup>1</sup>, Richard I. Klein<sup>1</sup>

*Institution(s):* <sup>1</sup> University of California Berkeley

## 346.14 Using synthetic observations to constrain the properties of magnetic fields in protostellar cores

**Author(s):** Joyce Lee<sup>3</sup>, Charles L. H. Hull<sup>1</sup>, Stella Offner<sup>2</sup>

*Institution(s):* <sup>1</sup> Harvard-Smithsonian Center for Astrophysics, <sup>2</sup> The University of Massachusetts, <sup>3</sup> University of Southampton

## 346.15 The Spatial Distribution of Large and Small Dust Grains in Transitional Disks

**Author(s):** Elizabeth Gutierrez<sup>2</sup>, Laura M. Perez<sup>1</sup>

*Institution(s):* <sup>1</sup> National Radio Astronomy Observatory, <sup>2</sup> Villanova University

## 347 Molecular Clouds, HII Regions, Interstellar Medium Poster Session

Thursday, 5:30 pm - 6:30 pm; Exhibit Hall A

### 347.01 A Search for AU-Scale C I Structure in the Diffuse ISM

**Author(s):** Larissa Markwardt<sup>2</sup>, David M. Meyer<sup>1</sup>

*Institution(s):* <sup>1</sup> Northwestern University, <sup>2</sup> University of Arkansas

### 347.02 Long-Term Monitoring of Molecular Masers in IRAS 18566+0408

**Author(s):** Daniel Michael Halbe<sup>4</sup>, Esteban Araya<sup>4</sup>, Peter Hofner<sup>3</sup>, Hendrik Linz<sup>2</sup>, Luca Olmi<sup>1</sup>

*Institution(s):* <sup>1</sup> INAF-OAA, <sup>2</sup> Max-Planck-Institut für Astronomie, <sup>3</sup> New Mexico Institute of Mining and Technology, <sup>4</sup> Western Illinois University

- 347.03 The Dust Cloud TGU H1192 (LDN 1525) in Auriga. II**  
**Author(s):** Richard P. Boyle<sup>1</sup>, Robert Janusz<sup>1</sup>, Vytautas Straizys<sup>2</sup>, Kazimieras Zdanavicius<sup>2</sup>, Marius Maskoliunas<sup>2</sup>, Algirdas Kazlauskas<sup>2</sup>  
*Institution(s):* <sup>1</sup> *Vatican Observatory*, <sup>2</sup> *Vilnius University*
- 347.04 Calibrating column density tracers with gamma-ray observations of the  $\rho$  Ophiuchi molecular cloud**  
**Author(s):** Ryan Abrahams<sup>1</sup>, Alex Teachey<sup>2</sup>, Timothy Paglione<sup>3</sup>  
*Institution(s):* <sup>1</sup> *CUNY Graduate Center*, <sup>2</sup> *CUNY Hunter College*, <sup>3</sup> *CUNY York College*
- 347.05 Physical Conditions in the Molecular Gas of the Local Group Dwarf Starburst, IC 10**  
**Author(s):** Lauren E. Bittle<sup>10</sup>, Kelsey E. Johnson<sup>10</sup>, Adam Leroy<sup>7</sup>, Remy Indebetouw<sup>10</sup>, Karin Sandstrom<sup>8</sup>, Amanda A. Kepley<sup>6</sup>, Andreas Schrub<sup>4</sup>, Alberto D. Bolatto<sup>9</sup>, Fabian Walter<sup>5</sup>, Jennifer Donovan Meyer<sup>6</sup>, Annie Hughes<sup>3</sup>, Laura Zschaechner<sup>5</sup>, Carsten Kramer<sup>1</sup>, Pierre Gratier<sup>2</sup>, Melanie Krips<sup>2</sup>, Cheoljong Lee<sup>7</sup>  
*Institution(s):* <sup>1</sup> *IRAM Granada*, <sup>2</sup> *IRAM Grenoble*, <sup>3</sup> *IRAP*, <sup>4</sup> *MPE Garching*, <sup>5</sup> *MPIA Heidelberg*, <sup>6</sup> *NRAO*, <sup>7</sup> *Ohio State University*, <sup>8</sup> *University of Arizona*, <sup>9</sup> *University of Maryland*, <sup>10</sup> *University of Virginia*
- 347.06 Radiation Hydrodynamics with GIZMO: The Disruption of Giant Molecular Clouds by Stellar Radiation Pressure**  
**Author(s):** David Khatami<sup>2</sup>, Philip F. Hopkins<sup>1</sup>  
*Institution(s):* <sup>1</sup> *Caltech*, <sup>2</sup> *Pomona College*
- 347.07 Spatial Distribution of Small Organics in Prestellar and Protostellar Cores**  
**Author(s):** William Waalkes<sup>2</sup>, Viviana Guzman<sup>1</sup>, Karin I. Oberg<sup>1</sup>  
*Institution(s):* <sup>1</sup> *Harvard-Smithsonian Center for Astrophysics*, <sup>2</sup> *University of Michigan*
- 347.08 The Galactic Arecibo L-Band Feed Array Survey Data Release 2**  
**Author(s):** Joshua Eli Goldston Peek<sup>3</sup>, Brian L Babler<sup>5</sup>, Kevin A Douglas<sup>2</sup>, Yong Zheng<sup>1</sup>, Susan Clark<sup>1</sup>, Mary E. Putman<sup>1</sup>, Snezana Stanimirovic<sup>5</sup>, Carl E. Heiles<sup>4</sup>, Steven J. Gibson<sup>6</sup>, Eric J. Korpela<sup>4</sup>  
*Institution(s):* <sup>1</sup> *Columbia University*, <sup>2</sup> *Okanagan College*, <sup>3</sup> *STScI*, <sup>4</sup> *UC, Berkeley*, <sup>5</sup> *UW Madison*, <sup>6</sup> *Western Kentucky University*
- 347.09 Kinematics of Filaments in Serpens and Perseus**  
**Author(s):** Arnab Dhabal<sup>1</sup>, Lee G. Mundy<sup>1</sup>, Maxime Rizzo<sup>1</sup>, Shaye Storm<sup>1</sup>, Peter J. Teuben<sup>1</sup>, Che-Yu Chen<sup>1</sup>, Eve C. Ostriker<sup>1</sup>  
*Institution(s):* <sup>1</sup> *University of Maryland*
- 347.10 The Southern HII Region Discovery Survey**  
**Author(s):** Trey Wenger<sup>6</sup>, John Miller Dickey<sup>5</sup>, Christopher Jordan<sup>5</sup>, Thomas M. Bania<sup>2</sup>, Dana S. Balser<sup>4</sup>, Joanne Dawson<sup>3</sup>, Loren D. Anderson<sup>7</sup>, William P. Armentrout<sup>7</sup>, Naomi McClure-Griffiths<sup>1</sup>  
*Institution(s):* <sup>1</sup> *Australian National University*, <sup>2</sup> *Boston University*, <sup>3</sup> *Macquarie University*, <sup>4</sup> *National Radio Astronomy Observatory*, <sup>5</sup> *University of Tasmania*, <sup>6</sup> *University of Virginia*, <sup>7</sup> *West Virginia University*

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## 347.11 CO Spectral Line Energy Distributions in Orion Sources: Templates for Extragalactic Observations

**Author(s):** Nick Indriolo<sup>3</sup>, Edwin A. Bergin<sup>3</sup>, Javier Goicoechea<sup>1</sup>, Peter Schilke<sup>2</sup>  
*Institution(s):* <sup>1</sup> Instituto de Ciencia de Materiales de Madrid, <sup>2</sup> Physikalisches Institut der Universität zu Köln, <sup>3</sup> University of Michigan

## 347.12 OH Zeeman Studies of Magnetic Field Strengths in Molecular Clouds

**Author(s):** Kristen L. Thompson<sup>1</sup>, Thomas H. Troland<sup>3</sup>, Carl E. Heiles<sup>2</sup>  
*Institution(s):* <sup>1</sup> Davidson College, <sup>2</sup> UC Berkeley, <sup>3</sup> University of Kentucky

## 347.13 Leaking Photons from the HII Region NGC 7538

**Author(s):** Matteo Luisi<sup>4</sup>, Loren D. Anderson<sup>4</sup>, Dana S. Balser<sup>2</sup>, Thomas M. Bania<sup>1</sup>, Trey Wenger<sup>3</sup>  
*Institution(s):* <sup>1</sup> Boston University, <sup>2</sup> National Radio Astronomy Observatory, <sup>3</sup> University of Virginia, <sup>4</sup> West Virginia University

## 347.14 Interstellar Extinction in the Direction of NGC 7380 (Sh2-142)

**Author(s):** Gregory A. Topasna<sup>1</sup>  
*Institution(s):* <sup>1</sup> Virginia Military Inst.

## 347.15 A Search for Gravitationally Bound Cloud Cores within the CMZ

**Author(s):** Elizabeth Gehret<sup>2</sup>, Cara Battersby<sup>1</sup>  
*Institution(s):* <sup>1</sup> Harvard-Smithsonian Center for Astrophysics, <sup>2</sup> Northern Arizona University

## 347.16 Constraining the Properties of Cold Interstellar Clouds

**Author(s):** Mary Elizabeth Spraggs<sup>1</sup>, Steven J. Gibson<sup>1</sup>  
*Institution(s):* <sup>1</sup> Western Kentucky University

## 347.17 The Wisconsin H-Alpha Mapper Sky Survey

**Author(s):** L. Matthew Haffner<sup>5</sup>, Ronald J. Reynolds<sup>5</sup>, Brian L. Babler<sup>5</sup>, Gregory J. Madsen<sup>4</sup>, Alex S. Hill<sup>2</sup>, Kathleen Barger<sup>3</sup>, Kurt P. Jaehnig<sup>5</sup>, Edwin J. Mierkiewicz<sup>1</sup>, Jeffrey W. Percival<sup>5</sup>, Nitish Chopra<sup>5</sup>, Nickolas Pingel<sup>7</sup>, Daniel T. Reese<sup>5</sup>, Martin Gostisha<sup>6</sup>, Jennifer Wunderlin<sup>5</sup>  
*Institution(s):* <sup>1</sup> Embry-Riddle Aeronautical University, <sup>2</sup> Haverford College, <sup>3</sup> Texas Christian University, <sup>4</sup> University of Cambridge, <sup>5</sup> University of Wisconsin - Madison, <sup>6</sup> University of Wisconsin-Milwaukee, <sup>7</sup> West Virginia University

## 347.18 The All-sky Kinematics of Diffuse Galactic H-alpha Emission from WHAM

**Author(s):** Andrew Eagon<sup>2</sup>, L. Matthew Haffner<sup>1</sup>, Robert A. Benjamin<sup>2</sup>  
*Institution(s):* <sup>1</sup> University of Wisconsin-Madison, <sup>2</sup> University of Wisconsin-Whitewater

## 347.19 WHAM observations of ionized gas in the inner Milky Way

**Author(s):** Alex S. Hill<sup>1</sup>, L. Matthew Haffner<sup>3</sup>, Robert A. Benjamin<sup>5</sup>, Martin Gostisha<sup>4</sup>, Kathleen Barger<sup>2</sup>  
*Institution(s):* <sup>1</sup> Haverford College, <sup>2</sup> Texas Christian University, <sup>3</sup> University of Wisconsin-Madison, <sup>4</sup> University of Wisconsin-Milwaukee, <sup>5</sup> University of Wisconsin-Whitewater

## 347.20 Discovery and Characterization of Large-Angular Size Ionized Nebulae with WHAM

**Author(s):** Peter Doze<sup>1</sup>, Robert A. Benjamin<sup>3</sup>, L. Matthew Haffner<sup>2</sup>

*Institution(s):* <sup>1</sup> Texas Southern University, <sup>2</sup> University of Wisconsin-Madison, <sup>3</sup> University of Wisconsin-Whitewater

## 347.21 WHAM Observations of High-latitude Supernova Remnants

**Author(s):** Alexander Orchard<sup>1</sup>, L. Matthew Haffner<sup>1</sup>, Robert A. Benjamin<sup>2</sup>, Martin Gostisha<sup>3</sup>

*Institution(s):* <sup>1</sup> University of Wisconsin - Madison, <sup>2</sup> University of Wisconsin - Whitewater, <sup>3</sup> University of Wisconsin-Milwaukee

## 348 Computation, Data Handling, Image Analysis Poster Session

Thursday, 5:30 pm - 6:30 pm; Exhibit Hall A

### 348.01 Making your code citable with the Astrophysics Source Code Library

**Author(s):** Alice Allen<sup>2</sup>, Kimberly DuPrie<sup>10</sup>, Judy Schmidt<sup>2</sup>, G. Bruce Berriman<sup>4</sup>, Robert J. Hanisch<sup>8</sup>, Jessica D. Mink<sup>9</sup>, Robert J. Nemiroff<sup>6</sup>, Lior Shamir<sup>5</sup>, Keith Shortridge<sup>3</sup>, Mark B Taylor<sup>11</sup>, Peter J. Teuben<sup>1</sup>, John F. Wallin<sup>7</sup>

*Institution(s):* <sup>1</sup> Astronomy Department, University of Maryland, <sup>2</sup> Astrophysics Source Code Library, <sup>3</sup> Australian Astronomical Observatory, <sup>4</sup> IPAC/California Institute of Technology, <sup>5</sup> Lawrence Technological University, <sup>6</sup> Michigan Technological University, <sup>7</sup> Middle Tennessee State University, <sup>8</sup> National Institute of Standards and Technology, <sup>9</sup> Smithsonian Astrophysical Observatory, <sup>10</sup> Space Telescope Science Institute, <sup>11</sup> University of Bristol

### 348.02 Monitoring Polaris and Seeing Conditions at PARI

**Author(s):** April Crawford<sup>1</sup>

*Institution(s):* <sup>1</sup> Pisgah Astronomical Research Institute

### 348.03 Sky Background Variability Measured on Maunakea at Gemini North Observatory

**Author(s):** Adam B. Smith<sup>1</sup>, Katherine Roth<sup>1</sup>, Andrew W. Stephens<sup>1</sup>

*Institution(s):* <sup>1</sup> Gemini Observatory

### 348.04 Refining Sunrise/set Prediction Models by Accounting for the Effects of Refraction

**Author(s):** Teresa Wilson<sup>1</sup>, Jennifer L. Bartlett<sup>2</sup>

*Institution(s):* <sup>1</sup> Michigan Technological University, <sup>2</sup> United States Naval Observatory

### 348.05 3D Visualization of Machine Learning Algorithms with Astronomical Data

**Author(s):** Brian R. Kent<sup>1</sup>

*Institution(s):* <sup>1</sup> NRAO

### 348.06 User extensibility of the Firefly astronomical visualization software

**Author(s):** Gregory P. Dubois-Felsmann<sup>1</sup>, Tatiana Goldina<sup>1</sup>, Loi Ly<sup>1</sup>, William Roby<sup>1</sup>, Xiuqin Wu<sup>1</sup>, Lijun Zhang<sup>1</sup>

*Institution(s):* <sup>1</sup> California Institute of Technology / IPAC

# THURSDAY, 7 JANUARY 2016

- 348.07 Understanding and Using the Fermi Science Tools**  
**Author(s):** Joseph Asercion<sup>1</sup>  
*Institution(s):* <sup>1</sup> Fermi Science Support Center
- 348.08 Fermi Science Support Center Data Servers and Archive**  
**Author(s):** Alexander Reustle<sup>1</sup>  
*Institution(s):* <sup>1</sup> Goddard Space Flight Center
- 348.09 A Refreshable, On-line Cache for HST Data Retrieval**  
**Author(s):** Dorothy A. Fraquelli<sup>1</sup>, Tracy A. Ellis<sup>1</sup>, Michael Ridgaway<sup>1</sup>  
*Institution(s):* <sup>1</sup> Computer Sciences Corp.
- 348.10 Proper coaddition of speckle images - diffraction limited ground-based imaging with high dynamic range**  
**Author(s):** Barak Zackay<sup>1</sup>, Eran Oded Ofek<sup>1</sup>, Avishay Gal-Yam<sup>1</sup>  
*Institution(s):* <sup>1</sup> Weizmann Institute of Science
- 348.11 Optimal Image Subtraction**  
**Author(s):** Avishay Gal-Yam<sup>1</sup>, Barak Zackay<sup>1</sup>, Eran Oded Ofek<sup>1</sup>  
*Institution(s):* <sup>1</sup> Weizmann Institute of Science
- 348.12 Proper coaddition of astronomical images - One image that contains the information from all the images**  
**Author(s):** Eran Ofek<sup>1</sup>, Barak Zackay<sup>1</sup>, Avishay Gal-Yam<sup>1</sup>  
*Institution(s):* <sup>1</sup> Weizmann Institute of Science
- 348.13 The Next Generation of the Montage Image Mosaic Engine**  
**Author(s):** G. Bruce Berriman<sup>1</sup>, John Good<sup>1</sup>, Ben Rusholme<sup>1</sup>, Thomas Robitaille<sup>2</sup>  
*Institution(s):* <sup>1</sup> Caltech, <sup>2</sup> MPIA
- 348.14 Shape Information for Photometric Redshifts with a Support Vector Machine Algorithm**  
**Author(s):** Evan Jones<sup>1</sup>, Jack Singal<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Richmond
- 348.15 The LSST Software Stack**  
**Author(s):** Timothy Jenness<sup>1</sup>  
*Institution(s):* <sup>1</sup> Large Synoptic Survey Telescope
- 348.16 Development of a Data Reduction Pipeline to Measure Stellar Radial Velocities Using Kutztown University's On-Campus Research Observatory**  
**Author(s):** Odysseus Fox<sup>1</sup>, Phillip A. Reed<sup>1</sup>  
*Institution(s):* <sup>1</sup> Kutztown University
- 348.17 Easy XMM-Newton Data Analysis with the Streamlined ABC Guide!**  
**Author(s):** Lynne A. Valencic<sup>1</sup>, Steven L. Snowden<sup>2</sup>, William D. Pence<sup>2</sup>  
*Institution(s):* <sup>1</sup> Johns Hopkins Univ., <sup>2</sup> NASA-GSFC
- 348.18 Comparison of Stellar Classification Accuracies Using Automated Algorithms**  
**Author(s):** Tessa Thorsen<sup>1</sup>, Jiahuan Zhou<sup>2</sup>, Ying Wu<sup>2</sup>  
*Institution(s):* <sup>1</sup> Gettysburg College, <sup>2</sup> Northwestern University

- 348.19 Variable Star Signature Classification using Slotted Symbolic Markov Modeling**  
**Author(s):** Kyle B. Johnston<sup>1</sup>, Adrian M. Peter<sup>1</sup>  
*Institution(s):* <sup>1</sup> Florida Institute of Technology
- 348.20 Supernova Photometric Lightcurve Classification**  
**Author(s):** Tayeb Zaidi<sup>1</sup>, Gautham Narayan<sup>1</sup>  
*Institution(s):* <sup>1</sup> NOAO
- 348.21 Python Program to Select HII Region Models**  
**Author(s):** Clare Miller<sup>1</sup>, Cody Lamarche<sup>1</sup>, Amit Vishwas<sup>1</sup>, Gordon J. Stacey<sup>1</sup>  
*Institution(s):* <sup>1</sup> Cornell University
- 348.22 Recovering Astrophysical Signals of Background Variable Sources in Kepler Data by Means of Custom Aperture Photometry**  
**Author(s):** Rebecca Lyn Bowers<sup>1</sup>, Joshua Pepper<sup>1</sup>, Andrej Prsa<sup>2</sup>  
*Institution(s):* <sup>1</sup> Lehigh University, <sup>2</sup> Villanova University
- 348.23 The NIRSPEC Data Reduction Pipeline for the Keck Observatory Archive**  
**Author(s):** Hien D. Tran<sup>2</sup>, R. Cohen<sup>2</sup>, J. A. Mader<sup>2</sup>, A. Colson<sup>2</sup>, G. Bruce Berriman<sup>1</sup>, Christopher R. Gelino<sup>1</sup>  
*Institution(s):* <sup>1</sup> NASA Exoplanet Science Institute, <sup>2</sup> W.M. Keck Observatory
- 348.24 Open Source Science: The Gravitational Wave Processing-Enabled Archive for NANOGrav**  
**Author(s):** Adam Brazier<sup>1</sup>, James M. Cordes<sup>1</sup>, Awa Dieng<sup>2</sup>, Robert Ferdman<sup>4</sup>, Nathaniel Garver-Daniels<sup>7</sup>, Steven Hawkins<sup>8</sup>, Justin Hendrick<sup>1</sup>, Eliu Huerta<sup>6</sup>, Michael T. Lam<sup>1</sup>, T. Joseph W. Lazio<sup>3</sup>, Ryan S Lynch<sup>5</sup>  
*Institution(s):* <sup>1</sup> Cornell University, <sup>2</sup> École nationale supérieure d'électronique, d'électrotechnique, d'informatique, d'hydraulique et des télécommunications, <sup>3</sup> Jet Propulsion Laboratory, <sup>4</sup> McGill University, <sup>5</sup> National Radio Astronomy Observatory, <sup>6</sup> University of Illinois, <sup>7</sup> University of West Virginia, <sup>8</sup> University of Wisconsin, Milwaukee

## 349 Catalogs, Surveys and Large Programs Poster Session

Thursday, 5:30 pm - 6:30 pm; Exhibit Hall A

- 349.01 Creation of a Mock Universe: Photometric Astronomy on Simulation**  
**Author(s):** Ajinkya Nene<sup>1</sup>, Aldo Rodriguez<sup>2</sup>, Joel R. Primack<sup>2</sup>  
*Institution(s):* <sup>1</sup> Lynbrook High School, <sup>2</sup> UC Santa Cruz
- 349.02 Geographically Distributed Citizen Scientist Training for the 2017 Citizen CATE Experiment**  
**Author(s):** Richard Gelderman<sup>7</sup>, Matt Penn<sup>1</sup>, Robert Baer<sup>4</sup>, Fred Isberner<sup>4</sup>, Michael Pierce<sup>6</sup>, Donald K. Walter<sup>3</sup>, Padma Yanamandra-Fisher<sup>5</sup>, Neil R. Sheeley<sup>2</sup>  
*Institution(s):* <sup>1</sup> National Solar Observatory, <sup>2</sup> Naval Research Laboratory, <sup>3</sup> South Carolina State University, <sup>4</sup> Southern Illinois University Carbondale, <sup>5</sup> Space Science Institute, <sup>6</sup> University of Wyoming, <sup>7</sup> Western Kentucky Univ.

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## 349.03 The SDSS-IV in 2015: Report of the Committee on the Participation of Women in the Sloan Digital Sky Survey

**Author(s):** Aleksandar M. Diamond-Stanic<sup>10</sup>, Sara Lucatello<sup>2</sup>, Alfonso Aragon-Salamanca<sup>9</sup>, Brian Cherinka<sup>3</sup>, Katia M. L. Cunha<sup>6</sup>, Bruce Andrew Gillespie<sup>1</sup>, Alex Hagen<sup>7</sup>, Amy Jones<sup>4</sup>, Karen Kinemuchi<sup>1</sup>, Britt Lundgren<sup>5</sup>, Adam D. Myers<sup>11</sup>, Alexandre Roman<sup>8</sup>, Gail Zasowski<sup>3</sup>

*Institution(s):* <sup>1.</sup> Apache Point Observatory, <sup>2.</sup> INAF, Observatorio Astronomico di Padova, <sup>3.</sup> Johns Hopkins University, <sup>4.</sup> Max Planck Institute for Astrophysics, <sup>5.</sup> National Science Foundation, <sup>6.</sup> Observatorio Nacional, <sup>7.</sup> Pennsylvania State University, <sup>8.</sup> University of La Serena, <sup>9.</sup> University of Nottingham, <sup>10.</sup> University of Wisconsin, <sup>11.</sup> University of Wyoming

## 349.04 White Dwarfs for Calibrating the Dark Energy Survey

**Author(s):** J. Allyn Smith<sup>1</sup>, William Wester<sup>3</sup>, Douglas Lee Tucker<sup>3</sup>, Mees B. Fix<sup>4</sup>, Pier-Emmanuel Tremblay<sup>5</sup>, Deborah J. Gullede<sup>1</sup>, Christopher P. McDonald<sup>1</sup>, Sahar S. Allam<sup>3</sup>, David James<sup>2</sup>

*Institution(s):* <sup>1.</sup> Austin Peay State Univ., <sup>2.</sup> CTIO, <sup>3.</sup> Fermilab, <sup>4.</sup> STScI, <sup>5.</sup> Univ. Warwick

## 349.05 SpIES: The Spitzer IRAC Equatorial Survey

**Author(s):** John Timlin<sup>4</sup>, Nicholas Ross<sup>9</sup>, Gordon T. Richards<sup>4</sup>, Mark Lacy<sup>6</sup>, Franz E. Bauer<sup>1</sup>, W. Niel Brandt<sup>8</sup>, Xiaohui Fan<sup>10</sup>, Daryl Haggard<sup>2</sup>, Martin Makler<sup>3</sup>, Adam D. Myers<sup>11</sup>, Donald P. Schneider<sup>8</sup>, Michael A. Strauss<sup>7</sup>, C. Megan Urry<sup>12</sup>, Nadia L. Zakamska<sup>5</sup>

*Institution(s):* <sup>1.</sup> Instituto de Astrofísica, <sup>2.</sup> Amherst College, <sup>3.</sup> Centro Brasileiro de Pesquisas Físicas, <sup>4.</sup> Drexel University, <sup>5.</sup> Johns Hopkins University, <sup>6.</sup> National Radio Astronomy Observatory, <sup>7.</sup> Princeton University, <sup>8.</sup> The Pennsylvania State University, <sup>9.</sup> The Royal Observatory, Edinburgh, <sup>10.</sup> University of Arizona, <sup>11.</sup> University of Wyoming, <sup>12.</sup> Yale University

## 349.06 The Fermi Guest Investigator program: Impactful Science and Groundbreaking Results

**Author(s):** Elizabeth C. Ferrara<sup>1</sup>

*Institution(s):* <sup>1.</sup> NASA/GSFC

## 349.07 The DAWN and FLARE Surveys

**Author(s):** James E. Rhoads<sup>1</sup>, Sangeeta Malhotra<sup>1</sup>, Zhenya Zheng<sup>9</sup>, Andrew Monson<sup>8</sup>, S. Eric Persson<sup>7</sup>, Alicia Gonzalez<sup>1</sup>, Ronald G. Probst<sup>6</sup>, Robert A. Swaters<sup>6</sup>, Vithal Tilvi<sup>1</sup>, Steven L. Finkelstein<sup>15</sup>, Tianxing Jiang<sup>1</sup>, Bahram Mobasher<sup>11</sup>, Mark Dickinson<sup>6</sup>, Alan Dressler<sup>7</sup>, Janice C. Lee<sup>10</sup>, S. Mark Ammons<sup>4</sup>, Ann I. Zabludoff<sup>12</sup>, Kimberly Emig<sup>5</sup>, Pascale Hibon<sup>3</sup>, Bhavin Joshi<sup>1</sup>, John Pharo<sup>1</sup>, Mark David Smith<sup>1</sup>, Jacob Trahan<sup>1</sup>, Sylvain Veilleux<sup>13</sup>, JunXian Wang<sup>14</sup>, Kenneth C. Wong<sup>12</sup>, Huan Yang<sup>1</sup>, Johannes Zabl<sup>2</sup>

*Institution(s):* <sup>1.</sup> Arizona State University, <sup>2.</sup> Dark Cosmology Centre, <sup>3.</sup> Gemini Observatory, <sup>4.</sup> Lawrence Livermore National Laboratory, <sup>5.</sup> Leiden University, <sup>6.</sup> NOAO, <sup>7.</sup> Observatories of the Carnegie Institution of Washington, <sup>8.</sup> Pennsylvania State University, <sup>9.</sup> Pontificia Universidad Catolica de Chile, <sup>10.</sup> Space Telescope Science Institute, <sup>11.</sup> U. California, Riverside, <sup>12.</sup> University of Arizona, <sup>13.</sup> University of Maryland, <sup>14.</sup> University of Science and Technology of China, <sup>15.</sup> University of Texas

- 349.08 The CLU Nearby Galaxy Catalog: Preliminary Results**  
**Author(s):** David O. Cook<sup>1</sup>, Mansi M. Kasliwal<sup>1</sup>  
*Institution(s):* <sup>1</sup> Caltech
- 349.09 The Stripe 82X Multiwavelength Survey of Supermassive Black Hole Growth in Powerful AGN**  
**Author(s):** C. Megan Urry<sup>19</sup>, Stephanie M. LaMassa<sup>12</sup>, Nico Cappelluti<sup>19</sup>, Tonima Ananna<sup>19</sup>, Mara Salvato<sup>9</sup>, Francesca Civano<sup>19</sup>, Stefano Marchesi<sup>13</sup>, Andrea Comastri<sup>13</sup>, Gordon T. Richards<sup>2</sup>, Eilat Glikman<sup>11</sup>, Hans Boehringer<sup>9</sup>, Marcella Brusa<sup>14</sup>, Carolin Cardamone<sup>18</sup>, Gayoung Chon<sup>9</sup>, Duncan Farrah<sup>17</sup>, Marat Gilfanov<sup>8</sup>, Paul J. Green<sup>4</sup>, Stefanie Komossa<sup>10</sup>, Paulina Lira<sup>15</sup>, Martin Makler<sup>1</sup>, Robert Pecoraro<sup>19</sup>, Piero Ranalli<sup>7</sup>, Kevin Schawinski<sup>3</sup>, Daniel K. Stern<sup>5</sup>, Ezequiel Treister<sup>16</sup>, Marco Viero<sup>6</sup>  
*Institution(s):* <sup>1</sup> 15. Centro Brasileiro de Pesquisas Físicas, <sup>2</sup> Drexel University, <sup>3</sup> ETH Zurich, <sup>4</sup> Harvard Smithsonian Center for Astrophysics, <sup>5</sup> JPL/Caltech, <sup>6</sup> KIPAC/Stanford, <sup>7</sup> Lund Observatory, <sup>8</sup> Max Planck Institute for Astronomy, <sup>9</sup> Max Planck Institute for Extraterrestrial Physics, <sup>10</sup> Max Planck Institute for Radio Astronomy, <sup>11</sup> Middlebury, <sup>12</sup> NASA Goddard Space Flight Center, <sup>13</sup> Observatory of Bologna, <sup>14</sup> University of Bologna, <sup>15</sup> University of Chile, <sup>16</sup> University of Concepcion, <sup>17</sup> Virginia Tech, <sup>18</sup> Wheelock College, <sup>19</sup> Yale University
- 349.10 Characterizing imaging distortion for the Intermediate Palomar Transient Factory**  
**Author(s):** David L. Shupe<sup>2</sup>, Russ Laher<sup>2</sup>, Frank J. Masci<sup>2</sup>, Jason A. Surace<sup>2</sup>, Eric Christopher Bellm<sup>1</sup>, Adam Miller<sup>1</sup>, Eran Ofek<sup>3</sup>  
*Institution(s):* <sup>1</sup> Caltech, <sup>2</sup> IPAC/Caltech, <sup>3</sup> Weizmann Institute of Science
- 349.11 A Machine-learning Model to Separate Stars and Galaxies in iPTF Images**  
**Author(s):** Adam Miller<sup>2</sup>, Maya Kulkarni<sup>3</sup>, Thomas A Prince<sup>1</sup>  
*Institution(s):* <sup>1</sup> Caltech, <sup>2</sup> JPL, <sup>3</sup> UC Berkeley
- 349.12 Supernovae in the First Two Years of the Dark Energy Survey**  
**Author(s):** Christopher D'Andrea<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Southampton
- 349.13 Extragalactic Transients Discovered by the All-Sky Automated Survey for Supernovae**  
**Author(s):** Jonathan Brown<sup>1</sup>, Thomas Warren-Son Holoiien<sup>1</sup>  
*Institution(s):* <sup>1</sup> The Ohio State University
- 349.14 Catalina Real-Time Transient Survey (CRTS): A Time Domain Resource for the Entire Community**  
**Author(s):** Stanislav G. Djorgovski<sup>1</sup>, Andrew J. Drake<sup>1</sup>, Ashish A. Mahabal<sup>1</sup>, Matthew Graham<sup>1</sup>, Ciro Donalek<sup>1</sup>, Eric J. Christensen<sup>2</sup>, Stephen M. Larson<sup>2</sup>  
*Institution(s):* <sup>1</sup> Caltech, <sup>2</sup> Univ. of Arizona
- 349.15 Measuring Redshifts of Emission-line Galaxies Using Ramp Filters**  
**Author(s):** Ryan William Lesser<sup>1</sup>, John Bohman<sup>1</sup>, Mathew McNeff<sup>1</sup>, Marcus Holden<sup>1</sup>, Joseph Moody<sup>1</sup>, Michael D. Joner<sup>1</sup>, Jonathan Barnes<sup>2</sup>  
*Institution(s):* <sup>1</sup> Brigham Young University, <sup>2</sup> Salt Lake Community College

# THURSDAY, 7 JANUARY 2016

## 349.16 Extreme Variability in a Broad Absorption Line Quasar

**Author(s):** Daniel Stern<sup>2</sup>, Matthew Graham<sup>1</sup>, Nahum Arav<sup>5</sup>, Stanislav G. Djorgovski<sup>1</sup>, Carter Chamberlain<sup>5</sup>, Aaron J. Barth<sup>4</sup>, Ciro Donalek<sup>1</sup>, Andrew J. Drake<sup>1</sup>, Eilat Glikman<sup>3</sup>, Hyunsung David Jun<sup>2</sup>, Ashish A. Mahabal<sup>1</sup>, Charles C. Steidel<sup>1</sup>

*Institution(s):* <sup>1</sup> Caltech, <sup>2</sup> JPL/ Caltech, <sup>3</sup> Middlebury College, <sup>4</sup> UC-Irvine, <sup>5</sup> Virginia Tech

## 349.17 J-PAS: The Javalambre-Physics of the Accelerating Universe Astrophysical Survey

**Author(s):** Renato A. Dupke<sup>4</sup>, Narciso Benitez<sup>2</sup>, Mariano Moles<sup>1</sup>, Laerte Sodre<sup>3</sup>, J-PAS Collaboration<sup>1</sup>

*Institution(s):* <sup>1</sup> CEFCA, <sup>2</sup> IAA, <sup>3</sup> IAG-USP, <sup>4</sup> Univ. of Michigan / Eureka Scientific

## 349.18 A 6 GHz Synoptic Survey of the COSMOS Deep Field with the JVLA

**Author(s):** Joseph R Sink<sup>2</sup>, Steven T. Myers<sup>1</sup>

*Institution(s):* <sup>1</sup> NRAO, <sup>2</sup> University Of Iowa

## 349.19 The Arecibo Galaxy Environment Survey: Observations towards the NGC 7817/7798 Galaxy Pair

**Author(s):** Amanda Harrison<sup>1</sup>

*Institution(s):* <sup>1</sup> Whittier College

## 349.20 The Jansky VLA Frontier Field Public Legacy Survey

**Author(s):** Emmanuel Momjian<sup>2</sup>, Eric J. Murphy<sup>1</sup>, Vandana Desai<sup>1</sup>, Sanjay Bhatnagar<sup>2</sup>

*Institution(s):* <sup>1</sup> California Institute of Technology, <sup>2</sup> NRAO

## 400 2015 Helen B. Warner Prize: Origins of Structure in Planetary Systems

Friday, 8:30 am - 9:20 am; Osceola C

Chair: C. Megan Urry (*Yale University*)



400.01

**Origins of Structure in Planetary Systems**

**Author(s): Ruth Murray-Clay<sup>1</sup>**

*Institution(s): <sup>1</sup> University of California*

**Citation:** For her theoretical studies of star and planet formation and for her substantial contributions to our understanding of circumstellar environments and the dynamics of the galactic center.

## Light Pollution at Campus/University Observatories

Friday, 9:30 am - 11:30 am; Orange Blossom Ballroom

Every January for the past three years, the Committee on Light Pollution, Radio Interference, and Space Debris has hosted successful AAS splinter sessions focusing on its mission and in particular how it relates to shielding, spectral management and LED technology issues near observatory sites. In keeping with the committee's charge to act as a clearinghouse for information on the topics of light pollution, radio interference and space debris, the theme for the proposed splinter session this January would concentrate on the current impact on campus and dedicated university-run observatories, such as many of those at <http://www.collegerank.net/amazing-college-observatories/>. Our speakers would make short presentations about the current impact on their observatory and the steps that people are taking to control or mitigate glare and stray light. Such people could include Doug Arion (Carthage College), Daniel Caton (Appalachian State University), James Lowenthal (Smith College), Roger Culver (Colorado State), Eric Hooper (University of Wisconsin) who have responded positively to our inquiries and are very active with campus and dedicated university-run observatories. In addition, the International Dark-Sky Association (IDA) may be providing a speaker to discuss the "Starry Sky-Friendly Campus Program" which is a new initiative under consideration at IDA. The program would promote state of the art environmentally progressive lighting practices on college campuses, which addresses the issue of student safety and security but will have the added benefit of keeping campus skies starry. The short presentations would be followed by a group discussion.

## Hack Day

Friday, 10:00 am - 5:00 pm; Tallahassee

A day to work intensively on collaborative projects. A wide-variety of projects will be undertaken and will be everything from software development and coding to creative outreach projects. Projects that take advantage of the unique gathering of enthusiasm and expertise at the Winter AAS Meeting are particularly encouraged. Hack ideas and participants will be solicited before and during the meeting. Participants can either

# FRIDAY, 8 JANUARY 2016

lead a project or join a project and should plan on focusing primarily on only one hack. In addition, we ask participants to commit to hacking for the majority of the day. Registration is encouraged to facilitate pre-meeting coordination, but not required. For more information, please visit <http://www.astrobetter.com/wiki/AASHackDay>.

**Organizer:** Kelle Cruz (*Hunter College/CUNY and AMNH*)

## 401 Physical Properties of High Redshift Galaxies

Friday, 10:00 am - 11:30 am; Sun A

**Chair:** Katherine Whitaker (*Yale University*)

### 401.01 The Star Formation Rate Efficiency of Atomic-dominated Hydrogen Gas from $z \sim 1$ to $z \sim 3$

**Author(s):** Marc Rafelski<sup>2</sup>, Jonathan P. Gardner<sup>2</sup>, Harry I. Teplitz<sup>3</sup>, Marcel Neeleman<sup>4</sup>, Michele Fumagalli<sup>1</sup>

*Institution(s):* <sup>1</sup> Durham University, <sup>2</sup> Goddard Space Flight Center, <sup>3</sup> Infrared Science Archive (IRSA), <sup>4</sup> UCO/Lick Observatory

### 401.02 The Formation of Bulges and Disks in the CANDELS survey

**Author(s):** Christopher Conselice<sup>1</sup>, Berta Margalef-Bentabol<sup>1</sup>

*Institution(s):* <sup>1</sup> Univ. of Nottingham

### 401.03D Galaxy Proto-clusters as an Interface Between Structure, Cluster, and Galaxy Formation

**Author(s):** Yi-Kuan Chiang<sup>1</sup>

*Institution(s):* <sup>1</sup> UT Austin

### 401.05 UV Absorption Lines as Metallicity Estimator and the Metal Content of Star-forming Galaxies at $z=5$

**Author(s):** Andreas Faisst<sup>1</sup>, Peter L. Capak<sup>1</sup>, Iary Davidson<sup>6</sup>, Yuko Kakazu<sup>5</sup>, Mara Salvato<sup>4</sup>, Clotilde Laigle<sup>2</sup>, Masato Onodera<sup>3</sup>, Daniel Masters<sup>1</sup>

*Institution(s):* <sup>1</sup> Caltech, <sup>2</sup> Institut d'Astrophysique de Paris, <sup>3</sup> Institute for Astronomy, ETH Zurich, <sup>4</sup> Max Planck Institut für Extraterrestrische Physik, <sup>5</sup> Subaru Telescope, <sup>6</sup> Università di Bologna

### 401.06 The Impossibly Early Galaxy Problem

**Author(s):** Charles L. Steinhardt<sup>1</sup>, Peter L. Capak<sup>1</sup>, Daniel Masters<sup>1</sup>, Josh S. Speagle<sup>2</sup>

*Institution(s):* <sup>1</sup> Caltech, <sup>2</sup> Harvard

### 401.07 The Atacama Cosmology Telescope: Spectroscopic Redshifts for Dusty Star-forming Galaxies

**Author(s):** Andrew J. Baker<sup>5</sup>, Min Su Yun<sup>9</sup>, Grant Wilson<sup>9</sup>, Ting Su<sup>2</sup>, Jesus Rivera<sup>5</sup>, Andrew I. Harris<sup>8</sup>, David T. Frayer<sup>4</sup>, Itziar Aretxaga<sup>1</sup>, Mark J. Devlin<sup>10</sup>, Megan B. Gralla<sup>6</sup>, Kirsten Hall<sup>2</sup>, Mark Halpern<sup>7</sup>, David Hughes<sup>1</sup>, John Patrick Hughes<sup>5</sup>, Charles R. Keeton<sup>5</sup>, Tobias Marriage<sup>2</sup>, Alfredo Montana<sup>1</sup>, David Sanchez<sup>1</sup>, Amitpal S. Tagore<sup>11</sup>, Yuping Tang<sup>9</sup>, Axel Weiss<sup>3</sup>

*Institution(s):* <sup>1</sup> INAOE, <sup>2</sup> Johns Hopkins University, <sup>3</sup> MPIfR, <sup>4</sup> NRAO, <sup>5</sup> Rutgers, the State University of NJ, <sup>6</sup> University of Arizona, <sup>7</sup> University of British Columbia, <sup>8</sup> University of Maryland, <sup>9</sup> University of Massachusetts, <sup>10</sup> University of Pennsylvania, <sup>11</sup> University of Manchester

**401.08 Cosmic Evolution of X-ray Binary Populations: Probes of Changing Chemistry and Aging Stellar Populations in the Universe**

**Author(s):** Bret Lehmer<sup>11</sup>, Antara Basu-Zych<sup>6</sup>, Stefano Mineo<sup>5</sup>, W. Niel Brandt<sup>8</sup>, Rafael T. Eufrazio<sup>6</sup>, Tassos Fragos<sup>1</sup>, Ann E. Hornschemeier<sup>6</sup>, Bin Luo<sup>8</sup>, Yongquan Xue<sup>14</sup>, Franz E. Bauer<sup>9</sup>, Marat Gilfanov<sup>5</sup>, Vassiliki Kalogera<sup>7</sup>, Piero Ranalli<sup>2</sup>, Donald P. Schneider<sup>8</sup>, Ohad Shemmer<sup>13</sup>, Paolo Tozzi<sup>3</sup>, Jonathan Trump<sup>8</sup>, Cristian Vignali<sup>12</sup>, JunXian Wang<sup>14</sup>, Mihoko Yukita<sup>4</sup>, Andreas Zezas<sup>10</sup>

*Institution(s):* <sup>1.</sup> Geneva Observatory, <sup>2.</sup> IAASARS, <sup>3.</sup> INAF, <sup>4.</sup> Johns Hopkins University, <sup>5.</sup> MPA, <sup>6.</sup> NASA GSFC, <sup>7.</sup> Northwestern, <sup>8.</sup> Penn State, <sup>9.</sup> Pontificia Catolica de Chile, <sup>10.</sup> SAO, <sup>11.</sup> University of Arkansas, <sup>12.</sup> University of Bologna, <sup>13.</sup> University of North Texas, <sup>14.</sup> University of Science and Technology of China

**402 Binary Stellar Systems, X-ray Binaries II**

Friday, 10:00 am - 11:30 am; Sun B

**Chair:** Constantinos Kalapotharakos (NASA, Goddard Space Flight Center)

**402.01 Young, Low-Mass Spectroscopic Binaries in Nearby Moving Groups**

**Author(s):** Laura Flagg<sup>4</sup>, Evgenya L Shkolnik<sup>1</sup>, Alycia J. Weinberger<sup>3</sup>, Brendan P. Bowler<sup>2</sup>, Adam L. Kraus<sup>6</sup>, Michael C. Liu<sup>5</sup>

*Institution(s):* <sup>1.</sup> Arizona State University, <sup>2.</sup> California Institute of Technology, <sup>3.</sup> Carnegie Institute of Washington, <sup>4.</sup> Northern Arizona University, <sup>5.</sup> University of Hawaii, <sup>6.</sup> University of Texas - Austin

**402.02D Variability of Optical Counterparts to X-ray Selected Sources in the Galactic Bulge Survey**

**Author(s):** Christopher Johnson<sup>1</sup>, Robert I. Hynes<sup>1</sup>, Peter Jonker<sup>2</sup>, Manuel Torres<sup>2</sup>, Thomas J. Maccarone<sup>3</sup>, Christopher Britt<sup>3</sup>, Danny Steeghs<sup>4</sup>

*Institution(s):* <sup>1.</sup> Louisiana State University, <sup>2.</sup> SRON, <sup>3.</sup> Texas Tech University, <sup>4.</sup> University of Warwick

**402.03D Is the Binary Mass Ratio Distribution Separation-Dependent?**

**Author(s):** Kevin Gullikson<sup>1</sup>, Adam L. Kraus<sup>1</sup>

*Institution(s):* <sup>1.</sup> University of Texas Austin

**402.04 Radial velocity monitoring of Kepler heartbeat stars with Keck/HIRES**

**Author(s):** Avi Shporer<sup>2</sup>, Jim Fuller<sup>1</sup>, Kelly Hambleton<sup>8</sup>, Susan Mullally<sup>4</sup>, Howard T. Isaacson<sup>5</sup>, Andrew Howard<sup>7</sup>, Donald Kurtz<sup>6</sup>, Mara Zimmerman<sup>3</sup>

*Institution(s):* <sup>1.</sup> Caltech, <sup>2.</sup> JPL, <sup>3.</sup> Juniata College, <sup>4.</sup> NASA Ames Research Center, <sup>5.</sup> University of California, Berkeley, <sup>6.</sup> University of Central Lancashire, <sup>7.</sup> University of Hawaii, <sup>8.</sup> Villanova University

**402.05D Fundamental Parameters of Eclipsing Binaries in the Kepler Field of View**

**Author(s):** Rachel A. Matson<sup>1</sup>

*Institution(s):* <sup>1.</sup> Georgia State University

# FRIDAY, 8 JANUARY 2016

## 402.06 The Supernova Impostor SN 2010da

**Author(s):** Breanna A. Binder<sup>5</sup>, Benjamin F. Williams<sup>5</sup>, Albert K. H. Kong<sup>2</sup>, Paul P. Plucinsky<sup>1</sup>, Terrance J. Gaetz<sup>1</sup>, Evan D. Skillman<sup>4</sup>, Andrew E. Dolphin<sup>3</sup>

*Institution(s):* <sup>1</sup> Harvard-Smithsonian Center for Astrophysics, <sup>2</sup> National Tsing Hua University, <sup>3</sup> Raytheon Company, <sup>4</sup> University of Minnesota, <sup>5</sup> University of Washington

## 403 AGN, QSO, Blazars: Gamma Ray and Cosmic Ray Sources

Friday, 10:00 am - 11:30 am; Sun C

Chair: Jeremy Perkins (NASA/GSFC)

### 403.01 Methods for Identifying Pair Halos

**Author(s):** Brendan Wells<sup>1</sup>, Regina Caputo<sup>1</sup>, William Atwood<sup>1</sup>, Steven M. Ritz<sup>1</sup>

*Institution(s):* <sup>1</sup> University of California, Santa Cruz

### 403.02 Evidence for quasi-periodic modulation in the gamma-ray blazar PG 1553+113

**Author(s):** Sara Cutini<sup>2</sup>, Stefano Ciprini<sup>2</sup>, Stefan Larsson<sup>1</sup>, David John Thompson<sup>4</sup>, Antonio Stamerra<sup>3</sup>

*Institution(s):* <sup>1</sup> KTH Royal Institute of Technology, <sup>2</sup> ASDC, <sup>3</sup> INAF, <sup>4</sup> NASA Goddard Space Flight Center

### 403.04 2FHL: The second Catalog of Hard Fermi-LAT Sources

**Author(s):** Marco Ajello<sup>2</sup>, Alberto Dominguez<sup>2</sup>, Jamie Cohen<sup>3</sup>, Sara Cutini<sup>1</sup>, Dario Gasparrini<sup>1</sup>

*Institution(s):* <sup>1</sup> ASI Science Data Center, <sup>2</sup> Clemson, <sup>3</sup> University of Maryland

### 403.05 Pushing the Limits: High Redshift Fermi-LAT Blazars

**Author(s):** Roopesh Ojha<sup>3</sup>, Dario Gasparrini<sup>2</sup>, Benoit Lott<sup>1</sup>, Sara Cutini<sup>2</sup>

*Institution(s):* <sup>1</sup> CNRS, <sup>2</sup> INFN, ASI Science Data Center, <sup>3</sup> NASA/GSFC

### 403.06 Highlights from the VERITAS Active Galactic Nuclei Observing Program

**Author(s):** Lucy Fortson<sup>1</sup>

*Institution(s):* <sup>1</sup> University of Minnesota

### 403.07 PKS 1441+25: Insights from a New Gamma-ray Quasar

**Author(s):** Caitlin Johnson<sup>1</sup>

*Institution(s):* <sup>1</sup> University of California, Santa Cruz

### 403.08 Spectacular variability of gamma-ray emission in blazar 3C279 during the large outburst in June 2015

**Author(s):** Grzegorz Maria Madejski<sup>4</sup>, Masaaki Hayashida<sup>2</sup>, Katsuaki Asano<sup>2</sup>, David John Thompson<sup>3</sup>, Krzysztof Nalewajko<sup>4</sup>, Marek Sikora<sup>1</sup>

*Institution(s):* <sup>1</sup> Copernicus Center, <sup>2</sup> ICRR, Univ. of Tokyo, <sup>3</sup> NASA/Goddard, <sup>4</sup> Stanford Linear Accelerator Ctr.

### 403.09 Ultra-High Energy Cosmic Rays

**Author(s):** Rafael Antonio Colon<sup>2</sup>, Roberto Moncada<sup>1</sup>, Juan Guerra<sup>2</sup>, Luis Anchordoqui<sup>2</sup>

*Institution(s):* <sup>1</sup> CUNY City College, <sup>2</sup> Lehman College

## 404 Formation and Evolution of Stars and Stellar Systems

Friday, 10:00 am - 11:30 am; Sun D

Chair: Todd Henry (*RECONS*)

- 404.02 Binaries at Birth: Stellar multiplicity in embedded clusters from radial velocity variations in the IN-SYNC survey**  
**Author(s):** Karl Oskar Jaehnig<sup>1</sup>, Keivan Stassun<sup>3</sup>, Jonathan C. Tan<sup>2</sup>, Kevin R. Covey<sup>4</sup>, Nicola Da Rio<sup>2</sup>  
*Institution(s):* <sup>1</sup> Fisk University, <sup>2</sup> University of Florida, <sup>3</sup> Vanderbilt University, <sup>4</sup> Western Washington University
- 404.03 Signatures of planet formation in high-precision elemental abundances of twin stars**  
**Author(s):** Ivan Ramirez<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Texas at Austin
- 404.04 The EREBOS Project: Determining the Influence of Substellar Objects on Stellar Evolution**  
**Author(s):** Brad Barlow<sup>1</sup>, Veronika Schaffenroth<sup>2</sup>, Rodrigo Catalan-Hurtado<sup>1</sup>  
*Institution(s):* <sup>1</sup> High Point University, <sup>2</sup> University of Innsbruck
- 404.05 High-resolution analysis of carbon-enhanced metal-poor stars with Magellan**  
**Author(s):** Catherine R. Kennedy<sup>2</sup>, Vinicius M Placco<sup>1</sup>, Timothy C. Beers<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Notre Dame, <sup>2</sup> University of Tampa
- 404.06 The Frequency of Lithium-Rich Giants in Globular Clusters**  
**Author(s):** Evan N Kirby<sup>1</sup>, Puragra Guhathakurta<sup>7</sup>, Andrew J Zhang<sup>6</sup>, Jerry Hong<sup>4</sup>, Michelle Guo<sup>5</sup>, Rachel Guo<sup>2</sup>, Judith G. Cohen<sup>1</sup>, Katia M. L. Cunha<sup>3</sup>  
*Institution(s):* <sup>1</sup> California Institute of Technology, <sup>2</sup> Irvington High School, <sup>3</sup> Observatório Nacional, <sup>4</sup> Palo Alto High School, <sup>5</sup> Stanford University, <sup>6</sup> The Harker School, <sup>7</sup> University of California Santa Cruz
- 404.07 The asteroseismic signature of strong magnetic fields in the cores of red giant stars**  
**Author(s):** Jim Fuller<sup>1</sup>, Matteo Cantiello<sup>3</sup>, Dennis Stello<sup>4</sup>, Rafael Garcia<sup>2</sup>, Lars Bildsten<sup>3</sup>  
*Institution(s):* <sup>1</sup> California Institute of Technology, <sup>2</sup> CEA, <sup>3</sup> Kavli Institute for Theoretical Physics, <sup>4</sup> University of Sydney
- 404.08 First results from the Bulge Asymmetries and Dynamic Evolution survey**  
**Author(s):** Ylva Pihlstrom<sup>3</sup>, Lorant Sjouwerman<sup>1</sup>, Robert Michael Rich<sup>2</sup>, Mark J. Claussen<sup>1</sup>, Mark Morris<sup>2</sup>  
*Institution(s):* <sup>1</sup> NRAO, <sup>2</sup> UCLA, <sup>3</sup> Univ. of New Mexico
- 404.09 Probing the dusty inhabitants of the Local Group Galaxies: JWST/MIRI colors of infrared stellar populations**  
**Author(s):** Olivia Jones<sup>1</sup>, Margaret Meixner<sup>1</sup>  
*Institution(s):* <sup>1</sup> STScI

# FRIDAY, 8 JANUARY 2016

## 405 Relativistic Astrophysics, Gravitational Lenses & Waves

Friday, 10:00 am - 11:30 am; Osceola A

Chair: Curtis McCully (*Rutgers, The State University of New Jersey*)

**405.01 Finally Here - The launch of LISA Pathfinder and the road to detecting Gravitational Waves in space**

**Author(s):** James Thorpe<sup>1</sup>

*Institution(s):*<sup>1</sup> NASA GSFC

**405.02 NASA's Preparations for ESA's L3 Gravitational Wave Mission**

**Author(s):** Robin T. Stebbins<sup>1</sup>

*Institution(s):*<sup>1</sup> NASA GSFC

**405.03 Evaluation of new technologies for the LISA gravitational reference sensor using the UF torsion pendulum**

**Author(s):** John Conklin<sup>1</sup>, Andrew Chilton<sup>1</sup>, Taiwo Olatunde<sup>1</sup>, Stephen Apple<sup>1</sup>, Michael Aitken<sup>1</sup>, Giacomo Ciani<sup>1</sup>, Guido Mueller<sup>1</sup>

*Institution(s):*<sup>1</sup> University of Florida

**405.04D Rate and Followup of Advanced LIGO-Virgo Events**

**Author(s):** Hsin-Yu Chen<sup>1</sup>, Daniel Holz<sup>1</sup>

*Institution(s):*<sup>1</sup> University of Chicago

**405.05 An Automated Search for Gravitationally Lensed Quasars in the Sloan Digital Sky Survey**

**Author(s):** Pranav Sivakumar<sup>1</sup>, Janani N. Sivakumar<sup>2</sup>, Paul J. Nebres<sup>1</sup>

*Institution(s):*<sup>1</sup> Illinois Mathematics and Science Academy, <sup>2</sup> Indiana University

**405.06 Investigating Parameter Space for Resonant Stellar Absorption of Gravitational Waves**

**Author(s):** K.E. Saavik Ford<sup>1</sup>, Barry McKernan<sup>1</sup>, Susan Blackburn<sup>1</sup>

*Institution(s):*<sup>1</sup> CUNY Borough of Manhattan Community College

**405.07 Multi-Messenger Sources For Pulsar Timing Arrays**

**Author(s):** Joseph Simon<sup>2</sup>, Sarah Spolaor<sup>1</sup>

*Institution(s):*<sup>1</sup> NRAO Socorro, <sup>2</sup> University of Wisconsin-Milwaukee

**405.08 Towards robust detection of gravitational waves by pulsar timing**

**Author(s):** Neil J. Cornish<sup>1</sup>, Laura Sampson<sup>2</sup>

*Institution(s):*<sup>1</sup> Montana State Univ., <sup>2</sup> Northwestern University

## 406 Extrasolar Planets: Hosts, Interactions, Formation, and Interiors

Friday, 10:00 am - 11:30 am; Osceola B

Chair: Erika Nesvold (*Department of Terrestrial Magnetism, Carnegie Institution of Washington*)

- 406.01 How Many Exoplanets Does it Take to Constrain the Origin of Mercury?**  
**Author(s):** Leslie Rogers<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of California, Berkeley
- 406.02 A variable polytrope index applied to planet and material models**  
**Author(s):** Kevin Thielen<sup>1</sup>, Stephen Weppner<sup>1</sup>, Alexander Zielinski<sup>1</sup>  
*Institution(s):* <sup>1</sup> Eckerd College
- 406.03 How Giant Planets Shape the Characteristics of Terrestrial Planets**  
**Author(s):** Thomas Barclay<sup>1</sup>, Elisa V. Quintana<sup>1</sup>  
*Institution(s):* <sup>1</sup> NASA Ames Research Center
- 406.04 The Effect of Orbital Configuration on the Possible Climates and Habitability of Kepler-62f**  
**Author(s):** Aomawa Shields<sup>1</sup>, Rory Barnes<sup>2</sup>, Eric Agol<sup>2</sup>, Benjamin Charnay<sup>2</sup>, Cecilia Bitz<sup>2</sup>, Victoria Meadows<sup>2</sup>  
*Institution(s):* <sup>1</sup> UCLA/Harvard, <sup>2</sup> University of Washington
- 406.05 Solar and Stellar Flares over Time: Effects on Hosted Planets**  
**Author(s):** Edward F. Guinan<sup>1</sup>, Laurence E. DeWarf<sup>1</sup>, Scott G. Engle<sup>1</sup>, Jeffrey Gropp<sup>1</sup>  
*Institution(s):* <sup>1</sup> Villanova Univ.
- 406.07 Dynamical Constraints on the Core Mass of Hot Jupiter HAT-P-13b**  
**Author(s):** Peter Benjamin Buhler<sup>2</sup>, Heather Knutson<sup>2</sup>, Konstantin Batygin<sup>2</sup>, Benjamin James Fulton<sup>4</sup>, Adam Seth Burrows<sup>1</sup>, Jonathan J. Fortney<sup>3</sup>  
*Institution(s):* <sup>1</sup> Astrophysical Sciences, Princeton University, <sup>2</sup> California Institute of Technology, <sup>3</sup> Department of Astronomy and Astrophysics, University of California, Santa Cruz, <sup>4</sup> Institute for Astronomy, University of Hawaii at Manoa
- 406.08D Diagnostics of models and observations in the contexts of exoplanets, brown dwarfs, and very low-mass stars.**  
**Author(s):** Taisiya Kopytova<sup>1</sup>  
*Institution(s):* <sup>1</sup> Max Planck Institute for Astronomy

## 407 Cosmology, CMB, and Dark Matter III

Friday, 10:00 am - 11:30 am; Miami

**Chair:** Puragra Guhathakurta (*UC, Santa Cruz*)

- 407.01 Probing B-mode foregrounds using estimators of isotropy violation**  
**Author(s):** Aditya Rotti<sup>1</sup>, Kevin Huffenberger<sup>1</sup>  
*Institution(s):* <sup>1</sup> Florida State University
- 407.02D The Scale-Dependence of Halo Assembly Bias**  
**Author(s):** Tomomi Sunayama<sup>2</sup>, Andrew Hearin<sup>2</sup>, Nikhil Padmanabhan<sup>2</sup>, Alexie Leauthaud<sup>1</sup>  
*Institution(s):* <sup>1</sup> Kavli Institute for the Physics and Mathematics of the Universe The University of Tokyo, <sup>2</sup> Yale University

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- 407.03 Fisher Matrix Optimization of Cosmic Microwave Background Interferometry**  
**Author(s):** Haonan Liu<sup>1</sup>, Emory F. Bunn<sup>1</sup>  
*Institution(s):* <sup>1</sup> *University of Richmond*
- 407.04 Associations between small-scale structure in the GALFA survey data of HI in the galactic disk and similar features in the Cosmic Microwave Background observed by PLANCK**  
**Author(s):** Gerrit L. Verschuur<sup>1</sup>  
*Institution(s):* <sup>1</sup> *Arecibo Observatory*
- 407.05 Gravitational Lensing Science with the Atacama Cosmology Telescope Polarization Survey**  
**Author(s):** Alexander Van Englen<sup>1</sup>  
*Institution(s):* <sup>1</sup> *CITA*
- 407.06 Polarization predictions for cosmological models with large-scale power modulation**  
**Author(s):** Emory F. Bunn<sup>1</sup>, Qingyang Xue<sup>1</sup>  
*Institution(s):* <sup>1</sup> *Univ. of Richmond*
- 407.07 Diffuse gamma-ray emission modeling near the Galactic Center and the 3 GeV excess**  
**Author(s):** Andrea Albert<sup>1</sup>  
*Institution(s):* <sup>1</sup> *SLAC National Accelerator Laboratory*
- 407.08 Eliminating the optical depth nuisance from the CMB with 21cm cosmology**  
**Author(s):** Adrian Liu<sup>2</sup>, Jonathan R. Pritchard<sup>1</sup>, Rupert Allison<sup>3</sup>, Aaron Parsons<sup>2</sup>, Uros Seljak<sup>2</sup>, Blake Sherwin<sup>2</sup>  
*Institution(s):* <sup>1</sup> *Imperial College*, <sup>2</sup> *University of California Berkeley*, <sup>3</sup> *University of Oxford*

## 408 Structure and Physics of Galaxies at $z < \sim 0.2$

Friday, 10:00 am - 11:30 am; Naples

Chair: Kartik Sheth (*NRAO*)

- 408.01 GAMA: Stellar Mass Assembly in Galaxy Bulges and Disks**  
**Author(s):** Amanda J. Moffett<sup>1</sup>, Simon P Driver<sup>1</sup>, Rebecca Lange<sup>1</sup>, Aaron Robotham<sup>1</sup>, Lee Kelvin<sup>2</sup>  
*Institution(s):* <sup>1</sup> *ICRAR, University of Western Australia*, <sup>2</sup> *Liverpool John Moores University*
- 408.02D The Evolution of Galaxies (via SF activity and gas content) versus Environment**  
**Author(s):** Ryan Cybulski<sup>1</sup>, Min Su Yun<sup>1</sup>  
*Institution(s):* <sup>1</sup> *University of Massachusetts, Amherst*
- 408.03 Demographics of Isolated Galaxies along the Hubble Sequence**  
**Author(s):** Honggeun Khim<sup>1</sup>, Sukyoung Yi<sup>1</sup>, Jongwon Park<sup>1</sup>, Seong-woo Seo<sup>1</sup>, Jaehyun Lee<sup>1</sup>, Rory Smith<sup>1</sup>  
*Institution(s):* <sup>1</sup> *Yonsei University*

**408.04D Toward the Distribution of Orbital Parameters of Nearby Major Galaxy Mergers**

**Author(s):** Seyed Alireza Mortazavi Karvani<sup>1</sup>  
*Institution(s):*<sup>1.</sup> Johns Hopkins University

**408.05 Why do the HighMass Galaxies Have so Much Gas?: Studying Massive, Gas-Rich Galaxies at z~0 with Resolved HI and H2**

**Author(s):** Gregory L Hallenbeck<sup>1</sup>  
*Institution(s):*<sup>1.</sup> Union College

**409 Molecular Clouds, HII Regions, Interstellar Medium I**

Friday, 10:00 am - 11:30 am; Tampa

**Chair:** Joseph Lazio (*Jet Propulsion Laboratory*)

**409.01 Mapping Magnetic Fields in Star Forming Regions with BLASTPol**

**Author(s):** Laura M. Fissel<sup>4</sup>, Peter Ade<sup>3</sup>, Francesco E Angilè<sup>15</sup>, Peter Ashton<sup>4</sup>, Steven J Benton<sup>11</sup>, Mark J. Devlin<sup>15</sup>, Bradley Dober<sup>15</sup>, Yasuo Fukui<sup>8</sup>, Nicholas B Galitzki<sup>15</sup>, Natalie Gandilo<sup>16</sup>, J.R. Klein<sup>15</sup>, Zhi-Yun Li<sup>17</sup>, Andrei Korotkov<sup>1</sup>, Peter G. Martin<sup>5</sup>, Tristan Matthews<sup>4</sup>, Lorenzo Moncelsi<sup>2</sup>, fumitaka nakamura<sup>9</sup>, Calvin Barth Netterfield<sup>16</sup>, Giles Novak<sup>4</sup>, Enzo Pascale<sup>3</sup>, Frédéric Poidevin<sup>7</sup>, Fábio Pereira Santos<sup>4</sup>, Giorgio Savini<sup>12</sup>, Douglas Scott<sup>13</sup>, Jamil Shariff<sup>16</sup>, Juan D. Soler<sup>6</sup>, Nicholas Thomas<sup>10</sup>, carole tucker<sup>3</sup>, Gregory S. Tucker<sup>1</sup>, Derek Ward-Thompson<sup>14</sup>  
*Institution(s):*<sup>1.</sup> Brown University, <sup>2.</sup> California Institute of Technology, <sup>3.</sup> Cardiff University, <sup>4.</sup> CIERA - Northwestern University, <sup>5.</sup> CITA, <sup>6.</sup> Institute d'Astrophysique Spatiale, <sup>7.</sup> Instituto de Astrofísica de Canarias, <sup>8.</sup> Nagoya University, <sup>9.</sup> NAOJ, <sup>10.</sup> NASA Goddard, <sup>11.</sup> Princeton University, <sup>12.</sup> University College London, <sup>13.</sup> University of British Columbia, <sup>14.</sup> University of Central Lancashire, <sup>15.</sup> University of Pennsylvania, <sup>16.</sup> University of Toronto, <sup>17.</sup> University of Virginia

**409.02D Mid Infrared H2 lines- a new direct tracer for total molecular gas content in galaxies**

**Author(s):** Aditya Togi<sup>1</sup>, John-David T. Smith<sup>1</sup>  
*Institution(s):*<sup>1.</sup> University of Toledo

**409.03 Helium Ionization in the Diffuse Ionized Gas surrounding Ultra-compact HII regions**

**Author(s):** D. Anish Roshi<sup>1</sup>, Edward B. Churchwell<sup>2</sup>  
*Institution(s):*<sup>1.</sup> National Radio Astronomy Observatory, <sup>2.</sup> University of Wisconsin-Madison

**409.04 A New Mass Conversion Law for CO Observations**

**Author(s):** Peter John Barnes<sup>2</sup>, Erik Muller<sup>1</sup>  
*Institution(s):*<sup>1.</sup> National Astronomical Observatory of Japan, <sup>2.</sup> University of Florida

**409.05 The Tilt of the Galactic Mid-Plane**

**Author(s):** Loren D. Anderson<sup>1</sup>  
*Institution(s):*<sup>1.</sup> West Virginia University

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## 409.06 An X-ray and Infrared Hunt for New Candidate Galactic OB Stars

**Author(s):** Matthew S. Povich<sup>1</sup>, Michael J Alexander<sup>2</sup>, Heather Busk<sup>4</sup>, Richard J Hanes<sup>3</sup>, Eric Feigelson<sup>4</sup>, M. Virginia McSwain<sup>3</sup>, Leisa K. Townsley<sup>4</sup>  
*Institution(s):*<sup>1.</sup> Cal Poly Pomona, <sup>2.</sup> Lafayette College, <sup>3.</sup> Lehigh University, <sup>4.</sup> The Pennsylvania State University

## 409.07 High-Mass Star Formation in the Outer Scutum-Centaurus Arm

**Author(s):** William P. Armentrout<sup>5</sup>, Loren D. Anderson<sup>5</sup>, Dana S. Balser<sup>3</sup>, Thomas M. Bania<sup>1</sup>, Thomas M. Dame<sup>2</sup>, Trey Wenger<sup>4</sup>  
*Institution(s):*<sup>1.</sup> Boston University, <sup>2.</sup> Harvard University, <sup>3.</sup> National Radio Astronomy Observatory, <sup>4.</sup> University of Virginia, <sup>5.</sup> West Virginia University

## 409.08 The Bane of Column Density Analysis and What Good It Can Do for Us

**Author(s):** Hope How-Huan Chen<sup>2</sup>, Alyssa A. Goodman<sup>2</sup>, Blakesley K. Burkhart<sup>2</sup>, Philip C. Myers<sup>2</sup>, David C Collins<sup>1</sup>, Aaron M. Meisner<sup>3</sup>, Katherine I Lee<sup>2</sup>  
*Institution(s):*<sup>1.</sup> Florida State University, <sup>2.</sup> Harvard-Smithsonian Center for Astrophysics, <sup>3.</sup> University of California, Berkeley

## 410 The Milky Way, Galactic Center

Friday, 10:00 am - 11:30 am; Sanibel

Chair: Jeffrey Carlin (*Rensselaer Polytechnic Institute*)

### 410.01 Modeling Diffuse X-ray Emission around the Galactic Center from Colliding Stellar Winds

**Author(s):** Christopher Michael Post Russell<sup>1</sup>, Jorge Cuadra<sup>2</sup>, Q. Daniel Wang<sup>3</sup>, Timothy R. Kallman<sup>1</sup>  
*Institution(s):*<sup>1.</sup> NASA/GSFC, <sup>2.</sup> Pontificia Universidad Catolica de Chile, <sup>3.</sup> University of Massachusetts Amherst

### 410.02D Investigating the Physics of Hard X-ray Outbursts from the Galactic Center Supermassive Black Hole Sagittarius A\* with NuSTAR

**Author(s):** Shuo Zhang<sup>1</sup>  
*Institution(s):*<sup>1.</sup> Columbia University

### 410.03 Evidence for Intermediate Polars as the origin of the Galactic Center hard X-ray emission

**Author(s):** Charles James Hailey<sup>1</sup>  
*Institution(s):*<sup>1.</sup> Columbia University

### 410.04 The Kinematics of the Milky Way's Biconical Nuclear Wind

**Author(s):** Andrew Fox<sup>5</sup>, Rongmon Bordoloi<sup>1</sup>, Edward B. Jenkins<sup>3</sup>, Blair D. Savage<sup>7</sup>, Svea Hernandez<sup>4</sup>, Bart P. Wakker<sup>7</sup>, Jonathan Bland-Hawthorn<sup>6</sup>, Felix J. Lockman<sup>2</sup>, Jason Tumlinson<sup>5</sup>  
*Institution(s):*<sup>1.</sup> MIT, <sup>2.</sup> NRAO, <sup>3.</sup> Princeton, <sup>4.</sup> Radboud University, <sup>5.</sup> Space Telescope Science Institute, <sup>6.</sup> University of Sydney, <sup>7.</sup> University of Wisconsin

### 410.05 Constraining the Fraction of Dense Gas in the Galactic Center

**Author(s):** Elisabeth A. Mills<sup>3</sup>, Adam Ginsburg<sup>1</sup>, Jonathan Barnes<sup>3</sup>, Mark Morris<sup>4</sup>, Laurent Wiesenfeld<sup>2</sup>, Alexandre Faure<sup>2</sup>  
*Institution(s):*<sup>1.</sup> ESO, <sup>2.</sup> Grenoble Observatory, <sup>3.</sup> National Radio Astronomy Observatory, <sup>4.</sup> UCLA

## 410.06D Determining the Origins and Impact of Hot Gas in the Milky Way

**Author(s):** Matthew J. Miller<sup>1</sup>, Joel N. Bregman<sup>1</sup>, Edmund J. Hodges-Kluck<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Michigan

## 410.07 Evidence for a Large Scale Outflow of Hot Gas from the Scutum-Centaurus Spiral Arm

**Author(s):** Robert A. Benjamin<sup>1</sup>  
*Institution(s):* <sup>1</sup> Univ. of Wisconsin, Whitewater

## 411 Gamma Ray and X-ray Binary Systems

Friday, 10:00 am - 11:30 am; Sarasota

**Chair:** Theo Ten Brummelaar (*Georgia State Univ.*)

### 411.01 A Unified View of X-ray Absorbers in AGNs and XRBs with MHD Winds

**Author(s):** Keigo Fukumura<sup>3</sup>, Demosthenes Kazanas<sup>4</sup>, Chris R. Shrader<sup>4</sup>, Francesco Tombesi<sup>4</sup>, Ehud Behar<sup>2</sup>, John Contopoulos<sup>1</sup>  
*Institution(s):* <sup>1</sup> Academy of Athens, <sup>2</sup> Department of Physics, Technion, <sup>3</sup> James Madison University, <sup>4</sup> NASA/GSFC

### 411.02 Giant Rapid X-ray Flares in Extragalactic Globular Clusters

**Author(s):** Jimmy Irwin<sup>4</sup>, W. Peter Maksym<sup>1</sup>, Aaron J. Romanowsky<sup>3</sup>, Jay Strader<sup>2</sup>, Dacheng Lin<sup>5</sup>  
*Institution(s):* <sup>1</sup> Harvard-Smithsonian Center for Astrophysics, <sup>2</sup> Michigan State University, <sup>3</sup> San Jose State University, <sup>4</sup> University of Alabama - Tuscaloosa, <sup>5</sup> University of New Hampshire

### 411.03D X-ray Emission from Early Universe Analog Galaxies

**Author(s):** Matthew Brorby<sup>4</sup>, Philip Kaaret<sup>4</sup>, Andrea H. Prestwich<sup>2</sup>, I. Felix Mirabel<sup>1</sup>, Hua Feng<sup>3</sup>  
*Institution(s):* <sup>1</sup> CEA-CEN Saclay, <sup>2</sup> Harvard-Smithsonian, CfA, <sup>3</sup> Tsinghua University, <sup>4</sup> University of Iowa

### 411.04 The Fermi Gamma-ray Burst Monitor as a Transient Monitor

**Author(s):** Colleen A. Wilson-Hodge<sup>1</sup>  
*Institution(s):* <sup>1</sup> NASA's MSFC

### 411.05D Revelations of X-ray spectral analysis of the enigmatic black hole binary GRS 1915+105

**Author(s):** Charith Peris<sup>3</sup>, Ronald A. Remillard<sup>4</sup>, James Steiner<sup>3</sup>, Saeqa Dil Vrtilek<sup>3</sup>, Peggy Varniere<sup>1</sup>, Jerome Rodriguez<sup>2</sup>, Guy Pooley<sup>5</sup>  
*Institution(s):* <sup>1</sup> AstroParticule & Cosmologie, <sup>2</sup> CEA, <sup>3</sup> Harvard-Smithsonian Center for Astrophysics, <sup>4</sup> Massachusetts Institute of Technology, <sup>5</sup> University of Cambridge

### 411.06 Analysis of the iron K $\alpha$ line from 4U 1728-34 with NuSTAR and Swift

**Author(s):** Clio Sleator<sup>2</sup>, John Tomsick<sup>2</sup>, Ashley L. King<sup>1</sup>, Jon M. Miller<sup>3</sup>, Steven E. Boggs<sup>2</sup>  
*Institution(s):* <sup>1</sup> Stanford University, <sup>2</sup> UC Berkeley, <sup>3</sup> University of Michigan

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## 411.07 The energy dependence of quasi periodic oscillations in GRS 1915+105

**Author(s):** Jakob Van Den Eijnden<sup>1</sup>, Adam Ingram<sup>1</sup>, Phil Uttley<sup>1</sup>

*Institution(s):*<sup>1</sup> University of Amsterdam

## 412 The Cosmic History of Light: New Results and Future Outlook

Friday, 10:00 am - 11:30 am; Osceola 5

Photons emitted by star formation processes and accreting compact objects throughout the history of the Universe are encoded in the extragalactic background light (EBL). Characterization of the EBL and its evolution with redshift provides insight into the nature of galaxy evolution. Direct measurements of the EBL are fundamental but difficult due to local foregrounds such as the zodiacal light and emission from our own Galaxy. Gamma-ray astronomy provides a valuable independent probe of the EBL since high-energy gamma rays may interact with photons of the EBL and generate positron-electron pairs, introducing an attenuation feature in the spectra of distant gamma-ray sources that can be used to constrain the opacity of the universe and thus the energy density of the EBL. Moreover, the electron-positron pairs can generate an electromagnetic cascades that reprocess the initial photon energy to lower gamma-ray energies producing spectral, spatial and temporal signatures that can be used to place sensitive constraints on the strength of the intergalactic magnetic field (IGMF). Recent studies using gamma-ray blazars claimed the detection of EBL-induced absorption signatures consistent with the minimum level of EBL intensity expected from the established star formation rate. Thus, there is little room for an additional, truly diffuse component generated at much higher redshifts. At the same time, other studies based on gamma-ray blazars constrained the strength of the IGMF to  $>1e-17$  Gauss (depending on the coherent length and source activity timescale). Our proposed special session will focus on the current research in this area, in particular emphasizing constraints of the IGMF, measurements of the EBL and further characterizing the EBL intensity, its evolution, and its impact on understanding cosmic star formation. This session will bring together different part of the community and most active scientists in the field.

**Organizer:** Marco Ajello (Clemson)

### 412.01 Probing The Cosmic History of Light With High-Energy Gamma Rays

**Author(s):** Dieter Hartmann<sup>1</sup>

*Institution(s):*<sup>1</sup> Clemson Univ.

### 412.02 Near-IR Extragalactic Background Results from the Cosmic Infrared Background Experiment (CIBER)

**Author(s):** Michael B. Zemcov<sup>1</sup>

*Institution(s):*<sup>1</sup> Rochester Institute of Technology

### 412.03 Star formation history, dust correction, and the extragalactic background light

**Author(s):** Vikram Khair<sup>1</sup>, Raghunathan Srianand<sup>1</sup>

*Institution(s):*<sup>1</sup> Inter-University Centre for Astronomy and Astrophysics

- 412.04 The Intergalactic mid IR - Far IR Luminosity Density and the Gamma-Ray Opacity of the Universe**  
**Author(s):** Sean Scully<sup>1</sup>  
*Institution(s):* <sup>1</sup> James Madison Univ.
- 412.05 Anisotropies in the unresolved EBL: What do they tell us?**  
**Author(s):** Kári Helgason<sup>1</sup>  
*Institution(s):* <sup>1</sup> Max Planck Institute for Astrophysics
- 412.06 Latest Fermi-LAT results on the very high energy photon propagation through the EBL**  
**Author(s):** Alberto Dominguez<sup>1</sup>  
*Institution(s):* <sup>1</sup> Clemson University
- 412.07 Blazars and gamma-ray cosmology: recent and prospective results**  
**Author(s):** Jonathan Biteau<sup>1</sup>, David A. Williams<sup>2</sup>  
*Institution(s):* <sup>1</sup> Institut de Physique Nucleaire d'Orsay, <sup>2</sup> University of California, Santa Cruz
- 412.08 Constraints on the Intergalactic Magnetic Field from Gamma-Ray Observations of Blazars**  
**Author(s):** Justin Finke<sup>1</sup>  
*Institution(s):* <sup>1</sup> US Naval Research Laboratory

## 413 Beyond the Academy: Showcasing Astronomy Alumni in Non-Academic Careers

Friday, 10:00 am - 11:30 am; Osceola 4

More of our astronomy colleagues are choosing meaningful careers in industry, and yet very little information trickles back into academia about what those careers are like, what skills transferred from astronomy training, or even how to make the career transition. The lack of solid information and mentoring can make any career path beyond the academy seem daunting. We propose to fill this information gap in a continuation of the Employment Committee's professional development workshops and seminars at the annual winter meeting of the American Astronomical Society (AAS). In partnership with the American Institute of Physics (AIP), we propose to have two complementary sessions on careers beyond academia. This first session is designed to provide an inside look at the types of projects tackled and skills needed in a variety of rewarding and intellectually challenging careers. Through a series of invited talks from astronomers who are currently in the professional, entrepreneurial, and government sectors, we will learn about their career trajectories, what they do day-to-day, and why they recommend this path, as well as the growth opportunities and challenges in their fields. Showcasing these real-world examples of astronomers in successful careers will provide tangible recognition of the rich variety of career paths available beyond academia.

**Organizer:** Kelly Holley-Bockelmann (*Vanderbilt University*)

- 413.01 Astronomers as Software Developers**  
**Author(s):** Rachel A. Pildis<sup>1</sup>  
*Institution(s):* <sup>1</sup> none

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## 413.02 Entrepreneurship: Trust that the dots will connect

**Author(s):** Tony Pan<sup>1</sup>

*Institution(s):*<sup>1</sup> *Modern Electron*

## 413.03 Coffee, Black Holes, Editors, and Beer: The Science-Writing Life

**Author(s):** Matthew R. Francis<sup>1</sup>

*Institution(s):*<sup>1</sup> *N/A*

## 414 Plenary Talk: The Jansky VLA: Rebuilt for 21st Century Astronomy

Friday, 11:40 am - 12:30 pm; Osceola C

**Chair:** Jack Burns (*Univ. of Colorado at Boulder*)



**414.01**

**The Jansky VLA: Rebuilt for 21st Century Astronomy**

**Author(s):** Gregg Hallinan<sup>1</sup>

*Institution(s):*<sup>1</sup> *California Institute of Technology*

## 415 Gemini Observatory Town Hall

Friday, 12:45 pm - 1:45 pm; Tampa

Director Markus Kissler-Patig will provide an update on Gemini Observatory and seek feedback from the US user community to guide future improvements. He will describe recent innovations and changes in operations, including the fast turnaround program that enables observations as soon as one month after proposal submission and changes to the science archive. He will also present new approaches to community instrument development and give updates on instruments in progress, notably two options for high-resolution optical spectroscopy and feasibility studies for the next facility instrument to come.

**Organizer:** Nancy Levenson (*Gemini Observatory*)

## 416 Gamma Ray Bursts

Friday, 2:00 pm - 3:30 pm; Sun B

**Chair:** Justin Finke (*US Naval Research Laboratory*)

### 416.01 Features of >130 Gamma-Ray Bursts at high energy: towards the 2nd Fermi LAT GRB catalog

**Author(s):** Giacomo Vianello<sup>1</sup>, Nicola Omodei<sup>1</sup>

*Institution(s):*<sup>1</sup> *Stanford University*

### 416.02 Fermi GBM Counterparts to LIGO Gravitational-Wave Candidates

**Author(s):** Valerie Connaughton<sup>6</sup>, Lindy Blackburn<sup>3</sup>, Michael Stephen Briggs<sup>7</sup>, Eric Burns<sup>7</sup>, Jordan Camp<sup>4</sup>, Tito Dal Canton<sup>1</sup>, Nelson Christensen<sup>2</sup>, Adam Goldstein<sup>5</sup>, Peter Jenke<sup>7</sup>, Tyson Littenberg<sup>6</sup>, Judith L. Racusin<sup>4</sup>, Peter S. Shawhan<sup>9</sup>, Leo Singer<sup>4</sup>, John Veitch<sup>8</sup>, Colleen Wilson-Hodge<sup>5</sup>, Binbin Zhang<sup>7</sup>

*Institution(s):*<sup>1. AEI, 2. Carleton College, 3. CfA, 4. NASA/GSFC, 5. NASA/MSFC, 6. Universities Space Research Association, 7. University of Alabama in Huntsville, 8. University of Birmingham, 9. University of Maryland</sup>

## **416.03D Jet or Shock Breakout? The Low-Luminosity GRB 060218**

**Author(s):** Christopher Irwin<sup>1</sup>, Roger Chevalier<sup>1</sup>

*Institution(s):*<sup>1. University of Virginia</sup>

## **416.04 Environments of Gamma-Ray Bursts**

**Author(s):** Peter Roming<sup>1</sup>, Jennifer Tobler<sup>2</sup>

*Institution(s):*<sup>1. Southwest Research Institute, 2. University of North Dakota</sup>

## **416.05 Explaining the Relative and Absolute LGRB Rate with Metallicity**

**Author(s):** John Graham<sup>1</sup>

*Institution(s):*<sup>1. Max Planck Institute for Extraterrestrial Physics</sup>

## **416.06 Non-Bohm Diffusion in Relativistic Shock Acceleration**

**Author(s):** Donald C. Ellison<sup>3</sup>, Donald Warren<sup>1</sup>, Andrei Bykov<sup>2</sup>

*Institution(s):*<sup>1. Astrophysical Big Bang Laboratory, RIKEN, 2. Ioffe Institute for Physics and Technology, 3. North Carolina State Univ.</sup>

# **417 AGN, QSO, Blazars: Broad lines, Narrow Lines, and Flows**

Friday, 2:00 pm - 3:30 pm; Sun C

**Chair:** Grant Tremblay (*Rochester Institute of Technology*)

## **417.01 Do QSO2s have Narrow Line Region Outflows? Implications for quasar-mode feedback. Spectroscopic Results**

**Author(s):** Travis C. Fischer<sup>2</sup>, Steven B. Kraemer<sup>4</sup>, D. Michael Crenshaw<sup>1</sup>, Henrique R. Schmitt<sup>3</sup>

*Institution(s):*<sup>1. Georgia State University, 2. NASA's Goddard Space Flight Center, 3. Naval Research Laboratory, 4. The Catholic University of America</sup>

## **417.02 Do QSO2s have Narrow Line Region Outflows? Implications for quasar-mode feedback. Imaging Results**

**Author(s):** Steven B. Kraemer<sup>1</sup>, Luis Felipe Longo Micchi<sup>5</sup>, Henrique R. Schmitt<sup>4</sup>, Travis C. Fischer<sup>3</sup>, D. Michael Crenshaw<sup>2</sup>

*Institution(s):*<sup>1. Catholic University of America, 2. Georgia State University, 3. NASA/GSFC, 4. Naval Research Lab, 5. Universidade Federal do Rio de Janeiro</sup>

## **417.03D Quasar Outflow Constraints using Broad Absorption Line Variability Studies**

**Author(s):** Sean McGraw<sup>1</sup>, Joseph C. Shields<sup>1</sup>, Fred Hamann<sup>4</sup>, Daniel M. Capellupo<sup>3</sup>, Sarah Gallagher<sup>5</sup>, W. Niel Brandt<sup>2</sup>, Hanna Herbst<sup>4</sup>

*Institution(s):*<sup>1. Ohio University, 2. Pennsylvania State University, 3. Tel Aviv University, 4. University of Florida, 5. University of Western Ontario</sup>

## **417.04 Toward a Complete Picture of Quasar Outflows: from BALs to mini-BALs**

**Author(s):** Emily Moravec<sup>3</sup>, Fred Hamann<sup>3</sup>, Daniel M. Capellupo<sup>2</sup>, Sean McGraw<sup>1</sup>, Joseph C. Shields<sup>1</sup>, Paola Rodriguez Hidalgo<sup>4</sup>

*Institution(s):*<sup>1. Ohio University, 2. Tel-Aviv University, 3. University of Florida - Gainesville, 4. York University</sup>

# FRIDAY, 8 JANUARY 2016

## 417.05 Still Raining in Quasars: An Origin for the Broad Emission Line Region

**Author(s):** Martin Elvis<sup>1</sup>

*Institution(s):* <sup>1</sup> Harvard-Smithsonian CfA

## 417.06 Giant Broad Line Regions in Dwarf Seyferts

**Author(s):** Nicholas A. Devereux<sup>1</sup>

*Institution(s):* <sup>1</sup> Embry-Riddle Aeronautical Univ.

## 417.07D Studying AGN Feedback with Galactic Outflows in Luminous Obscured Quasar

**Author(s):** Ai-Lei Sun<sup>1</sup>

*Institution(s):* <sup>1</sup> Princeton University

## 418 Star Forming Regions: Observations

Friday, 2:00 pm - 3:30 pm; Sun D

**Chair:** Peter Barnes (*University of Florida*)

### 418.01 Studying the outflow-core interaction with ALMA Cycle 1 observations of the HH 46/47 molecular outflow

**Author(s):** Yichen Zhang<sup>5</sup>, Hector G. Arce<sup>7</sup>, Diego Mardones<sup>5</sup>, Michael Dunham<sup>2</sup>, Guido Garay<sup>5</sup>, Alberto Noriega-Crespo<sup>1</sup>, Stuartt Corder<sup>3</sup>, Stella Offner<sup>6</sup>, Sylvie Cabrit<sup>4</sup>

*Institution(s):* <sup>1</sup> Caltech-IPAC, <sup>2</sup> Harvard-CfA, <sup>3</sup> Joint ALMA Observatory, <sup>4</sup> Observatoire de Paris, <sup>5</sup> Universidad de Chile, <sup>6</sup> University of Massachusetts, <sup>7</sup> Yale University

### 418.02D The L1495-B218 filaments in Taurus seen in NH3 & CCS and Dynamical Stability of Filaments and Dense Cores

**Author(s):** Youngmin Seo<sup>1</sup>

*Institution(s):* <sup>1</sup> University Of Arizona

### 418.03 Formation of proto-multiple systems in a magnetized, fragmenting filament

**Author(s):** Charles L. H. Hull<sup>1</sup>

*Institution(s):* <sup>1</sup> Harvard-Smithsonian Center for Astrophysics

### 418.04 Observing the Depth of Star-Forming Regions: Sheets within Perseus and Serpens

**Author(s):** Shaye Storm<sup>3</sup>, Lee G. Mundy<sup>3</sup>, Eve C. Ostriker<sup>2</sup>, Che-Yu Chen<sup>3</sup>, Katherine I Lee<sup>1</sup>

*Institution(s):* <sup>1</sup> Harvard-Smithsonian CfA, <sup>2</sup> Princeton University, <sup>3</sup> University of Maryland

### 418.05D The Physics and Chemistry of Massive Starless Cores

**Author(s):** Shuo Kong<sup>3</sup>, Jonathan C. Tan<sup>3</sup>, Paola Caselli<sup>1</sup>, Francesco Fontani<sup>2</sup>, Matthew D. Goodson<sup>4</sup>

*Institution(s):* <sup>1</sup> Max Planck Institute for Extraterrestrial Physics, <sup>2</sup> Osservatorio Astrofisico di Arcetri, <sup>3</sup> University of Florida, <sup>4</sup> University of North Carolina Chapel Hill

**418.06 The Green Bank Ammonia Survey: Initial results**

**Author(s):** Jaime E. Pineda<sup>2</sup>, Rachel Friesen<sup>1</sup>

*Institution(s):* <sup>1</sup> *Dunlap Institute for Astronomy and Astrophysics*, <sup>2</sup> *Max-Planck-Institut für extraterrestrische Physik*

**419 Cosmology**

Friday, 2:00 pm - 3:30 pm; Osceola A

Chair: Eric Gawiser (*Rutgers University*)

**419.01 A Spectroscopic Survey of the Fields of 28 Strong Gravitational Lenses: Lens Environments and Line-of-Sight Structures**

**Author(s):** Michelle Wilson<sup>4</sup>, Ann I. Zabludoff<sup>4</sup>, Kenneth C. Wong<sup>1</sup>, Charles R. Keeton<sup>2</sup>, Katheryn Decker French<sup>4</sup>, Ivelina G. Momcheva<sup>5</sup>, Kurtis A. Williams<sup>3</sup>

*Institution(s):* <sup>1</sup> *Academia Sinica Institute of Astronomy and Astrophysics*, <sup>2</sup> *Rutgers University*, <sup>3</sup> *Texas A&M University-Commerce*, <sup>4</sup> *University of Arizona*, <sup>5</sup> *Yale University*

**419.02 Weak Lensing Analysis of Massive Galaxy Cluster IDCS J1426.5+3508 at z=1.75**

**Author(s):** Wenli Mo<sup>6</sup>, Anthony H. Gonzalez<sup>6</sup>, Myungkook J. Jee<sup>4</sup>, Richard Massey<sup>1</sup>, Jason Rhodes<sup>2</sup>, Mark Brodwin<sup>7</sup>, Peter R. Eisenhardt<sup>2</sup>, Daniel P. Marrone<sup>5</sup>, S. Adam Stanford<sup>4</sup>, Gregory Zeimann<sup>3</sup>

*Institution(s):* <sup>1</sup> *Durham University*, <sup>2</sup> *Jet Propulsion Laboratory*, <sup>3</sup> *Penn State*, <sup>4</sup> *UC Davis*, <sup>5</sup> *University of Arizona*, <sup>6</sup> *University of Florida*, <sup>7</sup> *University of Missouri*

**419.03 The Swift AGN and Cluster Survey**

**Author(s):** Rhiannon Danae Griffin<sup>3</sup>, Xinyu Dai<sup>3</sup>, Christopher S. Kochanek<sup>1</sup>, Joel N. Bregman<sup>2</sup>, Jenna Nugent<sup>3</sup>

*Institution(s):* <sup>1</sup> *Ohio State University*, <sup>2</sup> *University of Michigan*, <sup>3</sup> *University of Oklahoma*

**419.04 Highlights of the Merging Cluster Collaboration's Analysis of 26 Radio Relic Galaxy Cluster Mergers**

**Author(s):** William Dawson<sup>2</sup>, Nathan Golovich<sup>8</sup>, David M. Wittman<sup>8</sup>, Marusa Bradac<sup>8</sup>, Marcus Brüggen<sup>10</sup>, James Bullock<sup>9</sup>, Oliver Elbert<sup>9</sup>, James Jee<sup>8</sup>, Manoj Kaplinghat<sup>9</sup>, Stacy Kim<sup>5</sup>, Andisheh Mahdavi<sup>6</sup>, Julian Merten<sup>11</sup>, Karen Ng<sup>8</sup>, Peter Annika<sup>5</sup>, Miguel E Rocha<sup>7</sup>, David Sobral<sup>4</sup>, Andra Stroe<sup>3</sup>, Reinout J. Van Weeren<sup>1</sup>

*Institution(s):* <sup>1</sup> *Harvard-Smithsonian Center for Astrophysics*, <sup>2</sup> *Lawrence Livermore Nat. Lab.*, <sup>3</sup> *Leiden Observatory*, <sup>4</sup> *Lisbon Observatory*, <sup>5</sup> *OSU*, <sup>6</sup> *San Francisco State University*, <sup>7</sup> *U Santa Cruz*, <sup>8</sup> *UC Davis*, <sup>9</sup> *UC Irvine*, <sup>10</sup> *University of Hamburg*, <sup>11</sup> *University of Oxford*

**419.05 Dynamical Mass Measurements of Contaminated Galaxy Clusters Using Machine Learning**

**Author(s):** Michelle Ntampaka<sup>1</sup>, Hy Trac<sup>1</sup>, Dougal Sutherland<sup>1</sup>, Sebastien Fromenteau<sup>1</sup>, Barnabas Pocz<sup>1</sup>, Jeff Schneider<sup>1</sup>

*Institution(s):* <sup>1</sup> *Carnegie Mellon University*

# FRIDAY, 8 JANUARY 2016

## 419.06 Galaxy Cluster Studies with the Hobby Eberly Telescope Dark Energy Experiment

**Author(s):** Steven A. Boada<sup>2</sup>, Casey J. Papovich<sup>2</sup>, Risa H. Wechsler<sup>1</sup>, Eduardo Rozo<sup>1</sup>, Eli S. Rykoff<sup>1</sup>, Karl Gebhardt<sup>3</sup>

*Institution(s):* <sup>1</sup> *Kavli Institute for Particle Astrophysics and Cosmology*, <sup>2</sup> *Texas A&M University*, <sup>3</sup> *University of Texas*

## 419.07 Mapping matter jointly with CMB lensing and Large Scale Structure

**Author(s):** Kevin Huffenberger<sup>1</sup>, Aditya Rotti<sup>1</sup>, Felipe Maldonado<sup>1</sup>

*Institution(s):* <sup>1</sup> *Florida State University*

## 419.08 GTC observations of Lyman-Alpha Emitters at z=6.5: A Search for a Highest Redshift Proto-Cluster

**Author(s):** Krittapas Chanchaiworawit<sup>1</sup>, Rafael Guzman<sup>1</sup>

*Institution(s):* <sup>1</sup> *University of Florida*

## 419.09 Precision distances with spiral galaxy apparent diameters

**Author(s):** Ian Steer<sup>1</sup>

*Institution(s):* <sup>1</sup> *NED*

## 420 Extrasolar Planets: Populations and Demographics

Friday, 2:00 pm - 3:30 pm; Osceola B

**Chair:** Ian Crossfield (UA/LPL)

### 420.01 A Probabilistic Mass-Radius Relationship for Sub-Neptune-Sized Planets: Implications for Missions Post-Kepler

**Author(s):** Angie Wolfgang<sup>1</sup>, Leslie Rogers<sup>2</sup>, Eric B Ford<sup>1</sup>, Gregory P. Laughlin<sup>3</sup>

*Institution(s):* <sup>1</sup> *The Pennsylvania State University*, <sup>2</sup> *University of California, Berkeley*, <sup>3</sup> *University of California, Santa Cruz*

### 420.02 The Dependence of the Kepler Planet Population on Host Star Properties

**Author(s):** Gijs Mulders<sup>1</sup>, Ilaria Pascucci<sup>1</sup>, Daniel Apai<sup>1</sup>

*Institution(s):* <sup>1</sup> *University of Arizona*

### 420.03D Synthesizing Exoplanet Demographics

**Author(s):** Christian Clanton<sup>1</sup>

*Institution(s):* <sup>1</sup> *The Ohio State University*

### 420.04 Connections among spacing, composition, and flatness in super-Earth systems

**Author(s):** Rebekah Ilene Dawson<sup>1</sup>, Eve Lee<sup>1</sup>, Eugene Chiang<sup>1</sup>

*Institution(s):* <sup>1</sup> *University of California, Berkeley*

### 420.05 The Robo-AO KOI Survey: Laser Adaptive Optics Imaging of Every Kepler Exoplanet Candidate

**Author(s):** Carl Ziegler<sup>4</sup>, Nicholas M. Law<sup>4</sup>, Christoph Baranec<sup>3</sup>, Tim Morton<sup>2</sup>, Reed L. Riddle<sup>1</sup>

*Institution(s):* <sup>1</sup> *California Institute of Technology*, <sup>2</sup> *Princeton University*, <sup>3</sup> *University of Hawaii at Manoa*, <sup>4</sup> *University of North Carolina - Chapel Hill*

## 420.06 Exploring the Diversity of Super-Earths

**Author(s):** Björn Benneke<sup>1</sup>, Ian Crossfield<sup>6</sup>, Heather Knutson<sup>1</sup>, Joshua Lothringer<sup>6</sup>, Diana Dragomir<sup>3</sup>, Jonathan J. Fortney<sup>5</sup>, Andrew Howard<sup>7</sup>, Peter R. McCullough<sup>4</sup>, Ronald L. Gilliland<sup>4</sup>, Eliza Kempton<sup>2</sup>, Caroline Morley<sup>5</sup>  
*Institution(s):* <sup>1</sup> Caltech, <sup>2</sup> Grinnell College, <sup>3</sup> LCOGT, <sup>4</sup> STScI, <sup>5</sup> UC Santa Cruz, <sup>6</sup> University of Arizona, <sup>7</sup> University of Hawaii

## 420.08 Five Years of SETI with the Allen Telescope Array: Lessons Learned

**Author(s):** Gerald Harp<sup>1</sup>  
*Institution(s):* <sup>1</sup> SETI Institute

## 421 Catalogs, Surveys, Data: The Variable Sky

Friday, 2:00 pm - 3:30 pm; Miami

Chair: Richard Perley (NRAO)

### 421.01 The Promise of Domain Adaptation

**Author(s):** Ashish A. Mahabal<sup>2</sup>, Jingling Li<sup>1</sup>, Samarth Vajjanapurkar<sup>3</sup>, Brian Bue<sup>4</sup>, Adam Miller<sup>2</sup>, Ciro Donalek<sup>2</sup>, Stanislav G. Djorgovski<sup>2</sup>, Andrew J. Drake<sup>2</sup>, Matthew Graham<sup>2</sup>  
*Institution(s):* <sup>1</sup> Bryn Mawr College, <sup>2</sup> Caltech, <sup>3</sup> IIT, <sup>4</sup> JPL

### 421.02 The Solar System Survey by NASA's K2 Mission

**Author(s):** Geert Barentsen<sup>1</sup>  
*Institution(s):* <sup>1</sup> NASA Ames

### 421.03D Exploring the transient sky: from surveys to simulations

**Author(s):** Dario Carbone<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Amsterdam

### 421.04 Searching for Variability in the Gamma-ray Sky using the Fermi All-sky Variability Analysis (FAVA)

**Author(s):** Daniel Kocevski<sup>3</sup>, Rolf Buehler<sup>2</sup>, Marco Ajello<sup>1</sup>, Matteo Giomi<sup>2</sup>  
*Institution(s):* <sup>1</sup> Clemson University, <sup>2</sup> DESY Zeuthen, <sup>3</sup> NASA Goddard Space Flight Center

### 421.05 Automated Transient Recovery Algorithm using Discrete Zernike Polynomials on Image-Subtracted Data

**Author(s):** Kendall Ackley<sup>1</sup>, Stephen S. Eikenberry<sup>1</sup>, Sergey Klimenko<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Florida

### 421.06D Unveiling the Variable Sky with the Time-Domain Spectroscopic Survey

**Author(s):** John J. Ruan<sup>4</sup>, Scott F. Anderson<sup>4</sup>, Paul J. Green<sup>2</sup>, Michael Eracleous<sup>3</sup>, Eric Morganson<sup>2</sup>, Jessie C. Runnoe<sup>3</sup>, W. Niel Brandt<sup>3</sup>, Donald P. Schneider<sup>3</sup>, Yue Shen<sup>1</sup>  
*Institution(s):* <sup>1</sup> Carnegie Observatories, <sup>2</sup> Harvard Smithsonian CfA, <sup>3</sup> Penn State Univ., <sup>4</sup> University of Washington

# FRIDAY, 8 JANUARY 2016

## 421.07 The iPTF Galactic Plane Survey

**Author(s):** Eric Christopher Bellm<sup>1</sup>, Thomas A Prince<sup>1</sup>, Adam Miller<sup>3</sup>, Shrinivas R. Kulkarni<sup>1</sup>, Thomas Kupfer<sup>1</sup>, Russ Laher<sup>2</sup>, Frank J. Masci<sup>2</sup>, Eran Oded Ofek<sup>4</sup>, David L. Shupe<sup>2</sup>, Jason A. Surace<sup>2</sup>

*Institution(s):* <sup>1</sup> Caltech, <sup>2</sup> IPAC, <sup>3</sup> JPL, <sup>4</sup> Weizmann Institute of Science

## 422 Star-Forming Galaxies at $z \sim 0.3-1.0$

Friday, 2:00 pm - 3:30 pm; Naples

**Chair:** Cameron Hummels (*Columbia Univ*)

### 422.01 Coupling the emission of ionizing radiation and Lyman alpha

**Author(s):** Claudia Scarlata<sup>3</sup>, Matthew Hayes<sup>1</sup>, Brendan P. Miller<sup>2</sup>, Johannes Pushnig<sup>1</sup>, Gustav Jansson<sup>1</sup>

*Institution(s):* <sup>1</sup> Stockholm University, <sup>2</sup> University of Michigan, <sup>3</sup> University of Minnesota

### 422.02 Spectroscopic Study of Star-forming Galaxies in Filaments and the Field at $z \sim 0.5$ : Evidence for Environmental Dependence of Electron Density

**Author(s):** Behnam Darvish<sup>3</sup>, Bahram Mobasher<sup>3</sup>, David Sobral<sup>1</sup>, Shoubaneh Hemmati<sup>3</sup>, Hooshang Nayyeri<sup>2</sup>, Irene Shivaie<sup>3</sup>

*Institution(s):* <sup>1</sup> Lancaster University, <sup>2</sup> University of California, Irvine, <sup>3</sup> University of California, Riverside

### 422.03D The Evolution of the Tully-Fisher Relation Since $z \sim 1$ with KROSS and SAMI

**Author(s):** Alfred Tiley<sup>2</sup>, Martin Bureau<sup>2</sup>, John Stott<sup>2</sup>, Mark Swinbank<sup>1</sup>, Richard Bower<sup>1</sup>, Christopher Harrison<sup>1</sup>, Andrew Bunker<sup>2</sup>, Ian Smail<sup>1</sup>, Georgios Magdis<sup>2</sup>, Helen Johnson<sup>1</sup>

*Institution(s):* <sup>1</sup> Durham University, <sup>2</sup> University of Oxford

### 422.04 An Examination of Strong-line Metallicity Diagnostics with Direct Gas-Phase Metallicities at Higher Redshifts

**Author(s):** Chun Ly<sup>2</sup>, Jane R. Rigby<sup>2</sup>, Matthew Arnold Malkan<sup>3</sup>, Sangeeta Malhotra<sup>1</sup>

*Institution(s):* <sup>1</sup> Arizona State, <sup>2</sup> NASA GSFC, <sup>3</sup> UCLA

### 422.05D Where stars form: inside-out growth and coherent star formation across the main sequence from HST H $\alpha$ maps at $z \sim 1$

**Author(s):** Erica Nelson<sup>4</sup>, Pieter G. Van Dokkum<sup>4</sup>, Marijn Franx<sup>1</sup>, Natascha Forster Schreiber<sup>2</sup>, Ivelina G. Momcheva<sup>4</sup>, Gabriel Brammer<sup>3</sup>

*Institution(s):* <sup>1</sup> Leiden Observatory, <sup>2</sup> MPE, <sup>3</sup> STScI, <sup>4</sup> Yale University

### 422.06 Investigating the burstiness of the star formation history of low-mass galaxies at intermediate redshifts with KECK/DEIMOS spectroscopy and CANDELS imaging

**Author(s):** Yicheng Guo<sup>2</sup>, David C. Koo<sup>2</sup>, Sandra M. Faber<sup>2</sup>, Marc Rafelski<sup>1</sup>

*Institution(s):* <sup>1</sup> GSFC, <sup>2</sup> UCO/Lick Observatory

## 423 Pulsars and Neutron Stars

Friday, 2:00 pm - 3:30 pm; Tampa

Chair: Colleen Wilson-Hodge (*NASA's MSFC*)

- 423.01 High Energy Emission in Pulsar Magnetospheres: Modeling in the FERMI Era**  
**Author(s):** Constantinos Kalapotharakos<sup>1</sup>, Alice Kust Harding<sup>1</sup>, Demosthenes Kazanas<sup>1</sup>, Gabriele Brambilla<sup>1</sup>  
*Institution(s):* <sup>1</sup> *NASA, Goddard Space Flight Center*
- 423.02 Merger of Magnetized Binary Neutron Stars**  
**Author(s):** Patrick M. Motl<sup>4</sup>, Matthew Anderson<sup>3</sup>, Luis Lehner<sup>6</sup>, Steven L. Liebling<sup>5</sup>, Eric Hirschmann<sup>1</sup>, David Neilsen<sup>1</sup>, Carlos Palenzuela<sup>2</sup>  
*Institution(s):* <sup>1</sup> *Brigham Young University*, <sup>2</sup> *Canadian Institute for Theoretical Astrophysics*, <sup>3</sup> *Indiana University*, <sup>4</sup> *Indiana University Kokomo*, <sup>5</sup> *Long Island University*, <sup>6</sup> *Perimeter Institute for Theoretical Physics*
- 423.03 A complete library of X-ray pulsars in the Magellanic Clouds: A new resource for modeling the time evolution of luminosity and pulse profile**  
**Author(s):** Jun Yang<sup>2</sup>, Silas Laycock<sup>2</sup>, Dimitris Christodoulou<sup>2</sup>, Samuel Fingerman<sup>2</sup>, Rigel Cappallo<sup>2</sup>, Andreas Zezas<sup>1</sup>, Vallia Antoniou<sup>1</sup>, Jaesub Hong<sup>1</sup>, Wynn Ho<sup>3</sup>, Malcolm Coe<sup>3</sup>, Helen Klus<sup>3</sup>  
*Institution(s):* <sup>1</sup> *Harvard-Smithsonian Center for Astrophysics*, <sup>2</sup> *University of Massachusetts*, <sup>3</sup> *University of Southampton*
- 423.04 Discovery of Pulsed Gamma Rays and a New Spin-Down State of the LMC Pulsar B0540-69**  
**Author(s):** Francis E. Marshall<sup>4</sup>, Lucas Guillemot<sup>1</sup>, Alice Kust Harding<sup>4</sup>, Pierrick Martin<sup>3</sup>, David A Smith<sup>2</sup>  
*Institution(s):* <sup>1</sup> *CNRS-Universite d'Orleans*, <sup>2</sup> *CNRS-Universite de Bordeaux*, <sup>3</sup> *CNRS/IRAP, Universite Paul Sabatier*, <sup>4</sup> *NASA's GSFC*
- 423.06 Arecibo Search for Radio Pulses from M33**  
**Author(s):** Fronefield Crawford<sup>2</sup>, James M. Cordes<sup>1</sup>, Laura Spitler<sup>3</sup>  
*Institution(s):* <sup>1</sup> *Cornell University*, <sup>2</sup> *Franklin and Marshall College*, <sup>3</sup> *Max-Planck-Institut fur Radioastronomie*
- 423.07 Timing and Fermi LAT Analysis of Four Millisecond Pulsars Discovered in Parkes Radio Searches of Gamma-ray Sources**  
**Author(s):** Paul S. Ray<sup>5</sup>, Scott M. Ransom<sup>4</sup>, Fernando M. Camilo<sup>2</sup>, Matthew Kerr<sup>1</sup>, John Reynolds<sup>1</sup>, John Sarkissian<sup>1</sup>, Paulo Freire<sup>3</sup>, H. Thankful Cromartie<sup>7</sup>, Ewan D. Barr<sup>6</sup>  
*Institution(s):* <sup>1</sup> *ATNF*, <sup>2</sup> *Columbia University*, <sup>3</sup> *MPIfR*, <sup>4</sup> *NRAO*, <sup>5</sup> *NRL*, <sup>6</sup> *Swinburne*, <sup>7</sup> *University of Virginia*
- 423.08 Dynamo Activity in Strongly Magnetized Accretion Disks**  
**Author(s):** Greg Salvesen<sup>2</sup>, Jacob B. Simon<sup>1</sup>, Philip J. Armitage<sup>2</sup>, Mitchell C. Begelman<sup>2</sup>  
*Institution(s):* <sup>1</sup> *Southwest Research Institute*, <sup>2</sup> *University of Colorado Boulder*

# FRIDAY, 8 JANUARY 2016

## 423.09 FRBs: We are realfast

**Author(s):** Geoffrey C. Bower<sup>1</sup>, Sarah Spolaor<sup>5</sup>, Casey J. Law<sup>6</sup>, Paul Demorest<sup>5</sup>, Bryan J. Butler<sup>5</sup>, Michael P. Rupen<sup>2</sup>, T. Joseph W. Lazio<sup>3</sup>, Scott Vander Wiel<sup>4</sup>, Earl Lawrence<sup>4</sup>

*Institution(s):*<sup>1</sup>. ASIAA, <sup>2</sup>. DRAO, <sup>3</sup>. JPL, <sup>4</sup>. LANL, <sup>5</sup>. NRAO, <sup>6</sup>. UC Berkeley

## 424 Molecular Clouds, HII Regions, Interstellar Medium II

Friday, 2:00 pm - 3:30 pm; Sanibel

**Chair:** Elisabeth Mills (*University of Arizona*)

### 424.01 The Dense Gas Fraction in Molecular Clouds

**Author(s):** Nia Imara<sup>1</sup>

*Institution(s):*<sup>1</sup>. Harvard-Smithsonian Center for Astrophysics

### 424.02D Molecular hydrogen emission as a density and temperature indicator

**Author(s):** Xiang Wang<sup>4</sup>, Gary J. Ferland<sup>4</sup>, Jack A. Baldwin<sup>2</sup>, Edwin D. Loh<sup>2</sup>, Andy C Fabian<sup>3</sup>, Robin Williams<sup>1</sup>

*Institution(s):*<sup>1</sup>. AWE, <sup>2</sup>. Michigan State University, <sup>3</sup>. University of Cambridge, <sup>4</sup>. University of Kentucky

### 424.03 RAMPS: The Radio Ammonia Mid-Plane Survey

**Author(s):** James M. Jackson<sup>1</sup>, Taylor Hogge<sup>1</sup>, Ian Stephens<sup>1</sup>, John Scott Whitaker<sup>1</sup>

*Institution(s):*<sup>1</sup>. Boston Univ.

### 424.04 An HST/COS survey of molecular hydrogen in low-z DLAs/sub-DLAs

**Author(s):** Sowgat Muzahid<sup>2</sup>, Raghunathan Sriamand<sup>1</sup>, Jane C. Charlton<sup>2</sup>

*Institution(s):*<sup>1</sup>. Inter-University Centre for Astronomy & Astrophysics, <sup>2</sup>. The Pennsylvania State University

### 424.05 Dust grain alignment in IC 63 - H2 formation enhancement and collisional disalignment

**Author(s):** B-G Andersson<sup>3</sup>, John E. Vaillancourt<sup>3</sup>, Jose Acosta-Pulido<sup>2</sup>, Manuel Fernandez<sup>1</sup>

*Institution(s):*<sup>1</sup>. Instituto Argentino de Radioastronomía, <sup>2</sup>. Instituto de Astrofísica de Canarias (IAC), <sup>3</sup>. SOFIA Science Center/USRA

### 424.06 The Mass Surface Density Distribution of a High-Mass Protocluster forming from an IRDC and GMC

**Author(s):** Wanggi Lim<sup>2</sup>, Jonathan C. Tan<sup>2</sup>, Jouni Kainulainen<sup>1</sup>, Bo Ma<sup>2</sup>, Michael Butler<sup>1</sup>

*Institution(s):*<sup>1</sup>. Max-Planck-Institute for Astronomy, <sup>2</sup>. University of Florida

### 424.07 Toward Measuring Galactic Dense Molecular Gas Properties and 3D Distribution with Hi-GAL

**Author(s):** Erika Zetterlund<sup>1</sup>, Jason Glenn<sup>1</sup>, Phil Maloney<sup>1</sup>

*Institution(s):*<sup>1</sup>. University of Colorado, Boulder

### 424.08 Hydrogen Sticking on Amorphous Water-Ice: A Numerical Study

**Author(s):** John Dupuy<sup>1</sup>, Steven Lewis<sup>1</sup>, Phillip C. Stancil<sup>1</sup>

*Institution(s):*<sup>1</sup>. University of Georgia

## 425 The Milky Way, Stellar Populations

Friday, 2:00 pm - 3:30 pm; Sarasota

Chair: Nick Indriolo (*University of Michigan*)

### 425.01 Chronography of the Milky Way's Halo System with Field Blue Horizontal-Branch Stars

**Author(s):** Timothy C. Beers<sup>4</sup>, Vinicius M Placco<sup>4</sup>, Daniela Carollo<sup>4</sup>, Rafael Santucci<sup>5</sup>, Siliva Rossi<sup>5</sup>, Young Sun Lee<sup>1</sup>, Pavel Denissenkov<sup>6</sup>, Jason Tumlinson<sup>2</sup>, Patricia Tissera<sup>3</sup>, Geoffrey Lentner<sup>4</sup>

*Institution(s):* <sup>1</sup> Chungnam National University, <sup>2</sup> Space Telescope Science Institute, <sup>3</sup> Universidad Andres Bello, <sup>4</sup> University of Notre Dame, <sup>5</sup> University of Sao Paulo, <sup>6</sup> University of Victoria

### 425.02D At the interface of the disk and halo: A lesson from APOGEE and other large spectroscopic surveys

**Author(s):** Keith Hawkins<sup>1</sup>, Paula Jofre<sup>1</sup>, Thomas Masseron<sup>1</sup>, Gerard Gilmore<sup>1</sup>  
*Institution(s):* <sup>1</sup> Institute of Astronomy, Cambridge

### 425.03 Chemodynamics of the Milky Way Disk with Gaia-ESO

**Author(s):** Michael R. Hayden<sup>1</sup>, Alejandra Recio-Blanco<sup>1</sup>, Patrick De Laverny<sup>1</sup>, Vanessa Hill<sup>1</sup>, Mathias Schultheis<sup>1</sup>

*Institution(s):* <sup>1</sup> Observatoire de la Côte d'Azur

### 425.04 Spectroscopic determination of masses (and implied ages) for red giants

**Author(s):** Melissa Ness<sup>2</sup>, David W. Hogg<sup>3</sup>, Hans-Walter Rix<sup>2</sup>, Marie Martig<sup>2</sup>, Anna Ho<sup>1</sup>

*Institution(s):* <sup>1</sup> MIT, <sup>2</sup> MPIA, <sup>3</sup> NYU

### 425.05D Determining Ages of APOGEE Giants with Known Distances

**Author(s):** Diane Feuillet<sup>1</sup>, Jo Bovy<sup>3</sup>, Jon A. Holtzman<sup>1</sup>, Leo Girardi<sup>2</sup>

*Institution(s):* <sup>1</sup> New Mexico State University, <sup>2</sup> Osservatorio Astronomico di Padova - INAF, <sup>3</sup> University of Toronto

### 425.06 Chemo-dynamics in the Heart of the Galactic Bulge

**Author(s):** Gail Zasowski<sup>2</sup>, Melissa Ness<sup>3</sup>, Ana García Pérez<sup>1</sup>, Jennifer Johnson<sup>4</sup>

*Institution(s):* <sup>1</sup> IAC, <sup>2</sup> Johns Hopkins University, <sup>3</sup> MPIA, <sup>4</sup> The Ohio State University

### 425.07 Stellar Populations in the Kepler and K2 fields: APOGEE-KASC Collaboration

**Author(s):** Jennifer Johnson<sup>1</sup>

*Institution(s):* <sup>1</sup> Ohio State Univ.

## 426 Opening a New Window on Cosmological Structure with Intensity Mapping

Friday, 2:00 pm - 3:30 pm; Osceola 5

Intensity mapping, a method in which the statistical properties of wide-field astronomical images are used to constrain models of structure formation, is a promising technique for probing the distant and faint universe. Sensitive to the integrated emission from all sources in an instrument's spectral band, intensity mapping has recently been

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applied to data from instruments working across the electromagnetic spectrum. These measurements have led to crucial insights into a variety of aspects of large scale cosmic structure, including the relationship between light and dark matter halos during the peak epoch of star formation, measurement of the missing Lyman alpha emission around high redshift objects, and the discovery of unexpectedly bright intra-halo emission around galaxies. In this session, we highlight recent results demonstrating the efficacy of the intensity mapping method from a variety of broad-band and spectral line intensity mapping measurements including the GBT, CIBER, SPIRE, SDSS/BOSS, and the SZA. Discussion will emphasize both the measurement methods and the cosmological implications of the results. Powerful, fully tomographic instruments coming online in the next few years will also be presented, highlighting experiments such as TIME, COMAP, AIM-CO, and CHIME.

**Chair: Michael Zemcov** (*Rochester Institute of Technology*)

## 426.01 21-cm Intensity Mapping

**Author(s): Tzu-Ching Chang**<sup>1</sup>

*Institution(s):* <sup>1</sup> ASIAA

## 426.02 Recent Results from Broad-Band Intensity Mapping Measurements of Cosmic Large Scale Structure

**Author(s): Michael B. Zemcov**<sup>1</sup>

*Institution(s):* <sup>1</sup> Rochester Institute of Technology

## 426.03 Lya intensity mapping: current observational results from SDSS/BOSS and its future potential.

**Author(s): Rupert A. Croft**<sup>1</sup>, Jordi Miralda-Escudé<sup>3</sup>, Zheng Zheng<sup>2</sup>

*Institution(s):* <sup>1</sup> Carnegie Mellon Univ., <sup>2</sup> Department of Physics and Astronomy, University of Utah, <sup>3</sup> Institutio Catalana de Recerca i Estudis Avancats

## 426.04 Cosmic Structure and Galaxy Evolution through Intensity Mapping of Molecular Gas

**Author(s): Geoffrey C. Bower**<sup>1</sup>, Garrett K. Keating<sup>2</sup>, Daniel P. Marrone<sup>3</sup>

*Institution(s):* <sup>1</sup> ASIAA, <sup>2</sup> UC Berkeley, <sup>3</sup> University of Arizona

## 426.06 The CO Mapping Array Pathfinder (COMAP)

**Author(s): Kieran Cleary**<sup>1</sup>, Marie-Anne Bigot-Sazy<sup>4</sup>, Dongwoo Chung<sup>3</sup>, Sarah E. Church<sup>3</sup>, Clive Dickinson<sup>4</sup>, Hans Eriksen<sup>7</sup>, todd gaier<sup>2</sup>, Paul Goldsmith<sup>2</sup>, Joshua O. Gundersen<sup>6</sup>, Stuart Harper<sup>4</sup>, Andrew I. Harris<sup>5</sup>, James Lamb<sup>1</sup>, Tony Li<sup>3</sup>, Ryan Munroe<sup>1</sup>, Timothy J. Pearson<sup>1</sup>, Anthony C. S. Readhead<sup>1</sup>, Risa H. Wechsler<sup>3</sup>, Ingunn Kathrine Wehus<sup>7</sup>, David Woody<sup>1</sup>

*Institution(s):* <sup>1</sup> California Institute of Technology, <sup>2</sup> Jet Propulsion Laboratory, <sup>3</sup> Stanford University, <sup>4</sup> University of Manchester, <sup>5</sup> University of Maryland, <sup>6</sup> University of Miami, <sup>7</sup> University of Oslo

**426.07 Probing the Epoch of Reionization via CII Tomography with TIME-Pilot**

**Author(s):** Matt Bradford<sup>3</sup>, Abigail Crites<sup>2</sup>, Jonathon Hunacek<sup>2</sup>, Steve Hailey-Dunsheath<sup>2</sup>, Michael B. Zemcov<sup>4</sup>, James Bock<sup>2</sup>, Asantha R. Cooray<sup>5</sup>, Tzu-Ching Chang<sup>1</sup>, Chao-Te Li<sup>1</sup>, Bruce Bumble<sup>3</sup>, Erik Shirokoff<sup>6</sup>, Zachary Staniszewski<sup>2</sup>, Roger O'Brient<sup>3</sup>, Corwin Shiu<sup>2</sup>, Yun-Ting Cheng<sup>2</sup>, Bade Uzgil<sup>7</sup>

*Institution(s):* <sup>1.</sup> ASIAA, <sup>2.</sup> Caltech, <sup>3.</sup> JPL, <sup>4.</sup> Rochester Institute of Technology, <sup>5.</sup> UC Irvine, <sup>6.</sup> University of Chicago, <sup>7.</sup> University of Pennsylvania

**426.08 Intensity Mapping During Reionization: 21 cm and Cross-correlations**

**Author(s):** James E. Aguirre<sup>1</sup>

*Institution(s):* <sup>1.</sup> University of Pennsylvania

**427 Instrumentation: Exoplanets, Adaptive Optics, Transients**

Friday, 2:00 pm - 3:30 pm; Osceola 4

Chair: Harley Thronson (NASA GSFC)

**427.01D Photonic systems for high precision radial velocity measurements**

**Author(s):** Samuel Halverson<sup>1</sup>

*Institution(s):* <sup>1.</sup> Pennsylvania State University

**427.02 The CHARA Array Adaptive Optics Program**

**Author(s):** Theo Ten Brummelaar<sup>2</sup>, Xiao Che<sup>4</sup>, Harold A. McAlister<sup>2</sup>, Michael Ireland<sup>1</sup>, John D. Monnier<sup>4</sup>, Denis Mourard<sup>5</sup>, Stephen T. Ridgway<sup>3</sup>, Judith sturmann<sup>2</sup>, Laszlo Sturmann<sup>2</sup>, Nils H. Turner<sup>2</sup>, Peter Tuthill<sup>6</sup>

*Institution(s):* <sup>1.</sup> Australian National University, <sup>2.</sup> Georgia State Univ., <sup>3.</sup> NOAO, <sup>4.</sup> University of Michigan, <sup>5.</sup> University of Nice, <sup>6.</sup> University of Sydney

**427.03 Robo-AO KP: A new era in robotic adaptive optics**

**Author(s):** Reed L. Riddle<sup>1</sup>, Christoph Baranec<sup>3</sup>, Nicholas M. Law<sup>4</sup>, Shrinivas R. Kulkarni<sup>1</sup>, Dmitry Duev<sup>1</sup>, Carl Ziegler<sup>4</sup>, Rebecca M. Jensen-Clem<sup>1</sup>, Dani Eleanor Atkinson<sup>3</sup>, Angelle M. Tanner<sup>2</sup>, Celia Zhang<sup>1</sup>, Amy Ray<sup>2</sup>

*Institution(s):* <sup>1.</sup> California Institute of Technology, <sup>2.</sup> Mississippi State University, <sup>3.</sup> University of Hawai'i, <sup>4.</sup> University of North Carolina

**427.04D Fast-response optical and near-infrared GRB science with RATIR and RIMAS**

**Author(s):** John Capone<sup>1</sup>

*Institution(s):* <sup>1.</sup> The University of Maryland

**427.05 Algolcam: Low Cost Sky Scanning with Modern Technology**

**Author(s):** Martin Connors<sup>1</sup>, Dempsey Bolton<sup>2</sup>, Ian Doktor<sup>1</sup>

*Institution(s):* <sup>1.</sup> Athabasca University, <sup>2.</sup> University of Alberta

**427.06 The Rapid Transient Surveyor**

**Author(s):** Christoph Baranec<sup>4</sup>, John Tonry<sup>4</sup>, Shelley Wright<sup>1</sup>, R. Brent Tully<sup>4</sup>, Jessica R. Lu<sup>4</sup>, Marianne Y. Takamiya<sup>3</sup>, Lisa Hunter<sup>2</sup>

*Institution(s):* <sup>1.</sup> University of California San Diego, <sup>2.</sup> University of California Santa Cruz, <sup>3.</sup> University of Hawai'i at Hilo, <sup>4.</sup> University of Hawai'i at Manoa

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## 428 Plenary Talk: News on the Search for Milky Way Satellite Galaxies

Friday, 3:40 pm - 4:30 pm; Osceola C

Chair: Jack Burns (*Univ. of Colorado at Boulder*)



428.01

News on the Search for Milky Way Satellite Galaxies

Author(s): Keith Bechtol<sup>1</sup>

Institution(s): <sup>1</sup> University of Wisconsin - Madison

## 429 Lancelot M. Berkeley Prize: Latest Results from Planck

Friday, 4:30 pm - 5:20 pm; Osceola C

Chair: C. Megan Urry (*Yale University*)



429.01

Latest results from Planck

Author(s): Jan Tauber<sup>1</sup>

Institution(s): <sup>1</sup> European Space Agency

**Citation:** Dr. Jan Tauber is the European Space Agency's Planck Project Scientist leading the international Planck Collaboration to its groundbreaking success in delivering detailed maps of the cosmic microwave background and values of the cosmological parameters, enabling a fundamental revolution in our understanding of the origin of our Universe. As the Project Scientist he is awarded the Berkeley Prize for the most widely cited paper in the astrophysics literature published during calendar year 2014 entitled "Planck 2013 results. XVI. Cosmological parameters".

## AAS Closing Reception

Friday, 5:30 pm - 7:00 pm; Coquina Lawn

Please join us as we close the 227th AAS Meeting, and say goodbye to old friends and new, with light refreshments provided.

## POSTER SESSIONS

### 430 Extrasolar Planets and the Solar System Late Poster Session

Friday, 1:00 pm - 2:00 pm; Exhibit Hall A

**430.01 Asteroidal companions in the visible: HST data**

**Author(s):** Alex Storrs<sup>3</sup>, Faith Vilas<sup>2</sup>, Rob Landis<sup>1</sup>, Michael J. Gaffey<sup>4</sup>, Khaldoun Makhoul<sup>3</sup>, Mike Davis<sup>3</sup>, Mike Richmond<sup>3</sup>

*Institution(s):* <sup>1</sup> NASA HQ, <sup>2</sup> Planetary Science Institute, <sup>3</sup> Towson Univ., <sup>4</sup> U. of N. Dakota

**430.02 The Albedo Distribution of Near Earth Asteroids**

**Author(s):** Edward L. Wright<sup>1</sup>

*Institution(s):* <sup>1</sup> UC, Los Angeles

**430.03 The Las Cumbres Observatory (LCOGT) Network for NEO and Solar System Science**

**Author(s):** Tim Lister<sup>1</sup>, Sarah Greenstreet<sup>1</sup>, Edward Gomez<sup>1</sup>, Eric J. Christensen<sup>2</sup>, Stephen M. Larson<sup>2</sup>

*Institution(s):* <sup>1</sup> Las Cumbres Observatory, <sup>2</sup> University of Arizona

**430.04 Low Order Wavefront Sensing and Control for WFIRST-AFTA Coronagraph**

**Author(s):** FANG SHI<sup>1</sup>

*Institution(s):* <sup>1</sup> Jet Propulsion Laboratory

**430.05 Kepler AutoRegressive Planet Search**

**Author(s):** Gabriel Antonio Caceres<sup>1</sup>, Eric Feigelson<sup>1</sup>

*Institution(s):* <sup>1</sup> Pennsylvania State University

**430.06 Imaging exoplanets with the WFIRST Coronagraph: A background check of high priority targets**

**Author(s):** Guangwei Fu<sup>3</sup>, Margaret C. Turnbull<sup>2</sup>, John S. Gallagher<sup>3</sup>, Ralf C. Kotulla<sup>3</sup>, Aronne Merrelli<sup>3</sup>, Tristan L'Ecuyer<sup>3</sup>, Renyu Hu<sup>1</sup>

*Institution(s):* <sup>1</sup> JPL, <sup>2</sup> SETI Institute, <sup>3</sup> University of Wisconsin - Madison

**430.07 The Properties of Exomoons Around the Habitable Zone Planets, Kepler 22b and HD160691b**

**Author(s):** Jake Bokorney<sup>1</sup>, Christopher R. Fuse<sup>1</sup>

*Institution(s):* <sup>1</sup> Rollins College

**430.08 Using Brigham Young University's Orson Pratt Observatory 16" telescope to identify possible transiting planets discovered by the Kilodegree Extremely Little Telescope**

**Author(s):** Kyle Matt<sup>1</sup>, Denise C. Stephens<sup>1</sup>, Clement Gaillard<sup>1</sup>

*Institution(s):* <sup>1</sup> Brigham Young University

**430.09 The Case for Exoplanet Surveys at Radio Wavelengths**

**Author(s):** Peter K. G. Williams<sup>1</sup>, Edo Berger<sup>1</sup>

*Institution(s):* <sup>1</sup> Harvard-Smithsonian Center for Astrophysics

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## 430.10 Dispatch Scheduling to Maximize Exoplanet Detection

**Author(s):** Samson Johnson<sup>1</sup>, Nate McCrady<sup>1</sup>

*Institution(s):* <sup>1</sup> University of Montana

## 430.11 Exploring Hot Exoplanet Atmospheres with JWST/NIRSpec and a Hybrid Version of NEMESIS

**Author(s):** Mahmuda A. Badhan<sup>3</sup>, Avi Mandell<sup>1</sup>, Natasha Batalha<sup>2</sup>, Patrick GJ Irwin<sup>4</sup>, Joanna Barstow<sup>4</sup>, Ryan Garland<sup>4</sup>, Drake Deming<sup>3</sup>, Brigette E. Hesman<sup>3</sup>, Conor A. Nixon<sup>1</sup>

*Institution(s):* <sup>1</sup> NASA Goddard Space Flight Center, <sup>2</sup> Pennsylvania State University, <sup>3</sup> University of Maryland, <sup>4</sup> University of Oxford

## 430.12 Characterization of Mid-Type M Dwarfs in the Kepler Field

**Author(s):** Kevin Hardegree-Ullman<sup>2</sup>, Michael Cushing<sup>2</sup>, Philip Steven Muirhead<sup>1</sup>

*Institution(s):* <sup>1</sup> Boston University, <sup>2</sup> University of Toledo

# 431 Star Formation and Young Stars Late Poster Session

Friday, 1:00 pm - 2:00 pm; Exhibit Hall A

## 431.01 A survey of 44-GHz Class I methanol masers toward High Mass Protostellar Objects

**Author(s):** Carolina Berenice Rodríguez Garza<sup>1</sup>, Stan Kurtz<sup>1</sup>

*Institution(s):* <sup>1</sup> Instituto de Radioastronomía y Astrofísica, UNAM

## 431.02 The origin of the scatter of the star forming main sequence at z=0

**Author(s):** Clare Shanahan<sup>2</sup>, Rachel S. Somerville<sup>2</sup>, Amelie Saintonge<sup>3</sup>, Mei-Ling Huang<sup>1</sup>

*Institution(s):* <sup>1</sup> Max-Planck Institute for Astrophysics, <sup>2</sup> Rutgers University, <sup>3</sup> University College London

## 431.03 Resolved Companions of Cepheids as Seen by HST and XMM

**Author(s):** Nancy Ramage Evans<sup>3</sup>, Howard E. Bond<sup>2</sup>, Gail Schaefer<sup>1</sup>, Brian D. Mason<sup>4</sup>, Evan Tingle<sup>3</sup>, Margarita Karovska<sup>3</sup>, Ignazio Pillitteri<sup>3</sup>, Scott J. Wolk<sup>3</sup>, Edward F. Guinan<sup>5</sup>, Scott G. Engle<sup>5</sup>

*Institution(s):* <sup>1</sup> Georgia State University, <sup>2</sup> PSU, <sup>3</sup> SAO, <sup>4</sup> US Naval Obs., <sup>5</sup> Villanova

## 431.04 Characterizing the thermal distributions of warm molecular hydrogen in protoplanetary disks

**Author(s):** Keri Hoadley<sup>1</sup>, Kevin France<sup>1</sup>

*Institution(s):* <sup>1</sup> University of Colorado - Boulder

## 431.05 Photo-reverberation Mapping of a Protoplanetary Accretion Disk around a T Tauri Star

**Author(s):** Huan Meng<sup>1</sup>, Peter Plavchan<sup>1</sup>, George Rieke<sup>2</sup>

*Institution(s):* <sup>1</sup> IPAC/Caltech, <sup>2</sup> University of Arizona

**431.06 Reconstructing the low-mass IMF of the Orion Nebula Cluster through HST photometry in the H2O band at 1.4micron**

**Author(s):** Maria Giulia Ubeira Gabellini<sup>1</sup>, Leonardo Ubeda<sup>1</sup>, Nicola Da Rio<sup>2</sup>, Massimo Robberto<sup>1</sup>

*Institution(s):* <sup>1</sup> Space Telescope Science Institute, <sup>2</sup> University of Florida

**431.07 Observing the Circumstellar Environment of the Eruptive FUor/EXor Protostar V1647 Ori with ALMA**

**Author(s):** David Principe<sup>3</sup>, Lucas A. Cieza<sup>3</sup>, Zhaohuan Zhu<sup>2</sup>, John J. Tobin<sup>1</sup>, Jose Luis Prieto<sup>3</sup>

*Institution(s):* <sup>1</sup> Leiden Observatory, <sup>2</sup> Princeton University, <sup>3</sup> Universidad Diego Portales

## 432 Stellar Clusters and the Milky Way Late Poster Session

Friday, 1:00 pm - 2:00 pm; Exhibit Hall A

**432.02 A Swift/UVOT Study of Open Clusters**

**Author(s):** Samuel LaPorte<sup>1</sup>, Michael Siegel<sup>1</sup>

*Institution(s):* <sup>1</sup> Pennsylvania State University

**432.03 Searching for very late-type members of Hyades**

**Author(s):** Jinhee Lee<sup>1</sup>, Inseok Song<sup>1</sup>

*Institution(s):* <sup>1</sup> The University of Georgia

## 433 Evolved Stars and Things That Go Boom in the Night Late Poster Session

Friday, 1:00 pm - 2:00 pm; Exhibit Hall A

**433.01 An HST COS and Archival IUE Far UV Analysis of the U Geminorum-Type Dwarf Nova CW Monocerotis During Quiescence**

**Author(s):** Connor Hause<sup>1</sup>, Edward M. Sion<sup>1</sup>, Patrick Godon<sup>1</sup>

*Institution(s):* <sup>1</sup> Villanova University

**433.02 The Role of Extinction in Spatial Distribution of Novae in M31**

**Author(s):** A. Kaur<sup>1</sup>, Dieter Hartmann<sup>1</sup>

*Institution(s):* <sup>1</sup> Clemson University

**433.03 SPIRITS15c: An Unusual Transient Discovered in the Mid-Infrared**

**Author(s):** Jacob Jencson<sup>1</sup>, Mansi M. Kasliwal<sup>1</sup>

*Institution(s):* <sup>1</sup> California Institute of Technology

**433.04 An Accelerated Radioactive Decay (ARD) Model for Type Ia Supernovae**

**Author(s):** Bert W. Rust<sup>1</sup>, Marvin Leventhal<sup>2</sup>

*Institution(s):* <sup>1</sup> NIST, <sup>2</sup> University of Maryland

**433.05 An Analysis of Supernovae and their Place in their Host Galaxies using Swift**

**Author(s):** Ethan Kilgore<sup>1</sup>, Mark D. Leising<sup>1</sup>

*Institution(s):* <sup>1</sup> Clemson University

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## 433.06 Spectropolarimetry of ASASSN-14lp

**Author(s):** Amber L. Porter<sup>1</sup>, Mark D. Leising<sup>1</sup>, Peter Milne<sup>2</sup>, Grant Williams<sup>2</sup>, Paul S. Smith<sup>2</sup>

*Institution(s):* <sup>1</sup> Clemson University, <sup>2</sup> University of Arizona

## 433.07 SN2009ip at Very Late Times

**Author(s):** Andrew Christopher Bigley<sup>1</sup>, Melissa Lynn Graham<sup>1</sup>

*Institution(s):* <sup>1</sup> University of California -- Berkeley

## 433.08 UV Properties of High-Z Supernovae Found In Archival CFHTLS Data

**Author(s):** Tyler A. Pritchard<sup>1</sup>, Jeff Cooke<sup>1</sup>

*Institution(s):* <sup>1</sup> Swinburne

## 434 Mellow Stellar Topics Late Poster Session

Friday, 1:00 pm - 2:00 pm; Exhibit Hall A

### 434.01 The Advanced Spectral Library (ASTRAL): Abundance Analysis of the CP Star HR 465

**Author(s):** Kenneth G. Carpenter<sup>2</sup>, Krister E. Nielsen<sup>1</sup>, Gladys V. Kober<sup>1</sup>

*Institution(s):* <sup>1</sup> Catholic University of America, <sup>2</sup> NASA's GSFC

### 434.02 Doing Away with Occupation Probability: A New Way to Model Continuum Lowering at White Dwarf Photosphere Conditions

**Author(s):** Thomas A. Gomez<sup>3</sup>, Donald E. Winget<sup>3</sup>, Michael H. Montgomery<sup>3</sup>, Dave Kilcrease<sup>1</sup>, Taisuke Nagayama<sup>2</sup>

*Institution(s):* <sup>1</sup> Los Alamos National Laboratories, <sup>2</sup> Sandia National Laboratories, <sup>3</sup> University of Texas

### 434.03 Probing gas--dust interactions in debris disks

**Author(s):** Alexander J.W. Richert<sup>3</sup>, Marc J. Kuchner<sup>2</sup>, Wladimir Lyra<sup>1</sup>

*Institution(s):* <sup>1</sup> California State University, Northridge, <sup>2</sup> Goddard Space Flight Center (NASA), <sup>3</sup> The Pennsylvania State University

### 434.04 Vertical Structure of Magnetized Accretion Disks Around Young Stars

**Author(s):** Carlos Tapia<sup>1</sup>, Susana Lizano<sup>1</sup>

*Institution(s):* <sup>1</sup> Instituto de Radioastronomía y Astrofísica

### 434.05 Applying a Hydrodynamical Treatment of Stream Flow and Accretion Disk Formation in WASP-12/b Exoplanetary System

**Author(s):** Ian Weaver<sup>1</sup>, Aaron Lopez<sup>1</sup>, Phil Macias<sup>1</sup>

*Institution(s):* <sup>1</sup> UC Santa Cruz

### 434.06 The T-R diagram: a new empirical tool to reveal disk gaps and investigate exoplanet compositions

**Author(s):** Andrea Banzatti<sup>1</sup>, Klaus Pontoppidan<sup>1</sup>

*Institution(s):* <sup>1</sup> Space Telescope Science Institute

### 434.07 Spectroscopic Observations of Low-Mass Stars in the GALNYSS Survey

**Author(s):** Laura Vican<sup>1</sup>, Ben M. Zuckerman<sup>1</sup>, David Rodriguez<sup>1</sup>

*Institution(s):* <sup>1</sup> UCLA

## 434.08 The SpeX Prism Library Analysis Toolkit: Design Considerations and First Results

**Author(s):** Adam J. Burgasser<sup>3</sup>, Christian Aganze<sup>2</sup>, Ivana Escala<sup>3</sup>, Mike Lopez<sup>3</sup>, Caleb Choban<sup>3</sup>, Yuhui Jin<sup>3</sup>, Aishwarya Iyer<sup>3</sup>, Melisa Tallis<sup>3</sup>, Adrian Suarez<sup>3</sup>, Maitrayee Sahi<sup>1</sup>

*Institution(s):* <sup>1</sup> Grossmont High School, <sup>2</sup> Morehouse College, <sup>3</sup> UC San Diego

## 434.09 Go Long! Identifying Distant Brown Dwarfs in HST/WFC3 Parallel Field

**Author(s):** Christian Aganze<sup>2</sup>, Adam J. Burgasser<sup>3</sup>, Matthew Arnold Malkan<sup>4</sup>, Daniel C. Masters<sup>1</sup>, Gretel Mercado<sup>3</sup>, Adrian Suarez<sup>3</sup>, Tomoki Tamiya<sup>3</sup>

*Institution(s):* <sup>1</sup> Caltech/IPAC, <sup>2</sup> Morehouse College, <sup>3</sup> UC San Diego, <sup>4</sup> UCLA

## 435 Pulsars, Neutron Stars and Black Holes Late Poster Session

Friday, 1:00 pm - 2:00 pm; Exhibit Hall A

### 435.01 What if a black hole devours too much?

**Author(s):** Jifeng Liu<sup>1</sup>

*Institution(s):* <sup>1</sup> National Astronomical Observatory of China

### 435.02 Multi-wavelength Monitoring of Lensed Quasars: Deciphering Quasar Structure at Micro-arcseconds Scales

**Author(s):** Ana Mosquera<sup>3</sup>, Christopher W. Morgan<sup>3</sup>, Christopher S. Kochanek<sup>2</sup>, Xinyu Dai<sup>5</sup>, Bin Chen<sup>5</sup>, Chelsea Louise MacLeod<sup>4</sup>, George Chartas<sup>1</sup>

*Institution(s):* <sup>1</sup> College of Charleston, <sup>2</sup> The Ohio State University, <sup>3</sup> United States Naval Academy, <sup>4</sup> University of Edinburgh, <sup>5</sup> University of Oklahoma

### 435.03 Science highlights from high-sensitivity pulsar observations with the MWA

**Author(s):** Samuel McSweeney<sup>1</sup>, Ramesh Bhat<sup>1</sup>, Steven Tremblay<sup>1</sup>, Stephen Ord<sup>1</sup>

*Institution(s):* <sup>1</sup> Curtin University (ICRAR)

### 435.04 The NANOGrav Nine-Year Dataset: Interpretation of Dispersion Measure Variations

**Author(s):** Megan Jones<sup>1</sup>, Maura McLaughlin<sup>1</sup>

*Institution(s):* <sup>1</sup> West Virginia University

### 435.05 Detection of Hidden Pulsar J0737-3039B

**Author(s):** Tessa Maynard<sup>1</sup>

*Institution(s):* <sup>1</sup> West Virginia University

### 435.06 Arecibo Pulsar Highlights

**Author(s):** Andrew Seymour<sup>1</sup>

*Institution(s):* <sup>1</sup> NAIC

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## 436 The ISM, PNe and SNRs Late Poster Session

Friday, 1:00 pm - 2:00 pm; Exhibit Hall A

- 436.01 Characterizing the X-ray Emitting Plasma of the Galactic Supernova Remnant Kesteven 69 (G21.8-0.6)**  
**Author(s):** Thomas Pannuti<sup>1</sup>  
*Institution(s):* <sup>1</sup> Morehead State University
- 436.02 The supernova remnant 3C 397: distance and evolutionary state.**  
**Author(s):** Denis A. Leahy<sup>1</sup>, Sujith Ranasinghe<sup>1</sup>  
*Institution(s):* <sup>1</sup> Univ. of Calgary
- 436.03 Densities in Diffuse Molecular Clouds as Determined from Observations of CO Absorption**  
**Author(s):** Trevor Ryder Picard<sup>2</sup>, Nick Indriolo<sup>2</sup>, Paul Goldsmith<sup>1</sup>  
*Institution(s):* <sup>1</sup> California Institute of Technology, <sup>2</sup> University of Michigan
- 436.04 Karl G. Jansky VLA 3.6 cm Continuum and RRL Observations of the Galactic Massive Star Forming Region W49A**  
**Author(s):** Christopher G. De Pree<sup>1</sup>, David J. Wilner<sup>3</sup>, Roberto Galvan-Madrid<sup>7</sup>, Miller Goss<sup>6</sup>, Ralf Klessen<sup>4</sup>, Mordecai-Mark Mac Low<sup>2</sup>, Thomas Peters<sup>5</sup>, Charlee Amason<sup>1</sup>  
*Institution(s):* <sup>1</sup> Agnes Scott College, <sup>2</sup> AMNH, <sup>3</sup> Center for Astrophysics, <sup>4</sup> ITA, <sup>5</sup> MPA, <sup>6</sup> NRAO, <sup>7</sup> UNAM
- 436.05 Si K Edge Measurements of the ISM with Chandra**  
**Author(s):** Norbert S. Schulz<sup>1</sup>, Lia Corrales<sup>1</sup>, C. R. Canizares<sup>1</sup>  
*Institution(s):* <sup>1</sup> MIT
- 436.06 The Gas-Grain Chemistry of Galactic Translucent Clouds**  
**Author(s):** Dominique M. Maffucci<sup>1</sup>, Eric Herbst<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Virginia
- 436.07 Properties of H II Region Populations in the Whirlpool Galaxy: Hubble Space Telescope Pa-beta Imaging**  
**Author(s):** Elizabeth Grace<sup>1</sup>  
*Institution(s):* <sup>1</sup> Reed College
- 436.08 Compact Neutral Hydrogen Clouds: Searching for Undiscovered Dwarf Galaxies and Gas Associated with an Algol-type Variable Star**  
**Author(s):** Jana Grcevich<sup>1</sup>, Sabrina Berger<sup>4</sup>, Mary E. Putman<sup>2</sup>, Joshua Eli Goldston Peek<sup>3</sup>  
*Institution(s):* <sup>1</sup> American Museum of Natural History, <sup>2</sup> Columbia University, <sup>3</sup> Space Telescope Science Institute, <sup>4</sup> University of California
- 436.09 The Contribution of Small Body Disruptions to Debris Disks**  
**Author(s):** Ashley J. Espy Kehoe<sup>2</sup>, Thomas James Joseph Kehoe<sup>1</sup>, Joshua E. Colwell<sup>2</sup>  
*Institution(s):* <sup>1</sup> Florida Space Institute, <sup>2</sup> University of Central Florida

**437 Binaries and Variable Stars Late Poster Session**

Friday, 1:00 pm - 2:00 pm; Exhibit Hall A

- 437.02 Discovery of 30,000 Periodic Variables in the Southern Sky**  
**Author(s):** Andrew J. Drake<sup>2</sup>, Stanislav G. Djorgovski<sup>2</sup>, Matthew Graham<sup>2</sup>, Marcio Catelan<sup>4</sup>, Gabriel Torrealba<sup>3</sup>, Ashish A. Mahabal<sup>2</sup>, Eric J. Christensen<sup>5</sup>, Stephen M. Larson<sup>5</sup>, Robert McNaught<sup>1</sup>, Gordon Garradd<sup>1</sup>  
*Institution(s):* <sup>1</sup> Australian National University, <sup>2</sup> Caltech, <sup>3</sup> Cambridge University, <sup>4</sup> Pontificia Universidad Catolica, <sup>5</sup> University of Arizona
- 437.03 Period and Orbital Separation determination of a Subdwarf B Pulsator, EC 20117-4014**  
**Author(s):** Tomomi Otani<sup>1</sup>, Terry Oswalt<sup>1</sup>  
*Institution(s):* <sup>1</sup> Embry Riddle Aeronautical University
- 437.04 An Observational Study of Pulsations in Proto-Planetary Nebulae**  
**Author(s):** Bruce J. Hrivnak<sup>2</sup>, Wenxian Lu<sup>2</sup>, Gary D. Henson<sup>1</sup>, Todd C. Hillwig<sup>2</sup>  
*Institution(s):* <sup>1</sup> East Tennessee State University, <sup>2</sup> Valparaiso Univ.
- 437.05 Variability Studies in Two Hypergiants and a Post-AGB Object**  
**Author(s):** Stephen Freund<sup>1</sup>, Bruce J. Hrivnak<sup>1</sup>, Wenxian Lu<sup>1</sup>  
*Institution(s):* <sup>1</sup> Valparaiso University
- 437.06 Extending the capability of GYRE to calculate tidally forced stellar oscillations**  
**Author(s):** Zhao Guo<sup>1</sup>, Douglas R. Gies<sup>1</sup>  
*Institution(s):* <sup>1</sup> Georgia State University
- 437.07 SARA South Observations and Analysis of the Solar Type, Totally Eclipsing, Shallow Contact Binary, CW Sculptoris**  
**Author(s):** Ronald G. Samec<sup>2</sup>, Cody Norris<sup>2</sup>, Walter V. Van Hamme<sup>3</sup>, Danny R Faulkner<sup>4</sup>, Robert L. Hill<sup>1</sup>  
*Institution(s):* <sup>1</sup> Bob Jones Univ., <sup>2</sup> Emmanuel College, <sup>3</sup> Florida International University, <sup>4</sup> University of South Carolina
- 437.08 BVRI Photometric Study of the Short Period Solar Type Near-Contact W UMa Binary, FF Vulpeculae**  
**Author(s):** Daniel B. Caton<sup>1</sup>, Ronald G. Samec<sup>2</sup>, Ropafadzo Nyaude<sup>2</sup>, Walter V. Van Hamme<sup>3</sup>  
*Institution(s):* <sup>1</sup> Appalachian State Univ., <sup>2</sup> Emmanuel College, <sup>3</sup> Florida Institute of Technology
- 437.09 Two Small Instrumental Artifacts from Chandra ACIS Data**  
**Author(s):** Hang Gong<sup>1</sup>  
*Institution(s):* <sup>1</sup> National Astronomical Observatory of China
- 437.10 Polars Observed with SDSS, CRTS, and McDonald Observatory 2.1-m**  
**Author(s):** Joshua Santana<sup>1</sup>, Paul A. Mason<sup>1</sup>  
*Institution(s):* <sup>1</sup> New Mexico State University

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- 437.11 Designing Information Measures for Real-time Lightcurve Classification**  
**Author(s):** David Edward Jones<sup>2</sup>, Yang Chen<sup>2</sup>, Xiao-Li Meng<sup>2</sup>, Aneta Siemiginowska<sup>1</sup>, Vinay Kashyap<sup>1</sup>  
*Institution(s):* <sup>1</sup> Harvard Smithsonian, CfA, <sup>2</sup> Harvard University

## 438 AGN and QSOs Late Poster Session

Friday, 1:00 pm - 2:00 pm; Exhibit Hall A

- 438.01 Time Variability of VHE Gamma-Ray Induced Pair Cascades in AGN Environments**  
**Author(s):** Parisa Roustazadeh<sup>2</sup>, Samantha Elaine Thrush<sup>2</sup>, Markus Boettcher<sup>1</sup>  
*Institution(s):* <sup>1</sup> Centre for Space Research, North-West University, <sup>2</sup> Ohio University
- 438.02 Spline-based Study of the Extragalactic Background Light Spectrum using Gamma-Ray Observations**  
**Author(s):** Anoushka Bose<sup>1</sup>, Julia Rathmann-Bloch<sup>1</sup>, Jonathan Biteau<sup>1</sup>, David A. Williams<sup>1</sup>  
*Institution(s):* <sup>1</sup> Santa Cruz Institute of Particle Physics, University of California Santa Cruz
- 438.03 Inflow Generated X-ray Corona Around Supermassive Black Holes and Unified Model for X-ray Emission**  
**Author(s):** Lile Wang<sup>1</sup>, Renyue Cen<sup>1</sup>  
*Institution(s):* <sup>1</sup> Princeton University
- 438.04 The pattern of extreme star formation events in SDSS quasar hosts in Herschel fields**  
**Author(s):** Lura Katherine Pitchford<sup>6</sup>, Evanthia Hatziminaoglou<sup>3</sup>, Anna Feltre<sup>2</sup>, Charlotte Clarke<sup>5</sup>, Duncan Farrah<sup>6</sup>, Kathryn Amy Harris<sup>6</sup>, Peter Hurley<sup>5</sup>, Sebastian Oliver<sup>5</sup>, Mat Page<sup>4</sup>, Lingyu Wang<sup>1</sup>  
*Institution(s):* <sup>1</sup> SRON Netherlands Institute for Space Research, <sup>2</sup> CNRS, Institut d'Astrophysique de Paris, <sup>3</sup> European Southern Observatory, <sup>4</sup> University College London, Space and Climate Physics, Mullard Space Science Laboratory, <sup>5</sup> University of Sussex, <sup>6</sup> Virginia Polytechnic Institute and State University
- 438.05 Determining Orientation in Radio-Quiet Quasars**  
**Author(s):** Michael S. Brotherton<sup>2</sup>, Vikram Singh<sup>2</sup>, Jessie C. Runnoe<sup>1</sup>  
*Institution(s):* <sup>1</sup> Penn State, <sup>2</sup> Univ. of Wyoming
- 438.06 Evaluating and Improving Redshift Determinations in High-z Quasars**  
**Author(s):** Michelle Mason<sup>1</sup>, Michael S. Brotherton<sup>1</sup>, Adam D. Myers<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Wyoming
- 438.07 The Host Galaxies of Nearby, Optically Luminous, AGN**  
**Author(s):** Andreea Petric<sup>1</sup>  
*Institution(s):* <sup>1</sup> Gemini Observatories

**438.08 Formation of Continuous and Episodic Relativistic Outflows in Regions of Stability and Instability in Advection-Dominated Accretion Flows**

**Author(s):** Truong V. Le<sup>1</sup>, Kent S. Wood<sup>3</sup>, Michael Thomas Wolff<sup>3</sup>, Peter A. Becker<sup>2</sup>, Joy Putney<sup>4</sup>, Elizabeth Edge<sup>1</sup>

*Institution(s):* <sup>1</sup> Berry College, <sup>2</sup> George Mason University, <sup>3</sup> Naval Research Laboratory, <sup>4</sup> Washington and Lee University

**438.09 Searching for Outflows from the central kpc of nearby ULIRGs with OSIRIS**

**Author(s):** Alexander R. Rudy<sup>2</sup>, Claire E. Max<sup>1</sup>, Srikar Srinath<sup>2</sup>

*Institution(s):* <sup>1</sup> UC Observatories, <sup>2</sup> UC Santa Cruz

## 439 Galaxy Clusters and Large Scale Structure Late Poster Session

Friday, 1:00 pm - 2:00 pm; Exhibit Hall A

**439.01 SDSS-IV: The Clustering of eBOSS LRGs using photometric redshifts**

**Author(s):** Abhishek Prakash<sup>1</sup>

*Institution(s):* <sup>1</sup> University of Pittsburgh

**439.02 A First Calibration of SBF using Mult-Conjugate Adaptive Optics**

**Author(s):** Zachary Gibson<sup>3</sup>, Joseph B. Jensen<sup>3</sup>, John Blakeslee<sup>2</sup>, Mischa Schirmer<sup>1</sup>

*Institution(s):* <sup>1</sup> Gemini Observatory, <sup>2</sup> Herzberg Institute of Astrophysics, <sup>3</sup> Utah Valley University

**439.03 Characterizing the Cosmic Infrared Background Fluctuations**

**Author(s):** Yanxia Li<sup>1</sup>, Guenther Hasinger<sup>1</sup>, Nico Cappelluti<sup>2</sup>

*Institution(s):* <sup>1</sup> IfA, University of Hawaii, <sup>2</sup> Yale University

**439.04 High Resolution SZE Imaging of Galaxy Clusters with MUSTANG-2**

**Author(s):** Brian S. Mason<sup>4</sup>, Charles Romero<sup>3</sup>, Simon Dicker<sup>6</sup>, Tony Mroczkowski<sup>5</sup>, Sara Stanchfield<sup>6</sup>, Jack Sayers<sup>2</sup>, Nicole G. Czakon<sup>1</sup>, Craig L. Sarazin<sup>7</sup>, Sunil R. Golwala<sup>2</sup>, Mark J. Devlin<sup>6</sup>

*Institution(s):* <sup>1</sup> ASIAA, <sup>2</sup> Caltech, <sup>3</sup> IRAM, <sup>4</sup> NRAO, <sup>5</sup> NRL, <sup>6</sup> University of Pennsylvania, <sup>7</sup> UVA

**439.05 IDCS J1426.5+3508: The Most Massive Galaxy Cluster at  $z > 1.5$**

**Author(s):** Mark Brodwin<sup>6</sup>, Michael McDonald<sup>2</sup>, Anthony H. Gonzalez<sup>4</sup>, S. Adam Stanford<sup>5</sup>, Peter R. Eisenhardt<sup>1</sup>, Daniel Stern<sup>1</sup>, Gregory Zeimann<sup>3</sup>

*Institution(s):* <sup>1</sup> JPL, <sup>2</sup> MIT/Kavli, <sup>3</sup> Penn State, <sup>4</sup> U Florida, <sup>5</sup> UC Davis, <sup>6</sup> University of Missouri - Kansas City

**439.06 The Dynamics of the Merging Cluster Abell 562**

**Author(s):** Percy L. Gomez<sup>1</sup>

*Institution(s):* <sup>1</sup> Gemini Obs.

**439.07 A Search for Distant Galaxy Cluster Hosting Extreme Central Galaxies**

**Author(s):** Taweewat Somboonpanyakul<sup>1</sup>

*Institution(s):* <sup>1</sup> Massachusetts Institute of Technology

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## 439.08 Investigating Galaxy Superwinds and the Circumgalactic Medium

**Author(s):** Daniel Brandt<sup>1</sup>, Jason X. Prochaska<sup>2</sup>, Jessica Werk<sup>2</sup>

*Institution(s):* <sup>1</sup> Case Western Reserve University, <sup>2</sup> University of California, Santa Cruz

## 439.09 Probing the Properties of Distant Galaxies and their Circumgalactic Medium with Damped, Sub-damped, and Super-damped Lyman-alpha Quasar Absorbers

**Author(s):** Varsha P. Kulkarni<sup>6</sup>, Debopam Som<sup>6</sup>, Sean Morrison<sup>6</sup>, Celine Peroux<sup>3</sup>, Donald G. York<sup>4</sup>, Samuel Quiret<sup>3</sup>, James Thomas Lauroesch<sup>5</sup>, Pushpa Khare<sup>2</sup>, Monique C. Aller<sup>1</sup>

*Institution(s):* <sup>1</sup> Georgia Southern University, <sup>2</sup> IUCAA, <sup>3</sup> Laboratoire d'Astrophysique de Marseille, <sup>4</sup> Univ. of Chicago, <sup>5</sup> Univ. of Louisville, <sup>6</sup> Univ. Of South Carolina

## 439.10 Fingerprints of the First Stars: The Discovery of Possible Population III Remnants at Redshift 3.5

**Author(s):** John O'Meara<sup>1</sup>, Neil H. M. Crighton<sup>2</sup>, Michael Murphy<sup>2</sup>

*Institution(s):* <sup>1</sup> Saint Michael's College, <sup>2</sup> Swinburne University of Technology

# 440 The Evolution of Galaxies Late Poster Session

Friday, 1:00 pm - 2:00 pm; Exhibit Hall A

## 440.01 The evolution of individual galaxies in numerical simulations and semi-analytic models

**Author(s):** Yotam Cohen<sup>1</sup>, Rachel S. Somerville<sup>1</sup>, Alyson Brooks<sup>1</sup>, Charlotte Christensen<sup>2</sup>, Sheehan Ahmed<sup>1</sup>

*Institution(s):* <sup>1</sup> Rutgers University, <sup>2</sup> University of Arizona

## 440.02 Constraining the Major Merger History of Massive Galaxies from $z \sim 0$ to $z \sim 3$ using Pairs from CANDELS & SDSS

**Author(s):** Kameswara Bharadwaj Mantha<sup>5</sup>, Daniel H. McIntosh<sup>5</sup>, Ryan Brennan<sup>2</sup>, Joshua Cook<sup>5</sup>, Christopher Conselice<sup>4</sup>, Jennifer Lotz<sup>3</sup>, Nimish P. Hathi<sup>1</sup>

*Institution(s):* <sup>1</sup> Aix Marseille Université, CNRS, LAM (Laboratoire d'Astrophysique de Marseille), <sup>2</sup> Rutgers University, <sup>3</sup> Space Telescope Science Institute, <sup>4</sup> The University of Nottingham, <sup>5</sup> University of Missouri- Kansas city

## 440.03 Constraints on the Star Formation Efficiency of Galaxies During Cosmic Reionization

**Author(s):** Guochao Sun<sup>1</sup>, Steven R. Furlanetto<sup>1</sup>

*Institution(s):* <sup>1</sup> University of California, Los Angeles

## 440.04 Numerical Simulations of Interacting Galaxies NGC3395/96

**Author(s):** Curtis Dankof<sup>1</sup>, Elizabeth Gehret<sup>1</sup>, Li-Hsin Chien<sup>1</sup>

*Institution(s):* <sup>1</sup> Northern Arizona University

## 440.05 The stellar mass assembly of galaxies in the Illustris simulation: growth by mergers and the spatial distribution of accreted stars

**Author(s):** Vicente Rodriguez-Gomez<sup>1</sup>, Annalisa Pillepich<sup>1</sup>, Lars E. Hernquist<sup>1</sup>

*Institution(s):* <sup>1</sup> Harvard University

- 440.06 Metal enrichment of the CGM through outflows**  
**Author(s):** Charlotte Christensen<sup>1</sup>  
*Institution(s):* <sup>1</sup> Grinnell College
- 440.07 The OH and H<sub>2</sub>O Megamaser Connection: H<sub>2</sub>O Emission Toward OH Megamaser Hosts**  
**Author(s):** Brandon Kerry Wiggins<sup>1</sup>  
*Institution(s):* <sup>1</sup> Brigham Young University
- 440.08 Searching for the Most UV-Luminous Galaxies in the Distant Universe**  
**Author(s):** Matthew L. Stevans<sup>4</sup>, Steven L. Finkelstein<sup>4</sup>, Isak Wold<sup>4</sup>, Karl Gebhardt<sup>4</sup>, Shardha Jogee<sup>4</sup>, Casey J. Papovich<sup>3</sup>, Robin Ciardullo<sup>2</sup>, Caryl Gronwall<sup>2</sup>, Viviana Acquaviva<sup>1</sup>, Caitlin Casey<sup>4</sup>  
*Institution(s):* <sup>1</sup> New York City College of Technology, <sup>2</sup> Penn State University, <sup>3</sup> Texas A and M University, <sup>4</sup> University of Texas at Austin
- 440.09 X-Ray Properties Along the Toomre Sequence of Galaxy Merger**  
**Author(s):** John Allen<sup>1</sup>, Christopher R. Fuse<sup>1</sup>  
*Institution(s):* <sup>1</sup> Rollins College
- 440.10 Constraints on Feedback in the Local Universe: The Relation Between Star Formation and AGN Activity in Early Type Galaxies**  
**Author(s):** Sravani Vaddi<sup>1</sup>, Christopher P. O'Dea<sup>1</sup>, Stefi Alison Baum<sup>1</sup>  
*Institution(s):* <sup>1</sup> Rochester Institute of Technology
- 440.11 Most Massive Group Galaxies at Intermediate Redshifts**  
**Author(s):** Jennifer L. Connelly<sup>2</sup>, Laura C. Parker<sup>1</sup>  
*Institution(s):* <sup>1</sup> McMaster University, <sup>2</sup> Rochester Institute of Technology

## 441 Galaxies of all Types Late Poster Session

Friday, 1:00 pm - 2:00 pm; Exhibit Hall A

- 441.01 DECam Observations of the Tidal Shells Around NGC 3923**  
**Author(s):** Bryan Miller<sup>2</sup>, Connor Grooms<sup>5</sup>, Thomas H. Puzia<sup>3</sup>, Taylor Matthew<sup>3</sup>, Candlish Graeme<sup>4</sup>, Stacy S. McGaugh<sup>1</sup>, Chris Mihos<sup>1</sup>, Rory Smith<sup>6</sup>, Mischa Schirmer<sup>2</sup>  
*Institution(s):* <sup>1</sup> Case Western Reserve University, <sup>2</sup> Gemini Observatory, <sup>3</sup> Pontificia Universidad Catolica de Chile, <sup>4</sup> Universidad de Concepcion, <sup>5</sup> University of Victoria, <sup>6</sup> Yonsei University
- 441.02 Chandra Galaxy Atlas**  
**Author(s):** Dong-Woo Kim<sup>2</sup>, Craig Anderson<sup>2</sup>, Doug Burke<sup>2</sup>, Giuseppina Fabbiano<sup>2</sup>, Antonella Fruscione<sup>2</sup>, Jennifer L. Lauer<sup>2</sup>, Michael L. McCollough<sup>2</sup>, Doug Morgan<sup>2</sup>, Amy Mossman<sup>2</sup>, Ewan O'Sullivan<sup>2</sup>, Alessandro Paggi<sup>2</sup>, Ginevra Trinchieri<sup>1</sup>  
*Institution(s):* <sup>1</sup> INAF, <sup>2</sup> Smithsonian Astrophysical Observatory
- 441.03 The multi-wavelength Tully-Fisher relation: hunting for the intrinsic scatter**  
**Author(s):** Anastasia Ponomareva<sup>1</sup>  
*Institution(s):* <sup>1</sup> Kapteyn Astronomical Institute

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- 441.04 M31AGES: Studying the intermediate-aged populations in the satellites, smooth halo, and substructure of Andromeda**  
**Author(s):** Katherine Hamren<sup>2</sup>, Rachael Beaton<sup>1</sup>, Puragra Guhathakurta<sup>2</sup>, Steven R. Majewski<sup>3</sup>  
*Institution(s):* <sup>1</sup> *The Carnegie Observatories*, <sup>2</sup> *University of California Santa Cruz*, <sup>3</sup> *University of Virginia*
- 441.05 The Evolution of Dwarf Galaxies**  
**Author(s):** Jacqueline M. Dunn<sup>1</sup>  
*Institution(s):* <sup>1</sup> *Midwestern State University*
- 441.06 A Receding Halo Sub-structure Towards Norma**  
**Author(s):** Sukanya Chakrabarti<sup>1</sup>  
*Institution(s):* <sup>1</sup> *Rochester Institute of Technology*

## 442 Gravitational Waves, Lenses and GRBs Late Poster Session

Friday, 1:00 pm - 2:00 pm; Exhibit Hall A

- 442.01 A Search for Structure in Gamma Ray Burst X-ray Flares Confirming Whether They Are Similar To The Three Pulse Structure Found In Propt Emission Pulses**  
**Author(s):** Jason Baron<sup>2</sup>, Judith L. Racusin<sup>1</sup>, David C Morris<sup>2</sup>  
*Institution(s):* <sup>1</sup> *NASA/GSFC*, <sup>2</sup> *University of the Virgin Islands*
- 442.02 A sample gamma-ray bursts with low luminosity afterglow to statistically derive their properties**  
**Author(s):** Bruce Gendre<sup>4</sup>, Husne Dereli<sup>3</sup>, michel boer<sup>1</sup>, lorenzo amati<sup>2</sup>, simone dichiara<sup>2</sup>  
*Institution(s):* <sup>1</sup> *ARTEMIS*, <sup>2</sup> *IASF-Bologna*, <sup>3</sup> *KTH*, <sup>4</sup> *University of the Virgin Islands*
- 442.03 Observing Gravitational Waves from Core-Collapse Supernovae in the Advanced Detector Era**  
**Author(s):** Sarah Gossan<sup>1</sup>, Patrick Sutton<sup>2</sup>, Amber L. Stuver<sup>4</sup>, Michele Zanolin<sup>3</sup>, Kiranjyot Gill<sup>3</sup>, Christian D. Ott<sup>1</sup>  
*Institution(s):* <sup>1</sup> *California Institute of Technology*, <sup>2</sup> *Cardiff University*, <sup>3</sup> *Embry-Riddle Aeronautical University*, <sup>4</sup> *Louisiana State University*
- 442.04 X-ray Line Profile Variations During Quasar Microlensing**  
**Author(s):** David Heyrovsky<sup>2</sup>, Lukas Ledvina<sup>2</sup>, Michal Dovciak<sup>1</sup>  
*Institution(s):* <sup>1</sup> *Astronomical Institute of the Czech Academy of Sciences*, <sup>2</sup> *Charles University in Prague*
- 442.05 Multi-messenger astronomy of gravitational-wave sources with flexible wide-area radio transient surveys**  
**Author(s):** Michael Kavic<sup>1</sup>  
*Institution(s):* <sup>1</sup> *Long Island University*

## 443 Cosmology Late Poster Session

Friday, 1:00 pm - 2:00 pm; Exhibit Hall A

## 443.01 Quasar clustering at intermediate redshift - Analysis of systematics and of luminosity effects

**Author(s):** Sarah Eftekharzadeh<sup>6</sup>, Adam D. Myers<sup>6</sup>, Ehsan Kourkchi<sup>8</sup>, Michael A. DiPompeo<sup>6</sup>, Martin White<sup>11</sup>, David, H. Weinberg<sup>4</sup>, Andreu Font-Ribera<sup>10</sup>, Jian Ge<sup>5</sup>, Isabelle Paris<sup>9</sup>, Nicholas P. Ross<sup>7</sup>, Donald P. Schneider<sup>3</sup>, Yue Shen<sup>2</sup>, Alina Streblyanska<sup>1</sup>

*Institution(s):* <sup>1.</sup> Departamento de Astrofísica, Universidad de La Laguna (ULL), <sup>2.</sup> Department of Astronomy, <sup>3.</sup> Department of Astronomy & Astrophysics and Institute for Gravitation & the Cosmos, Pennsylvania State University, <sup>4.</sup> Department of Astronomy and CCAPP, <sup>5.</sup> Department of Astronomy, University of Florida, <sup>6.</sup> Department of Physics & Astronomy, University of Wyoming, <sup>7.</sup> Department of Physics, Drexel University, <sup>8.</sup> Institute for Astronomy, University of Hawaii, <sup>9.</sup> Instituto de Astrofísica de Canarias (IAC), <sup>10.</sup> Lawrence Berkeley National Laboratory, <sup>11.</sup> Physics Division, Lawrence Berkeley National Laboratory

## 443.02 Possible New Horizons Fundamental Contribution to Cosmology

**Author(s):** Richard Conn Henry<sup>2</sup>, Jayant Murthy<sup>1</sup>

*Institution(s):* <sup>1.</sup> Indian Institute of Astrophysics, <sup>2.</sup> Johns Hopkins Univ.

## 443.03 The HST Frontier Fields: High-Level Science Data Products for the First 4 Completed Clusters, and Latest Data on the Remaining Clusters

**Author(s):** Anton M. Koekemoer<sup>1</sup>, Jennifer Mack<sup>1</sup>, Jennifer Lotz<sup>1</sup>, Jay Anderson<sup>1</sup>, Roberto J. Avila<sup>1</sup>, Elizabeth A. Barker<sup>1</sup>, David Borncamp<sup>1</sup>, Heather C. Gunning<sup>1</sup>, Bryan Hilbert<sup>1</sup>, Harish G. Khandrika<sup>1</sup>, Ray A. Lucas<sup>1</sup>, Sara Ogaz<sup>1</sup>, Blair Porterfield<sup>1</sup>, Norman A. Grogin<sup>1</sup>, Massimo Robberto<sup>1</sup>, Kathryn Flanagan<sup>1</sup>, Matt Mountain<sup>1</sup>

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## 443.04 21 cm Fluctuations of the Cosmic Dawn with the Owens Valley Long Wavelength Array

**Author(s):** Michael Eastwood<sup>1</sup>, Gregg Hallinan<sup>1</sup>

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## 443.05 The halo mass function goes nonlinear

**Author(s):** Caroline Heneka<sup>2</sup>, David Rapetti<sup>2</sup>, Matteo Cataneo<sup>2</sup>, Adam Mantz<sup>3</sup>, Steven W. Allen<sup>4</sup>, Anja Von Der Linden<sup>5</sup>, Douglas Applegate<sup>1</sup>

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## 443.06 The Co-evolution of Cosmic Entropy and Structures in the Universe

**Author(s):** Xinghai Zhao<sup>1</sup>, Yuexing Li<sup>1</sup>, Qirong Zhu<sup>1</sup>, Derek B. Fox<sup>1</sup>

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## 443.07 The Environmental Dependence of the Galaxy Luminosity Function in the ECO Survey

**Author(s):** Hayley Andrews<sup>1</sup>

*Institution(s):* <sup>1</sup> Vanderbilt University

## 443.08 Searches for Decaying Sterile Neutrinos with the X-Ray Quantum Calorimeter Sounding Rocket

**Author(s):** David Goldfinger<sup>1</sup>

*Institution(s):* <sup>1</sup> Massachusetts Institute of Technology

## 444 Catalog, Surveys, Computation and Related Topics Late Poster Session

Friday, 1:00 pm - 2:00 pm; Exhibit Hall A

### 444.01 The Hubble Spectroscopic Legacy Archive

**Author(s):** Molly S. Peeples<sup>2</sup>, Jason Tumlinson<sup>2</sup>, Andrew Fox<sup>2</sup>, Alessandra Aloisi<sup>2</sup>, Thomas R. Ayres<sup>3</sup>, Charles Danforth<sup>3</sup>, Scott W. Fleming<sup>2</sup>, Edward B. Jenkins<sup>1</sup>, Robert I. Jedrzejewski<sup>2</sup>, Brian A. Keeney<sup>3</sup>, Cristina M. Oliveira<sup>2</sup>

*Institution(s):* <sup>1</sup> Princeton University, <sup>2</sup> Space Telescope Science Institute, <sup>3</sup> University of Colorado

### 444.02 Proposal Auto-Categorizer and Manager for Time Allocation Review at Space Telescope Science Institute

**Author(s):** Sophia Porter<sup>1</sup>, Louis-Gregory Strolger<sup>2</sup>, Jill Lagerstrom<sup>2</sup>, Sarah Weissman<sup>2</sup>

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### 444.03 NASA Astrophysics Funds Strategic Technology Development

**Author(s):** Bernard D. Seery<sup>1</sup>, Opher Ganel<sup>1</sup>, Bruce Pham<sup>1</sup>

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### 444.04 Derivation of Johnson-Cousins Magnitudes from DSLR Camera Observations

**Author(s):** Woojin Park<sup>3</sup>, Soojong Pak<sup>3</sup>, Hyunjin Shim<sup>4</sup>, Huynh Anh N. Le<sup>3</sup>, Myungshin Im<sup>5</sup>, Seunghyuk Chang<sup>2</sup>, Joonkyu Yu<sup>1</sup>

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### 444.05 First parallax results from URAT data

**Author(s):** Norbert Zacharias<sup>2</sup>, Charlie T. Finch<sup>2</sup>, Wei-Chun Jao<sup>1</sup>

*Institution(s):* <sup>1</sup> RECONS, <sup>2</sup> U.S. Naval Observatory

### 444.06 WorldWide Telescope: A Newly Open Source Astronomy Visualization System

**Author(s):** Jonathan Fay<sup>1</sup>, Douglas A. Roberts<sup>2</sup>

*Institution(s):* <sup>1</sup> Microsoft, <sup>2</sup> Northwestern University

- 444.07 The effect of plasma shear flow on drift Alfvén instabilities of a finite beta plasma and on anomalous heating of ions by ion cyclotron turbulence**  
**Author(s):** Young Hyun Jo<sup>1</sup>, Hae June Lee<sup>1</sup>, Vladimir V. Mikhailenko<sup>1</sup>, Vladimir S. Mikhailenko<sup>1</sup>  
*Institution(s):* <sup>1</sup> Pusan National University
- 444.08 The Dark Energy Survey Pipeline**  
**Author(s):** Eric Morganson<sup>1</sup>  
*Institution(s):* <sup>1</sup> National Center for Supercomputing Applications

## 445 Instrumentation on Earth and in Space Late Poster Session

Friday, 1:00 pm - 2:00 pm; Exhibit Hall A

- 445.01 Gemini South Multi-Object Spectrograph (GMOS-S) detector Video boards upgrade: improved performance for the Hamamatsu CCDs.**  
**Author(s):** German Gimeno<sup>2</sup>, Luc Boucher<sup>2</sup>, Kristin Chiboucas<sup>1</sup>, Pascale Hibon<sup>2</sup>, Manuel Lazo<sup>2</sup>, Richard Murowinski<sup>1</sup>, Matthew Rippa<sup>1</sup>, Rolando Rogers<sup>2</sup>, Roberto Rojas<sup>2</sup>, Katherine Roth<sup>1</sup>, John White<sup>1</sup>  
*Institution(s):* <sup>1</sup> Gemini Observatory, <sup>2</sup> Gemini Observatory
- 445.02 The Alignment System for a Medium-Sized Schwarzschild-Couder Telescope Prototype for the Cherenkov Telescope Array**  
**Author(s):** Deivid Ribeiro<sup>1</sup>, Brian Humensky<sup>1</sup>, Daniel Nieto<sup>1</sup>  
*Institution(s):* <sup>1</sup> Columbia University
- 445.03 The Gemini Science User Support Department: A community-centered approach to user support**  
**Author(s):** André-Nicolas Chené<sup>1</sup>, Joanna Thomas-Osip<sup>1</sup>  
*Institution(s):* <sup>1</sup> Gemini Observatory
- 445.04 Non-interferometer Phase-differential Imaging Method with a Single Telescope Installation**  
**Author(s):** Jaeho Choi<sup>1</sup>  
*Institution(s):* <sup>1</sup> Dankook University
- 445.05 Status And Performance Of The Virgin Islands Robotic Telescope at Etelman Observatory**  
**Author(s):** David C. Morris<sup>3</sup>, Bruce Gendre<sup>3</sup>, James E. Neff<sup>1</sup>, Timothy W. Giblin<sup>2</sup>  
*Institution(s):* <sup>1</sup> College of Charleston, <sup>2</sup> United States Air Force Academy, <sup>3</sup> University of the Virgin Islands
- 445.06 Development of an Inexpensive Telescope System for Very High Energy Astronomy: EL CHEAPO**  
**Author(s):** Laiya F Ackman<sup>1</sup>, Jeremy S Perkins<sup>2</sup>  
*Institution(s):* <sup>1</sup> Columbia University, <sup>2</sup> NASA/GSFC

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- 445.07 Compton-Pair Production Space Telescope: Extending Fermi-LAT Discoveries into MeV Gamma-ray Astronomy**  
**Author(s):** Regina Caputo<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of California Santa Cruz
- 445.08 Chandra X-ray Observatory Optical Axis and Aimpoint**  
**Author(s):** Ping Zhao<sup>1</sup>  
*Institution(s):* <sup>1</sup> Harvard-Smithsonian, CfA
- 445.09 Developing A New Test Stand For Lifetime Measurements Using A Narrow Gap Detector**  
**Author(s):** Omani Tuit<sup>2</sup>, Joanne E. Hill<sup>1</sup>, Keith Jahoda<sup>1</sup>, David C Morris<sup>2</sup>  
*Institution(s):* <sup>1</sup> NASA/GSFC, <sup>2</sup> University of the Virgin Islands
- 445.10 Fabrication of Metallic Freeform Mirrors for Wide-Field Space Infrared Telescope**  
**Author(s):** Byeongjoon Jeong<sup>3</sup>, Soojong Pak<sup>3</sup>, Sanghyuk kim<sup>3</sup>, Kwangjo Lee<sup>3</sup>, Seunghyuk Chang<sup>1</sup>, GUN HEE KIM<sup>2</sup>, Sangwon Hyun<sup>2</sup>, Min Woo Jeon<sup>2</sup>  
*Institution(s):* <sup>1</sup> Center for Integrated Smart Sensors, KAIST, <sup>2</sup> Korea Basic Science Institute, <sup>3</sup> Kyunghee University
- 445.11 Need for a network of observatories for space debris dynamical and physical characterization**  
**Author(s):** Fabrizio Piergentili<sup>4</sup>, Fabio Santoni<sup>3</sup>, Marco Castronuovo<sup>1</sup>, Claudio Portelli<sup>1</sup>, Tommaso Cardona<sup>4</sup>, Lorenzo Arena<sup>4</sup>, Gioacchino Sciré<sup>4</sup>, Patrick Seitzer<sup>2</sup>  
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## 446 Education Topics Late Poster Session

Friday, 1:00 pm - 2:00 pm; Exhibit Hall A

- 446.01 Improving Science Communication and Engaging the Public in Astronomy and Nature**  
**Author(s):** Douglas N. Arion<sup>1</sup>  
*Institution(s):* <sup>1</sup> Carthage College
- 446.02 Solar Eclipse Computer API: Planning Ahead for August 2017**  
**Author(s):** Jennifer L. Bartlett<sup>2</sup>, Malynda Chizek Frouard<sup>2</sup>, Michael V. Lesniak<sup>2</sup>, Steve Bell<sup>1</sup>  
*Institution(s):* <sup>1</sup> Her Majesty's Nautical Almanac Office, <sup>2</sup> US Naval Observatory
- 446.03 The Role of the Modern Planetarium as an Effective Tool in Astronomy Education and Public Outreach**  
**Author(s):** Edward F. Albin<sup>1</sup>  
*Institution(s):* <sup>1</sup> Fernbank Science Center
- 446.04 AstroPAL: A Mentoring Program for Grad Students**  
**Author(s):** Nicole Cabrera<sup>1</sup>  
*Institution(s):* <sup>1</sup> Georgia State University

- 446.05 Evaluation of Data Visualization Software for Large Astronomical Data Sets**  
**Author(s):** Matthew Doyle<sup>3</sup>, Roger S. Taylor<sup>3</sup>, Shashi Kanbur<sup>3</sup>, Damian Schofield<sup>3</sup>, Ciro Donalek<sup>1</sup>, Stanislav G. Djorgovski<sup>1</sup>, Scott Davidoff<sup>2</sup>  
*Institution(s):* <sup>1</sup> California Institute of Technology, <sup>2</sup> Jet Propulsion Laboratory, <sup>3</sup> State University of New York at Oswego
- 446.06 Exploring Lifelong Learners Engaged in an Astronomy-Related Massively Open Online Course**  
**Author(s):** Sanlyn Buxner<sup>1</sup>, Chris David Impey<sup>1</sup>, Matthew Wenger<sup>1</sup>, Martin Formanek<sup>1</sup>, James M Romine<sup>1</sup>  
*Institution(s):* <sup>1</sup> University of Arizona
- 446.07 Modeling Asteroid Geometries using Photometry at the Glendale Community College North Observatory**  
**Author(s):** Brian Gleim<sup>1</sup>, Cristian Santana<sup>1</sup>, Blake Smith<sup>1</sup>, Martha Cheff<sup>1</sup>, Gonzalo Muniz<sup>1</sup>, Elizabeth Boyer<sup>1</sup>, Justin Keegan<sup>1</sup>, Justin Dixon<sup>1</sup>, Frankie Baker<sup>1</sup>, Kaitlynn Karpurk<sup>1</sup>, Anjelica Rodriguez<sup>1</sup>, Andres Bolinaga<sup>1</sup>, Erik Acosta<sup>1</sup>, Bailie Powell<sup>1</sup>, Sara D. Watt<sup>1</sup>  
*Institution(s):* <sup>1</sup> Glendale Community College
- 446.08 GRAD-MAP: A Joint Physics and Astronomy Diversity Initiative at the University of Maryland**  
**Author(s):** Ashlee N. Wilkins<sup>1</sup>, Katherine Jameson<sup>1</sup>, Corbin James Taylor<sup>1</sup>, Neil Anderson<sup>1</sup>, Peter Megson<sup>1</sup>, Gareth Roberg-Clark<sup>1</sup>, Kyle Sheppard<sup>1</sup>, Tim Uher<sup>1</sup>, Donna Hammer<sup>1</sup>, Stuart N. Vogel<sup>1</sup>  
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