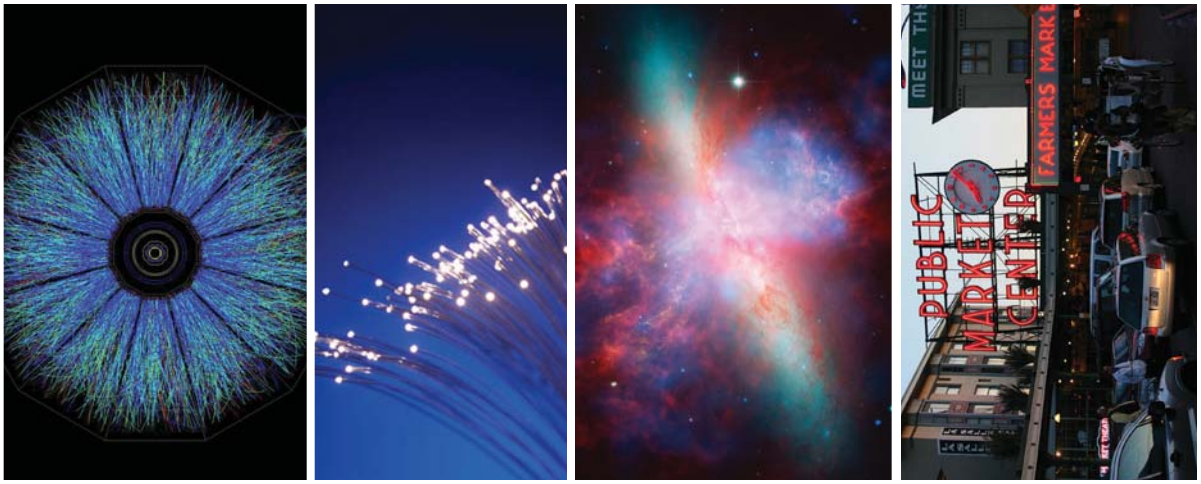

new attractions in physics and astronomy

Joint Meeting of the American Astronomical Society &
the American Association of Physics Teachers
5-10 January 2007 / Seattle, Washington
Final Program

AAS seattle '07 AAPT

AAS seattle '07 AAPT
2000 Florida Ave., NW Suite 400
Washington, DC 20009-1231

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MEETING PROGRAM

2007 AAS/AAPT Joint Meeting
5-10 January 2007
Washington State Convention and Trade Center
Seattle, WA

The 209th Meeting of the American Astronomical Society and the 2007 Winter Meeting of the American Association of Physics Teachers are being held jointly at Washington State Convention and Trade Center, 5-10 January 2007, Seattle, Washington.

The AAS Historical Astronomy Division and the AAS High Energy Astrophysics Division are also meeting in conjuction with the AAS/AAPT.

Washington State Convention and Trade Center
7th and Pike Streets
Seattle, WA

AAS
2000 Florida Ave., NW, Suite 400,
Washington, DC 20009-1231
202-328-2010, fax: 202-234-2560,
aas@aas.org, www.aas.org

AAPT
One Physics Ellipse
College Park, MD 20740-3845
301-209-3300, fax: 301-209-0845
meetings@aapt.org, www.aapt.org

IN GRATITUDE

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AAS Paper Sorters

The Executive Office extends thanks to those who sorted meeting papers into scientific sessions: Tom Armstrong, Ginger Bryngelson, Joan Centrella, Mark Claussen, Susana Deustua, Mariam Dittmann, Jonathan Gardner, Shaul Hanany, Lynne Jones, Lucas Marci, Kevin Marvel, Julie McEnery, Lee Rickard and Kartik Sheth.

AAPT Paper Sorters

The National Office extends thanks to those who sorted meeting papers into sessions: Janelle Bailey, JD Garcie, Lila Adair, Rachel Scherr and Carol Heimpel.

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FOR FURTHER INFORMATION

AAS Scientific Programming, Meeting Logistics:
Kelli Gilmore, 202-328-2010 ext. 111, gilmore@aas.org.

AAPT Scientific Programming, Meeting Logistics:
Gale Quilter, 301-209-3340, gquilter@aapt.org

AAS Registration:
Laronda Boyce, 202-328-2010 ext. 110, reg-help@aas.org

AAPT Registration:
Natasha Randall, 301-209-3340, aapt-meet@aapt.org

AV Equipment:
Rick Matthews, 703-573-6910, speakerready@aas.org

Exhibits:
Jacqueline Determan, 301-209-3340, jdeterma@aapt.org

Onsite Registration Desk:
206-219-4650

Paper Submission:
support@abstractsonline.com, 217-398-1792

Press:
Prior to Meeting, Steve Maran 202-328-2010 ext.116.,
Onsite Press Office: 206-219-4651, -4652, -4653,
and fax 206-219-4654

PLEASE NOTE

Meeting Format

The Seattle Meeting days differ from the normal AAS Meeting format. AAPT Workshops begin on Friday, 5 January 2007. The Opening Reception will be held Saturday, 6 January 2007. Scientific sessions begin Sunday, 7 January 2007 and will end on Wednesday, 10 January 2007.

Invited talks will be held in joint AAS/AAPT plenary sessions. Registrants will have access to all AAS, HAD, HEAD and AAPT sessions. Additional registration fees are required for extra events such as Workshops and the Banquet.

Audiovisual Equipment

Audiovisual equipment MUST be ordered via email at least 24 hours prior to your presentation or personally handed to the American Audio Video technician in the speaker ready room (**603-04**). You may not project from your own laptop. See AV instructions under Saturday's listings.

Awards at Banquet

The following award will be presented at the Banquet:

AAS Education Prize for 2006
Dr. Sidney Wolff, National Optical Astronomy Observatory

Cyber Café

The Cyber Café, will open Sunday, opening at the beginning of the morning coffee break and closing Wednesday after the evening poster sessions. In addition to computers, there will be open lines for your laptops. There will be an open area with wireless connectivity. Please be advised that users need to bring their own wireless cards and review the connection process with their system administrators. In order to provide continuous network connectivity to all of our attendees and exhibitors, we will ask you to adhere to the following rules.

- If there is a waiting line for computers, please limit your time to 15 minutes.
- All attached devices will be required to be running the most up-to-date Virus Protection Software and Virus Definitions, IP Filtering, Anti-Ad and Anti-Spyware Software.
- We recommend turning off automatic updates to your operating system, this will prevent bottlenecks in the network during the morning hours.
- No device should be running as a server for offsite clients.
- Absolutely no routers can be attached to the network without prior authorization from the AAS IT Staff.

The network will be monitored throughout the meeting and the AAS Staff reserves the right to disconnect any device that is causing overall network problems.

Late Papers

A Late Paper Schedule will be included in the Program Update distributed at the meeting. Late papers are scheduled as poster presentations on Wednesday, 10 January 2007 and published in a subsequent issue of the *B.A.A.S.*

Paper Presentation Instructions

Poster Presentations: Posters should fit within an approximate 44" x 44" square area. Please bring your own thumbtacks. Posters may be set up after 7:30am and must be removed by the end of the evening cocktail hour ~7:00pm. Posters left after these times will be discarded.

Oral Presentation: Five minutes are allowed for the normal oral presentation and three minutes for open discussion. Timing for other talks (Invited, Special, etc.) are at the discretion of the Session Organizer.

Dissertation Abstracts: Dissertation Abstracts are oral presentations of 15 minutes plus a few minutes for discussion.

EXHIBITS

The following will be furnishing exhibits of displays at the meeting. Be sure to stop by their booths during exhibit hours: Sunday - Tuesday 9:20am - 6:30pm, and Wednesday 9:20am - 4:00pm.

AAS Sustaining Member

Springer

AAPT Sustaining Members

Addison Wesley
Centre Pointe Learning
Daedalon Corporation
Educational Innovations, Inc.
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Kinetic Books
PASCO Scientific
Physics2000.com
Prentice Hall
Sargent Welch
TEACHSPIN, Inc.
Turning Technologies LLC
Vernier Software & Technology
W.H. Freeman & Company
WebAssign

AAS Corporate Member, Publisher Affiliate and Associated AAS/AAPT Exhibits

AAS/AAPT
American Physical Society
Apogee Instruments Inc.
Astronomical Consultants & Equipment Inc
AURA
Ball Aerospace
Blackwell Publishing
Cambridge University Press
comPADRE

Elsevier
Gemini Observatory
Lockheed Martin
McDonald Observatory
NOAO Gemini Science Center
Northrop Grumman
NRAO
Princeton University Press
The National Optical Astronomy Observatory
The Society of Physics Students
University of Chicago Press
University Science Books

Non-Member and Government Exhibits

Academia Sinica Institute of Astronomy and Astrophysics
Barr Associates, Inc.
Beyond Einstein
Brooks/Cole, Thomson
Cavendish Science Org
CHANDRA X-ray Center
Computing in Science & Engineering
Delight's Earthly Delights
Digitalis Education Solutions, Inc.
Embry-Riddle Aeronautical University
ESO
Far Ultraviolet Spectroscopic Explorer
Galaxy Evolution Explorer
HEASARC
Hextek Corporation
IOP Publishing
It's About Time
James Webb Space Telescope
Jet Propulsion Laboratory - PLANCK
JPL Navigator Program
Kendall/Hunt Publishing Co.
Kepler Mission
Large Synoptic Survey Telescope
McGraw-Hill Higher Education

Michelson Science Center
NASA Science Mission Directorate
NASA/SOFIA
National Astronomy & Ionosphere Center/Arecibo Observatory
National Research Council
National Science Foundation
NED / IRSA
New Universe Theory+Laws of Physics
NHSC
Oxford University Press
Physics Education Technology Project
Project CLEA
Rayleigh Optical Corporation
SIMBAD
SLOAN Digital Sky Survey
Smithsonian/NASA ADS
Space Science Institute
Space Telescope Science Institute
Spitzer Science Center
Submillimeter Array
Swift/GLAST
Swinburne Astronomy Online
UNCF Special Programs Corporation
Unihedron
University of California Berkeley
University of Michigan Introductory Physics Program
WISE Mission

MEETING REGISTRATION

Meeting registration was processed by both the AAS and AAPT. All sessions are open to all registrants. Extra meeting events are also open but addional registration fees may apply.

Contact the individual Society for assistance.

AAS Registration:

Laronda Boyce, 202-328-2010 ext. 110, reg-help@aas.org,
http://www.aas.org/meetings/registration.html

AAPT Registration:

Natasha Randall, 301-209-3340, aapt-meet@aapt.org

http://www.aapt.org/Events/Secure/prereg.cfm

LOCATION AND LODGING

Housing Information

The 2007 AAS/AAPT Joint Meeting will be held at Washington State Convention and Trade Center (7th and Pike Streets, Seattle, WA).

Reservations for rooms are made through the Seattle Housing Bureau.

Seattle Housing Bureau
One Convention Place
701 Pike Street, Suite 800
Seattle, WA 98101
Phone: 888-877-0255 or 206-461-5881
FAX: 206-461-5853

Make reservations by **15 December 2006** to ensure the special rate.

Sheraton, 1400 Sixth Ave., *one block ($144 Single, $164 Double)
Hyatt, 721 Pine St., *two blocks ($144 Single, $164 Double)
Hilton, 1301 6th Ave., *two blocks ($136 King/Double)
Summerfield Suites, 1011 Pike St., *three blocks ($134 Suites)
Hotel Max, 620 Stewart St., *four blocks ($129 King/Double)
Paramount, 724 Pine St., *three blocks ($129 King/Double)
Roosevelt, 1531 7th Ave., *two blocks ($129 King/Double)
Marriott, 515 Madison St., *three blocks ($136 Single, $136 Double)
Red Lion

Online:
https://resweb.passkey.com/Resweb.do?mode=welcome_ei_new&eventID=32718

Paper: http:www.aas.org/meetings/houseform.pdf

Acknowledgements: The Seattle Housing Bureau will acknowledge all reservations. If you do not receive confirmation within 10-14 days or have questions regarding your reservation contact the Seattle Housing Bureau at 888-877-0255 or hotelres@seeseattle.org. You will not receive a confirmation from the hotel.

Reservations may be changed or cancelled with the Seattle Housing Bureau up to 15 December 2006. After 15 December contact the hotel directly regarding changes or cancellations.

Importance of Staying in the Conference Hotels

In order to book the Seattle meeting, the AAS had to contract for a blocks of sleeping rooms in area hotels. If we do not fill these blocks, financial penalties will be incurred. This ultimately impacts the health of the AAS and consequently registration fees.

*All hotels are within walking distance of the Convention Center. Approximate distance is noted. A Seattle tour map is available online at www.tourmap.com

Roommate Search

An informal forum is provided for those interested in sharing a hotel room, www.aas.org/meetings/roommatesearch.php

Childcare

PANDA Dial-A-Sitter
Group child care at event site. Licensed/insured. Caregivers CPR & ECE trained. PO Box 33636, Seattle, WA 98133, Suzan M. Shayler, President, (206) 325-2327

Babysitter Sharing
A forum is posted for those interested in sharing childcare in Seattle, www.aas.org/meetings/childcaresharing.php

Childcare Grants
$100 grants are available to defray childcare costs at the Seattle Meeting. The online application www.aas.org/meetings/childcaregrants.php must be submitted by 6 December 2006. If requests exceed available funding, preference will be given to those in the early stages of their careers.

Visa Information

Foreign meeting attendees need to apply for their visas as early as possible and no later than three months before the meeting. Visa processing information is posted on the National Academy's International Visitors website: http://national-academies.org/visas.

Local Information

The average temperature for Seattle in January is 46 degrees Fahrenheit. The Seattle Convention and Visitor's Bureau website, www.seeseattle.org includes an online Visitor's Guide and a downloadable Dining Guide. A Seattle tour map is available online at www.tourmap.com

Scooter Rentals

Access Mobility Systems, electric scooters and wheelchair accessible van rentals. 21104 70th Ave W, Edmonds, WA 98026, (425) 771-4659, (800) 854-4176, Fax: (425) 771-3946, info@accessams.com, www.accessams.com

Special Airfares

American Airlines

- www.aa.com or 1-800-433-1790
- Authorization Number/Discount Code: A0217AK

Northwest Airlines

- www.nwa.com or 800-328-1111
- World File # NYUSJCar Rental

Car Rental

Avis Rent a Car

- 1-800-331-1600 or www.avis.com
- Code for AAS: AWD# J659136 (Avis Worldwide Discount)
- Code for AAPT: AWD# J945158

Hertz

- 1-800-654-2240 or hertz.com
- Code: CV#03YY002

Travel from Airports

Taxi

- A taxi from the airport to downtown will cost approximately $35.

Gray Line Downtown Airporter

- 206-626-6088, 1-800-426-7532

- Serves the following AAS Meeting Seattle hotels: Hilton Hotel, Seattle Sheraton, Grand Hyatt. Connector Service to Hotel Max is available at no extra cost by calling 206-255-7159 one hour prior to pick-up.
- $10.25 one way, $17 roundtrip.
- Reservations are not accepted. Purchase tickets from the driver, the Gray Line desk located at the south end of the Seattle-Tacoma International Airport main terminal, just beyond baggage carousel #1or from your hotel concierge.
- Board the Gray Line Airporter outside Door 00 on the Baggage Claim (lower) level.
- Departs twice an hour from 5:30 a.m. - 11:00 p.m.

Shuttle Express

- 425-981-7000, 1-800-487-7433
- $28.75 one-way
- Reservations are not required from the airport to the hotels. Reservations are needed to return to the airport.
- Passengers are picked up and dropped off on the third floor of the Airport Garage on the inner drive.

Parking

Convention Center

- WSCTC Parking Garage entrances on 8th and Pike Street are open daily 5:30 a.m. - 12 midnight. 1 hour = $4, 2 hrs = $5, 3 hrs = $7, 4 hrs = $9, 4-8 hrs = $10, 8-12 hrs = $11, 12-overnight = $16, evening (in after 5pm) = $6.
- Freeway Park Garage (located on Hubbell Street) is open Monday -Friday 6:00 a.m. - 8:00 p.m. 1 hour = $3, 2 hrs = $4, 3 hrs = $6, 4 hrs = $8, 4-8 hrs =$9, 8-12 hrs = $10, 12-overnight = $15, no separate evening rate.

Hotels

- Sheraton: valet parking for hotel guests only $28.29
- Hyatt: valet parking: $31.55 per night (in/out privileges included), self parking: $22 per night, not owned by Hyatt but is connected to hotel (does not include in/out privileges)
- Hilton: self parking $23.00 (in/out privileges included)

Schedule of Events

SCHEDULE OF EVENTS

Except where noted meeting rooms are in the Washington State Convention and Trade Center. Workshops held at the University of Washington, Physics-Astronomy Building, Northside, Wing B are indicated by UW PAB.

	Start Time	End Time	Event Type	Session Number	Session/Event Title	Location
Friday, January 05, 2007						
Fri	7:00 AM	03:00 PM	Attendee Services		Registration (workshops only)	South Lobby
Fri	8:00 AM	12:00 PM	AAPT Workshop	W01	Video Based Motion Analysis for Homework and Classroom	UW PAB B108
Fri	8:00 AM	12:00 PM	AAPT Workshop	W02	Building TYC/University Partnerships in Teacher Preparation	306
Fri	8:00 AM	12:00 PM	AAPT Workshop	W03	Intuitive Quantum Physics for Non-Science Majors	309
Fri	8:00 AM	12:00 PM	AAPT Workshop	W04	Grant Opportunities for Two-Year Colleges, Part 2	UW PAB B110
Fri	8:00 AM	12:00 PM	AAPT Workshop	W05	Case Studies for the Laboratory	212
Fri	8:00 AM	12:00 PM	AAPT Workshop	W06	Making Pretty Pictures: How Astronomers Make Images	211
Fri	8:00 AM	12:00 PM	AAPT Workshop	W07	Energy: What It Is, What It Isn't, and How We Know	310
Fri	8:00 AM	12:00 PM	AAPT Workshop	W08	Physics of Supernovae	307
Fri	8:00 AM	05:00 PM	AAPT Workshop	W09	Using Large Data Sets to Teach Astronomy	UW PAB B128
Fri	8:00 AM	05:00 PM	AAPT Workshop	W10	Problem Solving	213
Fri	8:00 AM	05:00 PM	AAPT Workshop	W11	InterActions in Physical Science: A Standards-based, Inquiry-oriented Middle School Curriculum	214
Fri	9:00 AM	05:00 PM	AAS Workshop		Strategies for Creating a Learner-Centered Introductory College Astronomy Course	608
Fri	10:00 AM	06:00 PM	Attendee Services		Speaker Ready Room	603-04
Fri	01:00 PM	05:00 PM	AAPT Workshop	W12	Energy in the 21st Century	UW PAB B108
Fri	01:00 PM	05:00 PM	AAPT Workshop	W13	Designing a Diagnostic Environment in the Pre-College Classroom	UW PAB B110
Fri	01:00 PM	05:00 PM	AAPT Workshop	W14	General Relativity Labs	UW PAB B176
Fri	01:00 PM	05:00 PM	AAPT Workshop	W15	Make Your Own Haunted Physics Lab	212
Fri	01:00 PM	05:00 PM	AAPT Workshop	W16	Teaching Physics to Middle School Teachers with Light and Sound Toys	204
Fri	01:00 PM	05:00 PM	AAPT Event		Area Chairs' Meeting	303
Fri	1:00 PM	07:00 PM	AAS Workshop		NSF Astronomy & Astrophysics Postdoctoral Fellow Symposium	605
Fri	02:00 PM	04:00 PM	AAPT Tutorial	T01	Mining the Internet	208
Fri	06:00 PM	09:00 PM	AAPT Event		Executive Board I	Douglas Brdrm, Grand Hyatt

Schedule of Events

Saturday, January 06, 2007

	Start Time	End Time	Event Type	Session Number	Session/Event Title	Location
Sat	7:00 AM	09:00 PM	Attendee Services		Registration (workshops reg. am, all reg. pm)	South Lobby
Sat	8:00 AM	12:00 PM	AAPT Workshop	W17	Environmental Physics & Global Warming	UW PAB B110
Sat	8:00 AM	12:00 PM	AAPT Workshop	W18	Exploring Special and General Relativity with Interactive Curricular Material	UW PAB B128
Sat	8:00 AM	12:00 PM	AAPT Workshop	W19	A Primer for Doing Astronomy Education Research	213
Sat	8:00 AM	12:00 PM	AAPT Workshop	W20	Physics by Inquiry	212
Sat	8:00 AM	12:00 PM	AAPT Workshop	W21	Beyond Clickers: Using Interactive Learning Devices for Student Collaboration in the Classroom	214
Sat	8:00 AM	12:00 PM	AAPT Workshop	W22	Physics for Elementary Teachers and Physical Science for Elementary Teachers	309
Sat	8:00 AM	05:00 PM	AAPT Workshop	W23	Using Research-based Curricula and Tools to Revitalize Your Introductory Course	UW PAB B108
Sat	8:00 AM	05:00 PM	AAPT Workshop	W24	Teaching Astronomy with Technology	UW PAB B356
Sat	8:00 AM	05:00 PM	AAPT Workshop	W25	Piaget Beyond	307
Sat	8:00 AM	11:00 AM	AAPT Event		Publications Committee	303
Sat	8:30 AM	03:00 PM	AAS Splinter Meeting		NURO	606
Sat	9:00 AM	11:00 AM	AAPT Tutorial	T02	Civic Engagement and Service Learning	305
Sat	9:00 AM	11:00 AM	AAPT Tutorial	T03	Online DL Science Courses & Virtual Labs	306
Sat	9:00 AM	04:00 PM	AAS Workshop		Career Workshop	610
Sat	9:00 AM	05:00 PM	AAS Workshop		Strategies for Creating a Learner-Centered Introductory College Astronomy Course	608
Sat	9:00 AM	07:00 PM	AAS Workshop		NSF Astronomy & Astrophysics Postdoctoral Fellow Symposium	605
Sat	9:30 AM	11:30 AM	AAS Workshop		ComPADRE in the K-12 Classroom	613
Sat	10:00 AM	06:00 PM	Attendee Services		Speaker Ready Room	603-04
Sat	11:30 AM	02:30 PM	AAPT Event		Resource Letters Editorial Board	209
Sat	12:00 PM	04:00 PM	AAS Workshop		EPO Programs by NASA Research Grant Awardees	609
Sat	12:30 PM	04:30 PM	AAPT Event		Executive Board II	213
Sat	01:00 PM	05:00 PM	AAPT Workshop	W26	Intermediate Mechanics Tutorials	309
Sat	01:00 PM	05:00 PM	AAPT Workshop	W27	Not Your Usual Powerpoint	UW PAB B110
Sat	01:00 PM	05:00 PM	AAPT Workshop	W28	Experiencing the Pedagogical Process	UW PAB B128
Sat	01:00 PM	05:00 PM	AAPT Workshop	W29	Exploring Easy & Effective Ways to Use PhET's Web-Based Interactive Simulations in Your Physics Course	UW PAB B176

Schedule of Events

	Start Time	End Time	Event Type	Session Number	Session/Event Title	Location
Sat	01:00 PM	05:00 PM	AAPT Workshop	W30	The Physics Teaching Web Advisory, Online Advice for Teaching Physics	UW PAB B180
Sat	01:00 PM	05:00 PM	AAPT Workshop	W31	Cosmic Evolution: the "Astro" in Astrobiology	211
Sat	01:00 PM	05:00 PM	AAPT Workshop	W32	Tutorials in Introductory Physics	212
Sat	01:00 PM	05:00 PM	AAPT Workshop	W33	Franklin and Electrostatics	308
Sat	01:00 PM	05:00 PM	AAPT Workshop	W34	Teaching Tailored Tutorials	310
Sat	01:00 PM	03:00 PM	AAS Workshop		ComPADRE in Undergraduate Physics	613
Sat	01:00 PM	05:00 PM	AAS Workshop		Exploring Magnetism in Earth and Space Science	607
Sat	02:30 PM	05:30 PM	AAS Splinter Meeting		Astro 101 - Cancelled	612
Sat	03:00 PM	05:00 PM	AAS Workshop		ComPADRE, AstronomyCenter	613
Sat	04:30 PM	05:30 PM	AAPT Event		Programs I	620
Sat	05:30 PM	06:30 PM	AAPT Event		Examinations Ed. Board (closed)	210
Sat	05:30 PM	06:30 PM	AAPT Event		Section Officers' Exchange	615
Sat	06:00 PM	07:00 PM	AAS Event		Undergraduate Orientation	N. Galleria Lobby - 2nd Floor
Sat	06:30 PM	07:30 PM	AAPT Event		Teacher Prep Committee	211
Sat	06:30 PM	08:00 PM	AAPT Event		Section Representatives	615
Sat	06:30 PM	08:00 PM	AAPT Event		HS Share-a-thon	6C
Sat	07:00 PM	08:00 PM	AAPT Event		Center for Astronomy Learner-centered Teaching Workshop Participant Reunion	618
Sat	07:00 PM	010:00 PM	Joint Event		Opening Reception	Grand Hyatt
Sunday, January 07, 2007						
Sun	7:00 AM	8:00 AM	AAPT Event		First-Timers Orientation	307-08
Sun	7:30 AM	05:00 PM	Attendee Services		Registration	South Lobby
Sun	7:30 AM	06:00 PM	Attendee Services		Speaker Ready Room	603-04
Sun	8:00 AM	06:30 PM	Attendee Services		Cyber Café	South Lobby
Sun	8:15 AM	9:45 AM	Plenary	1	Opening Remarks	Ballroom 6
Sun	8:30 AM	9:20 AM	Plenary	2	Space Flight: A Human Perspective	Ballroom 6
Sun	9:20 AM	06:30 PM	AAPT Poster	3	Poster Session I	Exhibit Hall 4
Sun	9:20 AM	06:30 PM	AAS Poster	4	A Potpourri of Internal Properties of Galaxies	Exhibit Hall 4
Sun	9:20 AM	06:30 PM	AAS Poster	5	AGN, Starbursts, and Sub-mm Galaxies	Exhibit Hall 4
Sun	9:20 AM	06:30 PM	AAS Poster	6	Astrobiology and Lab Results	Exhibit Hall 4
Sun	9:20 AM	06:30 PM	AAS Poster	7	Black Holes	Exhibit Hall 4

Schedule of Events

	Start Time	End Time	Event Type	Session Number	Session/Event Title	Location
Sun	9:20 AM	06:30 PM	AAS Poster	8	Blazars and AGN jets	Exhibit Hall 4
Sun	9:20 AM	06:30 PM	AAS Poster	9	Cataclysmic / Eruptive Variables / Novae	Exhibit Hall 4
Sun	9:20 AM	06:30 PM	AAS Poster	10	Circumstellar Disk Observations	Exhibit Hall 4
Sun	9:20 AM	06:30 PM	AAS Poster	11	Cosmic Microwave Background	Exhibit Hall 4
Sun	9:20 AM	06:30 PM	AAS Poster	12	Dark Matter	Exhibit Hall 4
Sun	9:20 AM	06:30 PM	AAS Poster	13	Debris Disks	Exhibit Hall 4
Sun	9:20 AM	06:30 PM	AAS Poster	14	Differential Rotation & Activity of Cool Dwarfs	Exhibit Hall 4
Sun	9:20 AM	06:30 PM	AAS Poster	15	Extragalactic ISM	Exhibit Hall 4
Sun	9:20 AM	06:30 PM	AAS Poster	16	The Sun	Exhibit Hall 4
Sun	9:20 AM	06:30 PM	AAS Poster	17	Galactic ISM I	Exhibit Hall 4
Sun	9:20 AM	06:30 PM	AAS Poster	18	Galactic Structures: Identification & Evolution	Exhibit Hall 4
Sun	9:20 AM	06:30 PM	AAS Poster	19	Galaxy Evolution over Cosmic History	Exhibit Hall 4
Sun	9:20 AM	06:30 PM	AAS Poster	20	High Z Objects; IR, Optical Background	Exhibit Hall 4
Sun	9:20 AM	06:30 PM	AAS Poster	21	Gravitational Lensing	Exhibit Hall 4
Sun	9:20 AM	06:30 PM	AAS Poster	22	Ground-Based Instrumentation I	Exhibit Hall 4
Sun	9:20 AM	06:30 PM	AAS Poster	23	HAD IV	Exhibit Hall 4
Sun	9:20 AM	06:30 PM	AAS Poster	24	SIM Science	Exhibit Hall 4
Sun	9:20 AM	06:30 PM	AAS Poster	25	Solar System	Exhibit Hall 4
Sun	9:20 AM	06:30 PM	AAS Poster	26	Star Clusters I	Exhibit Hall 4
Sun	9:20 AM	06:30 PM	AAS Poster	27	Stellar Populations I	Exhibit Hall 4
Sun	9:20 AM	06:30 PM	AAS Poster	28	The SDSS Supernova Survey	Exhibit Hall 4
Sun	9:20 AM	06:30 PM	AAS Poster	29	Variable Stars	Exhibit Hall 4
Sun	9:20 AM	06:30 PM	AAS Poster	30	YSO / Star Formation I	Exhibit Hall 4
Sun	9:20 AM	05:00 PM	Attendee Services		Gadgets and Gizmos	South Lobby
Sun	9:20 AM	05:00 PM	Attendee Services		Job Center	Exhibit Hall 4
Sun	9:30 AM	11:00 AM	AAPT Event		Membership and Benefits Committee	212
Sun	10:00 AM	11:30 AM	AAS Special	31	Clickers in Astronomy Teaching	201
Sun	10:00 AM	11:30 AM	AAS Special	32	The SDSS Supernova Survey	204
Sun	10:00 AM	11:30 AM	HAD Special	33	HAD I	6A
Sun	10:00 AM	11:30 AM	AAS Oral	34	Accretion, Accretion Disks and Outflows	613-14
Sun	10:00 AM	11:30 AM	AAS Oral	35	Astrobiology & The Solar System	611-12
Sun	10:00 AM	11:30 AM	AAS Oral	36	Black Holes	608-10
Sun	10:00 AM	11:30 AM	AAS Oral	37	Dark Matter, Dark Energy and Lensing	605-07

Schedule of Events

	Start Time	End Time	Event Type	Session Number	Session/Event Title	Location
Sun	10:00 AM	11:30 AM	AAS Oral	38	Feedback and Mergers in Galaxy Evolution	3B
Sun	10:00 AM	11:30 AM	AAS Oral	39	Starburst Galaxies: Analogs of Lyman Break Galaxies?	6B
Sun	10:00 AM	11:30 AM	AAS Oral	40	Stellar Populations	3A
Sun	10:00 AM	11:30 AM	AAPT Invited	41	Integrating Mechanics with Computer Modeling	616
Sun	10:00 AM	11:30 AM	AAPT Invited	42	Physics: Something for Everyone	303
Sun	10:00 AM	11:30 AM	AAPT Special	43	Optics Education in the Middle Schools	310
Sun	10:00 AM	11:30 AM	AAPT Panel	44	Interactive Lecture Demonstrations using Physics Suite Materials	617
Sun	10:00 AM	11:30 AM	AAPT Special	45	Innovations in High School Physics, Part I	307-08
Sun	10:00 AM	11:30 AM	AAPT Oral	46	Innovations in Teaching Astronomy	615
Sun	11:30 AM	12:30 PM	AAS Splinter Meeting		HAD Business Meeting	609
Sun	11:30 AM	01:00 PM	AAPT Event		Multicultural Luncheon	618-20
Sun	11:40 AM	12:30 PM	Plenary	47	Pierce Prize in Astronomy	Ballroom 6
Sun	12:30 PM	01:30 PM	AAPT Event		Nominating Committee I (closed)	508
Sun	12:30 PM	01:30 PM	AAPT Event		SI Units & Metric Ed Committee	507
Sun	12:30 PM	02:00 PM	AAS Splinter Meeting		Accessing and Using Sloan Digital Sky Survey Data	608
Sun	12:30 PM	02:30 PM	AAPT Event		PTRA Rural Regional Coordinators Meeting	208
Sun	12:45 PM	01:45 PM	AAS Town Hall Meeting		NSF Town Hall	6A
Sun	01:00 PM	02:00 PM	AAPT Crackerbarrel		How to Spend Limited Resources	615
Sun	01:00 PM	02:00 PM	AAPT Crackerbarrel		PhysicsFirst Crackerbarrel	310
Sun	01:00 PM	02:00 PM	AAPT Crackerbarrel		Professional Concerns of Junior Faculty in PER	211
Sun	01:00 PM	02:00 PM	AAPT Crackerbarrel		See Spot Run, See Spot Run from Astronomy Teaching	616
Sun	01:00 PM	02:00 PM	AAS Splinter Meeting		Committee on the Status of Women in Astronomy	613
Sun	02:00 PM	03:30 PM	AAS Special	48	Cool Astronomy For Everyone	613-14
Sun	02:00 PM	03:30 PM	AAS Special	49	Cosmic Microwave Background	6A
Sun	02:00 PM	03:30 PM	AAS Special	50	NSF Astronomy Division Senior Review Outcome	6B
Sun	02:00 PM	03:40 PM	HAD Special	51	HAD II: Case Studies in How 20th Century Observatory Directors Got Chosen	611-12
Sun	02:00 PM	03:30 PM	AAS Oral	52	AGN Populations	3A
Sun	02:00 PM	03:30 PM	AAS Oral	53	Distant Works: Cosmology, Large Scale Structure and Gravitational Waves	6E
Sun	02:00 PM	03:30 PM	AAS Oral	54	EXIST	3B
Sun	02:00 PM	03:30 PM	AAS Oral	55	ISM/Molecular Clouds	608-10

Schedule of Events

	Start Time	End Time	Event Type	Session Number	Session/Event Title	Location
Sun	02:00 PM	03:30 PM	AAS Oral	56	Space Mission Concepts and Instrumentation	605-07
Sun	02:00 PM	03:30 PM	AAS Oral	57	Young Stellar Objects	6C
Sun	02:00 PM	03:30 PM	AAPT Oral	58	Context Rich Lab Problems	617
Sun	02:00 PM	03:30 PM	AAPT Oral	59	Innovations in High School Physics, Part II	307-08
Sun	02:00 PM	03:30 PM	AAPT Poster	60	Physics Education with Vpython	303
Sun	02:30 PM	03:30 PM	AAPT Event		Bauder Fund Committee	507
Sun	02:30 PM	03:30 PM	AAPT Event		Nomination Committee II (closed)	508
Sun	03:40 PM	04:30 PM	Plenary	61	Faint Structures in Nearby Galaxies	Ballroom 6
Sun	04:30 PM	06:30 PM	AAPT Event		Council	615
Sun	04:40 PM	05:30 PM	Plenary	62	The Assembly of Galaxies and Their Black Holes	Ballroom 6
Sun	05:30 PM	06:30 PM	AAS Town Hall Meeting		Astronomy and Astrophysics Advisory Committee	6B
Sun	06:30 PM	07:45 PM	AAS Splinter Meeting		Astrophysics, Cosmology, and Extrasolar Planets: NASA's Navigator Missions	6E
Sun	06:30 PM	08:00 PM	AAPT Invited	63	The Future of the Core Curriculum	616
Sun	06:30 PM	08:00 PM	AAPT Invited	64	When Was the Last Time 5000 College Students Gave You Feedback on Your High School Physics Course?	307-08
Sun	06:30 PM	08:00 PM	AAPT Special	65	Astronomy and the Two-Year Colleges	615
Sun	06:30 PM	07:30 PM	AAPT Special	66	Effective Features of Online Tutorials	303
Sun	06:30 PM	08:00 PM	AAPT Oral	67	High School Curriculum Issues	310
Sun	06:30 PM	08:00 PM	AAPT Oral	68	Insights into Mechanics and Sound	617
Sun	07:00 PM	08:30 PM	Plenary	69	AIP Gemant Award Lecture	Ballroom 6
Sun	07:00 PM	09:00 PM	Joint Event		SPS/AAPT/AAS Undergraduate Science Evening	6A
Sun	08:00 PM	09:30 PM	AAPT Event		Apparatus Committee	310
Sun	08:00 PM	09:30 PM	AAPT Event		Graduate Ed Committee	214
Sun	08:00 PM	09:30 PM	AAPT Event		History and Philosophy Committee	210
Sun	08:00 PM	09:30 PM	AAPT Event		HS Committee	307-08
Sun	08:00 PM	09:30 PM	AAPT Event		Space Science and Astronomy Committee	303
Sun	08:00 PM	09:30 PM	AAPT Event		Two-Year College Committee	212
Sun	08:00 PM	09:30 PM	AAPT Event		Women in Physics Committee	615

Schedule of Events

Monday, January 08, 2007

	Start Time	End Time	Event Type	Session Number	Session/Event Title	Location
Mon	7:00 AM	8:30 AM	AAPT Event		Retirees Breakfast	211
Mon	7:00 AM	8:30 AM	AAPT Event		Two Year College Breakfast	213
Mon	7:30 AM	06:00 PM	Attendee Services		Speaker Ready Room	603-04
Mon	8:00 AM	05:00 PM	Attendee Services		Registration	South Lobby
Mon	8:00 AM	06:30 PM	Attendee Services		Cyber Café	South Lobby
Mon	8:30 AM	9:20 AM	Plenary	70	The Coming Revolutions in Particle Physics	Ballroom 6
Mon	9:20 AM	06:30 PM	AAPT Poster	71	Poster Session II	Exhibit Hall 4
Mon	9:20 AM	06:30 PM	AAS Poster	72	AGNs, QSOs and Active Galaxies 1	Exhibit Hall 4
Mon	9:20 AM	06:30 PM	AAS Poster	73	Astronomers in Public Education	Exhibit Hall 4
Mon	9:20 AM	06:30 PM	AAS Poster	74	Astronomy and Astrophysics with LISA	Exhibit Hall 4
Mon	9:20 AM	06:30 PM	AAS Poster	75	Astronomy Research by Students of All Ages and the Public	Exhibit Hall 4
Mon	9:20 AM	06:30 PM	AAS Poster	76	Circumstellar Disk Models	Exhibit Hall 4
Mon	9:20 AM	06:30 PM	AAS Poster	77	Clusters & Cosmology	Exhibit Hall 4
Mon	9:20 AM	06:30 PM	AAS Poster	78	Computation, Data Handling, and Image Analysis	Exhibit Hall 4
Mon	9:20 AM	06:30 PM	AAS Poster	79	Cool dwarfs	Exhibit Hall 4
Mon	9:20 AM	06:30 PM	AAS Poster	80	COSMOS	Exhibit Hall 4
Mon	9:20 AM	06:30 PM	AAS Poster	81	Disks Later in Life	Exhibit Hall 4
Mon	9:20 AM	06:30 PM	AAS Poster	82	Formation and Detection of Habitable Planets	Exhibit Hall 4
Mon	9:20 AM	06:30 PM	AAS Poster	83	Galactic and Extragalactic Surveys Using AzTEC	Exhibit Hall 4
Mon	9:20 AM	06:30 PM	AAS Poster	84	Galactic ISM II	Exhibit Hall 4
Mon	9:20 AM	06:30 PM	AAS Poster	85	Ground-Based Instrumentation II	Exhibit Hall 4
Mon	9:20 AM	06:30 PM	AAS Poster	86	LSST	Exhibit Hall 4
Mon	9:20 AM	06:30 PM	AAS Poster	87	M33: Our Other Neighbor	Exhibit Hall 4
Mon	9:20 AM	06:30 PM	AAS Poster	88	MIPSGAL	Exhibit Hall 4
Mon	9:20 AM	06:30 PM	AAS Poster	89	Stellar Populations III	Exhibit Hall 4
Mon	9:20 AM	06:30 PM	AAS Poster	90	More Supernovae	Exhibit Hall 4
Mon	9:20 AM	06:30 PM	AAS Poster	91	Neutron Stars	Exhibit Hall 4
Mon	9:20 AM	06:30 PM	AAS Poster	92	Planetary and Pre-Planetary Nebulae	Exhibit Hall 4
Mon	9:20 AM	06:30 PM	AAS Poster	93	Properties of Cool Giant Stars	Exhibit Hall 4
Mon	9:20 AM	06:30 PM	AAS Poster	94	Putting Education into Outreach	Exhibit Hall 4
Mon	9:20 AM	06:30 PM	AAS Poster	95	Radio Galaxy Surveys	Exhibit Hall 4

Schedule of Events

	Start Time	End Time	Event Type	Session Number	Session/Event Title	Location
Mon	9:20 AM	06:30 PM	AAS Poster	96	Research in K-12 Astronomy Education for Students, Their Teachers, and Their Families both in and out of the Classroom	Exhibit Hall 4
Mon	9:20 AM	06:30 PM	AAS Poster	97	Sloan Digital Sky Survey	Exhibit Hall 4
Mon	9:20 AM	06:30 PM	AAS Poster	98	SNAP Mission	Exhibit Hall 4
Mon	9:20 AM	06:30 PM	AAS Poster	99	Source Surveys, Catalogs and Astrometry	Exhibit Hall 4
Mon	9:20 AM	06:30 PM	AAS Poster	100	Star Clusters II and HST/ACS Survey of Galactic Globular Clusters	Exhibit Hall 4
Mon	9:20 AM	06:30 PM	AAS Poster	101	Structure of Stellar Winds	Exhibit Hall 4
Mon	9:20 AM	06:30 PM	AAS Poster	102	Variable Stars and Distance Scale	Exhibit Hall 4
Mon	9:20 AM	06:30 PM	AAS Poster	103	White Dwarfs: Search, Survey, Study, and Understand?	Exhibit Hall 4
Mon	9:20 AM	06:30 PM	AAS Poster	104	X-ray to IR Observations of Compact X-ray Objects	Exhibit Hall 4
Mon	9:20 AM	06:30 PM	AAS Poster	105	YSO / Star Formation II	Exhibit Hall 4
Mon	9:20 AM	05:00 PM	Attendee Services		Gadgets and Gizmos	South Lobby
Mon	9:20 AM	05:00 PM	Attendee Services		Job Center	Exhibit Hall 4
Mon	9:30 AM	10:30 AM	AAPT Event		Investment Advisory Committee	507
Mon	9:30 AM	11:00 AM	Commercial Workshop		Experience Digital Physics Curriculum I	302
Mon	9:30 AM	11:00 AM	Commercial Workshop		MasteringPhysics	305
Mon	10:00 AM	11:30 AM	AAS Special	106	Education with Large Astronomical Surveys	613-14
Mon	10:00 AM	11:30 AM	AAS Special	107	The Future of Astronomy and Astrophysics at NASA	611-12
Mon	10:00 AM	11:30 AM	HAD Oral	108	HAD III	608-10
Mon	10:00 AM	11:30 AM	AAS Oral	109	AGN Variability, Interactions and Environments	3A
Mon	10:00 AM	11:30 AM	AAS Oral	110	Circumstellar Disks: Early	204
Mon	10:00 AM	11:30 AM	AAS Oral	111	Dust, Starbursts and Obscured AGN	6A
Mon	10:00 AM	11:30 AM	AAS Oral	112	Formation History of Galaxies	605-07
Mon	10:00 AM	11:30 AM	AAS Oral	113	Galaxy Clusters I	6B
Mon	10:00 AM	11:30 AM	AAS Oral	114	Nearby Galaxies and ANGST	3B
Mon	10:00 AM	11:30 AM	AAS Oral	115	Pulsars and White Dwarfs I	201
Mon	10:00 AM	11:30 AM	AAPT Invited	116	Advanced Physics in the Pre-High School AP, IB and Dual Enrollment Courses	310
Mon	10:00 AM	11:30 AM	AAPT Invited	117	The Once and Future Role of Women in Astronomy	615
Mon	10:00 AM	11:30 AM	AAPT Special	118	Nanoscale Physics in the Classroom	616
Mon	10:00 AM	11:30 AM	AAPT Special	119	Resource Collections and Communities Online through Com-PADRE	303

Schedule of Events

	Start Time	End Time	Event Type	Session Number	Session/Event Title	Location
Mon	10:00 AM	11:30 AM	AAPT Special	120	Significant Advances in Low Temperature Physics	307-08
Mon	10:00 AM	11:30 AM	AAPT Oral	121	SPS Undergraduate Research Outreach	617
Mon	11:40 AM	12:30 PM	Plenary	122	Warner Prize for Astronomy	Ballroom 6
Mon	12:30 PM	02:00 PM	AAS Splinter Meeting		Accessing and Using Sloan Digital Sky Survey Data	608
Mon	12:30 PM	02:00 PM	AAS Splinter Meeting		Extended FUSE Operations Beyond FY08	607
Mon	12:45 PM	01:45 PM	AAS Town Hall Meeting		NASA Town Hall	6B
Mon	12:45 PM	01:45 PM	AAS Town Hall Meeting		NRAO Town Meeting	6A
Mon	01:00 PM	02:00 PM	AAPT Invited	123	Presidential Address and Awards Presentation	Ballroom 6
Mon	02:00 PM	03:30 PM	AAS Special	124	Formation and Detection of Habitable Planets	611-12
Mon	02:00 PM	03:30 PM	AAS Special	125	Galactic and Extragalactic Surveys Using AzTEC	204
Mon	02:00 PM	03:30 PM	AAS Special	126	Job Applicants: Top 10 Questions You Should Ask	201
Mon	02:00 PM	03:30 PM	AAS Oral	127	Circumstellar Disks: Not So Early	608-10
Mon	02:00 PM	03:30 PM	AAS Oral	128	Education Across the Spectrum	605-07
Mon	02:00 PM	03:30 PM	AAS Oral	129	Galaxy Clusters II	6B
Mon	02:00 PM	03:30 PM	AAS Oral	130	Instrumentation for Ground-Based and Airborne Observatories	3B
Mon	02:00 PM	03:30 PM	AAS Oral	131	Pulsars and White Dwarfs II	3A
Mon	02:00 PM	03:30 PM	AAS Oral	132	UDF, GOODS and High Redshift Galaxies	613-14
Mon	02:00 PM	03:30 PM	AAS Oral	133	YSOs and Early Type Stars	6A
Mon	02:00 PM	03:30 PM	AAPT Invited	134	Recruiting the Next Generation of Physics Teachers	310
Mon	02:00 PM	03:30 PM	AAPT Invited	135	Student Difficulties with Mathematics in Upper-Division Physics	307-08
Mon	02:00 PM	03:30 PM	AAPT Oral	136	Physics Teaching Around the World	619
Mon	02:00 PM	03:30 PM	AAPT Oral	137	Undergraduates Research Astronomy and Physics	616
Mon	02:00 PM	03:30 PM	AAPT Crackerbarrel		Professional Concerns of Women in Physics Crackerbarrel	615
Mon	02:00 PM	03:30 PM	AAPT Crackerbarrel		The Double Simplex: Envisioning Particles & Interactions	618
Mon	03:30 PM	04:30 PM	AAPT Event		Nominating Committee III (closed)	608
Mon	03:40 PM	04:30 PM	Plenary	138	Hypervelocity Stars	Ballroom 6
Mon	04:40 PM	05:30 PM	Plenary	139	Probing the Gas Content of Galaxy Groups: A Radio Perspective	Ballroom 6
Mon	06:00 PM	08:00 PM	AAPT Invited	140	Hot Topics in Nanoscience	616
Mon	06:00 PM	08:00 PM	AAPT Invited	141	Learning Sciences and Learning Technologies: A Convergence	303
Mon	06:00 PM	08:00 PM	AAPT Invited	142	Women Using Physics: Alternative Career Paths	615

Schedule of Events

	Start Time	End Time	Event Type	Session Number	Session/Event Title	Location
Mon	06:00 PM	08:00 PM	AAPT Special	143	Electronic Journaling: Fostering Reflection & Building Community	310
Mon	06:00 PM	08:00 PM	AAPT Oral	144	Bringing Physics by Inquiry to K-12 Classrooms, Part I	211
Mon	06:00 PM	08:00 PM	AAPT Oral	145	Students' Use of Mathematics in Physics Contexts	307-08
Mon	06:00 PM	08:00 PM	AAPT Poster	146	Apparatus for Astronomy Education	617
Mon	06:00 PM	07:30 PM	AAS Splinter Meeting		CTIO Blanco Telescope Dark Energy Camera	611
Mon	06:00 PM	08:00 PM	AAS Splinter Meeting		Future of NASA Scientific Ballooning in Astronomical Research	6A
Mon	06:15 PM	09:00 PM	AAS Town Hall Meeting		Meet JWST Reception and Talks	6E
Mon	06:30 PM	07:30 PM	AAS Event		Graduate Student - Employer Networking	N. Galleria Lobby - 2nd Floor
Mon	07:00 PM	09:30 PM	AAS Splinter Meeting		Herschel: The Coming of Observing Opportunities	605-07
Mon	08:00 PM	09:30 PM	AAPT Event		Educational Technologies Committee	303
Mon	08:00 PM	09:30 PM	AAPT Event		Goals Planning Meeting	210
Mon	08:00 PM	09:30 PM	AAPT Event		Interest of Senior Physicists Committee	212
Mon	08:00 PM	09:30 PM	AAPT Event		International Education Committee	214
Mon	08:00 PM	09:30 PM	AAPT Event		Laboratories Committee	211
Mon	08:00 PM	09:30 PM	AAPT Event		Minorities in Physics Committee	616
Mon	08:00 PM	09:30 PM	AAPT Event		Pre-High School Committee	615
Mon	08:00 PM	09:30 PM	AAPT Event		Professional Concerns Committee	213
Mon	08:00 PM	09:30 PM	AAPT Event		Research in Physics Ed Committee	307-08
Mon	08:00 PM	09:30 PM	AAPT Event		Science Ed for the Public Committee	620
Mon	08:00 PM	09:30 PM	AAPT Event		Undergraduate Ed Committee	617
Tuesday, January 09, 2007						
Tue	7:00 AM	9:00 AM	AAPT Event		Programs II	620
Tue	7:30 AM	06:00 PM	Attendee Services		Speaker Ready Room	603-04
Tue	8:00 AM	05:00 PM	Attendee Services		Registration	South Lobby
Tue	8:00 AM	06:30 PM	Attendee Services		Cyber Café	South Lobby
Tue	8:30 AM	9:20 AM	Plenary	147	Supernova Neutrino Astrophysics	Ballroom 6
Tue	9:00 AM	10:00 AM	AAPT Event		Venture Fund	507
Tue	9:20 AM	06:30 PM	AAPT Poster	148	Poster Session III	Exhibit Hall 4
Tue	9:20 AM	06:30 PM	AAS Poster	149	AGNs, QSOs and Active Galaxies 2	Exhibit Hall 4
Tue	9:20 AM	06:30 PM	AAS Poster	150	And Yet More Supernovae	Exhibit Hall 4
Tue	9:20 AM	06:30 PM	AAS Poster	151	Binary Stars	Exhibit Hall 4
Tue	9:20 AM	06:30 PM	AAS Poster	152	Extrasolar Planets V: Host Stars	Exhibit Hall 4

Schedule of Events

	Start Time	End Time	Event Type	Session Number	Session/Event Title	Location
Tue	9:20 AM	06:30 PM	AAS Poster	153	GLAST	Exhibit Hall 4
Tue	9:20 AM	06:30 PM	AAS Poster	154	Ground-Based Instrumentation III	Exhibit Hall 4
Tue	9:20 AM	06:30 PM	AAS Poster	155	Observations and Models of Extragalactic LMXBs	Exhibit Hall 4
Tue	9:20 AM	06:30 PM	AAS Poster	156	Planetary Nebulae & Supernova Remnants	Exhibit Hall 4
Tue	9:20 AM	06:30 PM	AAS Poster	157	Professional Development for Scientists and Educators	Exhibit Hall 4
Tue	9:20 AM	06:30 PM	AAS Poster	158	Properties of Hot Stars	Exhibit Hall 4
Tue	9:20 AM	06:30 PM	AAS Poster	159	Pulsars	Exhibit Hall 4
Tue	9:20 AM	06:30 PM	AAS Poster	160	SAGE	Exhibit Hall 4
Tue	9:20 AM	06:30 PM	AAS Poster	161	Science from the NDWFS Bootes Field	Exhibit Hall 4
Tue	9:20 AM	06:30 PM	AAS Poster	162	Search for Variables Through Surveys, Databases and Archives	Exhibit Hall 4
Tue	9:20 AM	06:30 PM	AAS Poster	163	Extrasolar Planets VI: Observed Systems	Exhibit Hall 4
Tue	9:20 AM	06:30 PM	AAS Poster	164	Space-Based Instrumentation I	Exhibit Hall 4
Tue	9:20 AM	06:30 PM	AAS Poster	165	Star Clusters III	Exhibit Hall 4
Tue	9:20 AM	06:30 PM	AAS Poster	166	Tests of Gravity, and Alternative Theories of Gravity	Exhibit Hall 4
Tue	9:20 AM	06:30 PM	AAS Poster	167	Stars, Gas and their Motions in Dwarfs and Irregulars	Exhibit Hall 4
Tue	9:20 AM	06:30 PM	AAS Poster	168	Stellar Populations II	Exhibit Hall 4
Tue	9:20 AM	06:30 PM	AAS Poster	169	Extrasolar Planets VII: Surveys	Exhibit Hall 4
Tue	9:20 AM	06:30 PM	AAS Poster	170	The Undergraduate Astronomy Course for Non-Majors	Exhibit Hall 4
Tue	9:20 AM	06:30 PM	AAS Poster	171	UDF and DEEP2	Exhibit Hall 4
Tue	9:20 AM	06:30 PM	AAS Poster	172	The Milky Way	Exhibit Hall 4
Tue	9:20 AM	04:00 PM	AAS Poster	173	Instrumentation and Community Analysis	Exhibit Hall 4
Tue	9:20 AM	05:00 PM	Attendee Services		Gadgets and Gizmos	South Lobby
Tue	9:20 AM	05:00 PM	Attendee Services		Job Center	Exhibit Hall 4
Tue	9:30 AM	11:00 AM	Commercial Workshop		And You Thought It Was About Homework (The way you imagined teaching could be)	305
Tue	9:30 AM	11:00 AM	Commercial Workshop		Experience Digital Physics Curriculum II	302
Tue	10:00 AM	11:30 AM	AAS Special	174	Impact of Intelligent Design and Responses to It	204
Tue	10:00 AM	11:30 AM	AAS Special	175	Observations and Models of Extragalactic LMXBs	201
Tue	10:00 AM	11:30 AM	HEAD Special	176	GLAST Science and Opportunities at All Wavelengths	611-12
Tue	10:00 AM	11:30 AM	AAS Oral	177	Andromeda All the Time	6B
Tue	10:00 AM	11:30 AM	AAS Oral	178	Dwarf Galaxies: Don't Let Their Size Fool You	3B
Tue	10:00 AM	11:30 AM	AAS Oral	179	Extrasolar Planets I	605-07
Tue	10:00 AM	11:30 AM	AAS Oral	180	Galaxy Clusters III	613-14

Schedule of Events

	Start Time	End Time	Event Type	Session Number	Session/Event Title	Location
Tue	10:00 AM	11:30 AM	AAS Oral	181	Galaxy Evolution with DEEP2	608-10
Tue	10:00 AM	11:30 AM	AAS Oral	182	Novae/Cataclysmic Variables	6A
Tue	10:00 AM	11:30 AM	AAS Oral	183	SDSS and GALEX	3A
Tue	10:00 AM	11:30 AM	AAPT Panel	184	Helping Faculty/Teachers Become More Adept at Working with Under-represented Groups	615
Tue	10:00 AM	11:30 AM	AAPT Panel	185	NAEP Science 2009: Why Should Physics Teachers Care?	310
Tue	10:00 AM	11:30 AM	AAPT Special	186	1957: the Legacy of Sputnik	303
Tue	10:00 AM	11:30 AM	AAPT Special	187	Virtual Observatories	618
Tue	10:00 AM	11:30 AM	AAPT Oral	188	PER: Student Understanding and Student Reasoning	307-08
Tue	10:00 AM	11:30 AM	AAPT Oral	189	Techniques in Introductory Physics Teaching	616
Tue	10:00 AM	11:00 AM	AAPT Event		Lotze Scholarship Committee	508
Tue	11:40 AM	12:30 PM	Plenary	190	Heineman Prize Lecture	Ballroom 6
Tue	12:30 PM	02:00 PM	Commercial Workshop		Begin With Special Relativity	302
Tue	12:45 PM	01:45 PM	AAS Splinter Meeting		HEAD Business Meeting	609
Tue	12:45 PM	01:45 PM	AAS Town Hall Meeting		Decadal Survey Town Hall	613
Tue	01:00 PM	02:00 PM	AAPT Crackerbarrel		Astronomy Education Research Town Hall	620
Tue	01:00 PM	02:00 PM	AAPT Crackerbarrel		High Performance Computing for Undergraduate Physics and Astronomy Education - Let's talk about it	618
Tue	01:00 PM	02:00 PM	AAPT Crackerbarrel		Physics and Society Education	619
Tue	01:00 PM	02:00 PM	AAPT Event		AAPT Town Hall Meeting	617
Tue	01:00 PM	02:30 PM	AAPT Event		Awards Committee (closed)	507
Tue	02:00 PM	03:30 PM	AAS Special	191	Next Generation Radial Velocity Planet Surveys	3B
Tue	02:00 PM	03:30 PM	AAS Special	192	SAGE: Surveying the Agents of a Galaxy's Evolution	201
Tue	02:00 PM	03:30 PM	AAS Special	193	Science from the NDWFS Bootes Field	3A
Tue	02:00 PM	03:30 PM	HEAD Special	194	Short Gamma-Ray Bursts	205
Tue	02:00 PM	03:30 PM	AAS Oral	195	AGN, Starbursts and Sub-mm Galaxies	6C
Tue	02:00 PM	03:30 PM	AAS Oral	196	Extrasolar Planets III	605-07
Tue	02:00 PM	03:30 PM	AAS Oral	197	Galaxy Clusters IV	608-10
Tue	02:00 PM	03:30 PM	AAS Oral	198	ISM/Star Formation	611-12
Tue	02:00 PM	03:30 PM	AAS Oral	199	Kinematics of Galaxies - Internal and External	204
Tue	02:00 PM	03:30 PM	AAS Oral	200	Supernovae Ia, Ib, Ic & II	613-14
Tue	02:00 PM	03:30 PM	AAPT Invited	201	Effective Mentoring of Women and Minority Students in Physics and Astronomy	615

Schedule of Events

	Start Time	End Time	Event Type	Session Number	Session/Event Title	Location
Tue	02:00 PM	03:30 PM	AAPT Invited	202	Visualizing and Simulating the Cosmos with Computers	616
Tue	02:00 PM	03:30 PM	AAPT Panel	203	Panel on Choosing a Keypad System	303
Tue	02:00 PM	03:40 PM	AAPT Special	204	University Supervisors and Cooperating Teachers: Their Critical Roles for Student Teaching	310
Tue	02:00 PM	03:30 PM	AAPT Oral	205	Implementing Reform Instruction	307-08
Tue	02:00 PM	03:30 PM	AAPT Event		Nominating Committee IV (closed)	508
Tue	03:40 PM	04:30 PM	Plenary	206	Stardust Mission	Ballroom 6
Tue	04:40 PM	05:30 PM	Plenary	207	Richtmyer Memorial Lecture	Ballroom 6
Tue	07:15 PM	09:30 PM	Joint Event		Banquet	Sheraton
Wednesday, January 10, 2007						
Wed	7:30 AM	04:00 PM	Attendee Services		Speaker Ready Room	603-04
Wed	8:00 AM	02:00 PM	Attendee Services		Registration	South Lobby
Wed	8:00 AM	03:30 PM	Attendee Services		Cyber Café	South Lobby
Wed	8:30 AM	9:20 AM	Plenary	208	Rossi Prize Lecture	Ballroom 6
Wed	9:20 AM	04:00 PM	AAPT Poster	209	Poster Session IV	Exhibit Hall 4
Wed	9:20 AM	04:00 PM	AAS Poster	210	Space-Based Instrumentation II	Exhibit Hall 4
Wed	9:20 AM	04:00 PM	AAS Poster	211	Studying Galaxy Evolution with Nearby Galaxies	Exhibit Hall 4
Wed	9:20 AM	04:00 PM	AAS Poster	212	Gamma-Ray Bursts	Exhibit Hall 4
Wed	9:20 AM	04:00 PM	AAS Poster	213	How To ... Resources for Scientist Educators	Exhibit Hall 4
Wed	9:20 AM	04:00 PM	AAS Poster	214	It's All About Clear Skies	Exhibit Hall 4
Wed	9:20 AM	04:00 PM	AAS Poster	215	Optical Cluster Finding	Exhibit Hall 4
Wed	9:20 AM	04:00 PM	AAS Poster	216	Modelling Variable and Binary Stars	Exhibit Hall 4
Wed	9:20 AM	04:00 PM	AAS Poster	217	Starbursts & Interacting Galaxies	Exhibit Hall 4
Wed	9:20 AM	04:00 PM	AAS Poster	218	The 3Ts: Telescopes, Technologies and Techniques for Astronomy Education	Exhibit Hall 4
Wed	9:20 AM	04:00 PM	AAS Poster	219	YSO / Star Formation III	Exhibit Hall 4
Wed	9:20 AM	04:00 PM	AAS Poster	220	Fortune and Fame: Fellowships, Textbooks, Cartoons	Exhibit Hall 4
Wed	9:20 AM	12:00 PM	Attendee Services		Job Center	Exhibit Hall 4
Wed	9:20 AM	01:00 PM	Attendee Services		Gadgets and Gizmos	South Lobby
Wed	10:00 AM	11:30 AM	AAS Special	221	Biology of Astrobiology I Extremes of Earth Life	611-12
Wed	10:00 AM	11:30 AM	AAS Special	222	Optical Cluster Finding: SDSS, RCS, DEEP	613-14
Wed	10:00 AM	11:30 AM	AAS Oral	223	AGN General Properties and Relativistic Jet Acceleration.	6A
Wed	10:00 AM	11:30 AM	AAS Oral	224	CMB Theory and 21 cm Cosmology	6B

Schedule of Events

	Start Time	End Time	Event Type	Session Number	Session/Event Title	Location
Wed	10:00 AM	11:30 AM	AAS Oral	225	COSMOS and Other Surveys	605-07
Wed	10:00 AM	11:30 AM	AAS Oral	226	Extrasolar Planets II	608-10
Wed	10:00 AM	11:30 AM	AAS Oral	227	Gamma-Ray Bursts	3B
Wed	10:00 AM	11:30 AM	AAS Oral	228	Star Clusters I	204
Wed	10:00 AM	11:30 AM	AAS Oral	229	The Supernova Legacy Survey and other SN Ia Surveys	3A
Wed	10:00 AM	11:30 AM	AAS Oral	230	Variable and Binary Stars	201
Wed	10:00 AM	11:30 AM	AAPT Invited	231	Physics in Art and Art in Physics	211
Wed	10:00 AM	11:30 AM	AAPT Special	232	Demonstrations for Teaching Astronomy	617
Wed	10:00 AM	11:30 AM	AAPT Oral	233	Bringing Physics by Inquiry to K-12 Classrooms, Part II	303
Wed	10:00 AM	11:30 AM	AAPT Oral	234	Introductory Physics Curriculum and Delivery	616
Wed	10:00 AM	11:30 AM	AAPT Oral	235	Teacher Learning	310
Wed	11:40 AM	12:30 PM	Plenary	236	Cannon Award in Astronomy	Ballroom 6
Wed	12:30 PM	01:00 PM	AAPT Event		Great Book Giveaway	Exhibit Hall 4
Wed	12:30 PM	03:00 PM	AAPT Event		1st Annual AAPT Symposium on Physics Education	618-20
Wed	12:45 PM	01:45 PM	AAS Town Hall Meeting		Revealing the Hidden Nature of Space and Time (EPP2010)	609
Wed	02:00 PM	03:30 PM	AAS Special	237	Biology of Astrobiology II History of Earth's Life	611-12
Wed	02:00 PM	03:30 PM	AAS Special	238	Ground-Based Mid-IR Astronomy in the Spitzer Era	613-14
Wed	02:00 PM	03:30 PM	AAS Oral	239	AGN Jets	3B
Wed	02:00 PM	03:30 PM	AAS Oral	240	CMB-Experiments	6A
Wed	02:00 PM	03:30 PM	AAS Oral	241	Extrasolar Planets IV	605-07
Wed	02:00 PM	03:30 PM	AAS Oral	242	Milky Way Topics	3A
Wed	02:00 PM	03:30 PM	AAS Oral	243	SNR, Cosmic Rays and Neutron Stars	201
Wed	02:00 PM	03:30 PM	AAS Oral	244	Star Clusters II	204
Wed	02:00 PM	03:30 PM	AAPT Oral	245	Instructional Technology in Physics and Astronomy Courses	303
Wed	02:00 PM	03:30 PM	AAPT Oral	246	Physics and Society Education	617
Wed	02:00 PM	03:30 PM	AAPT Oral	247	Teacher Professional Development Programs and Assessments	310
Wed	02:00 PM	03:30 PM	AAPT Oral	248	Theoretical and Diagnostic Issues	307-08
Wed	03:40 PM	04:30 PM	Plenary	249	Oersted Medal Lecture	Ballroom 6
Wed	04:40 PM	05:30 PM	Plenary	250	New Planets	Ballroom 6
Wed	05:30 PM	09:30 PM	AAPT Event		Executive Board III	Douglas Boardroom, Grand Hyatt

FRIDAY

W01 Video Based Motion Analysis for Homework and Classroom

AAPT Workshop, Friday, 8:00am-12:00pm, UW PAB B108

This workshop is for physics teachers who wish to explore the use of video-based motion analysis in a wide range of applications including the teaching laboratory, projects and homework. Participants will learn how to make digital video clips for analysis, as well as how to use video analysis for homework problems and in the classroom. We will discuss educationally effective uses of video analysis being developed in the LivePhoto Physics project, the Workshop Physics project and in other settings. Evaluation copies of analysis software, selected digital video clips and homework assignments will be provided to the participants for their use after the workshop. The software used in this workshop is available for both Mac and Windows computers. Participants in this workshop may find that some prior, hands-on experience with basic video analysis using software such as VideoPoint or VideoGraph will be helpful but is not required. (Format: Mac/PC)

Chair, Robert Teese[1]
[1]*Rochester Institute of Technology.*

W02 Building TYC/University Partnerships in Teacher Preparation

AAPT Workshop, Friday, 8:00am-12:00pm, 306

Half of our K-12 teachers begin their educations at two-year colleges. Whether you are trying to start a program at your TYC or trying to forge links between your university and TYCs in your area, you can learn new ideas and share your own at this workshop. Green River CC?s Project TEACH has been hailed as a national model for teacher prep by the NSF, AAPT, AACC, and the National Association of Community College Teacher Education Programs. Hear from Project TEACH founder and physics teacher Keith Clay, Project TEACH Center Director Leslie Heizer, Central Washington University partner Bruce Palmquist, and GRCC grant-writing guru Anne Baunach how this project grew from an idea into million-dollar grants and then into an institutionalized part of our college, our partner university, and our state community and technical college system.

Chair, Keith Clay[1]
[1]*Green River Community College.*

W03 Intuitive Quantum Physics for Non-Science Majors

AAPT Workshop, Friday, 8:00am-12:00pm, 309

Our course is designed to help students with little mathematics and science background gain an understanding of some of the basic ideas and results of quantum physics. Where possible, we have students build an understanding of physics from easily observable phenomena, giving students touchstone concepts to use when dealing with more complicated topics. The course contains three instructional units in which students develop skills prerequisite to understanding quantum physics, create a “toolbox” with which to study the quantum world, and discuss applications of quantum physics. Concepts studied in the course include: superposition and interference, wave-particle duality, probability, energy, bound states, and tunneling. We use little algebra and emphasize graphical analysis and qualitative reasoning. Most material is introduced in three-hour lab-tutorial periods. The lab-tutorial includes individual, small-group, and large-group (full class) activities. Participants will work through activities, discuss instructional formats, and get a full set of lab-tutorials.

Chair, Michael Wittmann[1]
[1]*University of Maine.*

W04 Grant Opportunities for Two-Year Colleges, Part 2

AAPT Workshop, Friday, 8:00am-12:00pm, UW PAB B110

This workshop is a continuation of Grant Opportunities for Two-Year Colleges Part 1 offered at Syracuse. Participants need not have attended Part 1 in order to attend Part 2. Topics include locating funding sources, writing the proposal, building a budget, and how to revise for re-submission.

Chair, Steve Budd[1]
[1]*Springfield Technical Community College.*

W05 Case Studies for the Laboratory

AAPT Workshop, Friday, 8:00am-12:00pm, 212

Participants will be provided with four case study laboratory activities and work through one of them during the workshop. Participants will be asked to bring their own ideas for either a physics topic or case scenario to be developed into their own case. During the workshop participants will develop a first draft of the case notes and instructor notes.

Chair, Mary Creason[1]
[1]*Duke University.*

W06 Making Pretty Pictures: How Astronomers Make Images

AAPT Workshop, Friday, 8:00am-12:00pm, 211

Learn how astronomers make those great posters. LEARN TO MAKE YOUR OWN. This hands-on workshop is designed to increase students? interest in astronomy and its many wonderful images, like the Crab Nebula. We will start with the basics of image processing and then learn how to use images with different filters from The STScI Digitized Sky Survey. We will learn how to manipulate color, stack, title the data and print the image using Photoshop Elements computer program. The next step will be to use data taken at Kitt Peak National observatory from NOAO?s TLRBSE program (each image is about 16 Mb fits image) to make a poster-size quality image. CD with directions/files will be distributed. Some knowledge of Photoshop Elements will be helpful but not required. If available bring USB memory stick. This workshop is a synthesis of information gained through Murdock?s Partners in Science, NOAO?s TLRBSE, Liftoff Summer institute.

Chair, David McDonald[1]
[1]*Sidney High School.*

W07 Energy: What It Is, What It Isn't, and How We Know

AAPT Workshop, Friday, 8:00am-12:00pm, 310

We will present a model "chapter on energy" for an introductory physics course. Then we will consider it both in parts and as a whole, showing where most such chapters currently in texts lack or differ. We will examine why they fail in the "How we know" department, why they seem unable to tell what energy "is," and how they differ due to a number of "booby traps" that have currency in the physics teaching literature. These include confusion about friction and its place in energy conservation, the fundamental role of the Work-Energy principle in our understanding of energy. We will justify teaching energy within the framework of Newtonian physics, legitimizing the derivation of energy relations from Newton's Laws, and what this implies. The discussions are illustrated with Flash-animated snippets, contained in a CD that participants take home. Examples are worked out by participants.

Chair, Walter Scheider[1]
[1]*Cavendish Science Organization.*

W08 Physics of Supernovae

AAPT Workshop, Friday, 8:00am-12:00pm, 307

Supernovae explosions can be utilized as an exciting topic to begin a year of physics. The catastrophic destruction of stars involves topics and equations taught in physics. The electromagnetic spectrum, spectroscopy, scientific notation, gravitation, rotation, circular motion, the work-energy equation, the impulse-momentum relationship, phases of matter, and nuclear reactions are a few of the concepts that can be taught with supernovae events. This workshop will provide the materials and resources to introduce supernovae and stellar evolution into an existing physics curriculum. A PowerPoint presentation with images and animations with a separate descriptive text to introduce supernovae, and activities that range from pencil and paper to sophisticated image analysis software will be provided, along with a set of problems that use specific mathematical equations and relationships studied in a typical physics classroom. The problems will relate to supernovae, and can be inserted into an existing physics course at the instructor's discretion. This workshop is being fully subsidized by Chandra X-Ray.

Chair, Donna L. Young[1]
[1]*Tufts University.*

W09 Using Large Data Sets to Teach Astronomy

AAPT Workshop, Friday, 8:00am-5:00pm, UW PAB B128

In 2005, scientists collected more data than in all previous human history. Much of these data are online, including astronomy data for hundreds of millions of sky objects. Many of these datasets have teacher-friendly interfaces for viewing and searching their information, and many include lesson plans that guide students through the process of data discovery. I will show several projects that have tools that make data available to teachers, including the Sloan Digital Sky Survey and the National Virtual Observatory. I will also provide examples of lesson plans that teachers have designed that incorporate these data.

Chair, Jordan Raddick[1]
[1]*Johns Hopkins University.*

W10 Problem Solving

AAPT Workshop, Friday, 8:00am-5:00pm, 213

Accumulating research on problem solving in physics clearly indicates that traditional end-of-chapter numerical exercises in physics texts are not useful, and may actually be counterproductive, for helping students learn important physics concepts. The research also raises significant questions

about the efficacy of such tasks for helping students develop "problem solving skills." In light of these results the natural question is: What alternative tasks can we use to help our students develop problem solving skills and a legitimate conceptual understanding? This workshop will review the research and then provide examples of several alternative tasks and their use. The alternatives presented will run a gamut from tasks which can easily be incorporated into essentially any instructor's current structure to those that require a restructuring of an instructor's pedagogy.

Chair, Thomas M. Foster[1]
[1]*Southern Illinois University Edwardsville.*

W11 InterActions in Physical Science: A Standards-based, Inquiry-oriented Middle School Curriculum

AAPT Workshop, Friday, 8:00am-5:00pm, 214
What is appropriate middle-school physical science? What content is required in middle-school to prepare students for high-school physics. Can it reflect the nature of scientific inquiry? What does the research-base tell us about the ability of the pre-high school student to learn physical science concepts? Do you work with prospective and in-service middle school science teachers and desire material that is inquiry-oriented and research based? These are some of the questions that the developers of InterActions in Physical Science considered during the development of this NSF-supported physical science curriculum. The primary aim of InterActions is to promote both a deep understanding of fundamental physical science concepts and the nature of scientific inquiry. The curriculum actively engages students in doing science by conducting interesting investigations and participating in sense-making discussions in small groups and with the whole class. InterActions achieves these goals by helping students to pose scientific questions, doing hands-on investigations, and making claims that they can support with evidence. In this session you will learn how this curriculum supports a classroom environment that engages students in doing science, learning how to make claims supported by evidence, and them persuading themselves and their peers that these claims are valid and useful ways of understanding the world around them.

Chair, Robert Poel[1]
[1]*Western Michigan University.*

Strategies for Creating a Learner-Centered Introductory College Astronomy Course

AAS Workshop, Friday, 9:00am-5:00pm, 608
The overarching goal of this workshop is to help *past workshop participants* with their obstacles to implementing a learner-centered introductory college astronomy course. Specifically, workshop participants will work to understand how students learn while engaged in learner-centered activities and what the role of the instructor is in the learner-centered class.
Presenters: Edward Prather, Timothy Slater, Gina Brissenden (Univ. of Arizona, CAPER Team)
This is an advanced course. You must have participated in a past workshop to attend this workshop.
Fee: $35.00

Chair, Gina Brissenden[1]
[1]*Univ. of Arizona.*

Speaker Ready Room

Attendee Services, Friday, 10:00am-6:00pm, 603-04
See Saturday's listing for AV instructions.

W12 Energy in the 21st Century

AAPT Workshop, Friday, 1:00-5:00pm, UW PAB B108
We have found that engaging students in predictions of what form and how much energy will be used in the future is a very successful way to generate enthusiasm and further investigation of physics. Participants of this workshop will be introduced by way of experience to two different group projects that involve designing energy systems. These modeling exercises look at past energy consumption patterns and develop a plan for energy usage in the 21st Century. Other considerations such as population, costs and efficiencies are also used to further expand the discussion and decision making that takes place.

Chair, Pat Keefe[1]
[1]*Clatsop Community College.*

W13 Designing a Diagnostic Environment in the Pre-College Classroom

AAPT Workshop, Friday, 1:00-5:00pm, UW PAB B110
A diagnostic learning environment is one in which assessments are used to

identify students' understanding and reasoning such that a teacher can decide what might be troublesome about that thinking and address the specific difficulty with targeted instruction. While many teachers assess all the time, typically this means they identify whether the student has the "right" idea, and if not, the instruction presents more of the right idea. What we mean by a diagnostic learning environment closely parallels the diagnosis and prescription that a medical doctor does. The doctor doesn't just find out that you are not healthy. She/he assesses to find out, as specifically as possible, what the trouble is and then prescribes treatment to address that specific difficulty. Participants of this workshop will learn about and experience a diagnostic learning environment. In addition, participants will learn about the Diagnoser Project?s free instructional tools to help diagnose pre-college student thinking.

Chair, Stamatis Vokos[1]
[1]*Seattle Pacific University.*

W14 General Relativity Labs

AAPT Workshop, Friday, 1:00-5:00pm, UW PAB B176

"A new generation of lab-based tests of gravity" The workshop will take place at the NPL/CENPA building on the Univ. Washington campus, and would involve both presentations and lab tours. We will discuss tests of Einstein's Equivalence Principle, and of the Newtonian Inverse-square law at very small (less than 100 microns) and also large (orbit of the Moon) separations, as well astests involving quantum-mechanical spin. We will also give a presentation about LISA (proposed GravityWave Observatory in Space). Our experiments are primarily table-top and simple to understand without requiring much mathematical sophistication but the physics is really interesting and contemporary.
Co-leaders for this workshop are Eric Adelberger, Blayan Heckel, and Jens Gundlach.

Chair, Mary Creason[1]
[1]*Duke University.*

W15 Make Your Own Haunted Physics Lab

AAPT Workshop, Friday, 1:00-5:00pm, 212

?Hook? younger students into the physics lab and keep their attention for an afternoon with the promise of some spooky science. Once there, they and their parents are intrigued to find out how things really work. Come

learn how to put together an attractive, stimulating experience for children and parents that has the added benefit of getting your students involved in physics in a way they never anticipated. Haunted Physics Labs can be set up at any level, elementary through university. Build some of your own displays and see many more in person. A DVD with activity sheets, instructions and photographs will be provided to each participant in addition to the materials to construct some airline-friendly interactive displays. See our HPL set up at an elementary school at http://www.physics.niu.edu/~frontier/wyp/hpl_pec/index.html Support for this workshop provided by Arbor Scientific.

Chair, Patricia Sievert[1]
[1]*Northern Illinois University.*

W16 Teaching Physics to Middle School Teachers with Light and Sound Toys

AAPT Workshop, Friday, 1:00-5:00pm, 204

This workshop is based on a physics course for middle school teachers using toys to introduce physics concepts(and lower anxiety). The hands-on activities support a constructivist approach to teaching, emphasizing collaboration, modelling and embedded assessments. Participants will make simple toys such as kaleidoscopes and acoustical phones, receive sample toys and a copy of the book by the presenter,"Toying With Physics, II- Light an Sound."

Chair, Karen A. Bouffard[1]
[1]*Newton's Rule, Inc..*

NSF Astronomy & Astrophysics Postdoctoral Fellows

AAS Workshop, Friday, 1:00pm-7:00pm, 605

Chair, Nate McCrady[1]
[1]*UC, Los Angeles.*

T01 Mining the Internet

AAPT Tutorial, Friday, 2:00-4:00pm, 208

The Internet is a rich source of science information. In this tutorial, I will demonstrate some excellent resources. In this very informal setting, we can all learn from each other. Come prepared with questions and suggestions.

Chair, Pat Viele[1]
[1]*Cornell University.*

SATURDAY

Registration (workshop reg. am, all reg. pm)

Attendee Services, Saturday, 7:00am-9:00pm, South Lobby

W17 Environmental Physics & Global Warming

AAPT Workshop, Saturday, 8:00am-12:00pm, UW PAB B110

An overview of the science of global climate with related classroom activities. An introduction to online research to learn the state of our understanding of global climate change will also be included. Following this will be The Thermodynamics of Clothing Unit, is a hands-on activity-based unit adaptable to teaching grades 7 ? 12. The Solar House Design Project involves an understanding of Solar Geometry, and Energy Use including software to evaluate the performance of the house throughout the year. The Sustainability Unit will have your students wondering how they can best protect their future on Earth. You may bring your own laptop computer.

Chair, David Gewanter[1]
[1]*Georgetown University.*

W18 Exploring Special and General Relativity with Interactive Curricular Material

AAPT Workshop, Saturday, 8:00am-12:00pm, UW PAB B128

There are many reasons to use computer-based material for teaching relativity. Both the special and general theories are full of (apparent) paradoxes and captivate students? interest in physics. Because these topics focus on abstract and unfamiliar concepts, visualization is especially valuable. This workshop will emphasis both the special and general theory and the interactive software with which you and your students can explore spacetime. Special relativity examples include: visualizing simultaneity, length contraction, time dilation, and spacetime diagrams. General relativity examples include the gravitational red shift, trajectories of particles and light rays, and the observer?s view in the vicinity of non-spinning black holes. Each participant will receive a CD containing Java applets, programs, and source code developed by the Open Source Physics Project. This workshop is supported in part by NSF DUE-0442581.

Chair, Mario Belloni[1]
[1]*Davidson College.*

W19 A Primer for Doing Astronomy Education Research

AAPT Workshop, Saturday, 8:00am-12:00pm, 213

Are you running an E/PO project and are concerned about the evaluation? Are you implementing a new astronomy curriculum and want more data than just student evaluations? Have you been reading astronomy education research articles with too much uncertainty about the methods and results reported? Then this is the workshop for you. This primer will introduce you to the core philosophies and methods of astronomy education research to help you become a better user and consumer of AER.

Chair, Thomas M. Foster[1]
[1]*Southern Illinois University Edwardsville.*

W20 Physics by Inquiry

AAPT Workshop, Saturday, 8:00am-12:00pm, 212

This workshop focuses on how college and university physics faculty can contribute to the professional development of pre-college (K-12) teachers. Participants will have an opportunity to gain hands-on experience with instructional materials (Physics by Inquiry) designed to provide teachers with the background needed to teach physics and physical science as a process of inquiry.(1) Excerpts from a video produced by WGBH will be used to illustrate interactions between teachers and instructors during a course based on these instructional materials.(2) Participants will also gain an understanding of how physics education research has guided the design of the curriculum. In addition, there will be a discussion of various intellectual and practical issues. Volumes I and II will be provided to participants. (1) L.C. McDermott and the Physics Education Group at the University of Washington, Physics by Inquiry: An Introduction to Physics and Physical Science, Volumes I and II (Wiley, New York, 1996). Development was supported, in part, by the National Science Foundation. 2. Physics by Inquiry: A Video Resource (WGBH, Boston, 2000). Development was supported, in part, by the National Science Foundation.

Chair, Lillian McDermott[1]
[1]*University of Washington.*

W21 Beyond Clickers: Using Interactive Learning Devices for Student Collaboration in the Classroom

AAPT Workshop, Saturday, 8:00am-12:00pm, 214

In this workshop participants will learn how to use a new generation of soft-

ware that promotes student engagement with collaborative learning activities. For anyone excited about the promise of classroom response systems ('clickers') but frustrated by their limitations - this project offers new avenues for users and developers alike. Visit the project website http://tuples.sri.com/ for software downloads prior to the workshop. You are encouraged to bring your own laptop, Tablet PC or Windows Mobile device.

Chair, S. R. Chaudhury[1]
[1]*Christopher Newport University.*

W22 Physics for Elementary Teachers and Physical Science for Elementary Teachers

AAPT Workshop, Saturday, 8:00am-12:00pm, 309

Physics for Elementary Teachers (PET) and Physical Science for Elementary Teachers (PSET) are each one-semester courses for prospective and practicing elementary teachers. Both PET and PSET engage students in four types of activities: (1) standards-based physics or physical science content, (2) nature of science, (3) learning about one?s own learning, and (4) learning about the learning of elementary students. PET and PSET use a similar course pedagogy and activity sequence that is guided by research on student learning of physical science. The PET course content focuses on the themes of interactions, energy, forces and fields. PSET focuses on interactions, energy, forces and both macro and micro (small particle model) descriptions of the properties of matter. Specially designed computer simulators are used both during class and as part of web-based homework. After developing their own understanding of ideas in the PET or PSET class, students then analyze video of children discussing similar ideas in elementary classrooms. During the workshop participants will view and discuss video from college PET and PSET classrooms, and from elementary classrooms. This workshop will provide participants with a substantial introduction to both the PET and PSET curricula (with a greater emphasis on PET). *Supported in part by NSF Grant ESI-0096856. PET is published by, and PSET will be published by, It?s About Time, Herff Jones Education Division.

Chair, Fred Goldberg[1]
[1]*San Diego State University.*

W23 Using Research-based Curricula and Tools to Revitalize Your Introductory Course

AAPT Workshop, Saturday, 8:00am-5:00pm, UW PAB B108

This hands-on workshop is designed for those interested in making learning in their introductory courses more active within the context of lectures, labs, and recitation hours. Participants will be introduced to physics education research-based strategies for each of these components: Interactive Lecture Demonstration (ILDs), Web-Based ILDs, RealTime Physics labs, Activity Based Tutorials and Collaborative Problem-Solving Tutorials, as well as modeling and video analysis tools. The tools and software used in this workshop are available for Macintosh and Windows computers.

Chair, David Sokoloff[1]
[1]*University of Oregon.*

W24 Teaching Astronomy with Technology

AAPT Workshop, Saturday, 8:00am-5:00pm, UW PAB B356

This workshop will survey a variety of educational technologies useful for engaging students in both high school and introductory college classrooms. Special emphasis will be placed on simulation usage and peer instruction. Participants will work on computers gaining familiarity with the astrophysical simulations of the Nebraska Astronomy Applet Project (NAAP) and its web-based assessment capabilities. Participants will also design peer instruction sequences to be used in the classroom using the computer-based modules of the ClassAction Project. A lighter emphasis will be placed on using computerized ranking tasks and on comparing available options for online homework, astronomy laboratories, and desktop planetariums. All participants will receive NAAP, ClassAction, and computerized ranking task materials on CD.

Chair, Kevin Lee[1]
[1]*University of Nebraska–Lincoln.*

W25 Piaget Beyond

AAPT Workshop, Saturday, 8:00am-5:00pm, 307

While early work of the Swiss Genetic Epistemologist, Jean Piaget, and co-workers in Geneva was being "rediscovered" in the 1970's in physics education, Piaget and his co-workers were advancing understanding of origins and development of human understanding of the world several decades beyond the works we were studying at the time. We were just grappling with Piaget?s notion of developmental "stages," while Piaget and his co-workers moved beyond "stages," explaining how, why and under what circumstances human understanding changes. Physics educators realized

Piaget's method of evidence collection, the individual interview, revealed the nature of interviewee understanding. Such interviews became the origins of physics education research (PER) in student conceptions. Work of the Geneva group on understanding change in human understanding has not been extensively studied in physics education and PER. This later work, with significant implications for physics learning and teaching, will be the subject of this workshop.

Chair, Dewey Dykstra, Jr.[1]
[1]*Boise State University.*

T02 Civic Engagement and Service Learning

AAPT Tutorial, Saturday, 9:00-11:00am, 305

This tutorial is aimed at those interested in improving physics education within the context of civic engagement (including service learning). During the tutorial we will describe a national dissemination program that connects science and civic engagement by teaching "through" complex, capacious, and unresolved public issues and ways to participate in its activities. We will also discuss ways to include service learning in the physics curriculum using examples from across the country, and engage in group activities that will provide a springboard for making curricular changes that will make civic engagement an integral part of the physics curriculum.

Chair, Theo Koupelis[1]
[1]*University of Wisconsin Colleges.*

T03 Online DL Science Courses & Virtual Labs

AAPT Tutorial, Saturday, 9:00-11:00am, 306

Online learning will play an increasingly important role in educating tomorrow?s scientists and engineers. To be both pedagogically and cost effective, the challenge of offering inquiry-based, highly interactive, asynchronous or synchronous laboratory-based courses must be met. These courses must be based on proven pedagogy and include decision-making, selection of instrumentation, data collection and analysis, the ability to make realistic mistakes and transferable lab skills. Central to the laboratory environment is the dialog between user and virtual tutor; branching based on student answers permit nearly one-to-one guidance. A back end database permits extensive research on cognitive learning. This approach can be used for Just in Time Learning (JITL), Remediation, Tutorials, Interactive Assessment and Problem-Based Learning. You will be given an account to see how this

novel approach works. Participants are encouraged to bring wireless-enabled laptops.

Chair, Gerald Meisner[1]
[1]*University of North Carolina at Greensboro.*

Career Workshop

AAS Workshop, Saturday, 9:00am-4:00pm, 610

Registrants for this special workshop (attendance is limited) will learn how to market themselves in today's challenging employment environment. Ms. Jennifer Giesler, program officer for mentoring programs at the Geological Society of America, will spend the morning portion (9am-12noon) of the workshop providing insight into the current job market for astronomers, how to capitalize on unique skills and abilities to land a job, unveil the interview process and discuss other topics based on questions from participants. The afternoon portion (1-4pm) of the workshop is direct one-on-one review of participant resumes with special emphasis on resume customization. The registration fee for this event is $35 and may be paid with your meeting registration.

Chair, Jennifer Giesler[1]
[1]*Geological Society of America.*

Strategies for Creating a Learner-Centered Introductory College Astronomy Course

AAS Workshop, Saturday, 9:00am-5:00pm, 608

See Friday's listing for details.

NSF Astronomy & Astrophysics Postdoctoral Fellows

AAS Workshop, Saturday, 9:00am-7:00pm, 605

Chair, Nate McCrady[1]
[1]*UC, Los Angeles.*

ComPADRE in the K-12 Classroom

AAS Workshop, Saturday, 9:30-11:30am, 613

ComPADRE is an ongoing collaboration to provide community collections and tools for sharing teaching and learning resources in Physics and Astronomy. This workshop will introduce comPADRE's network of websites, the

materials it contains, submission tools for contributing resources, editorial tools for managing and reviewing materials, and, the communication tools for sharing expertise. Participants will use the ComPADRE's collections to gather content and materials for a class and share their ideas for using the materials. Topics covered include information databases submitting resources, reviewing materials, and developing new collections. depending on the interests of the audience. ComPADRE is partially funded by the National Science Foundation.
ComPADRE has three two-hour sessions each focused on different audiences 1) pre-college science, 2) undergraduate physics, 3) introductory undergraduate astronomy. Participants may sign up for one, two or three sessions. Some computing facilities will be available, but participants are strongly encouraged to bring a computer to work with the collections.

Chair, Susana E. Deustua[1]
[1]*American Astronomical Society.*

Speaker Ready Room

Attendee Services, Saturday, 10:00am-6:00pm, 603-04

AV EQUIPMENT

Audiovisual equipment MUST be ordered via email (speakerready@aas.org) at least 24 hours prior to your presentation or personally handed to the American Audio Video technician in the speaker ready room.

- VCRs/Monitors: must be ordered and cost $85. Payment may be made with registration and must be paid for by the start of the meeting.

- 35mm and Overhead Projectors: are free but must be ordered 24 hours in advance from the speaker ready room technician.

- Microphones: Each oral session room will have two microphones: a wireless lapel microphone, and a hard mounted podium microphone. You do not need to place an order for microphones.

- LCD Projectors and Laptops: will be provided in every oral session room, free of charge. YOU MAY NOT USE YOUR OWN. There will be one Mac laptop and one PC laptop in each room. You do not need to place an order to use the LCD Projector, but the following requirements must be strictly adhered to:

PRESENTATION: PowerPoint, Keynote, or Adobe Acrobat are the only accepted formats. Your presentation must be compatible with Office XP (2003) for PC or OS X for Mac. The PCs in the session rooms will be loaded with Windows XP Professional with Office XP, and the Macs will be loaded with OS X (10.46 Leopard) with Keynote and PowerPoint for Mac. All presentations must be in one of these formats.

MOVIES: Movie files should be linked to your presentation rather than embedded like a picture or drawing. If your presentation has linked files, you must copy the linked files as well as the presentation to your passoff media (see Drop Off below). QuickTime Movie files (.mov) or uncompressed Tiff files will not work as linked movies in the PC version of PowerPoint. Please convert these types of files into MPEG (.mpg, .mpeg) or AVI (.avi) formats if you wish to link them to your PowerPoint file.

LABEL: Your presentation file must be labeled with the session number, speaker number, and your last name (for example "35.03_smith"). Please double check your file name before dropping off your file.

DROP OFF: At least one day in advance of your session, bring your presentation on a CD-ROM or USB Flash Disk (PC formatted) to the Speaker Ready Room (Room 603-4).

SPEAKER READY ROOM: The Speaker Ready Room is located room 603-4. The computers in the speaker ready room and each of the session rooms are EXACTLY alike. If your presentation presents correctly in the Speaker Ready Room, it will present correctly in any Session Room. A technician will be in the Speaker Ready Room all day to assist you. Please feel free to drop by and ask questions.

IN THE SESSION: You will control your presentation on the computer in the session room. There will be a laptop for you to use. Please do not attempt to load your presentation on this laptop as it may be deleted remotely.

Questions: Prior to the meeting, contact Rick Mathews with American Audio Video, speakerready@aas.org, 703-573-6910, 703-569-6701. Onsite, a technician will be in the Speaker Ready Room (603-4) all day to assist you.

Chair, Rick Matthews[1]
[1]*American Audio Video.*

EPO Programs by NASA Research Grant Awardees

AAS Workshop, Saturday, 12:00-4:00pm, 609

This session is intended to highlight and serve those NASA research grant awardees who have carried out programs in education and public outreach (EPO). It is also intended to provide introductory information for space scientists who have yet to get involved in EPO but are interested in doing so. The session will include oral presentations on NASA's Science Mission Directorate EPO program, current EPO grant opportunities, and ways to navigate the proposal process. It will also include contributed oral and poster presentations by NASA research grant awardees which describe their EPO programs.

Chair, William H. Waller[1]
[1]*Tufts Univ..*

W26 Intermediate Mechanics Tutorials

AAPT Workshop, Saturday, 1:00-5:00pm, 309

Ongoing research in physics education has demonstrated that physics majors often do not develop a working knowledge of basic concepts in mechanics, even after standard instruction in upper-level mechanics courses. This workshop will focus on Intermediate Mechanics Tutorials (IMT), a suite of research-based materials that provides an innovative instructional approach that supplements traditional lectures. These materials are designed to address persistent student difficulties and to guide students to make appropriate connections between the physics and mathematics. Workshop participants will learn about recent results from the research and obtain firsthand experience with selected tutorials. Because intermediate mechanics courses vary in format and content from institution to institution, we will also discuss how IMT can be tailored appropriately. A copy of all IMT materials, which include conceptual, derivation, and computer-based tutorials, will be given to each participant.

Chair, Bradley Ambrose[1]
[1]*Grand Valley State University.*

W27 Not Your Usual Powerpoint

AAPT Workshop, Saturday, 1:00-5:00pm, UW PAB B110

With a little imagination it is possible to use Powerpoint to produce very attractive and creative presentations for illustrating physics talks -- either classroom lectures or presentations to professional audiences. This tutorial will help you do this. It will consist of a model one hour long Powerpoint talk on "Crazy Ideas in Science," followed by a practice session, where participants try to brainstorm ideas for creating such talks in areas of interest to them.

Chair, Robert Ehrlich[1]
[1]*George Mason University.*

W28 Experiencing the Pedagogical Process

AAPT Workshop, Saturday, 1:00-5:00pm, UW PAB B128

Pedagogy is a process. Unfortunately, it has been wrongfully viewed and taught as a subject matter in and of itself in the schools of education. As a result, pedagogy has come to be perceived by other professionals as largely irrelevant, sometimes even as fluff stuff. The net result is pedagogy has received a bad name. This view is a major obstacle to producing quality teachers. The workshop we are proposing is to demonstrate pedagogy as a process inseparable from the content being taught. In this case, the workshop uses computer applications as a content for providing a hands-on demonstration of pedagogy as a process for math and science teachers. This process has been analyzed into specific teaching techniques, now documented and illustrated in our book, "Color-Blind Teaching". These techniques have been tested and validated over a long period of time with diverse students, characterized by differing academic preparations, ethnicities, socio-economic status, and cultures. The techniques have resulted in a retention rate of around 95% with diverse populations, a vast improvement over the usual retention rate of 25-40% in diverse classrooms. Most importantly, the workshop opens the door to increased teaching effectiveness, and we promise all of this without your having to abandon the time-honored and much-loved lecture method.

Chair, Daryao Khatri[1]
[1]*University of the District of Columbia.*

W29 Exploring Easy & Effective Ways to Use PhET's Web-Based Interactive Simulations in Your Physics Course

AAPT Workshop, Saturday, 1:00-5:00pm, UW PAB B176

The Physics Education Technology (PhET) Project has developed over 50 simulations for teaching and learning introductory physics at the high school and college levels. These research-based simulations create animated, interactive, game-like environments that are designed to engage students in active thinking, encourage experimentation, and help develop visual and

conceptual models of physical phenomena, emphasizing their connections to everyday life. The simulations are free, and can be run from the PhET website (http://phet.colorado.edu) or downloaded to a local computer for off-line use. In this workshop, participants will work with these simulations and explore how they can be used effectively in lecture, lab, and as part of homework assignments to improve both student learning and engagement.

Chair, Katherine Perkins[1]
[1]*University of Colorado at Boulder.*

W30 The Physics Teaching Web Advisory, Online Advice for Teaching Physics

AAPT Workshop, Saturday, 1:00-5:00pm, UW PAB B180

The Physics Teaching Web Advisory (Pathway) is a new type of digital library. Based on state-of-the-art digital video technology, Pathway is a free online resource that provides assistance and expertise for teachers of physics. Participants will be introduced to the two primary components of Pathway ? the Synthetic Interview and the searchable digital video library. The Synthetic Interview enables any teacher to have a virtual conversation with experienced physics teachers while the digital library provides access to a variety of video resources. We will show how Synthetic Interview responses are tied to the National Science Education Standards and to current literature in physics teaching. Participants will learn how both features can be valuable in their physics teaching. Supported in part by NSF under grant numbers DUE-0226157, DUE-0226219, ESI-0455772 & ESI-0455813.

Chair, Brian Adrian[1]
[1]*Kansas State University.*

W31 Cosmic Evolution: the "Astro" in Astrobiology

AAPT Workshop, Saturday, 1:00-5:00pm, 211

Do you want to entice students to learn more physics by using astronomy applications within the context of astrobiology? Learn how the search for life in the universe inspires students. This workshop will introduce you to curriculum materials in the Cosmic Evolution module from Voyages Through Time (VTT), a standards-based and nationally field-tested course developed by SETI Institute. Participants will practice inquiry based lessons on spectroscopy, gravity and stellar evolution. In addition to VTT, you will learn how a space-orbiting photometer for the NASA Kepler Mission will be used to detect potentially life-supporting planets around other stars. Participants are encouraged to bring their laptops and will receive the module valued at $100. More information can be found at website http://www.voyagesthroughtime.org/cosmic/index.html.

Chair, Mary Ann Kadooka[1]
[1]*University of Hawaii.*

W32 Tutorials in Introductory Physics

AAPT Workshop, Saturday, 1:00-5:00pm, 212

Tutorials in Introductory Physics(1) is a set of instructional materials intended to supplement the lecture, textbook, and laboratory of a standard calculus-based or algebra-based introductory course. The tutorials are designed to address specific conceptual and reasoning difficulties that have been identified through research. In addition to providing hands-on experience with the curriculum, the workshop will include discussions of instructional strategies incorporated into the materials and results from assessments of student learning. Important aspects related to implementation of the tutorials will be covered, including preparation of graduate teaching assistants, undergraduate peer instructors, and post-docs. Copies of Tutorials in Introductory Physics will be provided to participants. (1) L.C. McDermott, P.S. Shaffer, and the Physics Education Group at the University of Washington, Tutorials in Introductory Physics, First Ed. (Prentice Hall, 2002). Development was supported, in part, by the National Science Foundation.

Chair, Lillian McDermott[1]
[1]*University of Washington.*

W33 Franklin and Electrostatics

AAPT Workshop, Saturday, 1:00-5:00pm, 308

Benjamin Franklin's experiments and observations on electricity established not only his reputation as a scientist, but also our electrical conventions and vocabulary, and the principle of charge conservation. In his letters, Franklin builds, test, and defends his model with skill and eloquence, arguing from experiment and sharing both his wisdom and doubts, while clearly conveying his fascination with electricity. As Franklin was not formally schooled in mathematics, his theory was qualitative, and is an approachable example of hands-on and minds-on construction of a conceptual model with significant explanatory power. In this new workshop, developed by the author at the Wright Center for Science Teaching at Tufts University, working with Frank-

lin's descriptions, we will recreate many of his experiments using modern, inexpensive equipment. Participants will receive a CD-ROM along with the workshop manual, a collection of Franklin's letters relating to electricity, and many historical pictures and illustrations. The year 2006 marked the tercentenniel of Franklin's birth. Continue the celebration! (Workshop partially supported by the Wright Center for Innovative Science Education, Tufts U.)

Chair, Robert Morse[1]
[1]*Cathedral College.*

W34 Teaching Tailored Tutorials

AAPT Workshop, Saturday, 1:00-5:00pm, 310

Instructors inevitably need to adapt even the best reform materials to suit their local circumstances. We offer a package of research-based, open-source, epistemologically-focused mechanics tutorials, along with the detailed information instructors need to make effective modifications and provide professional development for TAs. In particular, our tutorials are embedded with comments from the developers, advice from experienced instructors, and video clips of students working on the materials. A DVD will be provided to all participants.

Chair, Rachel Scherr[1]
[1]*University of Maryland.*

Exploring Magnetism in Earth and Space Science

AAS Workshop, Saturday, 1:00-5:00pm, 607

We will present hands-on lessons, developed by the Center for Science Education at UC Berkeley's Space Sciences Laboratory, about the basics of magnetism and its connection to electricity. Magnetism is important in understanding topics such as sunspots, solar flares, geomagnetic storms, and aurorae. Participants will map the magnetic fields around bar magnets and electrical circuits; explore how to make a coil of wire behave like a bar magnet; and discover how to generate electrical currents with nothing more than a bar magnet. Additional activities will explore the strength of magnetic fields during a solar flare, an electromagnetic induction lesson to help students understand how electrical currents in the upper atmosphere can be measured by magnetic fields on the ground, and an activity involving using the internet and computer software programs to discover how the Sun's electrical solar wind is influencing Earth's magnetic field. We seek to enhance the teacher's content knowledge as well as model pedagogical methods for

improvement of their science teaching in the classroom.

Chair, Bryan J. Mendez[1]
[1]*UC Berkeley.*

ComPADRE in Undergraduate Physics

AAS Workshop, Saturday, 1:00-3:00pm, 613

See morning ComPADRE workshop for description.

Chair, Susana E. Deustua[1]
[1]*American Astronomical Society.*

Undergraduate Orientation

AAS Event, Saturday, 6:00-7:00pm, N. Galleria Lobby - 2nd Floor

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. The Chair of the Astronomy Education Board will explain how to get the most benefit from an AAS meeting and outline how the meeting works. The leadership of the AAS will also be in attendance to answer questions and get to know the undergraduate attendees. Tickets are required and are available free of charge to all undergrads, their advisors and those offering research opportunities (or jobs) to undergraduates, through the meeting registration form and will be placed in their registration envelope. Light snacks and refreshments will be provided. Organizations hoping to recruit undergraduate students may reserve poster display space for a small fee.

Chair, Susana E. Deustua[1]
[1]*American Astronomical Society.*

Center for Astronomy Learner-centered Teaching Workshop Participant Reunion

AAPT Event, Saturday, 7:00-8:00pm, 618

Chair, Timothy F. Slater[1]
[1]*Univ. of Arizona.*

—END OF PRE-MEETING WORKSHOPS AND EVENTS—

Opening Reception

Joint Event, Saturday, 7:00-10:00pm, Grand Hyatt

This opening reception is for all participants and registered guests. It will feature a cash bar and light snacks (not to be construed as dinner!). Meeting registration is being held at a separate location, the Washington State Convention and Trade Center.

SUNDAY

First-Timers Orientation

AAPT Event, Sunday, 7:00 am - 8:00 am, 307-08

If this will be the first time you have had the opportunity to attend an AAPT National meeting and would like to have an "inside" track on where to start to gain the most from the experience, join forces with AAPT member meeting veterans who will be happy to show you the ropes. Sign-up for this event (no fee) and come on by for coffee and pastries. At this gathering you'll feel right at home and wonder why you haven't attended before!

No fee, but registration is required.

Registration

Attendee Services, Sunday, 7:30am-5:00pm, South Lobby

Speaker Ready Room

Attendee Services, Sunday, 7:30am-6:00pm, 603-04

See Saturday's listing for AV instructions.

Cyber Café

Attendee Services, Sunday, 8:00am-6:30pm, South Lobby

The Cyber Cafe, will open Sunday, opening at the beginning of the morning coffee break and closing Wednesday after the evening poster sessions. In addition to computers, there will be open lines for your laptops. There will be an open area with wireless connectivity. Please be advised that users need to bring their own wireless cards and review the connection process with their system administrators. In order to provide continuous network connectivity to all of our attendees and exhibitors, we will ask you to adhere to the following rules.

- If there is a waiting line for computers, please limit your time to 15 minutes.
- All attached devices will be required to be running the most up-to-date Virus Protection Software and Virus Definitions, IP Filtering, Anti-Ad and Anti-Spyware Software.
- We recommend turning off automatic updates to your operating system, this will prevent bottlenecks in the network during the morning hours.
- No device should be running as a server for offsite clients.

Absolutely no routers can be attached to the network without prior authorization from the AAS IT Staff.

The network will be monitored throughout the meeting and the AAS Staff reserves the right to disconnect any device that is causing overall network problems.

Chair, Scott Idem[1]
[1]*American Astronomical Society.*

Session 002 Space Flight: A Human Perspective

Plenary, Sunday, 8:30-9:20am, Ballroom 6

Chair, Janelle M. Bailey[1]
[1]*Univ. Nevada, Las Vegas.*

002.01 **Space Flight: A Human Perspective**
Kathryn C. Thornton[1]
[1]*University of Virginia.*

Session 003 Poster Session I

AAPT Poster, Sunday, 9:20am-6:30pm, Exhibit Hall 4

003.01 **PhysicsFirst: Building Connections with a Concurrent Mathematics Course**
Boris M. Korsunsky[1]
[1]*Weston High School.*

003.02 **Building Problem-Solving Skills in PhysicsFirst Classroom**
Boris M. Korsunsky[1]
[1]*Weston High School.*

003.03 **Putting the "Spark" into Physical Science and Algebra**
Andre Dagenais[1], **B. Pill**[1]
[1]*Sanford School.*

003.04 **Teaching Lower Socio-Economic Students About The Electromagnetic Spectrum Uses**
Sharon R. Blauvelt[1]
[1]*Missouri State University.*

003.05 **Impulse In, Impulse Out - Understanding Elastic Collisions Before Energy**
Richard G. Piccioni[1]
[1]*James A. Garfield High School.*

003.06 **Characterizing Student Experiences in Physics Competitions: The Power of Emotions**
Rachel F. Moll[1], **S. Nashon**[1], **D. Anderson**[1]
[1]*University of British Columbia, Canada.*

003.07 **Introduction to Physics of the Universe in AP Physics Classrooms**
Stephanie L. Allen[1]
[1]*Hope College.*

003.08 **Modification of Multiple-Choice Assessment Items Based on Student Feedback**
Thomas J. Regan[1]
[1]*AAAS/Project 2061.*

003.09 **Producing a Brighter Future by Changing a Trend**
Elaine Gwinn[1]
[1]*Ball State University.*

003.10 **The Illinois Pipeline Project**
Carl J. Wenning[1]
[1]*Illinois State University.*

003.11 **Efforts to Recruit Secondary STEM Teachers at Columbus State University**
Zodiac T. Webster[1], **MaSST Preparation Council**
[1]*Columbus State University.*

003.12 **Mentoring Beginning and Crossover Teachers**
Dale Freeland[1]
[1]*Portage Central High School.*

003.13 **Is Special Training Needed to Teach "Physics For Elementary Teachers"?**
Paul W. Zitzewitz[1], **J. F. Devlin**[1], **R. M. Savage**[1], **C. M. Swift**[1]
[1]*University of Michigan-Dearborn.*

003.14 **Training Future Physics Teachers at BYU: Successes in Teacher Training**
Duane B. Merrell[1], R. Beck Clark[1]
[1]Brigham Young University.

003.15 **A Proposal for a Research-based Constructivist Physics-and-Pedagogy Course**
Esther Zirbel[1]
[1]Tufts University.

003.16 **PET as a Model for Other Introductory Content Courses**
George D. Nelson[1]
[1]Western Washington University.

003.17 **Teacher Leaders as Intern Supervisors: Lessons from an MSP Project**
Jacob Clark Blickenstaff[1]
[1]Western Washington University.

003.18 **The Need and Effectiveness of Professional Development for K-12 Teachers**
Robert J. Endorf[1], K. M. Koenig[2]
[1]University of Cincinnati, [2]Wright State University.

003.19 **Orange Peel - The Orange's Life Vest**
Milijana Suskavcevic[1], E. Hagedorn[1]
[1]University of Texas at El Paso.

003.20 **Never Fear; Scaffolding is Here: Solar Research in the Classroom**
Constance E. Walker[1], N. DeMuth[2], D. Isbell[1], S. M. Pompea[1], K. Garmany[1]
[1]National Optical Astronomy Observatory, [2]El Camino College.

003.21 **Using Case Studies to Assess the Impact of Modeling Workshops**
Jeff Saul[1], G. O'Brien[1], L. Kramer[1]
[1]Florida International University.

003.22 **Contrasting Inquiry and Direct Physics Instructional Designs: Examples from Dynamics**
Betty Adams[1], A. Undreiu[1], D. Schuster[1]
[1]Western Michigan University.

003.23 **Report on the IX Inter-American Conference on Physics Education**
Gordon J. Aubrecht, II[1], J. F. Sullivan[2]
[1]Ohio State University at Marion, [2]College of Applied Science/University of Cincinnati.

003.24 **Latin America's Presentation of "World Year of Physics 2005"**
Margarete B. Allen[1]
[1]Los Angeles Pierce College.

003.25 **A Masterclass in Particle Physics for High School Students**
Kenneth Cecire[1], T. Entwistle[2]
[1]Hampton University, [2]Ward Melville High School.

003.26 **Physics Education in Nigeria**
Jefferson L. Collier[1]
[1]ABTI-American University of Nigeria, Nigeria.

003.27 **Physics Education in Russia and in the United States**
Irina Struganova[1]
[1]Barry University.

003.28 **The Comparison Between Russian High School And American College Curricula**
Valentin Voroshilov[1]
[1]Boston University.

003.29 **Representations of Force and Motion Concepts at the Middle Level**
Thomas J. Regan[1], B. Sweeney[1], T. Willard[1], G. DeBoer[1]
[1]AAAS/Project 2061.

Session 004 A Potpourri of Internal Properties of Galaxies

AAS Poster, Sunday, 9:20am-6:30pm, Exhibit Hall 4

004.01 **A Deep HST Survey of the Prototypical Spiral Galaxy M81**
Andreas Zezas[1], J. S. Gallagher, III[2], P. Mucciarelli[3]
[1]SAO, [2]U. Wisconsin-Madison, [3]INAF-Obs. Padova & U. Padova, Italy.

004.02 **Panchromatic Tully-Fisher Relations**
Martin Meyer[1], SINGS Team
[1]STScI.

004.03 **Mapping Tidal Interactions in the M51 System**
Allison G. Noble[1], J. S. Gallagher[1], K. E. Dellenbusch[1]
[1]U. Wisconsin-Madison.

004.04 **Ultraviolet Observations of M51 with Swift/UVOT**
Sally D. Hunsberger[1], C. Gronwall[1], A. Morgan[2], S. Immler[3], T. S. Poole[4], A. A. Breeveld[4]
[1]Pennsylvania State Univ., [2]University of Cambridge, United Kingdom, [3]NASA GSFC, [4]Mullard Space Sciences Laboratory, United Kingdom.

004.05 **Spitzer IRS Spectral Maps of Spatially Resolved Molecular Hydrogen in NGC 5194**
Gregory Brunner[1], K. Sheth[2], L. Armus[2], G. Helou[2], E. Schinnerer[3], S. Vogel[4], M. Wolfire[4]
[1]Rice Univ./Spitzer Science Center, [2]Spitzer Science Center, [3]MPIA, Germany, [4]University of Maryland.

004.06 **Excess 4.5 Micron Emission from SINGS Galaxies**
Michael W. Regan[1], SINGS Team
[1]STScI.

004.07 **Evolution and Instability of Galactic Gas Disks inresponse to A Spiral Density-wave Potential**
Chi Yuan[1], D. C. Yen[1], H. H. Wang[1]
[1]Academia Sinica, Taiwan.

004.08 **Hydrodynamical Simulations of the Barred Spiral Galaxy NGC 6782**
Lien-Hsuan Lin[1], C. Yuan[1], R. Buta[2]
[1]Academia Sinica, Taiwan, [2]Department of Physics and Astronomy, University of Alabama.

004.09 **Star formation and figure rotation in the early-type galaxy NGC2974**
Hyunjin Jeong[1], M. Bureau[2], S. K. Yi[1], D. Krajnovic[2], R. L. Davies[2]
[1]Yonsei University, Republic of Korea, [2]University of Oxford, United Kingdom.

004.10 **A Multi-Waveband Study of the Southern Compact Group, SCG 0018-4854**
Elizabeth H. Wehner[1]
[1]McMaster University, Canada.

004.11 **Mapping a Low Surface Brightness Galaxy**
Kushal T. Mehta[1], K. O'Neil[2]
[1]University of Maryland, Baltimore County, [2]National Radio Astronomy Observatory.

004.12 **In Search of the Highest Velocity Dispersion Galaxies in the Universe**
Sarah B. Salviander[1], G. A. Shields[1], K. Gebhardt[1], M. Bernardi[2]
[1]Univ. of Texas at Austin, [2]Univ. of Pennsylvania.

004.13 **The Connection In Bulge Properties And The Bimodailty Of Galaxy Properties**
David B. Fisher[1], N. Drory[2]
[1]Univ. Of Texas, [2]MPE - Garching, Germany.

004.14 **Revisiting the Low Metallicity Problem of the Hot ISM in X-ray Faint Early-type Galaxies**
Jimmy Irwin[1], G. R. Sivakoff[2], C. L. Sarazin[3], J. Ji[1], J. N. Bregman[1], W. G. Mathews[4]
[1]Univ. Of Michigan, [2]Ohio State University, [3]Univ. Of Virginia, [4]Univ. Of California-Santa Cruz.

004.15 **Chandra Observations of Maffei 1**
Christopher S. Reynolds[1], C. Miller[1]
[1]Univ. Of Maryland.

004.16 **PNLF Distances to Six Face-On Spiral Galaxies**
Kimberly A. Herrmann[1], R. Ciardullo[1], J. J. Feldmeier[2], M. Vinciguerra[1]
[1]Penn State University, [2]Youngstown State University.

004.17 **The Star Formation History in Andromeda's Diffuse Stellar Halo**
Thomas M. Brown[1], E. Smith[1], H. Ferguson[1], P. Guhathakurta[2], R. Rich[3], J. Kalirai[2], A. Renzini[4], A. Sweigart[5]
[1]STScI, [2]UCSC, [3]UCLA, [4]INAF, Italy, [5]NASA/GSFC.

Session 005 AGN, Starbursts, and Sub-mm Galaxies

AAS Poster, Sunday, 9:20am-6:30pm, Exhibit Hall 4

005.01 **SPIRE Multi-Color Fluctuation P(D) Analysis Below the Confusion Limit.**
Glenn T. Laurent[1], J. Glenn[1], P. R. Maloney[1], J. J. Bock[2]
[1]University of Colorado, [2]Jet Propulsion Laboratory.

005.02 **A Comparison of Effective Volumes for X-ray Surveys**
Dave J. English[1], M. Elvis[1], H. Hao[1]
[1]Harvard-Smithsonian CfA.

005.03 **Colour Bimodality in Powerful AGN Host Galaxies**
David Floyd[1]
[1]STScI.

005.04 **Cosmological History of Massive Black Hole Interactions in Triples**
Frederic A. Rasio[1], J. Fregeau[1], S. Umbreit[1], M. Volonteri[1]
[1]Northwestern Univ..

005.05 **Local Benchmarks for the Evolution of Major-Merger Galaxies (I)--- Spitzer Observations of a K-Band Selected Sample**
C. Kevin Xu[1], Y. Cheng[1], R. Cutri[1], D. Domingue[2], Y. Gao[3], J. Huang[4], N. Lu[1], J. Mazzarella[1], W. Sun[5], J. Surace[1]
[1]Caltech, [2]GCSU, [3]Purple Mountain, China, [4]CfA, [5]NCU, Taiwan.

005.06 **Local Benchmarks for the Evolution of Major-Merger Galaxies (II) --- Palomar H_alpha/H_beta Observations of a K-Band Selected Sample**
Yi-Wen Cheng[1], C. K. Xu[1], N. Lu[1], R. Cutri[1], D. Domingue[2], Y. Gao[3], J. Huang[4], J. Mazzarella[1], J. Surace[1], W. Sun[5]
[1]IPAC/Caltech, [2]GCSU, [3]Purple Mountain, China, [4]CfA, [5]National Central Univ., Taiwan.

005.07 **Evidence for Evolution in the FIR Luminosity Function of Luminous Infrared Galaxies from Spitzer and ISO Observations of the Lockman Hole**
Bradley Jacobs[1], D. B. Sanders[1], D. Rupke[2], S. Veilleux[2], E. Le Floc'h[1], O. Ilbert[1], H. Aussel[3], Y. Taniguchi[4], M. Yun[5]
[1]Univ. Of Hawaii, [2]Univ. Of Maryland, [3]CEA/Saclay, France, [4]Ehime University, Japan, [5]Univ. Of Massachusetts.

Session 006 Astrobiology and Lab Results

AAS Poster, Sunday, 9:20am-6:30pm, Exhibit Hall 4

006.01 **Investigation of Anomalous Sputtering Behavior of a Ga-In Target**
Dale R. Nunn[1], D. L. Weathers[1], L. R. Burns[1], P. Kadam[1], S. Li[1]
[1]University of North Texas.

006.02 **Laboratory Infrared Optical Constants and Reflectance Spectra of Silicon Carbide**
Karly M. Pitman[1], A. M. Hofmeister[2], A. K. Speck[3]
[1]NASA Jet Propulsion Laboratory, California Institute of Technology, [2]Dept. of Earth & Planetary Sciences, Washington University - St. Louis, [3]Dept. of Physics & Astronomy, University of Missouri - Columbia.

006.03 **Modeling Atmospheric Effects of the September 1859 Solar Flare**
Brian Thomas[1], C. H. Jackman[2], A. L. Melott[3]
[1]Washburn Univ., [2]NASA GSFC, [3]University of Kansas.

006.04 **Living with a dM Star: Evolution over Time of Dynamo Generated X-ray - UV Emissions and Effects on Hosted Planets**
Edward F. Guinan[1], S. G. Engle[1], L. E. DeWarf[1], D. Schulze-Makuch[2], M. Cuntz[3], R. T. Zellem[1], V. Pettiford[1]
[1]Villanova Univ., [2]WSU, [3]Univ. of Texas, Arlington.

006.05 **Evolutionary Competition Between Primitive Photosynthetic Systems: Existence of an early purple Earth?**
William B. Sparks[1], S. DasSarma[2], I. N. Reid[1]
[1]STScI, [2]University of Maryland Biotechnology Institute.

Session 007 Black Holes

AAS Poster, Sunday, 9:20am-6:30pm, Exhibit Hall 4

007.01 **The Binary Nucleus in VCC 128: A Candidate Supermassive Black Hole in a Dwarf Elliptical Galaxy**
Victor P. Debattista[1], I. Ferreras[2], A. Pasquali[3], A. Seth[4], S. De Rijcke[5], L. Morelli[6]
[1]Univ. of Washington, [2]King's College London, United Kingdom, [3]Max-Planck-Institut fur Astronomie, Germany, [4]Centre for Astrophysics, [5]Universiteit Gent, Belgium, [6]Pontificia Universidad Catolica de Chile, Chile.

007.02 **First Constraints on Black Hole Spin in Broad Iron Line AGN**
Laura Brenneman[1]
[1]Univ. of Maryland.

007.03 **The Accretion Disk of GRS 1915+105: What Makes it Go Crazy?**
David M. Rothstein[1]
[1]Cornell Univ..

007.04 **Toward Understanding the Spectral Energy Distribution of Microquasars. I. Multiwavelength Properties of XTE J1550--564**
Yongquan Xue[1], X. Wu[2], W. Cui[1]
[1]Purdue Univ., [2]Peking Univ., China.

007.05 **Active X-ray States of Black Hole Binaries: Current Overview**
Ronald A. Remillard[1], J. E. McClintock[2]
[1]MIT, [2]Harvard-Smithsonian.

007.06 **High Resolution Ultraviolet Spectroscopy of the X-ray Binary Cygnus X-1**
Adrienne E. Hunacek[1], S. D. Vrtilek[2], B. S. Boroson[2], D. Geis[3]
[1]MIT, [2]Harvard-Smithsonian CfA, [3]Georgia State University.

Session 008 Blazars and AGN jets

AAS Poster, Sunday, 9:20am-6:30pm, Exhibit Hall 4

008.01 **Collimation and Stability Properties in AGN Jets**
Masanori Nakamura[1], H. Li[1]
[1]LANL.

008.02 **Correlated Multifrequency Variability in the Blazars 3C 279 and PKS 1510-089**
Ritaban Chatterjee[1], A. P. Marscher[1], S. G. Jorstad[1], M. F. Aller[2], I. M. McHardy[3]
[1]Boston Univ., [2]Univ. Michigan, [3]Univ. Southampton, United Kingdom.

008.03 **Spitzer Observations of Cygnus A and Pictor A**
Dean C. Hines[1], G. H. Rieke[2], K. D. Gordon[2], C. L. Carilli[3], L. Armus[4], Y. Shi[2]
[1]Space Science Inst., NM, [2]U. Arizona, [3]NRAO, [4]Spitzer Science Ctr.

008.04 **Multi-frequency VLBA Observations of Circular Polarization fromExtragalactic Radio Jets**
Daniel C. Homan[1], M. L. Lister[2], H. D. Aller[3], M. F. Aller[3], J. F. Wardle[4]
[1]Denison Univ., [2]Purdue Univ., [3]University of Michigan, [4]Brandeis University.

008.05 **Cm-band Circular Polarization Spectral Variability from Blazars: Recent Results from the UMRAO Program**
Margo F. Aller[1], H. D. Aller[1], P. A. Hughes[1]
[1]Univ. of Michigan.

008.06 **Observations of Blazar S5 0716+714 With Ground Based Telescopes and the Spitzer Infrared Space Telescope**
Jeffery Adkins[1], M. Lacy[2], A. Morton[1], T. Travagli[1], M. Mulaveesala[1], J. Santiago[1], S. Rapp[3], L. Stefaniak[4]
[1]Deer Valley High School, [2]Spitzer Science Center, [3]Linwood Holton Governor's School, [4]Allentown High School.

008.07 **Microvariabilty in Active Galactic Nuclei at 1420 MHz**
James W. Atwood[1]
[1]Morehead State Univ..

008.08 **Ejection Direction Variations in MOJAVE AGN Jets**
Matthew L. Lister[1]
[1]Purdue Univ..

008.09 **Effects of Jet Opening Angle and Velocity Structure on Blazar Parameters**
Paul J. Wiita[1], .. Gopal-Krishna[2], S. Dhurde[3], P. Sircar[4]
[1]Georgia State Univ., [2]National Centre for Radio Astronomy/TIFR, India, [3]InterUniversity Centre Astron. & Astrophys., India, [4]Dept. Physics, IIT Kanpur, India.

008.10 **Searching for TeV Blazar Candidates in the Sloan Digital Sky Survey**
David A. Barnaby[1], L. Fortson[2], G. Gyuk[2], D. Steele[2], M. Subbarao[2], M. Carini[1], J. Maune[1]
[1]Western Kentucky Univ., [2]Adler Planetarium.

008.11 **Rapid Multiwavelength Polarization Variability in the Quasar 0420-014**
Francesca D. D'Arcangelo[1], S. G. Jorstad[1], A. P. Marscher[1], P. S. Smith[2]
[1]Boston Univ., [2]Steward Obs.

008.12 **A Multi-Wavelength Study of Blazars with WIYN - VERITAS - IceCube**
Kirsten Larson[1], M. Bayer[2], T. Montaruli[2], D. Steele[3]
[1]The College of Wooster, [2]U. Wisconsin-Madison, [3]Adler Planetarium.

008.13 **Deep Hubble Space Telescope Imaging of the M87 Jet**
Eric S. Perlman[1], W. B. Sparks[2], J. Madrid[2], D. E. Harris[3], D. Macchetto[2], J. Biretta[2]
[1]Florida Institute of Technology, [2]Space Telescope Science Institute, [3]Smithsonian Astrophysical Observatory.

008.14 **A Large Homogeneous Sample of BL Lacs from SDSS and FIRST**
Richard M. Plotkin[1], S. F. Anderson[1]
[1]University of Washington.

008.15 **An Optical Survey of Potential Gamma-ray Sources**
Lisa R. Carpenter[1]
[1]University of Michigan.

008.16 **A Two-Fluid Plasma Shock Wave Model for the Strong Shock in Centaurus A**
Robert F. Penna[1], P. E. Nulsen[2], R. P. Kraft[2]
[1]University Of Rochester, [2]Harvard-Smithsonian Center for Astrophysics.

Session 009 Cataclysmic / Eruptive Variables / Novae

AAS Poster, Sunday, 9:20am-6:30pm, Exhibit Hall 4

009.01 **Observations of SS Cyg - Quiescence to Outburst**
Krista F. White[1]
[1]Ball State Univ..

009.02 **HD 109962 - The Most Massive Dwarf Nova?**
Frederick M. Walter[1], H. E. Bond[2]
[1]Stony Brook University, [2]Space Telescope Science Institute.

009.03 **Phase-Resloved Infrared Cyclotron Spectroscopy of Polars**
Ryan Campbell[1]
[1]New Mexico State Univ..

009.04 **Near Infrared Quantitative Abundance Analysis of The Secondary Stars in a Sample of CVs**
Joseph W. Wellhouse[1], T. E. Harrison[1]
[1]New Mexico State University.

009.05 **The 0.5 - 13 μm Spectrum of V4332 Sagittarii in 2006**
David K. Lynch[1], R. J. Rudy[1], R. W. Russell[1], S. Mazuk[1], C. C. Venturini[1], M. L. Sitko[2], H. B. Hammel[3], R. C. Puetter[4], R. B. Perry[5]
[1]The Aerospace Corporation, [2]U. Cincinnati & Space Sci. Inst., [3]Space Science Institute, [4]Univ. California, [5]NASA LaRC.

009.06 **Spitzer Space Telescope and Visible/IR Spectrophotometry of V574 Pupis (Nova Pupis 2004)**
Richard J. Rudy[1], D. K. Lynch[1], S. M. Mazuk[1], C. C. Venturini[1], R. W. Russell[1], R. C. Puetter[2], R. B. Perry[3], C. E. Woodward[4], G. J. Schwarz[5], M. F. Bode[6], A. Evans[7], T. R. Geballe[8], R. D. Gehrz[4], M. A. Greenhouse[9], P. A. Hauschildt[10], L. A. Helton[4], J. E. Lyke[11], A. Salama[12], S. N. Shore[13], S. G. Starrfield[14], J. W. Truran[15], R. M. Wagner[16]
[1]Aerospace Corp., [2]UCSD, [3]NASA, [4]University of Minnesota, [5]West Chester University, [6]John Moores University, United Kingdom, [7]Keele University, United Kingdom, [8]Gemini Observatory, [9]NASA Goddard Space Flight Center, [10]Landessternwarte, Germany, [11]Keck Observatory, [12]ESA, Spain, [13]Universita' di Pisa, Italy, [14]Arizona State University, [15]University of Chicago, [16]University of Arizona.

009.07 **A New, Bright, Short-period, Emission Line Binary in Ophiuchus**
Michele A. Stark[1], R. A. Wade[2], J. R. Thorstensen[3], C. S. Peters[3], H. A. Sheets[3], H. A. Smith[4], R. D. Miller[4], E. M. Green[5]
[1]Univ. of Wyoming, [2]Penn State Univ., [3]Dartmouth Coll., [4]Michigan State Univ., [5]Steward Obs..

009.08 **Low-State Photometry of AM Her during 2005-06**
Jeff W. Robertson[1], S. Kafka[2], K. Honeycutt[3], T. Campbell[4]
[1]Arkansas Tech University, [2]CTIO/NOAO, Chile, [3]Indiana University, [4]Whispering Pines Observatory.

009.09 **Steady-State Modeling and Possible Detection of HCl in Eta Carinae's -513 km/s Ejecta**
Alissa S. Bans[1]
[1]Maria Mitchell Observatory.

009.10 **Population Synthesis Studies of Close Binary Systems Using a Variable Alpha: Dependence Upon the Evolutionary State of the Giant**
Michael Politano[1]
[1]Marquette Univ..

009.11 **Understanding the White Dwarfs in Intermediate Polars**
Kunegunda E. Belle[1], E. M. Sion[2]
[1]LANL, [2]Villanova University.

009.12 **The Hard X-ray Bright Magnetic Catclysmic Variable IGR J14536-5522=Swift J1453.4-5524**
Koji Mukai[1], C. Markwardt[1], J. Tueller[1], D. Buckley[2], S. Potter[2], M. Still[2], Swift/BAT team
[1]NASA's GSFC, [2]South African Astronomical Observatory, South Africa.

009.13 **Galactic Wolf-Rayet Infrared Imaging Survey**
Jill Gerke[1], D. R. Zurek[1], M. M. Shara[1], A. F. Moffat[2], N. St-Louis[2], R. Doyon[2], L. Drissen[3], C. Robert[3]
[1]American Museum of Natural History, [2]Universite de Montreal, Canada, [3]Universite Laval, Canada.

009.14 **Wind-Clumping does not Depend on Ambient Metallicity: Wolf-Rayet Stars in the SMC**
Sergey Marchenko[1], C. Foellmi[2], A. F. Moffat[3], F. Martins[4], J. Bouret[5], É. Depagne[6]
[1]Western Kentucky Univ., [2]Observatoire de Grenoble, France, [3]Universite de Montreal, Canada, [4]Max-Planck-Institut fur extraterrestrische Physik, Germany, [5]Laboratoire d'Astrophysique de Marseille, France, [6]European Southern Observatory, Chile.

009.15 **Revised Ephemerides for V1776 Cygni and QU Vulpeculae**
Michael Lujan[1], A. W. Shafter[2], K. A. Misselt[3], J. K. Reed[2], S. R. Warren[4]
[1]California Polytechnic State University, [2]San Diego State University, [3]University of Arizona, [4]University of Minnesota.

009.16 **A 2006 Spectroscopic Study of ST LMi**
R. K. Honeycutt[1], S. Kafka[2], S. B. Howell[3], J. W. Robertson[4]
[1]Indiana Univ., [2]CTIO/NOAO, Chile, [3]WIYN/NOAO, [4]Arkansas Tech Univ..

009.17 **Magnetic Activity on the Degenerate Secondary Star in EF Eri**
Styliani Kafka[1], S. B. Howell[2], F. M. Walter[3], A. Z. Bonanos[4], D. Steeghs[5]
[1]CTIO/NOAO, Chile, [2]WIYN/NOAO, [3]Stony Brook University, [4]Carnegie-DTM, [5]CfA.

009.18 **VLT Spectroscopy of Four Short Period Cataclysmic Variables**
Julie N. Skinner[1], S. B. Howell[2], E. Mason[3]
[1]University of Oklahoma, [2]WIYN/NOAO, [3]European Southern Observatory, Chile.

009.19 **XMM-Newton Observations of Three Interesting Cataclysmic Variables**
Eric J. Hilton[1], P. Szkody[1], L. Homer[2], G. Schmidt[3], A. Henden[4], S. Anderson[1], K. Mukai[5], A. Mukadam[1], L. van Zyl[6], C. Hellier[6]
[1]Univ. Of Washington, [2]Liverpool CC, United Kingdom, [3]Steward Observatory, [4]AAVSO, [5]NASA Goddard, [6]Keele University, United Kingdom.

009.20 **HET Spectroscopy of Extragalactic Novae**
Allen W. Shafter[1], E. A. Coelho[1], K. A. Misselt[2], M. F. Bode[3], M. J. Darnley[3]
[1]San Diego State University, [2]University of Arizona, [3]Liverpool JMU, United Kingdom.

009.21 **The Distance to V838 Monocerotis**
Howard E. Bond[1], W. B. Sparks[1], M. Cracraft[1], M. Afsar[2], R. Corradi[3], L. Crause[4], M. Dopita[5], A. Henden[6], Z. Levay[1], U. Munari[7], N. Panagia[1], S. Starrfield[8], B. Sugerman[9], M. Wagner[10], R. White[1]
[1]STScI, [2]Ege University, Turkey, [3]Isaac Newton Group, Spain, [4]University of Cape Town, South Africa, [5]Australian National University, Australia, [6]AAVSO, [7]Universita di Padova, Italy, [8]ASU, [9]Goucher College, [10]Large Binocular Telescope.

009.22 **Modeling Eclipses of the Novalike Variable TT Triangulum**
Steven R. Warren[1], A. W. Shafter[2], J. K. Reed[2]
[1]University of Minnesota, [2]San Diego State University.

Session 010 Circumstellar Disk Observations

AAS Poster, Sunday, 9:20am-6:30pm, Exhibit Hall 4

010.01 **The Formation and Evolution of Solar Systems: Penultimate Status Report on Results from a Spitzer Legacy Science Program**
Lynne Hillenbrand[1], FEPS Spitzer Legacy Science Team
[1]Caltech.

010.02 **A Detection of OH in the Planet Formation Regions of Circumstellar Disks**
Steinn Sigurdsson[1], A. M. Mandell[1], M. Mumma[2], G. Blake[3]
[1]Pennsylvania State Univ., [2]GSFC, [3]Caltech.

010.03 **Updated Observations of V1647 Orionis: Measuring Hα and Brγ in the Optical and Near-Infrared**
Matthew Troutman[1], S. Brittain[1], E. Gibb[2], T. Rettig[3], T. Simon[4], B. Donehew[1]
[1]Clemson University, [2]University of Missouri, [3]University of Notre Dame, [4]University of Hawaii.

010.04 **Characterizing the Disk Around the Brown Dwarf Planetary System 2MASSW J1207334-393254**
Basmah Riaz[1], J. E. Gizis[1]
[1]Univ. of Delaware.

010.05 **Sub-millimeter Interferometric Study of Circumstellar Disks Surrounding Optically Visible, Young High Mass Stars**
Manoj Puravankara[1], P. T. Ho[2], N. Ohashi[1], Q. Zhang[3]
[1]Institute of Astronomy and Astrophysics, Academia Sinica, Taiwan, [2]Smithsonian Astrophysical Observatory, [3]Harvard-Smithsonian CfA.

010.06 **Silica in Protoplanetary Disks**
Benjamin A. Sargent[1], W. J. Forrest[1], D. M. Watson[1], M. K. McClure[1], C. J. Bohac[1], E. Furlan[2], K. H. Kim[1], J. D. Green[1], G. C. Sloan[3]
[1]Univ. of Rochester, [2]UCLA, [3]Cornell Univ..

010.07 **Coronographic Observations of Circumstellar Disks with Subaru**
Jennifer Karr[1], M. Puravankara[1], M. Tamura[2], T. Kudo[2], N. Ohashi[1]
[1]ASIAA, Taiwan, [2]NAOJ, Japan.

010.08 **The TEXES/Gemini Survey for Protoplanetary Disk Gas**
Martin Bitner[1], M. J. Richter[2], J. H. Lacy[1], T. K. Greathouse[3], D. T. Jaffe[1], G. J. Herczeg[4], J. Najita[5], J. S. Carr[6], R. Y. Shuping[7], G. A. Blake[8], S. J. Kenyon[9], T. Currie[9], U. Gorti[7], D. Hollenbach[7]
[1]Dept. of Astronomy, U. Texas, Austin, [2]Dept. of Physics, UC, Davis, [3]Lunar and Planetary Institute, [4]Dept. of Astronomy, Caltech, [5]NOAO, [6]NRL, [7]NASA Ames Research Center, [8]Div. of Geological and Planetary Sciences, Caltech, [9]Harvard Smithsonian CfA.

010.09 **Warm HCN, C2H2, and CO in the Circumstellar Disk of GV Tau**
Erika Gibb[1], K. Van Brunt[1], S. D. Brittain[2], T. W. Rettig[3]
[1]Univ. of Missouri - St. Louis, [2]Clemson Univ., [3]Univ. of Notre Dame.

010.10 **Observing Grain Growth in Protoplanetary Disks**
Sarah T. Maddison[1], D. Lommen[2], C. Wright[3], T. Bourke[4], J. Jorgensen[4], E. van Dishoeck[2], M. Burton[5], A. Hughes[1], D. Wilner[4]
[1]Swinburne University, Australia, [2]Leiden Observatory, The Netherlands, [3]UNSW@ADFA, Australia, [4]CfA, [5]UNSW, Australia.

Session 011 Cosmic Microwave Background

AAS Poster, Sunday, 9:20am-6:30pm, Exhibit Hall 4

011.01 **CBI2: Current Status**
Jonathan L. Sievers[1], CBI Collaboration
[1]CITA, Canada.

011.02 **The Q/U Imaging Experiment (QUIET)**
Michael D. Seiffert[1], QUIET Collaboration
[1]JPL.

011.03 **PAPPA: A New Generation of CMB Polarimetry**
Alan J. Kogut[1], D. T. Chuss[1], M. Devlin[2], S. Dicker[2], D. Fixsen[3], G. F. Hinshaw[1], K. Irwin[4], M. Limon[3], D. Marsden[2], S. H. Moseley[1], N. G. Phillips[3], C. Semisch[2], T. Stevenson[1], E. J. Wollack[1]
[1]NASA's GSFC, [2]University of Pennsylvania, [3]SSAI/GSFC, [4]NIST.

011.04 **Spider: Searching for the Echos of Inflation**
William C. Jones[1], Observational Cosmology Group
[1]Caltech.

011.05 **BICEP2 and SPUD: Searching for Inflation with Degree-Scale Polarimetry from the South Pole**
John Kovac[1], BICEP/SPUD collaboration
[1]California Institute of Technology.

011.06 **Search for Extragalactic Point Sources using WMAP Q-, V- and W-band Data**
Xi Chen[1], E. L. Wright[1]
[1]UC, Los Angeles.

011.07 **Primordial non-Gaussianity using CMB Temperature and Polarization Anisotropies.**
Amit P. Yadav[1], E. Komatsu[2], B. D. Wandelt[1]
[1]Univ. Of Illinois, Urban-Champaign, [2]University of Texas at Austin.

Session 012 Dark Matter

AAS Poster, Sunday, 9:20am-6:30pm, Exhibit Hall 4

012.01 **Comparing the Cosmological Critical Density of Neutralinos and Cold Dark Matter**
Sarah McMurray[1], K. Andrew[1], D. Barnaby[1], B. Bolen[1], L. Strolger[1]
[1]Western Kentucky University.

012.02 **Constraining the Angular Distribution of Satellite Galaxies Surrounding Disk-like Host Galaxies**
Jason H. Steffen[1]
[1]Fermilab.

Session 013 Debris Disks

AAS Poster, Sunday, 9:20am-6:30pm, Exhibit Hall 4

013.01 **Debris-Disk Candidates in the Open Cluster NGC 2362: An Examination of 24 Micron Stellar Excesses**
Alexander J. Shvonski[1], T. Monroe[1], C. A. Pilachowski[1]
[1]Indiana University.

013.02 **Secular Planetary Perturbations in Circumstellar Debris Disks**
Joseph M. Hahn[1], C. Capobianco,[2], P. Kalas[3], K. A. Marsh[4], C. Telesco[5]
[1]Space Science Institute, [2]Queen's University, Canada, [3]UC Berkeley, [4]NASA/JPL, [5]University of Florida.

013.03 **The Signature of Primordial Grain Growth in the Polarized Light of the AU Mic Debris Disk**
James R. Graham[1], P. Kalas[1], B. Matthews[2]
[1]UC, Berkeley, [2]NRC-HIA, Canada.

013.04 **A Search for Debris Disks around Stars with Planets**
David R. Ardila[1], A. Kospal[2]
[1]Caltech, [2]Konkoly Observatory/Caltech, Hungary.

013.05 **Spitzer's Dirty Dozen: MIPS and IRACImaging of Nearby Debris Disks**
Karl R. Stapelfeldt[1], J. C. Carson[2], K. Y. Su[3], G. H. Rieke[3], M. W. Werner[1], G. Bryden[1], C. A. Beichman[4], Spitzer MIPS Instrument Team
[1]JPL, [2]JPL/ORAU, [3]Univ. of Arizona, [4]MSC/Caltech.

013.06 **Dual Imaging Polarimetry of young stars in Rho Ophiuchus**
Catarina Ubach[1], D. Potter[1]
[1]Univ. Of Arizona.

Session 014 Differential Rotation & Activity of Cool Dwarfs

AAS Poster, Sunday, 9:20am-6:30pm, Exhibit Hall 4

014.01 **The Differential Rotation Profile of kappa1 Ceti from MOST Photometry**
Gordon A. Walker[1], B. Croll[1], R. Kuschnig[1], J. Matthews[1], A. Walker[1], S. Rucinski[2], D. Guenther[3], A. Moffat[4], D. Sassalov[5], W. Weiss[6]
[1]UBC, Canada, [2]David Dunlap Observatory, Canada, [3]St Mary's Univ., Canada, [4]Univ Montreal, Canada, [5]Harvard-Smithsonian CfA, [6]Inst. f. Ast., Wien, Austria.

014.02 **Differential Rotation in Solar-type Stars**
David H. Bruning[1]
[1]Univ. of Wisconsin-Parkside.

014.03 **Tracers of Chromospheric Structure: Observations of CaII K and Hα in M Dwarfs**
Lucianne M. Walkowicz[1], S. L. Hawley[1]
[1]University of Washington.

014.04 **Solar Physics at Evergreen: Solar Dynamo and Chromospheric MHD**
E. J. Zita[1], J. Maxwell[1], N. Song[1], M. Dikpati[2]
[1]Evergreen State College, [2]High Altitude Observatory - NCAR.

Session 015 Extragalactic ISM

AAS Poster, Sunday, 9:20am-6:30pm, Exhibit Hall 4

015.01 **Spitzer View of Four Low Surface Brightness Giant Galaxies: Malin 1, UGC 6614, UGC 6879, UGC 9024**
M. N. Rahman[1], J. Howell[2], B. Buckalew[2], G. Helou[2]
[1]Caltech, [2]IPAC/Caltech.

015.02 **PDR-Produced HI in Star-Forming Regions of M33**
Jonathan S. Heiner[1], R. J. Allen[1], P. C. van der Kruit[2]
[1]STScI, [2]Kapteyn Astronomical Institute, The Netherlands.

015.03 **The Relationship of Atomic Gas and Aromatic Emission in SINGS Spiral Galaxies**
Esther Chapman[1], M. D. Thornley[2], The SINGS team
[1]Cornell College, [2]Bucknell University.

015.04 **Spitzer Observations of Extraplanar PAH Emission from Several Edge-On Galaxies**
Nicolas Lehner[1], C. Howk[1]
[1]University of Notre Dame.

015.05 **WFPC2 Imaging of the Multiphase Halos of Two Spiral Galaxies: Dust and Ionized Gas**
Katherine Rueff[1], M. Pitterle[1], A. Hirschauer[1], N. Lehner[1], C. Howk[1]
[1]Univ. of Notre Dame.

015.06 **Multiwavelength Observations of Tidally Induced Star Formation in the M81 Group**
Abigail S. Hedden[1], K. Knierman[1], T. Roelofsen[2], C. Kulesa[1], J. Feldmeier[3], V. Gorjian[4], P. Durrell[3], B. Sepulveda[5], T. Spuck[6], C. Wheeler[7]
[1]University of Arizona, Steward Observatory, [2]New Jersey Astronomy Center for Education, [3]Youngstown State University, [4]JPL, [5]Lincoln High School, [6]Oil City Area Senior High School, [7]Luther Burbank High School.

015.07 **Evidence for Outflows and a Galactic Wind in the Large Magellanic Cloud?**
J. C. Howk[1], N. Lehner[1]
[1]Univ. of Notre Dame.

015.08 **Spitzer IRS Observations of the Gaseous Halo of NGC 891**
Richard J. Rand[1], R. A. Benjamin[2], K. Wood[3]
[1]Univ. of New Mexico, [2]Univ. of Wisconsin-Whitewater, [3]Univ. of St. Andrews, United Kingdom.

015.09 **Models of the Effect of Gaseous Drag on the Accretion of Intergalactic Clouds**
Travis C. Fischer[1], R. Benjamin[1]
[1]University of Wisconsin-Whitewater.

015.10 **A PAH Deficit in Extremely Low Luminosity Galaxies**
Rongying Wu[1], D. W. Hogg[1]
[1]New York University.

015.11 **Low Frequency Turnovers of Compact Radio Sources in NGC 247**
Sara K. Schultz[1], C. K. Lacey[1]
[1]Univ. of South Carolina.

015.12 **SCONES: Determining the Warm Gas Properties of Nearby Galaxies**
Glen R. Petitpas[1], C. D. Wilson[2], A. J. Baker[3], D. Iono[4], A. B. Peck[1], K. Sakamoto[4], M. Krips[1], P. T. Ho[5], S. Matsushita[5]
[1]Harvard-Smithsonian Center for Astrophysics, [2]McMaster University, Canada, [3]Rutgers, [4]NAOJ, Japan, [5]ASIAA, Taiwan.

015.13 **Understanding the Interplay Between Star Clusters and Their Interstellar Medium Using SINGS H II Regions**
Brent A. Buckalew[1], SINGS Team
[1]Caltech/IPAC.

Session 016 The Sun

AAS Poster, Sunday, 9:20am-6:30pm, Exhibit Hall 4

016.01 **Broadband Spectroscopy of the Corona during the Total Solar Eclipse of March 29, 2006**
Sarah A. Jaeggli[1], S. R. Habbal[1], J. R. Kuhn[1], M. H. Nayfeh[2]
[1]Institute for Astronomy, Univ. of Hawaii, [2]Dept. of Physics, Univ. of Illinois at Urbana-Champaign.

016.02 **Changes in Sunspot Umbral Intensity Over Time**
Rachel MacDonald[1]
[1]University of Washington.

016.03 **Relationship Between the Radio Bursts from the Sun and Ionospheric Propagation**
Mary Lou West[1], N. Frissell[1], M. Papalos[1]
[1]Montclair State Univ..

016.04 **Coronal Loop Recognition: A Diagnostic Tool for Magnetic Field Extrapolation Models**
Julia Sandell[1], V. Kashyap[2], M. Weber[2], A. van Ballegooijen[3], E. Deluca[3], M. Bobra[3]
[1]Barnard College/Columbia University, [2]SAO/Cfa, [3]Center for Astrophysics/Smithsonian Astrophysical Observatory.

Session 017 Galactic ISM I

AAS Poster, Sunday, 9:20am-6:30pm, Exhibit Hall 4

017.01 **Imaging of Diffuse FUV Emission from the Gum Nebula with SPEAR**
Kaori Nishikida[1], R. Sankrit[1], M. Sirk[1], B. Welsh[1], K. Min[2], K. Ryu[2], J. Shinn[2], W. Han[3], D. Lee[3]
[1]Space Sciences Laboratory, UC Berkeley, [2]Korea Advanced Institute of Science and Technology, Republic of Korea, [3]Korea Astronomy and Space Science Institute, Republic of Korea.

017.02 **Properties of the Hot Diffuse Gas in our Galaxy observed with SPEAR**
Julia M. Kregenow[1], M. Sirk[2], R. Sankrit[2], C. Heiles[1], J. Edelstein[2], K. Min[3], K. Ryu[3], J. Shinn[3], W. Han[4], D. Lee[4]
[1]UC, Berkeley, [2]UC Berkeley, Space Sciences Lab, [3]KAIST, Republic of Korea, [4]KASI, Republic of Korea.

017.03 **Emission from Low Ionization Gas in the Galaxy observed with SPEAR**
Ravi Sankrit[1], E. Korpela[1], K. Seon[1], K. Nishikida[1], K. Min[2], K. Ryu[2], J. Shinn[2], W. Han[3], D. Lee[3]
[1]UC, Berkeley, [2]KAIST, Republic of Korea, [3]KASI, Republic of Korea.

017.04 **Molecular Hydrogen Fluorescence in our Galaxy Observed with SPEAR**
Jerry Edelstein[1], M. Sirk[1], J. Kregenow[1], E. Korpela[1], K. Seon[1], K. Min[2], K. Ryu[2], J. Shinn[2], W. Han[3], D. Lee[3]
[1]Space Sciences Lab, UC, [2]KAIST, Republic of Korea, [3]KASI, Republic of Korea.

017.05 **Maps of Emission from Hot Diffuse Gas in our Galaxy with SPEAR**
Eric J. Korpela[1], J. Kregenow[2], M. Sirk[1], J. Edelstein[1], J. Adolfo[1], K. Min[3], K. Ryu[3], J. Shinn[3], W. Han[4], D. Lee[4]
[1]Space Sciences Lab, UC-Berkeley, [2]Astronomy Dept, UC-Berkeley, [3]Korea Advanced Institute of Science and Technology, Republic of Korea, [4]Korea Astronomy and Space Science Institute, Republic of Korea.

017.06 **Mapping of FUV Emission Lines for the North Galactic Pole with SPEAR**
Martin M. Sirk[1], B. Y. Welsh[1], J. Edelstein[1], E. J. Korpela[1], R. Sankrit[1], K. Nishikida[1], J. Kregenow[1], K. I. Seon[1], K. W. Min[2], K. Ryu[2], J. H. Shinn[2], W. Han[3], D. H. Lee[3], U. W. Nam[3]
[1]UC, Berkeley, [2]Korea Advanced Inst. of Science and Tech., Republic of Korea, [3]Korea Astronomy and Space Science Inst., Republic of Korea.

017.07 **Observation of Cosmic Far-ultraviolet Background Radiation with SPEAR**
Kwang-Il Seon[1], J. Edelstein[1], E. Korpela[1], K. Min[2], K. Ryu[2], J. Shinn[2], W. Han[1], W. Han[3], D. Lee[3]
[1]UC, Berkeley, [2]KAIST, Republic of Korea, [3]KASI, Republic of Korea.

017.08 **Intermittency of the Velocity Field Structure in Compressible MHD Turbulence**
Grzegorz Kowal[1], A. Lazarian[1]
[1]University of Wisconsin-Madison.

017.09 **Turbulence and Cosmic Ray Acceleration**
Alex Lazarian[1]
[1]Univ. of Wisconsin.

017.10 **[O I] and [C II] Emission Towards NGC 6334 A**
Nicholas Abel[1], A. Sarma[2], G. Ferland[3], T. Troland[3]
[1]University of Cincinnati, [2]Depaul University, [3]University of Kentucky.

017.11 **The Galactic Center: High-resolution Imaging and Temperature Determination of Dense Molecular Clouds**
Juergen Ott[1], A. Weiss[2], L. Staveley-Smith[3], C. Henkel[2]
[1]CSIRO Australia Telescope National Facility, Australia, [2]MPI fuer Radioastronomie, Germany, [3]University of Western Australia, Australia.

017.12 **High-Resolution Study of X-ray Absorption by the Interstellar Medium**
Adrienne M. Juett[1], J. Wilms[2], N. S. Schulz[3], M. A. Nowak[3]
[1]Univ. of Virginia, [2]Univ. of Erlangen, Germany, [3]MIT.

017.13 **Highly Excited Rovibrational Rate Coefficients for H2 + He Collisions: Relevance to H2 Spectra in the ISM**
Teck-Ghee Lee[1], R. C. Forrey[2], S. Lepp[3], N. Balakrishnan[4], P. C. Stancil[5], D. R. Schultz[6], G. J. Ferland[7]
[1]Physics and Astronomy, University of Kentucky and Oak Ridge National Lab., [2]Department of Physics, Penn-State University, [3]Department of Physics, University of Nevada, [4]Department of Chemistry, University of Nevada, [5]Department of Physics and Astronomy and Center for Simulational Physics, The University of Georgia., [6]Physics Division, Oak Ridge National Lab., [7]Physics and Astronomy, University of Kentucky.

017.14 **A Study of the Radio Continuum - Far Infrared Correlation at Small Scales in the Galaxy**
Monica I. Rodriguez-Martinez[1], R. J. Allen[1], T. Wiklind[1], L. Loinard[2]
[1]STScI, [2]CRyA-UNAM, Mexico.

017.15 **Flows, Filaments & Fragmentation:Towards a Theory of Dynamical Star Formation**
Fabian Heitsch[1], L. Hartmann[1], A. D. Slyz[2], J. E. Devriendt[3], A. Burkert[4]
[1]Univ. Of Michigan, [2]University of Oxford, United Kingdom, [3]CRAL/Observatoire de Lyon, France, [4]University Observatory Munich, Germany.

017.16 **A New View of the Light Echoes from SN 1987A**
Andrew Newman[1], A. Rest[2], N. B. Suntzeff[3], R. C. Smith[2], D. L. Welch[4], G. Damke[2], A. Zenteno[2], C. Stubbs[5], A. Garg[5], P. Challis[5], A. C. Becker[6], G. A. Miknaitis[6], A. Miceli[6], K. H. Cook[7], M. Huber[7], S. Nikolaev[7], L. Morelli[8], D. Minniti[8], A. Clocchiatti[8], J. L. Prieto[9]
[1]Washington University, [2]NOAO/CTIO, [3]Texas A & M University, [4]McMaster University, Canada, [5]Harvard University, [6]University of Washington, [7]Lawrence Livermore National Laboratory, [8]Pontifica Universidad Católica de Chile, Chile, [9]Ohio State University.

017.17 **ATCA Imaging of Dense Gas in Star-Forming Environments**
Tony H. Wong[1], J. Ott[2], S. D. Ryder[3], K. Kohno[4], R. Buta[5], M. Dahlem[6], J. B. Whiteoak[6], Y. Chin[7], M. R. Cunningham[8]
[1]U. Illinois, [2]NRAO, [3]AAO, Australia, [4]U. Tokyo, Japan, [5]U. Alabama, [6]ATNF, Australia, [7]Tamkang U., Taiwan, [8]UNSW, Australia.

017.18 **Diagnostics of Astrophysical Magnetic Fields based on AtomicAlignment and Hanle Effect**
Huirong Yan[1], A. Lazarian[2]
[1]CITA, Canada, [2]Univ. Wisconsin-Madison.

017.19 **Studying Magnetic Fields in Star Forming Regions with Aligned Atoms**
Thiem C. Hoang[1], A. Lazarian[1], K. Nordsieck[1], H. Yan[2]
[1]University of Wisconsin-Madison, [2]Canadian Institute for Theoretical Astrophysics, Canada.

017.20 **High-Mass Star Formation in Three Southern, Galactic Cores**
Georgi Chunev[1], C. Watson[1], GLIMPSE Team
[1]Manchester College.

017.21 **Interstellar Material towards the Nearby High Latitude Star eta UMa**
Priscilla C. Frisch[1], E. B. Jenkins[2], J. Aufdenberg[3], U. J. Sofia[4], D. G. York[1], J. D. Slavin[5], C. M. Johns-Krull[6]
[1]University of Chicago, [2]Princeton, [3]Embry-Riddle Aeronautical University, [4]Whitman College, [5]Harvard-Smithsonian, CfA, [6]Rice University.

017.22 **Mapping [O III] Emission in Diffuse Ionized Gas**
Rex C. Beaber[1], L. M. Haffner[1], R. J. Reynolds[1], G. J. Madsen[2]
[1]University of Wisconsin - Madison, [2]Anglo-Australian Observatory, Australia.

017.23 **Density Distribution of the Warm Ionized Medium**
Alex S. Hill[1], R. J. Reynolds[1], R. A. Benjamin[2], L. M. Haffner[1]
[1]Univ. of Wisconsin-Madison, [2]Univ. of Wisconsin-Whitewater.

017.24 **Hydrogen-Dating Molecular Clouds**
Marko Krco[1], P. F. Goldsmith[2], D. Li[2]
[1]Cornell University, [2]JPL.

017.25 **Theoretical Studies of Wind Blown Nebulae around Massive Stars**
Vikram Dwarkadas[1]
[1]Univ. of Chicago.

Session 018 Galactic Structures: Identification & Evolution

AAS Poster, Sunday, 9:20am-6:30pm, Exhibit Hall 4

018.01 **Development of a Fourier Technique for Automated Spiral Galaxy Morphology**
Andrew R. Butler[1]
[1]Calvin College.

018.02 **Self-Consistent Models for Time Varying Galaxy Potentials**
Stephen Levine[1]
[1]U.S. Naval Observatory.

018.03 **The Stellar Halos of Nearby Galaxies**
Anil Seth[1], R. de Jong[2], H. Ferguson[2], J. Dalcanton[3]
[1]Harvard-Smithsonian CfA, [2]STScI, [3]U. of Washington.

018.04 **A Search for Faint, Diffuse Halo Emission in Edge-On Galaxies with Spitzer/IRAC**
Matthew Ashby[1], R. G. Arendt[2], J. L. Pipher[3], W. J. Forrest[3], M. Marengo[1], P. Barmby[1], S. P. Willner[1], J. R. Stauffer[4], G. G. Fazio[1]
[1]Harvard-Smithsonian Center for Astrophysics, [2]NASA's Goddard Space Flight Center, [3]University of Rochester, [4]Caltech/Spitzer Science Center.

018.05 **Spitzer's View on Edge-On Spiral Disks**
Benne W. Holwerda[1], R. S. de Jong[1], M. Regan[1], A. Seth[2], J. D. Dalcanton[3], E. Bell[4], S. Bianchi[5]
[1]STSCI, [2]CfA, [3]Astronomy Dept., University of Washington, [4]MPI fuer Astronomie, Germany, [5]AA (Istituto di Radioastronomia/CNR), Italy.

018.06 **A WIYN Study of Optical Asymmetry in Isolated Disk Galaxies**
Alex C. Viana[1], E. M. Wilcots[1]
[1]University of Wisconsin - Madison.

018.07 **The Structure of Polar Ring Galaxies UGC 7576, NGC 2685, and NGC 3718**
Christopher Q. Trinh[1], L. S. Sparke[2], J. S. Gallagher[2]
[1]University of California, Berkeley, [2]University of Wisconsin, Madison.

Session 019 Galaxy Evolution over Cosmic History

AAS Poster, Sunday, 9:20am-6:30pm, Exhibit Hall 4

019.01 **Five Thousand Galaxy Redshifts from PEARS**
Seth H. Cohen[1], R. E. Ryan, Jr.[1], S. Malhotra[1], J. E. Rhoads[1], N. P. Hathi[1], R. A. Windhorst[1], N. Pirzkal[2], C. Xu[2], PEARS Team
[1]Arizona State University, [2]Space Telescope Science Institute.

019.02 **The Size-Luminosity Relation of Disk Galaxies in EDisCS Clusters**
Stephanie M. Gogarten[1], J. J. Dalcanton[1], L. Simard[2], G. Rudnick[3], V. Desai[4], EDisCS Collaboration
[1]Univ. of Washington, [2]Herzberg Institute of Astrophysics, NRC, Canada, [3]NOAO, [4]California Institute of Technology.

019.03 **Simulated Optical Images of High Redshift Galaxies using GALEX Ultraviolet Images of Nearby Galaxies**
Bum-Suk Yeom[1], Y. Kim[1], S. Rey[1], J. Koo[1], S. Kim[1]
[1]Chungnam National University, Republic of Korea.

019.04 **Ages and Masses of Lyman Alpha Galaxies at z ~ 4.5**
Steven L. Finkelstein[1], J. E. Rhoads[1], S. Malhotra[1], N. Pirzkal[2], J. Wang[3]
[1]Arizona State Univ., [2]Space Telescope Science Institute, [3]University of Science and Technology of China, China.

019.05 **The Spitzer Interacting Galaxies Survey: IRAC Evaluations of Star Formation**
Christopher R. Klein[1], M. L. Ashby[2], H. A. Smith[2], A. Zezas[2], J. L. Hora[2], M. A. Pahre[2], G. G. Fazio[2]
[1]Caltech, [2]Harvard-Smithsonian Center for Astrophysics.

019.06 **Buildup of Massive Red Galaxies at redshift z=0.3**
Morad Masjedi[1], D. W. Hogg[1], M. R. Blanton[1]
[1]New York Univ..

019.07 **The Origin and Evolution of the Mass-Metallicity Relationship for Galaxies: Results from Cosmological N-Body Simulations**
Alyson Brooks[1], F. Governato[1], C. M. Booth[2], B. Willman[3], J. P. Gardner[4], J. Wadsley[5], G. Stinson[1], T. Quinn[1]
[1]Univ. of Washington, [2]Univ. of Durham, United Kingdom, [3]Harvard-Smithsonian CfA, [4]Univ. of Pittsburgh, [5]McMaster Univ., Canada.

019.08 **Star-Forming Galaxies at z~2: Stellar, Gas and Dynamical Masses and the Mass-Metallicity Relation**
Dawn Erb[1]
[1]Harvard-Smithsonian Center for Astrophysics.

Session 020 High Z Objects; IR, Optical Background

AAS Poster, Sunday, 9:20am-6:30pm, Exhibit Hall 4

020.01 **Search for High-Redshift Quasars in the Palomar-QUEST Survey**
Anne Bauer[1], C. Baltay[1], N. Ellman[1], J. Jerke[1], D. Rabinowitz[1], A. Mahabal[2], E. Glickman[2], C. Donalek[2], S. G. Djorgovski[2]
[1]Yale University, [2]California Institute of Technology.

020.02 **A Confirmation of the Optical EBL From HST Archival Data: First Results**
Timothy Dolch[1], H. C. Ferguson[2], B. Mobasher[2], M. Stiavelli[2], S. Casertano[2], R. S. de Jong[2], M. Giavalisco[2], L. E. Bergeron[2]
[1]Johns Hopkins Univ., [2]Space Telescope Science Institute.

020.03 **Probing the CIRB with Spitzer in 3 DIRBE Dark Spots**
Louis R. Levenson[1], E. L. Wright[1]
[1]UCLA.

020.04 **The First Stars in the Universe: Mass Function and Local Chemical Signatures**
Jason Tumlinson[1]
[1]Yale University.

020.05 **Photometric Redshift Survey Forecast for Luminous Red Galaxies at z~1.0**
Xiaosheng Huang[1], D. J. Schlegel[1]
[1]Lawrence Berkeley National Laboratory.

Session 021 Gravitational Lensing

AAS Poster, Sunday, 9:20am-6:30pm, Exhibit Hall 4

021.01 **A Three-Dimensional View of the Environments of Three Strong Gravitational Lenses**
Leonidas A. Moustakas[1], P. Marshall[2], AEGIS Collaboration
[1]JPL/Caltech, [2]UCSB.

021.02 **HST ACS Observations of the Gravitational Lens B1608+656**
Sherry H. Suyu[1], R. D. Blandford[2], C. D. Fassnacht[3], L. V. Koopmans[4], P. J. Marshall[5], J. P. McKean[3], T. Treu[5]
[1]California Institute of Technology, [2]KIPAC, Stanford University, [3]University of California, Davis, [4]Kapteyn Institute, The Netherlands, [5]University of California, Santa Barbara.

021.03 **LensPerfect: Exact Massmap Solutions for Gravitationally Lensed Multiple Images**
Dan A. Coe[1], E. Fuselier[2], N. Benítez[3], T. Broadhurst[4], H. Ford[1], ACS Science Team
[1]Johns Hopkins Univ., [2]U.S. Military Academy, [3]Instituto de Astrofísica de Andalucía, Spain, [4]Tel Aviv Univ., Israel.

021.04 **A Multi-Resolution Weak Lensing Reconstruction Method**
Hossein Khiabanian[1], I. Dell'Antonio[1]
[1]Brown Univ..

021.05 **Application of Gravitational Lensing Models to the Brightest Strongly LensedLyman Break Galaxy - the '8 o'clock arc'**
Elizabeth J. Buckley-Geer[1], S. S. Allam[2], D. Tucker[1], H. Lin[1], H. T. Diehl[1], J. Annis[1], J. A. Frieman[3]
[1]Fermi National Accelerator Laboratory, [2]Fermi National Accelerator Laboratory/University of Wyoming, [3]Fermi National Accelerator Laboratory/University of Chicago.

021.06 **Weak Lensing : Ground vs. Space in the Cosmos Field**
Mansi M. Kasliwal[1], R. J. Massey[2], R. S. Ellis[2], J. Rhodes[3]
[1]Caltech (Hale Fellow of Moore Foundation), [2]Astronomy Department, Caltech, [3]Jet Propulsion Laboratory, Caltech.

021.07 **Time-Delays and Mass Models for the Quadruple Lens RXJ1131-1231**
Nicholas D. Morgan[1], C. S. Kochanek[1], E. E. Falco[2], X. Dai[1]
[1]The Ohio State University, [2]Harvard Smithsonian Center for Astrophysics.

021.08 **Mid Infrared Observations of Quasar Lenses**
Eric Agol[1], C. Kochanek[2]
[1]Univ. of Washington, [2]Ohio State University.

Session 022 Ground-Based Instrumentation I

AAS Poster, Sunday, 9:20am-6:30pm, Exhibit Hall 4

022.01 **The Dark Energy Survey Instrument**
Brenna Flaugher[1], Dark Energy Survey Collaboration
[1]Fermilab.

022.02 **The Dark Energy Survey Camera Design**
Herman P. Cease[1], DES Collaboration
[1]Fermilab.

022.03 **Front-End Electronics for the Dark Energy Survey Camera (DECam)**
Theresa M. Shaw[1], D. Huffman[1], M. Kozlovsky[1], J. Olsen[1], W. Stuermer[1], M. Barcelo[2], L. Cardiel[2], J. Castilla[3], J. DeVicente[3], G. Martinez[3], P. Moore[4], R. Schmidt[4]
[1]Fermilab, [2]IFAE, Spain, [3]CIEMAT, Spain, [4]NOAO.

022.04 **Characterication and Testing of Dark Energy Survey CCDs**
H T. Diehl[1], Dark Energy Survey Collaboration
[1]Fermilab.

022.05 **Mountaintop Software for the Dark Energy Survey**
Jon Thaler[1], T. Abbott[2], I. Karliner[1], T. Qian[1], K. Honscheid[3], W. Merritt[4], L. Buckley-Geer[4]
[1]University of Illinois (UIUC), [2]CTIO, Chile, [3]Ohio State University, [4]Fermilab.

022.06 **Application of the Dark Energy Survey Data Management System to the Blanco Cosmology Survey Data**
Chow Choong Ngeow[1], J. J. Mohr[2], W. Barkhouse[1], T. Alam[3], C. Beldica[3], D. Cai[3], G. Daues[3], P. Duda[3], J. Annis[4], H. Lin[4], D. Tucker[4], A. Rest[5], C. Smith[5], Y. Lin[6], W. High[7], S. Hansen[8], M. Brodwin[9], S. Allam[4], BCS Collaboration
[1]Univ. of Illinois, [2]Univ. of Illinois and NCSA, [3]NCSA, [4]Fermilab, [5]NOAO/CTIO, Chile, [6]Princeton University/Pontificia Universidad Católica de Chile, Chile, [7]Harvard, [8]Univ. of Chicago, [9]NASA/JPL.

022.07 **Analyzing the Focus Sensor Images for ODI at WIYN**
Robert P. Nowicki[1]
[1]Susquehanna University.

022.08 **QUOTA sees First Light at WIYN!**
Daniel R. Harbeck[1], G. Jacoby[1], D. Sawyer[1], S. Howell[2], C. Corson[2], A. Yeatts[1], B. Brondel[3], M. Hunten[2], P. Moore[4]
[1]WIYN Observatory, [2]NOAO, [3]University of Indiana, [4]NOAO, Chile.

022.09 **Fast Guiding with the Quad OTA**
Brian J. Brondel[1], D. R. Harbeck[2], S. B. Howell[2], A. Yeatts[2]
[1]Indiana University, [2]National Optical Astronomy Observatories.

022.10 **The WIYN Serendipity Project: High Speed Guide Star Photometry at the WIYNObservatory**
Lisa M. Ferrara[1], S. B. Howell[2], D. Harbeck[2], C. Bailyn[1]
[1]Yale University, [2]WIYN Observatory and National Optical Astronomy Observatory.

022.11 **The Quest for Precision Ground-Based Astronomy:The CCD/Transit Instrument with Innovative Instrumentation (CTI-II)**
John T. McGraw[1], M. R. Ackermann[1], T. Williams[1], P. C. Zimmer[1], W. H. Gerstle[1], G. F. Benedict[2], S. C. Odewahn[2], C. J. Wetterer[3], V. L. Gamiz[4], C. F. Claver[5], J. R. Pier[6], D. C. Hines[7], J. S. Schwarz[8], NESSI/CTI-II Research Group
[1]Univ. of New Mexico, [2]Univ. of Texas, [3]US Air Force Academy, [4]Air Force Research Laboratory/DE, [5]National Optical Astronomy Observatory, [6]US Naval Observatory, [7]Space Science Institute, [8]Sandia National Laboratories.

022.12 **The Unique Optical Design of the CTI-II Survey Telescope**
Mark R. Ackermann[1], J. T. McGraw[2], M. MacFarlane[3]
[1]Sandia National Laboratories, [2]University of New Mexico, [3]Optical Design Consltant.

022.13 **LCOGT.net: A Global Telescope Network to Keep Astronomers in the Dark**
Stuart F. Taylor[1], T. M. Brown[1], W. Rosing[1], R. Ross[1], J. Farrell[1]
[1]Las Cumbres Observatory Global Telescope.

022.14 **The Discovery Channel Telescope: Construction and Design Progress, January 2007**
Thomas A. Bida[1], R. L. Millis[1], B. W. Smith[1], E. W. Dunham[1], H. Marshall[1]
[1]Lowell Obs..

Session 023 HAD IV

AAS Poster, Sunday, 9:20am-6:30pm, Exhibit Hall 4
This HAD Poster Session will contiue Monday morning.

023.01 **History of the Spitzer Mission**
George Rieke[1]
[1]Univ. of Arizona.

023.02 **The Role of Eclipse Expeditions in Early French and Australian Radio Astronomy**
Wayne Orchiston[1], J. Lequeux[2], M. Pick[2], B. Slee[3], J. Steinberg[2]
[1]James Cook University, Australia, [2]Paris Observatory, France, [3]Australia Telescope National Facility, Australia.

023.03 **Seth Nicholson's First Satellite Discovery: Jupiter IX and His Orbit for It**
Donald E. Osterbrock[1]
[1]UCO/Lick Observatory.

023.04 **The Guilford-Carleton Eclipse Expedition of 1900**
Thomas R. English, III[1]
[1]Guilford Tech. Community College.

023.05 **The North American Astronomical Photographic Plate Preservation & Digitization Center - Current Status**
Wayne Osborn[1], M. Castelaz[2], J. D. Cline[2], R. E. Griffin[3], T. Barker[2]
[1]Central Michigan Univ., [2]Pisgah Asronomical Research Institute, [3]Dominion Astrophysical Observatory, Canada.

023.06 **Astronomy Education Review: A Five-Year Progress Report**
Andrew Fraknoi[1], S. Wolff[2]
[1]Foothill College, [2]NOAO.

Session 024 SIM Science

AAS Poster, Sunday, 9:20am-6:30pm, Exhibit Hall 4

024.01 **The Exoplanet Host Star Gamma Cephei: Orbit of the Binary and Mass of the Substellar Companion**
Guillermo Torres[1]
[1]Harvard-Smithsonian, CfA.

024.02 **Astrometric Detection of Terrestrial Planets in the Habitable Zones of Nearby Stars with SIM PlanetQuest**
Joseph Catanzarite[1], M. Shao[1], A. Tanner[1], S. Unwin[1], J. Yu[1]
[1]Jet Propulsion Laboratory.

024.03 **Masses of Exoplanets from Doppler Spectroscopy and HST Astrometry**
Jacob Bean[1], B. E. McArthur[1], G. F. Benedict[1]
[1]Univ. of Texas, Austin.

024.04 **Clandestine Companions of Nearby Red Dwarfs**
Todd J. Henry[1], D. W. Koerner[2], W. C. Jao[1], J. P. Subasavage[1], P. A. Ianna[3], RECONS
[1]Georgia State Univ., [2]Northern Arizona Univ., [3]Univ. of Virginia.

024.05 **Crowded Field Astrometry with SIM**
Sridharan Rengaswamy[1], R. Allen[1]
[1]STScI.

Session 025 Solar System

AAS Poster, Sunday, 9:20am-6:30pm, Exhibit Hall 4

025.01 **Small Lnding Pobes for In-situ Characterization of Asteroids and Comets**
Dennis Ebbets[1], R. Dissly[1], R. Reinert[1]
[1]Ball Aerospace & Tech. Corp..

025.02 **Search for Satellites around Ceres**
Allyson Bieryla[1], J. W. Parker[1]
[1]Southwest Research Institute.

025.03 **Searching for Asteroids with 8 micron Spitzer Space Telescope Data**
Edward L. Wright[1], B. Mohlie[2]
[1]UC, Los Angeles, [2]RPI.

025.04 **Correlating Arecibo Radar and IRTF Near-Infrared Spectral Observations of 105 Artemis**
Heather M. Hanson[1], E. S. Howell[2], C. Magri[3], M. C. Nolan[2]
[1]University of Wyoming, [2]Arecibo Observatory, Puerto Rico, [3]University of Maine at Farmington.

025.05 **Orbits of Binary Near-Earth Asteroids from Radar Observations**
Heidi E. Brooks[1]
[1]Reed College.

025.06 **Differential Photometry of Asteroids 252 Clemintina, 329 Svea, 334 Chicago, 596 Scheila, 517 Edith, 521 Brixia and 713 Luscinia.**
Elise C. Jutzeler[1], E. Hausel[2], A. Burke[3], M. Leake[4]
[1]SUNY Geneseo, [2]University of Wyoming, [3]Vassar College, [4]Valdosta State University.

025.07 **Beyond the Main Belt: Properties of Solar System Objects using the Sloan Digital Sky Survey**
Shannon Schmoll[1], Z. Ivezic[1], M. Juric[2]
[1]Univ. of Washington, [2]Princeton University.

025.08 **Asteroid Families in the Sloan Digital Sky Survey Moving Object Catalog**
Alex Parker[1], Z. Ivezic[1], M. Juric[2], R. Lupton[2]
[1]University of Washington, [2]Princeton University.

025.09 **The Canada-France Ecliptic Plane Survey: Strategy, Details and Results**
R. L. Jones[1], J. Kavelaars[2], B. Gladman[3], J. Petit[4], J. Parker[5], A. Bieryla[5]
[1]Univ. of Washington, [2]HIA/NRC, Canada, [3]Univ. of British Columbia, Canada, [4]Obs. de Besancon, France, [5]SWRI.

025.10 **New and Improved Ephemerides of Nix and Hydra During the 1985 to 1990 Mutual Events Between Pluto and Charon**
Garrett Elliott[1], D. J. Tholen[2]
[1]The Ohio State University & Institute for Astronomy, University of Hawaii, [2]Institute for Astronomy, University of Hawaii.

025.11 **Obtaining An MPC Observatory Code For Arkansas Tech University**
Jason Ahrns[1], J. W. Robertson[1]
[1]Arkansas Tech University.

025.12 **Constraining the Rotational Period for Component C of the Periodic Comet 73P/Schwassmann-Wachmann 3**
Shaye Storm[1], N. Samarasinha[2], B. Mueller[3], T. Farnham[4], Y. Fernandez[5], A. Kidder[6], D. Snowden[6], M. A'Hearn[4], W. Harris[6], M. Knight[4], J. Morgenthaler[6], C. Lisse[7], F. Roesler[8]
[1]MIT, [2]NOAO & PSI, [3]PSI, [4]UMD, [5]UCF, [6]U of Wash, [7]APL/JHU, [8]U of Wisc.

025.13 **Comet 73P/Schwassmann-Wachmann 3: O(1D) and H2O Production Rates**
Tanya L. Hall[1], E. J. Mierkiewicz[2], L. M. Haffner[2], F. L. Roesler[2], W. M. Harris,[3], G. J. Madsen[4]
[1]Saint Cloud State University, [2]University of Wisconsin-Madison, [3]University of Washington, [4]Anglo-Australian Observatory, Australia.

025.14 **GALEX Observations of Comet 9P/Tempel 1 During Deep Impact**
Stephan R. McCandliss[1], P. D. Feldman[1], C. M. Lisse[2], H. A. Weaver[2], M. F. A'Hearn[3]
[1]Johns Hopkins Univ., [2]JHU/APL, [3]University of Maryland.

025.15 **Wide-field spectroscopic observations of comet C/2004 Q2 (Machholz) by GALEX**
Jeffrey P. Morgenthaler[1], W. M. Harris[1], M. R. Combi[2], P. D. Feldman[3], H. A. Weaver[4]
[1]Univ. of Washington, [2]Univ. of Michigan, [3]JHU., [4]JHU/APL.

025.16 **The Effect of the Sun's Early Environment on the Oort Cloud and Comet Showers**
Nathan A. Kaib[1], T. Quinn[1]
[1]Univ. Of Washington.

025.17 **Distribution of Ethane and Methane Emission on Neptune**
Heidi B. Hammel[1], M. L. Sitko[1], G. S. Orton[2], T. Geballe[3], D. K. Lynch[4], R. W. Russell[4], I. de Pater[5]
[1]Space Science Institute, [2]JPL, [3]Gemini, [4]The Aerospace Corp., [5]UC Berkeley.

025.18 **Origin of the Moon**
Peter D. Noerdlinger[1]
[1]St. Mary's University, Canada.

025.19 **Velocity Resolved Observations of the Extended Lunar Sodium Tail**
Michael R. Line[1], E. J. Mierkiewicz[1], F. L. Roesler[1], L. M. Haffner[1], R. J. Oliversen[2]
[1]University of Wisconsin-Madison, [2]NASA Goddard Space Flight Center.

025.20 **Advanced Computer Modeling of the Lunar Plasma Environment in the Dynamic Terrestrial Magnetosphere**
Erika Harnett[1], R. Winglee[1], J. Halekas[2]
[1]Univ. Of Washington, [2]Univ. Of California - Berkeley.

025.21 **3D Multi-Fluid Simulations of the Solar Wind Interaction with Mercury's Magnetosphere**
Ariah R. Kidder[1], R. M. Winglee[1], E. M. Harnett[1]
[1]University of Washington.

025.22 **3D Multi-fluid Simulations of Titan's Plasma Interaction**
Darci Snowden[1], R. Winglee[1]
[1]University of Washington.

Session 026 Star Clusters I

AAS Poster, Sunday, 9:20am-6:30pm, Exhibit Hall 4

026.07 **Age Distribution of Galactic Globular Clusters using HST Snapshot Photometry**
YoungDae Lee[1], S. Rey[1], Y. B. Kang[1], S. Kim[1]
[1]Chungnam National Univ., Republic of Korea.

026.08 **The Deepest UV Observations of a Globular Cluster: Preliminary Results for NGC 6681**
Jennifer L. Connelly[1], D. R. Zurek[1], M. M. Shara[1], C. Knigge[2], A. Dieball[2], K. S. Long[3]
[1]American Museum of Natural History, [2]U. Southampton, UK, [3]STScI.

026.09 **The Evolution of Horizontal Branch Stars in the Core Region of M15**
Jessica E. Castora[1], E. L. Sandquist[1]
[1]San Diego State Univ..

026.10 **The Evolved Stars of the Globular Cluster M 55**
Carlos Vargas Alvarez[1], E. Sandquist[1]
[1]San Diego State Univ..

026.11 **Washington Photometry of NGC 6441**
Joanne D. Hughes[1], G. Wallerstein[2], A. Bossi[1], W. McDougald[1], R. Covarrubias[2]
[1]Seattle Univ., [2]University of Washington.

026.12 **Spitzer Observations of Galactic Globular Clusters**
Pauline Barmby[1], M. L. Boyer[2], G. Bono[3], I. Ferraro[3], M. Marengo[1]
[1]CfA, [2]U. Minnesota, [3]INAF-Osservatorio Astronomico di Roma, Italy.

026.13 **Do the Large Magellanic Cloud and Milky Way Globular Clusters Share a Common Origin?**
Bradley E. Tucker[1], K. A. Olsen[2], B. Blum[2]
[1]Univ. Of Notre Dame, [2]Cerro Tololo Inter-American Observatory, Chile.

026.15 **CN and CH Bandstrengths in Bright Globular Cluster Red Giants**
Sarah L. Martell[1], G. H. Smith[1]
[1]UC Santa Cruz.

026.16 **Why Haven't Dense Globular Clusters Lost More Mass?**
Guido De Marchi[1], F. Paresce[2], L. Pulone[2]
[1]ESA, The Netherlands, [2]INAF, Italy.

026.17 **GRAPE6 Simulations of Star Cluster Evolution with a Hard Binary Population**
James E. Maxwell[1], H. N. Cohn[1], P. M. Lugger[1], S. D. Slavin[2]
[1]Indiana University, [2]Purdue University Calumet.

Session 027 Stellar Populations I

AAS Poster, Sunday, 9:20am-6:30pm, Exhibit Hall 4

027.01 **A Survey of Local Group Galaxies Currently Forming Stars: UBVRI Photometry of Stars in Seven Dwarfs and a Comparison with the Entire Sample**
Philip Massey[1], K. A. Olsen[2], P. W. Hodge[3], G. H. Jacoby[4], R. T. McNeill[5], R. C. Smith[6], S. B. Strong[7]
[1]Lowell Obs., [2]NOAO, Chile, [3]Univ of Washington, [4]WIYN, [5]Smith College, [6]NOAO, [7]Univ of Texas.

027.02 **Halpha Emission Line Stars in M31, M33 and Seven Local Group Dwarfs**
Reagin T. McNeill[1], P. Massey[2], K. A. Olsen[3], P. W. Hodge[4], G. H. Jacoby[5], C. Blaha[6], R. C. Smith[7], S. B. Holmes[8]
[1]Smith College, [2]Lowell Observatory, [3]NOAO, Chile, [4]University of Washington, [5]WIYN, [6]Carleton College, [7]NOAO, [8]University of Texas.

027.03 **H-alpha Photometric Survey of M33**
Cindy Blaha[1], P. Massey[2], P. Hodge[3], R. Martin[1], L. Gavilan[1], A. Adhikari[1]
[1]Carleton College, [2]Lowell Observatory, [3]University of Washington.

027.04 **The Search for Optical Counterparts to Supersoft X-ray Sources near the Nucleus of M31**
Sarah Scoles[1], B. Patel[2], R. DiStefano[3], J. Liu[3], P. Barmby[3], F. Primini[3]
[1]Agnes Scott College, [2]Tufts University, [3]Center for Astrophysics.

027.05 **The Magellanic Bridge: The Nearest Purely Tidal Stellar Population**
Jason R. Harris[1]
[1]Steward Observatory.

027.06 **Surface Brightness Fluctuations of Old Stellar Systems in UV and Optical Passbands as Population Indicators**
HyeJeon Cho[1], Y. Lee[1], S. Yoon[1]
[1]Department of Astronomy & Center for Space Astrophysics, Yonsei University, Republic of Korea.

027.07 **First Stars as a Possible Origin for the Helium-rich Population in ω Cen**
Ena Choi[1], S. K. Yi[1]
[1]Yonsei Univ., Republic of Korea.

027.08 **Measuring the Luminosity Function of Low-Mass Stars with Matched Survey Datasets**
Kevin R. Covey[1], J. J. Bochanski[2], S. L. Hawley[2], J. Davenport[2], I. Reid[3], D. Golimowski[4]
[1]Harvard Smithsonian CfA, [2]U. Washington, [3]STScI, [4]JHU.

027.09 **Substructure in the Galactic Halo**
Kenneth W. Carrell[1], R. Wilhelm[1]
[1]Texas Tech University.

027.10 **Globular Cluster Tidal Streams: An Observational Study**
William L. Powell[1], A. Lauchner[1], R. Wilhelm[1], A. McWilliam[2]
[1]Texas Tech Univ., [2]Carnegie Observatories.

Session 028 The SDSS Supernova Survey

AAS Poster, Sunday, 9:20am-6:30pm, Exhibit Hall 4

028.01 **Object Classification and Photometric Supernova Typing in the SDSS-II SN Survey**
Benjamin E. Dilday[1], SDSS-II Supernova collaboration
[1]Univ. of Chicago.

028.02 **Photometry and Light Curves for the SDSS-II SN Survey**
Jon A. Holtzman[1], SDSS-II Supernova Collaboration
[1]New Mexico State Univ..

028.03 **Follow-up Spectroscopy for the SDSS-II SN Survey**
Chen Zheng[1], SDSS-II Supernova Collaboration
[1]KIPAC.

028.04 **Core Collapse Supernova in the SDSS Supernova Survey**
David Cinabro[1]
[1]Wayne State University.

028.05 **Exploring the Variable Sky with SDSS**
Branimir Sesar[1], Z. Ivezic[1], R. H. Lupton[2], J. E. Gunn[2], G. R. Knapp[2], C. M. Rockosi[3], M. Juric[2], J. A. Smith[4], G. Miknaitis[4], H. Li[4], D. Tucker[4], D. J. Schlegel[5], D. Finkbeiner[6], N. Padmanabhan[2]
[1]Univ. Of Washington, [2]Princeton University, [3]University of California, [4]Fermilab, [5]LBNL, [6]Harvard University.

Session 029 Variable Stars

AAS Poster, Sunday, 9:20am-6:30pm, Exhibit Hall 4

029.01 **The Selection of RR Lyrae Stars Using POSS and SDSS**
Oliver J. Fraser[1], J. R. Barton[1], B. J. Oldfield[1], T. P. Biesiadzinski[1], D. A. Horning[2], J. A. Baerny[1], F. Kiuchi[1], D. Krogsrud[1], D. S. Longhurst[1], L. P. McCommas[1], J. A. Scheidt[1], R. Covarrubias[1], K. Covey[1], C. Laws[1], B. Sesar[1], Z. Ivezic[1]
[1]Univ. of Washington, [2]Bainbridge High School.

029.02 **Using RR Lyrae Stars to Proble the M33 Halo**
Barton J. Pritzl[1], M. Buttermore[1], A. Saha[2], E. D. Skillman[3], K. A. Venn[4], H. L. Morrison[5], E. W. Olszewski[6]
[1]Macalester College, [2]NOAO, [3]University of Minnesota, [4]University of Victoria, Canada, [5]Case Western Reserve University, [6]Steward Ob..

029.03 **The V-R Color of RR Lyrae Stars at Minimum Light**
Andrea M. Kunder[1], B. Chaboyer[1], A. Layden[2]
[1]Dartmouth College, [2]Bowling Green State University.

029.04 **Photometric Observations of RR Lyrae Stars at Red Buttes Obs.**
Frances Rivera[1], R. Ressler[1], K. Kinemuchi[1], H. A. Smith[2]
[1]University of Wyoming, [2]Michigan State University.

029.05 **SMC RR Lyr Abundances from Caby Photometry**
Scott R. Baird[1], H. A. Smith[2], S. C. Keller[3], K. H. Cook[4], A. R. Walker[5]
[1]Benedictine College & U. Kansas, [2]Michigan State U., [3]Mount Stromlo Obs., Australia, [4]LLNL, [5]CTIO, Chile.

029.06 **A Photometric Study of Starspot Evolution on HIP 106231**
Robert O. Harmon[1], R. M. Roettenbacher[1]
[1]Ohio Wesleyan University.

029.07 **Variable Stars in the LMC Globular Cluster NGC 1754**
Charles A. Kuehn, III[1], L. Taylor[2], H. A. Smith[1], M. Catelan[3], B. J. Pritzl[4], N. De Lee[1]
[1]Michigan State University, [2]Transylvania University, [3]Pontificia Universidad Catolica de Chile, Chile, [4]Macalester College.

029.08 **The Secret Lives of Cepheids: Discovery of Strong FUV Emissions in the Classical Cepheids Polaris and beta Dor**
Scott G. Engle[1], E. F. Guinan[1], N. R. Evans[2]
[1]Villanova Univ., [2]Harvard-Smithsonian CfA.

029.09 **Correlation of R Cassiopeia's SiO Maser Properties**
Anne Hayes[1], G. McIntosh[1]
[1]University of Minnesota, Morris.

029.10 **APT Observations of the Bright Cepheid HD 32456**
William Z. Taylor[1], R. J. Dukes, Jr.[1]
[1]College of Charleston.

029.11 **Frequency Determination for the Slowly Pulsating B Star, HD21071, From Combined Geneva and Stromgren Photometry**
Melissa Sims[1], R. J. Dukes, Jr.[1]
[1]College of Charleston.

029.12 **Frequency Determinations of Five Slowly Pulsating B Stars**
Joseph Bramlett[1], R. J. Dukes, Jr.[1]
[1]College of Charleston.

029.13 **Spitzer 24μ and 70μ Imagery of Symbiotic Stars with Extended Nebular Ejecta**
Bruce McCollum[1], F. C. Bruhweiler[2], G. M. Wahlgren[3], M. Eriksson[3], A. Rosas[4], E. Verner[5]
[1]IPAC/SSC, [2]CUA/GSFC, [3]Lund Obs., Sweden, [4]CUA, [5]CUA/UDC/GSFC.

029.14 **Fast-Drifting Radio Bursts Seen on the Flare Star AD Leo with the Arecibo Observatory**
Rachel A. Osten[1], T. Bastian[2]
[1]University of Maryland, [2]National Radio Astronomy Observatory.

029.15 **VLA Imaging of Cyngus X-3 Jets at 8.5 GHz**
Catherine A. Whiting[1], M. Rupen[2], A. Mioduszewski[2]
[1]University of Iowa/ NRAO, [2]NRAO.

029.17 **Photometric and Spectroscopic Observations of Two delta Scuti Variable: V919 Herculis and V927 Herculis**
Charles R. Phillips[1], E. G. Hintz[1]
[1]Brigham Young University.

029.18 **An Analysis of the Variable Star V577 Ophiuchi**
Christine Forsyth[1], E. G. Hintz[2]
[1]Bryn Mawr College, [2]Brigham Young Univ..

029.19 **Rotational Velocities of delta Scuti Variable Stars**
Tabitha C. Bush[1], E. G. Hintz[1]
[1]Brigham Young Univ..

029.20 **The Curious Case of GSC3196-641: Double-mode RR Lyrae or a Spotted Rotating Star?**
Michael Koppelman[1], R. Huziak[2], V. Petriew[3]
[1]Univ. of Minnesota, [2]Univ. of Saskatchewan, Canada, [3]AAVSO.

Session 030 YSO / Star Formation I

AAS Poster, Sunday, 9:20am-6:30pm, Exhibit Hall 4

030.01 **Stellar and Circumstellar Properties of Class I Protostars**
Kelly Lockhart[1], L. Prato[2], C. M. Johns-Krull[3], J. T. Rayner[4]
[1]Rice U., Lowell Obs., [2]Lowell Obs., [3]Rice U., [4]IfA, U. Hawaii.

030.02 **An Unbiased Statistical Study of Herbig AeBe Eystems in the X-rays Using Chandra**
Murad Hamidouche[1], S. Wang[1], L. W. Looney[1]
[1]Univ. of Illinois.

030.03 **Search for Close Binaries of Herbig Ae/Be Stars**
Maria J. Cordero[1], S. Thomas[2], N. van der Bliek[3], B. Rodgers[4], G. Doppmann[4], A. Sweet[5]
[1]Pontificia Universidad Catolica de Chile, Chile, [2]UC Santa Cruz, [3]CTIO, Chile, [4]Gemini South Observatory, Chile, [5]Macalester College.

030.04 **Wide-Field NIR Polarimetry of the Orion Nebula**
Nobuhiko Kusakabe[1], M. Tamura[1], R. Kandori[1], J. Hashimoto[2], Y. Nakajima[1], T. Nagayama[3], C. Nagashima[4], T. Nagata[3], J. H. Hough[5]
[1]National Astronomical Observatory, Japan, [2]Tokyo University of Science, Japan, [3]Kyoto University, Japan, [4]Nagoya University, Japan, [5]University of Hertfordshire, United Kingdom.

030.05 **Spitzer IRAC and MIPS Observations toward High-mass Star Forming Regions**
Keping Qiu[1], Q. Zhang[1], R. A. Gutermuth[1], T. S. Megeath[2], H. Beuther[3], T. K. Sridharan[1], D. S. Shepherd[4], L. Testi[5], C. G. De Pree[6]
[1]Harvard-Smithsonian Center for Astrophysics, [2]University of Toledo, [3]MPI for Astronomy, Germany, [4]NRAO, [5]Osservatorio Astrofisico di Arcetri, Italy, [6]Dept. of Physics and Astronomy, Agnes Scott College.

030.06 **Lithium Depletion in the Beta Pictoris Moving Group**
Jennifer C. Yee[1], E. L. Jensen[1], B. E. Reaser[1]
[1]Swarthmore College.

030.07 **A Search for OH Maser Emission In Bright-Rimmed Clouds**
Kristen L. Thomas[1], L. K. Morgan[1], J. S. Urquhart[2], M. A. Thompson[3]
[1]NRAO, [2]University of Leeds, UK, [3]The University of Hertfordshire, UK.

030.08 **A Mid-Infrared Survey of Class I/Flat-Spectrum Binary/Multiple Systems**
Karl E. Haisch, Jr.[1], M. Barsony[2], M. E. Ressler[3], T. P. Greene[4]
[1]Utah Valley State College, [2]San Francisco State University, [3]NASA JPL, [4]NASA Ames Research Center.

030.09 **CO Emission from the Inner Regions of Disks with Dust Clearing**
Joanna M. Brown[1], G. A. Blake[1], C. Salyk[1], A. C. Boogert[2]
[1]Caltech, [2]AURA/NOAO-South, Chile.

030.10 **Fission of Rapidly Rotating Protostars**
Jennifer L. Lozier[1], S. Michael[2], R. H. Durisen[2], J. N. Imamura[3]
[1]Mount Union College, [2]Indiana University, [3]University of Oregon.

030.11 **Formaldehyde Emission From Protostellar Region L1448IRS3**
Claire M. Davy[1], J. Mangum[2], A. Wootten[2]
[1]Bryn Mawr College, [2]NRAO.

030.12 **A Search for Young Stellar Objects in the Horsehead Nebula**
Brendan P. Bowler[1], W. H. Waller[1], S. T. Megeath[2], B. M. Patten[3], M. Tamura[4]
[1]Tufts University, [2]University of Toledo, [3]NSF, CfA, [4]NAOJ, Japan.

030.13 **Outflow Evolution in Turbulent Clouds**
Andrew Cunningham[1], A. Frank[1], A. C. Quillen[1], E. G. Blackman[1]
[1]University of Rochester.

030.14 **Protostellar Outflows and their Influence on the Star Formation Process**
Hector G. Arce[1]
[1]Am. Museum of Natural History.

030.15 **Photometric Monitoring of the PMS Object Walker 90**
Michael D. Joner[1]
[1]Brigham Young Univ..

030.16 **The Taurus Spitzer Legacy Project**
Deborah Padgett[1], M. Fukagawa[2], L. Rebull[1], A. Noriega-Crespo[1], S. Carey[1], K. Stapelfeldt[3], L. Hillenbrand[1], T. Huard[4], S. Terebey[5], D. Hines[6], T. Brooke[1], C. McCabe[3], M. Guedel[7], G. Knapp[8], M. Audard[9], F. Menard[10], J. Monin[10], C. Dougados[10], N. Evans[11], L. Allen[4], S. Strom[12], P. Harvey[11]
[1]California Institute of Technology, [2]Nagoya University, Japan, [3]JPL, [4]Harvard-Smithsonian CfA, [5]California State U., Los Angeles, [6]Space Science Institute, [7]Paul Sherrer Institut, Switzerland, [8]Princeton U., [9]U. Geneva, Switzerland, [10]Obs. du Grenoble, France, [11]U. Texas, [12]NOAO.

030.17 **Millimeter-Wavelength Methanol Masers in New Galactic Sources**
Jenna J. Lemonias[1], V. Strelnitski[2], P. Pratap[3]
[1]Vassar College, [2]Maria Mitchell Observatory, [3]MIT Haystack Observatory.

030.18 **Class I Methanol Masers in the DR21 Star Forming Complex**
Samantha Hoffmann[1], P. Pratap[2], V. Strelnitski[3]
[1]Texas Lutheran University and MIT Haystack Observatory, [2]MIT Haystack Observatory, [3]Maria Mitchell Observatory.

030.19 **Short-term Variations in the Class I Methanol Maser Line at 44 GHz**
Preethi Pratap[1], S. Hoffmann[1], V. Strelnitski[2]
[1]MIT Haystack Obs., [2]Maria Mitchell Observatory.

030.20 **A New Low-Mass, Pre-Main Sequence Eclipsing Binary in Orion: Precise Mass Determinations of System Components**
Phillip Cargile[1], K. G. Stassun[1], R. Mathieu[2]
[1]Vanderbilt Univ., [2]Universtiy of Wisconsin.

030.21 **Star Formation in Bright-Rimmed Clouds**
Sarah Ballard[1], L. Allen[2], R. Gutermuth[2]
[1]UC Berkeley, [2]Harvard-Smithsonian Center for Astrophysics.

Job Center

Attendee Services, Sunday, 9:20am-5:00pm, Exhibit Hall 4

The AAS Job Center will be operated as normal at the Seattle Meeting Washington.

The Job Center is designed to facilitate as many informal interviews as possible. It is our hope that successful formal interviews will be the next step for everyone.

Employers: If you are planning to conduct interviews in Calgary, please let us know. Send your name, institution and position for which you will be interviewing to jobs@aas.org

Job Seekers: To participate, please submit your resume and cover sheet to jobs@aas.org at the AAS Executive Office by 15 December 2006.

For more details access, http://members.aas.org/JobReg/JRIncludes/jobcen.cfm.

Session 500 Gadgets and Gizmos

Attendee Services, Sunday, 9:20am-5:00pm, South Lobby

If you're interested in sharing educational materials you've developed, adapted and used, whether you're new to teaching or an old hand, this session is for you. Suitable demonstrations include interactive web tools (applets, immersive experiences, touch screens), instructional software, remote observing tools, audience response systems ("clickers"), wireless delivery of content to handheld devices, laboratory activities, planetarium programs, etc., etc., and, of course, real gadgets and gizmos. Only non-commercial educational products, for any level and for any audience, are appropriate for this forum. Presenters may distribute materials – print, CD, DVD -- but not conduct sales.

Gadgets and Gizmos will be located in the main lobby right across from the Exhibit Hall and between the Cyber Café and the registration area. It will be open throughout the week to give everyone the opportunity for a hands-on experience. If you are interested in using this forum, or have questions about the suitability of an idea or technology, please email deustua@aas.org.

Registration: If you wish to be a presenter, please fill out the registration form at www.aas.org/meetings/gadgetregform.php. The deadline is 18 October 2006. G&G registrations received by the deadline will be included in the meeting program book. Please remember to provide a title, brief description of your demonstration to and note any specific display, space, electrical and internet requirements as well as the times you will be present. We do ask that your demonstrations be as stand alone as possible as during peak usage times internet access at the convention center can be limited. There may be a fee for internet connections and computer rentals. Presenting at G&G does not count against the one-author rule for contributed papers.

Chair, Susana E. Deustua[1]
[1]*American Astronomical Society.*

Session 031 Clickers in Astronomy Teaching

AAS Special, Sunday, 10:00-11:30am, 201

Chair, Douglas K. Duncan[1]
[1]*Univ. of Colorado.*

031.01 **Success and Failure Using Student Response Systems: "Clickers"**
Douglas K. Duncan[1]
[1]*Univ. of Colorado.*

031.02 **Clickers at UMass: a successful program of campus-wide implementation**
Stephen Schneider[1]
[1]*UMass.*

031.03 **To Click or Not to Click is Not the Question: How Research with Clickers Develops a Better Understanding of When Learning Happens in Your Classroom**
Edward Prather[1], **T. F. Slater**[1], **G. Brissenden**[1], **E. F. Dokter**[1]
[1]*Univ. of Arizona.*

031.04 **Interactive Learning and "Clickers"**
Alexander Rudolph[1]
[1]*California Polytechnic Univ..*

Session 032 The SDSS Supernova Survey

AAS Special, Sunday, 10:00-11:30am, 204

Chair, Joshua Frieman[1]
[1]*Fermi Nat'l. Accelerator Lab..*

032.01 **Overview of the SDSS Supernova Survey: the First Two Seasons**
Andrew C. Becker[1]
[1]*Univ. of Washington.*

032.02 **SDSS SN Hubble Diagram: First Cosmology Results**
Hubert Lampeitl[1], **SDSS-II Supernova collaboration**
[1]*Space Telescope Science Institute.*

032.03 **The Supernova Ia Rate at z~0.1**
Richard Kessler[1]
[1]*University of Chicago.*

032.04 **Peculiar Supernovae in the SDSS-II SN Survey**
Jose L. Prieto[1], **SDSS-II Supernova Survey Collaboration**
[1]*Ohio State University.*

032.05 **Studies with 'Purely Photometric' Supernovae from SDSS-II**
Masao Sako[1], **SDSS-II Supernova Survey Collaboration**
[1]*Univ. Pennsylvania.*

Session 033 HAD I

HAD Special, Sunday, 10:00-11:30am, 6A

Chair, Donald K. Yeomans[1]
[1]*JPL.*

033.01 **Astronomical Instruments of Ignazio Porro (1801-1875)**
Peter Abrahams[1]
[1]*Independent.*

033.02 **The Discovery of an 1862 Drawing of M 51, the Whirlpool Nebula**
Jay B. Holberg[1], **W. Tobin**[2]
[1]*Univ. of Arizona,* [2]*Vannes, France.*

033.03 **Radar and Meteors: Controversy over the Origin of Meteors in Postwar Astronomy**
Woodruff T. Sullivan, III[1]
[1]*Univ. of Washington.*

033.04 **Frank Ross's Early Orbits of the First Irregular Satellites of Saturn and Jupiter**
Donald E. Osterbrock[1]
[1]*UCO\Lick Observatory.*

Session 034 Accretion, Accretion Disks and Outflows

AAS Oral, Sunday, 10:00-11:30am, 613-14

034.02 **High Velocity Outflows in Quasars**
Paola Rodriguez[1], **F. Hamann**[1], **D. Nestor**[2]
[1]*Univ. of Florida,* [2]*Univ. of Cambridge, United Kingdom.*

034.04 **The Hard X-ray Spectral Slope as an Accretion-Rate Indicator in Radio-Quiet Active Galactic Nuclei**
Ohad Shemmer[1], **W. N. Brandt**[1], **H. Netzer**[2], **R. Maiolino**[3], **S. Kaspi**[2]
[1]*Pennsylvania State University,* [2]*Tel Aviv University, Israel,* [3]*INAF - Osservatorio Astrofisico di Arcetri, Italy.*

034.05 **Accretion Disk Temperatures and Continuum Colors in QSOs**
Erin W. Bonning[1], **G. A. Shields**[2], **S. Salviander**[2], **L. Cheng**[2], **K. Gebhardt**[2]
[1]*Obs. de Paris-Meudon, France,* [2]*University of Texas at Austin.*

034.06 **Interpreting the Variability of Double-Peaked Emission Lines using Accretion Disk Models**
Helene Flohic[1], **M. Eracleous**[1]
[1]*Pennsylvania State Univ..*

034.01D **Revisiting Standard Helium-like X-ray Diagnostics**
Ryan Porter[1], **G. Ferland**[1]
[1]*Univ. Of Kentucky.*

034.03D **A Sptizer Infrared and Chandra X-ray study of LINERs: A Link Between Star Formation, AGN Fueling, and Mass Accretion**
Rachel Dudik[1], **S. Satyapal**[1], **R. M. Sambruna**[2], **E. Dwek**[2], **M. Gliozzi**[1]
[1]*George Mason Univ.,* [2]*Goddard Space Flight Center.*

Session 035 Astrobiology & The Solar System

AAS Oral, Sunday, 10:00-11:30am, 611-12

035.01 **Near-Infrared Spectra of UV Photolyzed Astrophysical Ice Mixtures**
Perry A. Gerakines[1], **C. R. Richey**[1]
[1]*University of Alabama at Birmingham.*

035.02 **Detection of 13C Isotopomers of Molecule HC7N**
Glen Langston[1], **B. Turner**[1]
[1]*NRAO.*

035.03 **Life on Mars? - Reinterpretation of the Viking Life Detection Experiments: A Possible Biogenic Origin of Hydrogen Peroxide**
Dirk Schulze-Makuch[1], **J. M. Houtkooper**[2]
[1]*Washington State University,* [2]*Justus-Liebig University, Germany.*

035.04 **New Exploration on What is Life?**
D. K. Perkins[1]
[1]*Saratoga, CA.*

035.05 **Charge-Exchange Induced X-rays in the Martian Exosphere**
Dimitra Koutroumpa[1], **R. Lallement**[1], **R. Modolo**[2], **G. Chanteur**[2], **V. Kharchenko**[3]
[1]*Service D'Aéronomie, France,* [2]*Centre d'Etude des Environnements Terrestre et Planétaires, France,* [3]*Harvard-Smithsonian CfA.*

035.06 **Science Results from the Stardust Comet Sample Return Mission: Large Scale Mixing in the Solar Nebula and the Origin of Crystalline Silicates in Circumstellar Disks**
Donald E. Brownlee[1], Stardust Mission Team
[1]Univ. of Washington.

035.07 **Simulating Supernova Injection of Short Lived Radionuclides with Consideration of the Solar Birth Environment**
Keith W. Davis[1], M. D. Leising[1]
[1]Clemson Univ..

Session 036 Black Holes

AAS Oral, Sunday, 10:00-11:30am, 608-10

036.01 **Quasi-Periodic Oscillations and Spectral Behaviour of XTE 1859+226. QPO Frequency - Spectral Index Correlation and the Mass of the Central Object.**
Nikolai Shaposhnikov[1], R. Fiorito[2], L. Titarchuk[3]
[1]NASA's GSFC, [2]NASA's GSFC/UMD, [3]NASA's GSFC/GMU/NRL.

036.02 **Fundamental Parameters of Galactic Black Holes from SIM Planetquest**
Xiaopei Pan[1], S. Shaklan[1]
[1]JPL.

036.03 **Black Hole Formation in Galactic X-Ray Binaries**
Bart Willems[1], T. Fragos[1], V. Kalogera[1]
[1]Northwestern University.

036.07 **Seeing the Wiggle: High Resolution Imaging of SS433 with the VLBA**
Amy J. Mioduszewski[1], M. P. Rupen[1]
[1]NRAO.

036.08 **Recent Optical Observations of the Microquasar SS 433**
Todd C. Hillwig[1], D. Gies[2]
[1]Valparaiso Univ., [2]Georgia State Univ..

36.06 **Gravitational Waves From The Hierarchical Buildup Of Intermediate Mass Black Holes**
Miroslav Micic[1], S. Sigurdsson[1], K. Holley-Bockelmann[1], T. Abel[2]
[1]Pennsylvania State Univ., [2]Stanford University.

Session 037 Dark Matter, Dark Energy and Lensing

AAS Oral, Sunday, 10:00-11:30am, 605-07

037.01 **The Search for Dark Matter and New Physics using the Gamma Ray Large Area Space Telescope (GLAST) Large Area Telescope (LAT)**
Lawrence L. Wai[1], GLAST LAT Collaboration
[1]Kavli Institute for Particle Astrophysics and Cosmology.

037.02 **Gamma-rays from Dark Matter in the Galactic Center**
Douglas P. Finkbeiner[1]
[1]Harvard University.

037.03 **Discovery of a Dark Matter Ring in the Core of the Galaxy Cluster CL0024+17 at z=0.4**
Myungkook J. Jee[1], H. C. Ford[1], G. D. Illingworth[2], R. L. White[3], T. J. Broadhurst[4], D. A. Coe[1], G. R. Meurer[1], A. van der Wel[1], ACS Science Team
[1]Johns Hopkins Univ., [2]University of California, Santa Cruz, [3]Space Telescope Science Institute, [4]Tel Aviv University, Israel.

037.04 **Evidence for a New Force in the Dark Sector?**
Glennys R. Farrar[1], R. A. Rosen[1]
[1]New York Univ..

037.06 **Dark Energy Search: Current Status and Future Prospects**
Yun Wang[1]
[1]Univ. of Oklahoma.

037.07 **Dark Matter in Galaxy Cluster 1E0657-56: Measuring the Invisible With Gravitational Lensing**
Marusa Bradac[1], D. Clowe[2], A. Gonzalez[3], P. Marshall[1], W. Forman[4], C. Jones[4], M. Markevitch[4], S. Randall[4], T. Schrabback[5], D. Zaritsky[6]
[1]KIPAC/Stanford, [2]Ohio University, [3]University of Florida, [4]Harvard-Smithsonian Center for Astrophysics, [5]AIfA, Germany, [6]Steward Observatory.

037.05D **Simulations of Dark Matter Bound to the Solar System**
Annika Peter[1]
[1]Princeton Univ..

Session 038 Feedback and Mergers in Galaxy Evolution

AAS Oral, Sunday, 10:00-11:30am, 3B

038.01 **AGN Feedback Regulating Early-type Galaxy Evolution**
Kevin Schawinski[1], S. Khochfar[1], S. K. Yi[2], S. Kaviraj[1], GALEX Science Team
[1]Oxford Astrophysics, United Kingdom, [2]Yonsei Univ., Republic of Korea.

038.03 **The Evolution of the Massive Galaxy Luminosity Function Over Half of Cosmic History**
Richard J. Cool[1], D. J. Eisenstein[1]
[1]Univ. of Arizona.

038.04 **Understanding Galaxies in Pairs**
Elizabeth J. Barton[1], A. R. Zentner[2], J. S. Bullock[1], R. H. Wechsler[3]
[1]UC, Irvine, [2]KICP and U. Chicago, [3]KIPAC and Stanford University.

038.06 **The Asymmetric Relations among Galaxy Color, Structure, and Environment**
Alejandro D. Quintero[1], A. Berlind[2], M. R. Blanton[2], D. W. Hogg[2]
[1]Steward Observatory, [2]New York University.

038.07 **The Role of Galaxy Interactions and Mergers in Star Formation at z<1.3: Mid-Infrared Properties in the Spitzer First Look Survey**
Carrie Bridge[1], P. N. Appleton[2], C. J. Conselice[3], P. Choi[2], L. Armus[2], D. T. Fadda[2], S. Laine[2], F. R. Marleau[2], R. G. Carlberg[1], G. Helou[2], L. Yan[2]
[1]University of Toronto, Canada, [2]Spitzer Science Center, [3]University of Nottingham, United Kingdom.

038.02D **Star Formation and Supernova Feedback in Smoothed Particle Hydrodynamic Simulations of Galaxy Formation**
Gregory S. Stinson[1], T. Kaufmann[2], T. Quinn[1], C. Christensen[1], J. Wadsley[3], S. Kazantzidis[4]
[1]Univ. Of Washington, [2]Univ. of California, Irvine, [3]McMaster University, Canada, [4]KITP.

038.05D **Dynamic and Spatial Properties of Satellites in Isolated Galactic Systems**
Abel Diaz[1], R. Wilhelm[1]
[1]Texas Tech University.

Session 039 Starburst Galaxies: Analogs of Lyman Break Galaxies?

AAS Oral, Sunday, 10:00-11:30am, 6B

039.01 **The Young and The Dustless: Constraining the Star Formation History and Dust Content of Ultraviolet Luminous Galaxies using GALEX UV and Radio Observations**
Antara Basu-Zych[1], D. Schiminovich[1], Galex Science Team
[1]Columbia University.

039.03 **HST/STIS Spectroscopy of Ionized Gas in the M82 Starburst Core**
Linda J. Smith[1], M. S. Westmoquette[2], J. S. Gallagher, III[3], R. W. O'Connell[4], D. J. Rosario[4], R. de Grijs[5]
[1]Space Telescope Science Institute, [2]University College London, United Kingdom, [3]University of Wisconsin-Madison, [4]University of Virginia, [5]University of Sheffield, United Kingdom.

039.04 **Spitzer ISM Studies of Low Metallicity Starbursts**
Brian O'Halloran[1], S. Satyapal[1], R. Dudik[1]
[1]George Mason Univ..

039.02D **A FUSE Survey of Starburst Galaxies: Galactic Feedback from Star Formation**
John P. Grimes[1], T. Heckman[1], A. Aloisi[2]
[1]Johns Hopkins Univ., [2]Space Telescope Science Institute.

Session 040 Stellar Populations

AAS Oral, Sunday, 10:00-11:30am, 3A

040.02 **Theoretical Realization of Near-IR Photometry of Magellanic Star Clusters**
Hyun-chul Lee[1], G. Worthey[1]
[1]Washington State Univ..

040.05 **White Dwarfs in the Galaxy**
Stephane Vennes[1], A. Kawka[2]
[1]Florida Institute of Technology, [2]Astronomical Institute AV CR, Czech Republic.

040.01D **Detailed Properties of Populous Clusters in the Large Magellanic Cloud**
Aaron J. Grocholski[1], A. Sarajedini[1], A. A. Cole[2], D. Geisler[3], K. A. Olsen[4], G. P. Tiede[5], V. V. Smith[6], C. L. Mancone[1]
[1]Univ. of Florida, [2]Univ. of Minnesota, [3]Univ. de Concepcion, Chile, [4]CTIO, Chile, [5]Bowling Green State Univ., [6]US Gemini Project, Chile.

40.03 **Self-Consistent Stellar Evolution Models with Updated Physics and Variable Abundances**
Aaron L. Dotter[1], B. Chaboyer[1], E. Baron[2], J. W. Ferguson[3], D. Jevremovic[2], H. Lee[4], G. Worthey[4]
[1]Dartmouth College, [2]University of Oklahoma, [3]Wichita State University, [4]Washington State University.

040.04D **Bulge Formation Scenarios vs. the Observations**
Grant Newsham[1]
[1]The Ohio State University.

Session 041 Integrating Mechanics with Computer Modeling

AAPT Invited, Sunday, 10:00-11:30am, 616

Chair, Wolfgang Christian[1]
[1]Davidson College.

041.01 **Computation in Classical Mechanics with Easy Java Simulations (EJS)**
Anne J. Cox[1]
[1]Eckerd College.

041.02 **Introducing Computational Approaches in Intermediate Mechanics**
David M. Cook[1]
[1]Lawrence University.

Session 042 Physics: Something for Everyone

AAPT Invited, Sunday, 10:00-11:30am, 303

Chair, Kenneth Heller[1]
[1]Univ of Minnesota.

042.01 **The Physics Force - Physics for Ages 6 to 106**
E. D. Dahlberg[1], C. Falco[2], I. K. Schuller[3]
[1]University of Minnesota, [2]University of Arizona, [3]University of California - San Diego.

042.02 **The Science of Optics; the History of Art**
Charles M. Falco[1]
[1]University of Arizona.

042.03 **Science as Entertainment: Making of a Scientific Movie**
Ivan K. Schuller[1]
[1]UC, San Diego.

Session 043 Optics Education in the Middle Schools

AAPT Special, Sunday, 10:00-11:30am, 310

Chair, Robert T. Sparks[1]
[1]National Optical Astronomy Observatory.

043.01 **LITE, Optics, Color and Vision**
Kenneth Brecher[1]
[1]Boston University.

043.02 **Science beyond the Classroom: Hands-On Optics and the Boys and Girls Club**
Erin F. Dokter[1], C. Walker[2], C. Peruta[1], C. Ubach[1], R. Sparks[2], S. Pompea[2]
[1]University of Arizona, [2]National Optical Astronomy Observatory.

043.03 **Middle School Optics Education: Hitting the Target or Impedance Mismatch?**
Stephen M. Pompea[1], C. E. Walker[1], R. T. Sparks[1]
[1]National Optical Astronomy Observatory.

Session 044 Interactive Lecture Demonstrations using Physics Suite Materials

AAPT Panel, Sunday, 10:00-11:30am, 617

Co-presented with Ronald Thornton, Tufts Univ., and Priscilla Laws, Dickinson College The results of physics education research and the availability of microcomputer-based tools have led to the development of the activity-

based Physics Suite. Most of the Suite materials are designed for hands-on learning, for example student-oriented laboratory curricula like RealTime Physics. One reason for the success of these materials is that they encourage students to take an active part in their learning. This interactive session will demonstrate--through active audience participation?Suite materials designed to promote active learning in lecture?Interactive Lecture Demonstrations (ILDs). The demonstrations will be drawn from energy, heat and thermodynamics, oscillations and waves, electricity and magnetism, light and optics. Results of studies on the effectiveness of this approach will be presented. This session should be of special interest to teachers of large lecture classes as well as those who teach small classes where only one computer is available.

Chair, David Sokoloff[1]
[1]University of Oregon.

Session 045 Innovations in High School Physics, Part I

AAPT Special, Sunday, 10:00-11:30am, 307-08

Chair, Thomas F. Haff[1]
[1]Issaquah High School.

045.01 **Seattle Area High School Astronomy Projects: 4 local teachers present their work with students.**
Eric C. Muhs[1]
[1]Roosevelt High School.

Session 046 Innovations in Teaching Astronomy

AAPT Oral, Sunday, 10:00-11:30am, 615

Chair, Janelle M. Bailey[1]
[1]Univ. Nevada, Las Vegas.

046.01 **Survey Instrument Probing Student Understanding of the Greenhouse Effect**
John M. Keller[1], T. F. Slater[2], E. E. Prather[2]
[1]Cal Poly San Luis Obispo, [2]University of Arizona.

046.02 **Misconceptions in Astronomy and Physics**
Andy Veh[1]
[1]Kenai Peninsula College.

046.03 **Ranking Tasks for Assessing Conceptual and Quantitative Understanding in Astronomy**
Edward E. Prather[1], T. F. Slater[1], D. Loranz[2]
[1]U. Arizona CAPER Team, [2]Truckee Meadows Community College.

046.04 **Sorting Tasks and Vocabulary-in-Context Activities for Assessing Introductory Astronomy Understanding**
Timothy F. Slater[1], D. Loranz[2], E. E. Prather[1]
[1]U. Arizona CAPER Team, [2]Truckee Meadows Community College.

046.05 **Visual Activities for Assessing Non-science Majors' Understanding in Introductory Astronomy**
Daniel Loranz[1], E. E. Prather[2], T. F. Slater[2]
[1]Truckee Meadows Community College, [2]University of Arizona CAPER Team.

046.06 **A New Chart and Teaching Materials on Cosmology from CPEP**
G Samuel Lightner[1], M. Cherney[2], G. Aubrecht[3], R. Reiland[4]
[1]Westminster College, [2]Creighton University, [3]The Ohio State University, [4]Shady Side Academy.

046.07 **Asteroids and LSST EPO**
Robert T. Sparks[1], S. K. Croft[1], S. M. Pompea[1]
[1]National Optical Astronomy Observatory.

Multicultural Luncheon

AAPT Event, Sunday, 11:30 am - 1:00 pm, 618-20
Enjoy a buffet of multicultural foods and hear a guest speaker: Ben Franklin. Now that his 300th birthday celebration is now over, he has some time to spend with us!
Tickets: $35

Session 047 Pierce Prize in Astronomy

Plenary, Sunday, 11:40am-12:30pm, Ballroom 6

047.01 **Bubbles, Bow Shocks and B Fields: The Interplay Between Neutron Stars and Their Environments**
Bryan M. Gaensler[1]
[1]The University of Sydney, Australia; Harvard-Smithsonian Center for Astrophysics.

Accessing and Using Sloan Digital Sky Survey Data

AAS Splinter Meeting, Sunday, 12:30-2:00pm, 608

Presentations of a few specific cases showing astronomers how to access data from the Sloan Digital Sky Survey, with questions and answers from Jordan Raddick and other members of the SDSS collaboration. The session will be similar to the session given at the summer meeting in Calgary.

Chair, Jordan Raddick[1]

[1]*Johns Hopkins University.*

NSF Town Hall

AAS Town Hall Meeting, Sunday, 12:45-1:45pm, 6A

The Division of Astronomical Sciences of NSF will continue its discussion with the community at this town meeting. Staff will provide updates on the status of the NSF and Divisional budgets, highlight new and continued funding opportunities, and discuss ongoing strategic planning and coordination with other agencies. Updates will be provided on the activities of the senior review being carried out by the Division with a discussion of its recommendations should they be available at the time of the meeting. The majority of the session will be reserved for questions and discussion.

Chair, Eileen D. Friel[1]

[1]*NSF.*

Committee on the Status of Women in Astronomy

AAS Splinter Meeting, Sunday, 1:00-2:00pm, 613

The CSWA session will focus on one specific recommendation from the list of Pasadena Recommendations. This recommendation was for the AAS to commission a longitudinal study of young women and men in astronomy, tracking both those that remain in the field and those that choose to leave. The CSWA has facilitated the formation of a group of people interested in actively working on a longitudinal study of the career paths of women in astronomy, and requested that that group use this session to provide the broader astronomical community insight into their process.

The CSWA session will begin with an overview of the current status of statistics on the career paths of astronomers, and the clear need for a well-defined longitudinal study. The Longitudinal Study committee will then report on how they defined the overall goals of the study, selected an initial target group of participants, and formulated a first survey. This survey is undergoing final revisions. The study is supported by the American Institute of Physics, and the CSWA is proposing to secure additional seed funding for the first phase of the study from the AAS.

There will be significant time for questions and discussion. We look forward to seeing you there!

Chair, Patricia Knezek[1]

[1]*WIYN Consortium, Inc..*

How to Spend Limited Resources

AAPT Crackerbarrel, Sunday, 1:00-2:00pm, 615

Equipment budgets can be very tight, especially given the costs of educational apparatus and software. This is especially true for the high school teacher. How can you optimize your equipment budget to give you the most "bang for the buck?" Attendees are invited to bring their questions (and solutions!) about how to address this issue.

Chair, Gregory Puskar[1]

[1]*West Virginia University.*

Professional Concerns of Junior Faculty in PER

AAPT Crackerbarrel, Sunday, 1:00-2:00pm, 211

Participants will interactively discuss matters of professional concerns to junior faculty in PER. Please come prepared to tell us your situation, exchange ideas, ask questions, make suggestions, share a problem, share a solution, etc.

Chair, Rachel E. Scherr[1]

[1]*University of Maryland.*

See Spot Run, See Spot Run from Astronomy Teaching

AAPT Crackerbarrel, Sunday, 1:00-2:00pm, 616

In early childhood and elementary education, science topics are usually avoided by teachers, yet astronomy is among the science topics craved by their students. This crackerbarrel is for anyone who uses astronomy and space science to inspire young learners or their teachers. We will share strategies, activities, and heartbreaks.

Chair, Thomas M. Foster[1]

[1]*Southern Illinois University Edwardsville.*

PhysicsFirst Crackerbarrel

AAPT Crackerbarrel, Sunday, 1:00-2:00pm, 310

This session highlights the current status of the PhysicsFirst movement as a way to engage more students in learning physics. If you have a success story, or an unsucess story, we would like to hear about your experiences with implementing a PhysicsFirst approach at your school. Everyone is invited to join the discussion and/or present your story as a poster display.

Chair, Olga Livanis[1]

[1]*Stuyvesant HS.*

Session 048 Cool Astronomy For Everyone

AAS Special, Sunday, 2:00-3:30pm, 613-14

Chair, Susana E. Deustua[1]

[1]*American Astronomical Society.*

048.01 **Fusion Confusion: Assessing What Students Know (and Don't Know) About Stars**
Janelle M. Bailey[1], **E. E. Prather**[2], **B. Johnson**[2], **T. F. Slater**[2]
[1]*Univ. Nevada, Las Vegas,* [2]*Univ. Arizona.*

048.02 **Transients in 10 seconds or less: catching Gamma-Ray Bursts in the act with ROTSE**
Eli S. Rykoff[1]
[1]*Univ. of Michigan.*

Session 049 Cosmic Microwave Background

AAS Special, Sunday, 2:00-3:30pm, 6A

Chair, John Mather[1]

[1]*NASA Goddard Space Flight Center.*

049.01 **Introduction to the Cosmic Microwave Background**
Marc Kamionkowski[1]
[1]*Caltech.*

049.02 **CMB Anisotropies with the SZA**
Matthew Sharp[1], **J. Carlstrom**[1], **J. Cartwright**[1], **C. Greer**[1], **D. Hawkins**[2], **R. Hennessy**[1], **M. Joy**[3], **J. Lamb**[2], **E. Leitch**[4], **M. Loh**[1], **D. Marrone**[1], **A. Miller**[5], **T. Mroczkowski**[5], **S. Muchovej**[5], **C. Pryke**[1], **B. Reddall**[1], **M. Runyan**[1], **D. Woody**[2]
[1]*KICP, U. Chicago,* [2]*OVRO, Caltech,* [3]*NASA,* [4]*NASA/Caltech,* [5]*Columbia.*

049.03 **New measurements of the CMB polarization anisotropy at small angular scales from CAPMAP**
Lewis D. Hyatt[1], **CAPMAP Collaboration**
[1]*Princeton.*

049.04 **Report on BICEP's First Season Observing the Cosmic Microwave Background from South Pole**
K. W. Yoon[1], **P. A. Ade**[2], **D. Barkats**[1], **J. O. Battle**[3], **E. M. Bierman**[4], **J. J. Bock**[3], **H. C. Chiang**[1], **C. D. Dowell**[3], **L. Duband**[5], **G. S. Griffin**[1], **E. F. Hivon**[6], **W. L. Holzapfel**[7], **V. V. Hristov**[1], **B. G. Keating**[4], **J. M. Kovac**[1], **C. Kuo**[1], **A. E. Lange**[1], **E. M. Leitch**[3], **P. V. Mason**[1], **H. T. Nguyen**[3], **N. Ponthieu**[8], **Y. D. Takahashi**[7]
[1]*California Institute of Technology,* [2]*University of Wales, UK,* [3]*JPL,* [4]*U. C. San Diego,* [5]*CEA, France,* [6]*IPAC,* [7]*U. C. Berkeley,* [8]*IAS, France.*

049.05 **Status of the QUAD Experiment**
Sarah Church[1]
[1]*Stanford University/KIPAC.*

049.06 **The Future of CMB Polarization: Report of the CMB Task Force**
Rai Weiss[1]
[1]*MIT.*

049.07 **NASA CMBPOL Mission Studies**
Jamie Bock[1], **G. F. Hinshaw**[2], **P. T. Timbie**[3]
[1]*NASA/JPL,* [2]*NASA/GSFC,* [3]*U. Wisconsin.*

Session 050 NSF Astronomy Division Senior Review Outcome

AAS Special, Sunday, 2:00-3:30pm, 6B

Chair, Eileen D. Friel[1]

[1]*NSF.*

050.01 **NSF Astronomy Division Senior Review Outcome**
G W. Van Citters[1]
[1]NSF.

Session 051 HAD II: Case Studies in How 20th Century Observatory Directors Got Chosen

HAD Special, Sunday, 2:00-3:40pm, 611-12

Chair, Karl Hufbauer

051.01 **Lowell Observatory Enters the Twentieth Century—in the 1950s**
Joseph S. Tenn[1]
[1]Sonoma State Univ..

051.02 **The Evolution of the National Radio Astronomy Observatory into a User Based Observatory**
Kenneth I. Kellerman[1], E. Bouton[1]
[1]NRAO.

051.03 **Michigan Turns to Leo Goldberg**
Rudi P. Lindner[1]
[1]U. Michigan.

051.04 **A Referendum on the State of Astronomy at Harvard: Choosing Harlow Shapley's Successor**
David H. DeVorkin[1]
[1]Smithsonian Inst..

051.05 **Changing the Guard Slowly: Yale 1963-1975**
Virginia Trimble[1]
[1]U. C. Irvine.

Session 052 AGN Populations

AAS Oral, Sunday, 2:00-3:30pm, 3A

052.01 **The Infrared Properties of galaxies and Quasars at z~6**
Yuexing Li[1], L. Hernquist[1], D. Finkbeiner[1]
[1]Harvard-Smithsonian, CfA.

052.02 **X-ray Spectral Properties from Chandra Observations of SDSS QSOs to z=5**
Paul J. Green[1], W. A. Barkhouse[2], T. L. Aldcroft[1], D. Kim[1], A. Mossman[1], G. Richards[3], M. Weinstein[4], ChaMP Collaboration
[1]SAO, [2]UIUC, [3]Princeton, [4]PSU.

052.04 **Searching for the Sources Responsible for the Unresolved 6-8 keV Cosmic X-ray Background**
Aaron T. Steffen[1], W. N. Brandt[1], D. Alexander[2], S. Gallagher[3], B. Lehmer[1]
[1]Penn State Univ., [2]Durham University, United Kingdom, [3]UCLA.

052.05 **Swift/Burst Alert Telescope(BAT) Hard X-ray Survey**
Jack Tueller[1], C. Markwardt[2], R. Mushotzky[3], Swift Survey Team
[1]NASA's GSFC, [2]UMd/NASA/GSFC,, [3]NASA/GSFC.

052.06 **The DRaGONS Survey: A Search for High Redshift Radio Galaxies and Heavily Obscured AGNs**
Samuel Schmidt[1], A. Connolly[1], A. Hopkins[2]
[1]University of Pittsburgh, [2]University of Sydney, Australia.

052.07 **Spitzer/IRS Spectra of GOODS AGN**
Jeffrey Van Duyne[1], C. M. Urry[1]
[1]Yale University.

052.08 **Probing Faint Active Galaxies at Redshifts 6 - 7 and above**
Anton M. Koekemoer[1], J. Bergeron[2], D. Alexander[3], W. Brandt[4], R. Chary[5], C. Conselice[6], S. Cristiani[7], E. Daddi[8], M. Dickinson[9], D. Elbaz[8], N. Grogin[10], G. Hasinger[11], V. Mainieri[12], E. Treister[13], C. M. Urry[14]
[1]STScI, [2]IAP, France, [3]Institute of Astronomy, UK, [4]PSU, [5]Caltech, [6]U Nottingham, UK, [7]Osservatorio di Trieste, Italy, [8]CEA, France, [9]NOAO, [10]JHU, [11]MPE, Germany, [12]ESO, Germany, [13]ESO, Chile, [14]Yale U.

052.03D **Properties of Millijansky Radio Source Hosts**
Brian Stalder[1]
[1]University of Hawaii.

Session 053 Distant Works: Cosmology, Large Scale Structure and Gravitational Waves

AAS Oral, Sunday, 2:00-3:30pm, 6E

053.01 **Discovery of Faint Radio Structures over 50 Square Degrees Down to 3 arcmin Scales near the NGP**
Philipp P. Kronberg[1], R. Kothes[2], C. J. Salter[3], P. Perillat[3]
[1]LANL, [2]DRAO, NRC Canada, Canada, [3]Arecibo Observatory.

053.04 **A Direct View of the Large-Scale Distribution of Mass, from Weak Gravitational Lensing in the HST COSMOS Survey**
Richard Massey[1], J. Rhodes[1], A. Leauthaud[2], R. Ellis[1], N. Scoville[1], A. Finoguenov[3]
[1]CalTech, [2]Lab. d'Astrophysique de Marseille, France, [3]MPI fur Extraterrestrische Physik, Germany.

053.05 **Effects of Baryons and Dissipation on the Matter Power Spectrum**
Douglas Rudd[1], A. Zentner[1], A. Kravtsov[1]
[1]University of Chicago.

053.07 **Analytical and Numerical Models of Turnaround Densities in ΛCDM**
Alan Peel[1], E. Shaya[1]
[1]Univ. of Maryland.

053.03D **Crawling the Cosmic Web: An Exploration of Filamentary Structure**
Nicholas A. Bond[1], M. A. Strauss[1], R. Cen[1]
[1]Princeton Univ..

053.06D **Upper Limit Map of a Stochastic Background of Gravitational Waves**
Stefan Ballmer[1]
[1]California Institute of Technology.

Session 054 EXIST

AAS Oral, Sunday, 2:00-3:30pm, 3B

054.01 **Black Hole Finder Probe to EXIST:Surveying Black Holes in Space and Time**
Jonathan E. Grindlay[1], EXIST Team
[1]Harvard-Smithsonian, CfA.

054.02 **The Low-Energy Telescopes on EXIST**
Philip E. Kaaret[1], B. Ramsey[2], J. G. Jernigan[3], R. A. Remillard[4], R. E. Rothschild[5], J. Hong[6], J. E. Grindlay[6]
[1]Univ. of Iowa, [2]NASA/MSFC, [3]SSL/UC Berkeley, [4]MIT, [5]UCSD, [6]Harvard.

054.03 **The High Energy Telescopes on EXIST**
JaeSub Hong[1], J. E. Grindlay[1], EXIST team
[1]Harvard Univ..

054.04 **Blazars and the Cosmic Diffuse IR Background with EXIST**
Paolo S. Coppi[1], EXIST Science Team
[1]Yale Univ..

054.05 **Gamma Ray Bursts as Cosmological Probes with EXIST**
Dieter Hartmann[1], EXIST Team
[1]Clemson Univ..

054.06 **Uncovering Obscured AGN with EXIST and Other Hard X-Ray Surveys**
C. M. Urry[1], E. Treister[2], S. Virani[1]
[1]Yale Univ., [2]European Southern Observatory, Chile.

Session 055 ISM/Molecular Clouds

AAS Oral, Sunday, 2:00-3:30pm, 608-10

055.01 **Comparison of 13CO Line and Far-Infrared Continuum as a Diagnostic of Dust and Molecular Gas Physical Conditions --- Implications for the N(H2)/I(CO) Conversion Factor**
William F. Wall[1]
[1]INAOE, Mexico.

055.02 **Continuity between Magnetic Fields in GMCs and Large-scale Galactic Magnetic Fields**
Giles G. Novak[1], M. Krejny[1], H. Li[2], D. T. Chuss[3], P. G. Calisse[4]
[1]Northwestern Univ., [2]Harvard-Smithsonian Center for Astrophysics, [3]NASA-Goddard Space Flight Center, [4]Cardiff University, United Kingdom.

055.03 **Temporal Variations of Charge-Exchange induced Heliospheric X-rays: Constraints on the Local Interstellar X-ray Background**
Rosine Lallement[1], D. Koutroumpa[1], F. Acero[2], J. Ballet[2], V. Kharchenko[3], R. Pepino[3], A. Dalgarno[3]
[1]Service D'Aéronomie, France, [2]Commissariat à l'Energie Atomique, France, [3]Harvard-Smithsonian Center for Astrophysics.

055.04 **Spitzer Observations of the Lupus Molecular Cloud**
Nicholas L. Chapman[1], L. Mundy[1], N. J. Evans, II[2], c2d team
[1]Univ. of Maryland, [2]Univ. of Texas.

055.05 **The COMPLETE Calibration of 12CO and 13CO in Perseus**
Jaime E. Pineda[1], P. Caselli[1], A. A. Goodman[1], E. Rosolowsky[1], J. B. Foster[1]
[1]Harvard-Smithsonian Center for Astrophysics.

055.06 **Advancing Nebular Astrophysics through Near-Infrared Spectroscopic Mapping**
William H. Waller[1], A. Kutyrev[2], R. Silverberg[2], B. Woodgate[2], L. Allen[3]
[1]Tufts Univ., [2]NASA Goddard Space Flight Center, [3]Center for Astrophysics.

055.07 **Mapping Enrichment in M33**
Erik Rosolowsky[1], J. D. Simon[2]
[1]Harvard-Smithsonian, CfA, [2]California Institute of Technology.

Session 056 Space Mission Concepts and Instrumentation

AAS Oral, Sunday, 2:00-3:30pm, 605-07

056.01 **Flight Calibration of the Galaxy Evolution Explorer (GALEX)**
Patrick Morrissey[1], GALEX Science Team
[1]Caltech.

056.02 **Optical Performance of Designs for a Large Aperture Far-Infrared Telescope**
Paul Goldsmith[1], B. Khayatian[1], C. M. Bradford[1], M. Dragovan[1], W. Imbriale[1], R. Lee[1], C. Paine[1], H. Yorke[1], J. Zmuidzinas[1]
[1]JPL.

056.03 **Science Priorities of the RadioAstron Space VLBI Mission**
Glen Langston[1], N. Kardashev[2], International Space VLBI Collaboration
[1]NRAO, [2]Astro Space Center, Russian Federation.

056.04 **Telescope to Observe Planetary Systems (TOPS): A High Efficiency Coronagraphic 1.2-m Visible Telescope**
Olivier Guyon[1], J. R. Angel[2], C. Bowers[3], J. Burge[2], A. Burrows[2], J. Codona[2], T. Greene[4], M. Iye[5], J. Kasting[6], H. Martin[2], D. W. McCarthy[2], V. Meadows[7], M. Meyer[2], E. A. Pluzhnik[1], N. Sleep[8], T. Spears[9], M. Tamura[5], D. Tenerelli[10], R. Vanderbei[11], B. Woodgate[3], R. A. Woodruff[10], N. J. Woolf[2]
[1]Subaru Telescope, [2]University of Arizona, [3]NASA GSFC, [4]Ames Research Center, [5]National Astronomical Observatory of Japan, Japan, [6]Pennsylvania State University, [7]IPAC, [8]Stanford University, [9]LOGYX, [10]Lockheed Martin, [11]Princeton University.

056.05 **Availability of Calibration Sources for Measuring Spacecraft Angular Position with Sub-Nanoradian Accuracy**
Walid A. Majid[1], D. Bagri[1]
[1]JPL/Caltech.

056.07 **Future In-Space Operations for Astronomy**
Harley A. Thronson[1]
[1]NASA Goddard Space Flight Center.

Session 057 Young Stellar Objects

AAS Oral, Sunday, 2:00-3:30pm, 6C

057.01D **A Wide-field Search for Intermediate-age Pre-Main Sequence Stars near Taurus and Upper Scorpius**
Catherine L. Slesnick[1], J. M. Carpenter[1], L. A. Hillenbrand[1]
[1]Caltech.

057.02 **Mid-IR Spectral Survey of High Mass Protostellar Objects**
Murray F. Campbell[1], T. K. Sridharan[2], J. L. Hora[2], M. Kassis[3], H. Beuther[4], R. T. Brooks[1], S. Fung[1], L. C. Johnson[1], J. M. De Buizer[5]
[1]Colby College, [2]Center for Astrophysics, [3]Keck Observatory, [4]Max-Planck-Institut fur Astronomie, Germany, [5]Gemini Observatory, Chile.

057.03D **The Evolution of the Multiplicity of Young Stellar Objects**
Michael S. Connelley[1], B. Reipurth[1], A. Tokunaga[1]
[1]Univ. of Hawaii.

057.04D **The State and Evolution of Isolated Dense Molecular Cores**
Jens Kauffmann[1]
[1]Harvard-Smithsonian CfA.

057.05 **Gemini NIFS Integral Field Spectroscopy of YSO Environments: Spatially Extended Molecular Hydrogen Emission in the Inner 200 AU**
Tracy L. Beck[1], P. McGregor[2], M. Takami[3]
[1]Gemini North Observatory, [2]RSA&A, Australian National University, Australia, [3]Subaru Observatory.

057.06 **Application of Medical Imaging Software to the 3D Visualization of Astronomical Data**
Michelle A. Borkin[1], A. A. Goodman[2], M. Halle[3], D. Alan[1], J. Kauffmann[2]
[1]Initiative in Innovative Computing, Harvard University, [2]Initiative in Innovative Computing/Harvard Smithsonian Center for Astrophysics, [3]Initiative in Innovative Computing/Harvard Medical School.

Session 058 Context Rich Lab Problems

AAPT Oral, Sunday, 2:00-3:30pm, 617

Chair, Terry Singleton[1]
[1]University of Alberta, Canada.

058.01 **Undergraduate Labs for Biological Physics: Brownian Motion and Optical Trapping**
Kelvin Chu[1], A. Laughney[1], J. Williams[1]
[1]University of Vermont.

058.02 **Alternatives to Traditional Labs: a Discovery Lab Based on A*nalogy***
Mark I. Liff[1]
[1]Philadelphia University.

058.03 **Student Understanding Difficulties Research-based on Conceptual and Numerical Labs**
Sergio Flores[1]
[1]University of Juarez.

058.04 **Teaching Optics Topics in College Physics Laboratory***
Roman Y. Kezerashvili[1]
[1]Physics Department, New York City College of Technology, CUNY.

058.05 **A Laboratory on Pulse Trains, Counting Statistics, and the Central Limit Theorem for Physics Students**
David B. Pengra[1]
[1]University of Washington.

058.06 **Crafting a Gauss Gun Demonstration**
Matthew E. Blodgett[1], E. D. Blodgett[1]
[1]University of Wisconsin - River Falls.

058.07 **Using a Tube of Fire to Demonstrate Various Gas and Wave Properties.**
Don B. Cameron[1]
[1]University of Denver High School.

058.08 **My Top Ten List of Labs and Demonstrations**
Paul Robinson[1]
[1]San Mateo High School.

058.09 **My Most Annoying Demonstration**
Joseph M. Mosca[1]
[1]Embry-Riddle Aeronautical University.

Session 059 Innovations in High School Physics, Part II

AAPT Oral, Sunday, 2:00-3:30pm, 307-08

Chair, Eric C. Muhs[1]
[1]Roosevelt High School.

059.01 **Keeping Seniors Engaged During The Last Week Of School**
Thomas F. Haff[1]
[1]Issaquah High School.

059.02 **Thank You for Flying the Vomit Comet**
Gregory A. DiLisi[1], R. Dempsey[2], L. A. DiLisi[3], G. Santo[4]
[1]John Carroll University, [2]Johnson Space Center, [3]Parker Hannifin Corporation - Nichols Airborne Division, [4]Beaumont High School.

059.03 **Physics on Wheels: Teaching Mechanics by Riding a Bicycle**
Hezi Yizhaq[1], G. Baran[1]
[1]Environmental High School, Israel.

059.04 **High School Student Scientists Researching Pulsars at the CGWA**
Adrienne Rodriguez-Zermeno[1]
[1]University of Texas at Brownsville.

059.05 **Metricize Yourself**
Maria K. Falbo[1]
[1]Cardinal Gibbons High School.

059.06 **Mini-Labs**
Marc Kossover[1]
[1]The Jewish Community High School of the Bay.

059.07 **International Physics Summer Camp for High School Students**
Damian T. Pope[1], B. Korsunsky[2]
[1]Perimeter Institute for Theoretical Physics, Canada, [2]Weston High School.

059.08 **Student Measurements of Cosmic Rays on an International Scale**
Robert S. Peterson[1]
[1]QuarkNet/Education Office | Fermi National Accelerator Lab.

059.09 **The Next Best Thing to Having Your Own Accelerator: How QuarkNet Can Help**
Kris Whelan[1]
[1]Lawrence Berkeley National Laboratory.

Session 060 Physics Education with Vpython

AAPT Poster, Sunday, 2:00-3:30pm, 303

Chair, Ruth Chabay[1]
[1]North Carolina State University.

060.01 **Using VPython to Apply Mathematics to Physics in Mathematical Methods**
Dedra Demaree[1], J. Eagan[1], P. Finn[1], B. Knight[1], J. Singleton[1], A. Therrien[1]
[1]College of the Holy Cross.

060.02 **VPython applications for Teaching Physics**
Roberto B. Salgado[1]
[1]Syracuse University - Department of Physics.

060.03 **Charming VPythong Simulations**
Eric W. Pepin[1], R. P. Olenick[1]
[1]University of Dallas.

060.04 **Visual Basic - VPython Interface: Charged Particle in a Magnetic Field**
Chandra Prayaga[1]
[1]University of West Florida.

Session 061 Faint Structures in Nearby Galaxies

Plenary, Sunday, 3:40-4:30pm, Ballroom 6

061.01 **Faint Structures in Nearby Galaxies: Studies of Galaxy Formation at z=0**
Julianne Dalcanton[1]
[1]Univ. of Washington.

Session 062 The Assembly of Galaxies and Their Black Holes

Plenary, Sunday, 4:40-5:30pm, Ballroom 6

062.01 **The Assembly of Galaxies and Their Black Holes: A New Paradigm for Hierarchical Galaxy Formation?**
Rachel S. Somerville[1]
[1]Max-Planck-Institut fuer Astronomie, Germany.

Astronomy and Astrophysics Advisory Committee

AAS Town Hall Meeting, Sunday, 5:30-6:30pm, 6B

The Astronomy and Astrophysics Advisory Committee (AAAC) was constituted by Congress with OMB and agency support to advise both the Congress and the three Agencies supporting astronomy and astrophysics research programs, NASA, NSF, and DOE. The enabling legislation requires the AAAC to advise on (1) the coordination of programs in astronomy and

astrophysics between the three agencies, and (2) the status of the Decadal Survey and like NRC reports. The committee is required to submit an annual report to Congress and the heads of the agencies with findings and recommendations in these areas. Since this report must be submitted by March 15, input from the community at the AAS meeting in January would be most valuable and appreciated by the committee. The last discussion was very late in the day and was not well attended; the goal here is to provide a further opportunity to involve the AAS membership in discussions with the committee members and the agency representatives who can attend about a broad range of issues affecting astronomy programs at the three agencies.

Chair, Garth D. Illingworth[1]
[1]*UC, Santa Cruz.*

Astrophysics, Cosmology, and Extrasolar Planets: NASA's Navigator Missions

AAS Splinter Meeting, Sunday, 6:00-8:00pm, 6E

The President's Vision for Space Exploration calls for NASA to "conduct advanced telescope searches for Earth-like planets and habitable environments around other stars." The primary missions in these searches are Navigator Program missions - SIM PlanetQuest, and the Terrestrial Planet Finder Missions (TPF-C and TPF-I). Other observatories also play important roles in exploring the field of extrasolar planets: e.g. Kepler, Spitzer Space Telescope, JWST, the Keck and LBT Interferometers, and other ground-based observatories. In this session, we will recap some recent science results and show how the various techniques and instruments each play important roles in advancing our understanding in this rich field of research.

Chair, Stephen C. Unwin[1]
[1]*JPL.*

Session 063 The Future of the Core Curriculum

AAPT Invited, Sunday, 6:30-8:00pm, 616

Chair, Michael Theonnessen[1]
[1]*Michigan State University.*

063.01 **The Future of the Core Curriculum in Graduate Education**
Michael Thoennessen[1]
[1]*Michigan State University.*

Session 064 When Was the Last Time 5000 College Students Gave You Feedback on Your High School Physics Course?

AAPT Invited, Sunday, 6:30-8:00pm, 307-08

Chair, Wayne Fisher[1]
[1]*Myers Park High School.*

064.01 **Does Taking Physics Pay Off Later in Chemistry & Biology Courses?**
Philip M. Sadler[1], **R. H. Tai**[2]
[1]*Harvard-Smithsonian Center for Astrophysics,* [2]*University of Virginia.*

064.02 **High School Teaching and College Performance: Looking for Connections**
Robert H. Tai[1]
[1]*Univ. of Virginia.*

064.03 **Gender Differences in Introductory University Physics Performance: The Influence of High School Physics Preparation & Affect**
Zahra Hazari[1]
[1]*Harvard Smithsonian Center for Astrophysics.*

Session 065 Astronomy and the Two-Year Colleges

AAPT Special, Sunday, 6:30-8:00pm, 615

Chair, Theo Koupelis[1]
[1]*University of Wisconsin Colleges.*

065.01 **Community College's CAN do Research - A Decade of Eclipse Expeditions**
Jon M. Saken[1]
[1]*Appalachian State Univ..*

065.02 **What's in the Neighborhood?: Using Science/Technology/Society (STS) Instructional Strategies in an Introductory Community College Astronomy Class**
Lawrence R. Kellerman[1]
[1]*Illinois Central College.*

065.03 **NASA Center for Astronomy Education: Building a Community of Practice**
Gina Brissenden[1], E. Prather[1], T. F. Slater[1], W. M. Greene[2], M. Thaller[3]
[1]Univ. of Arizona, [2]JPL, [3]CalTech.

065.04 **Teaching Astronomy at Lewis and Clark Community College**
David A. Cornell[1]
[1]Principia College.

065.05 **Free Resources for Teaching with Technology**
Michelle A. Strand[1]
[1]Southeast Community College.

Session 066 Effective Features of Online Tutorials

AAPT Special, Sunday, 6:30-7:30pm, 303

Chair, Gerald W. Meisner[1]
[1]UNC Greensboro.

066.01 **PhET's Research-based Guidelines for Design & Use of Interactive Simulations**
Katherine K. Perkins[1], W. K. Adams[1], C. E. Wieman[1], PhET Team
[1]University of Colorado at Boulder.

066.02 **Virtual Labs and Virtual Worlds**
Ted Boehler, Ed.D.[1]
[1]Coastline Community College.

066.03 **Electric Circuits in a Virtual Environment**
Gerald W. Meisner[1], H. Hoffman[2], M. Turner[3]
[1]UNC Greensboro, [2]Science Lab Courseware, [3]Hebrew Academy.

066.05 **Measuring Learning from hints in Web-based Socratic Tutor**
Young-Jin Lee[1], D. E. Pritchard[1]
[1]Massachusetts Institute of Technology.

066.06 **Impact of Inquiry-Oriented Curriculum Materials Modified to Provide Better Access for Special Needs Students**
Julia K. Olsen[1], T. F. Slater[1]
[1]University of Arizona.

Session 067 High School Curriculum Issues

AAPT Oral, Sunday, 6:30-8:00pm, 310

Chair, Beverly Cannon[1]
[1]Highland Park HS.

067.01 **Active Physics - Problem Based Learning for High Schools**
Arthur Eisenkraft[1]
[1]Univ of Massachusetts Boston.

067.02 **Physics First: Why You Should Consider It at Your High School**
Alan P. Gnospelius[1]
[1]Design and Technology Academy.

067.03 **A TIME for Physics First in Missouri**
Meera Chandrasekhar[1], K. Manivannan[2], D. Kosztin[1], S. Torres[3]
[1]University of Missouri, [2]Missouri State University, [3]Columbia Public Schools.

067.04 **What To Do After The AP Test: How About Household Electricity?**
John P. Lewis[1]
[1]Glenbrook South High School.

067.05 **Introduction to Physics of the Universe in AP Physics Classrooms**
Stephanie L. Allen[1]
[1]Hope College.

067.06 **Using the Hypothesis Method in Learning Physics**
Genrikh Golin[1]
[1]Touro College & Franklin Delano Roosevelt HS.

067.07 **Inservice Preparation of High School Physics Teachers**
Stephen T. Thornton[1], R. A. Lindgren[1]
[1]University of Virginia.

Session 068 Insights into Mechanics and Sound

AAPT Oral, Sunday, 6:30-8:00pm, 617

Chair, G. Samuel Lightner[1]
[1]Westminster College.

068.01 **Some Aspects of the Physics of Shooting a Basketball**
John J. Fontanella[1]
[1]U. S. Naval Academy.

068.02 **Period-Speed Analysis of a Pendulum**
Barbara M. Hoeling[1], Y. Kostov[1], R. Morshed[1], P. Siegel[2]
[1]Pomona College, [2]Cal Poly Pomona.

068.03 **Optical Measurement of the Acceleration Due to Gravity**
Bill Crummett[1]
[1]Centre College.

068.04 **Why the Magnetic Levitation can be Observed only in a Constrained Case in PASCO's Magnetic Levitation Apparatus?**
Xiao Xie[1], P. P. Gu[1], Z. Y. Wang[1], Z. Xie[1]
[1]Hunan University, China.

068.05 **Wavelength Dependent End Correction for a Resonating Air Column**
Henry Kuhlman[1], C. Hansen[1]
[1]Southern Adventist University.

068.06 **Amplifier Distortion**
David Keeports[1]
[1]Mills College.

068.07 **Exact Relativistic to Non-Relativistic Transformation via an Effective Potential**
James P. Crawford[1], J. Shubila[1]
[1]Penn State University.

068.08 **New Ideas for Teaching Relativity: a unified derivation of the Doppler Effect**
Roberto B. Salgado[1]
[1]Syracuse University - Department of Physics.

Session 069 AIP Gemant Award Lecture

Plenary, Sunday, 7:00-8:30pm, Ballroom 6

Dr. Jim Stith of AIP, make present the award and introduce Marcia Bartusiak. Ms. Bartusiak is the author of numerous popular books on astronomy and cosmology, including "Einstein's Unfinished Symphony," "Thursday's Universe," "Through A Universe Darkly" and most recently, "Archives of the Universe." The award is given to individuals who have linked physics to the arts and humanities. Previous winners include Philip Morrison, Freeman T. Dyson, Gerald Holton, Jeremy Bernstein, Cyril Stanley Smith, Martin Aitken, and Abraham Pais.

Chair, James J. Stith[1]
[1]American Institute of Physics.

069.01 **Einstein's Legacy to Astronomy: From Black Holes to the Expanding Universe**
Marcia Bartusiak[1]
[1]MIT.

SPS/AAPT/AAS Undergraduate Science Evening

Joint Event, Sunday, 7:00-9:00pm, 6A

The AAS Education Office and the AIP/Society of Physics Students are sponsoring an "Evening with Scientists" for all undergraduates attending the AAS/AAPT Joint Meeting on Sunday Night from 7 to 9 pm. Two notable astronomers will give short (20 mins) presentations on their personal experiences as scientists, their perspectives on the field and their own research. Dinner, in the form of pizza, burritos and other student favorites will be provided. Undergraduates are invited to put up their posters for an hour of informal discussion with each other and the featured speakers to get a perspective on Astronomy that is often overlooked at large meetings.

Chair, Susana E. Deustua[1]
[1]American Astronomical Society.

Chair, Gary White[1]
[1]American Institute of Physics.

MONDAY

Retirees Breakfast

AAPT Event, Monday, 7:00 am - 8:30 am, 211
Retired, or considering retirement? Come join others and share stories, ask questions, or discuss issues and concerns at this informal breakfast of peers. Tickets: $20

Two Year College Breakfast

AAPT Event, Monday, 7:00 am - 8:30 am, 213
This breakfast is a get-together for Two-Year College (TYC) Physics Teachers. Come interact, debate, and discuss any and all matters concerning TYC faculty. Also, get to know the TYC Committee members. Tickets: $20

Speaker Ready Room

Attendee Services, Monday, 7:30am-6:00pm, 603-04
See Saturday's listing for AV instructions.

Cyber Café

Attendee Services, Monday, 8:00am-6:30pm, South Lobby
See Sunday's listing for details.

Registration

Attendee Services, Monday, 8:00am-5:00pm, South Lobby

Session 070 The Coming Revolutions in Particle Physics

Plenary, Monday, 8:30-9:20am, Ballroom 6

Chair, Lila Adair[1]
[1]*Piedmont College.*

070.01 **The Coming Revolutions in Particle Physics**
Chris Quigg[1]
[1]*Fermi National Accelerator Laboratory.*

Session 071 Poster Session II

AAPT Poster, Monday, 9:20am-6:30pm, Exhibit Hall 4

071.01 **Student Exploration of Scientific Literature**
Erin K. McCamish[1], **T. McKay**[1], **M. Geramita**[1], **E. Percha**[1]
[1]*University of Michigan.*

071.02 **Inquiry-Based, Hands-on In-class Astronomy Activities**
Rebecca Lindell[1], **T. Foster**[1]
[1]*Southern Illinois University Edwardsville.*

071.03 **Innovate Use of SCALE-UP for Teaching General Education Astronomy**
Luke Keller[1], **M. Rogers**[1]
[1]*Ithaca College.*

071.04 **Promoting Stellar Writing: An Astronomy/English Learning Community**
Frank Dudish[1], **R. Lacina**[1]
[1]*Delta College.*

071.05 **An Upper-Division Astronomy Laboratory Course for Undergraduate Physics Majors**
David M. Kuehn[1], **B. L. Davis**[1]
[1]*Pittsburg State University.*

071.06 **A New Chart and Teaching Materials on Cosmology from CPEP**
G Samuel Lightner[1], **M. Cherney**[2], **G. Aubrecht**[3], **R. Reiland**[4]
[1]*Westminster College,* [2]*Creighton University,* [3]*The Ohio State University,* [4]*Shady Side Academy.*

071.07 **Investigating Neglected Double Stars**
R Kent Clark[1], **J. M. Sanders**[1], **J. Guidry**[1], **J. Pearce**[1]
[1]*University of South Alabama.*

071.08 **Simulating the Retention of an Atmosphere**
Kevin M. Lee[1], **C. M. Siedell**[1], **A. N. Davis**[1]
[1]*University of Nebraska.*

071.09 **Citizen-Scientists Monitor Light Pollution Worldwide via "GLOBE at Night"**
Constance E. Walker[1], **S. M. Pompea**[1], **D. Isbell**[1], **D. Orellana**[2], **D. Ward**[3], **S. Henderson**[3], **K. Meymaris**[3], **S. Gallagher**[3], **D. Salisbury**[4]
[1]*National Optical Astronomy Observatory,* [2]*Centro de Apoyo a la DidÃ¡ctica de la AstronomÃa (CADIAS), Chile,* [3]*UCAR,* [4]*CSU.*

071.10 **Student-Scientists use Remote Sensing to Reach across the Equator**
Constance E. Walker[1], R. Probst[1], C. Martin[2], B. Dorame[2], D. Isbell[1], S. M. Pompea[1], H. Ochoa[3], D. Orellana[4], A. Garcia[5]
[1]National Optical Astronomy Observatory, [2]Howenstine Magnet High School, [3]Cerro Tololo Inter-American Observatory, Chile, [4]Centro de Apoyo a la DidÃ¡ctica de la AstronomÃa (CADIAS), Chile, [5]Gemini Observatory, Chile.

071.11 **NASA's Gravity Probe B Mission: Was Einstein Right?**
Shannon K. Range[1]
[1]NASA's Gravity Probe B at Stanford University.

071.12 **Using the Astronomy Diagnostic Test to Identify Students' Preconceptual Knowledge**
Dennis M. Robbins[1], S. Tribiano[1], K. Ford[1], B. McKernan[1]
[1]Borough of Manhattan Community College.

071.13 **Interactive Lecture Experiments in Large Introductory Physics Classes**
Marina M. Milner-Bolotin[1], A. Kotlicki[1], G. Rieger[1], F. Bates[1], R. Moll[1], K. McPhee[1], S. Nashon[1]
[1]University of British Columbia, Canada.

071.14 **Web administered pre/post assessment: reliability, compliance and security**
Scott W. Bonham[1]
[1]Western Kentucky University.

071.15 **Physics Applets for Drawing in the classroom**
Scott W. Bonham[1]
[1]Western Kentucky University.

071.16 **Active Learning with Ubiquitous Presenter and Tablet PCs**
Edward Price[1], B. Simon[2]
[1]California State University, San Marcos, [2]UC, San Diego.

071.17 **Simulation-Based e-Learning Tools for Science,Engineering, and Technology Education(SimBeLT)**
Doyle V. Davis[1], Y. Cherner[2]
[1]New Hampshire Community Technical College, [2]ATeL, LLC.

071.18 **Study of Interface Design for Engagement and Learning with Educational Simulations**
Wendy K. Adams[1], S. Reid[1], R. LeMaster[1], S. McKagan[1], K. Perkins[1], C. E. Wieman[1]
[1]University of Colorado.

071.19 **Advanced Modeling in Excel: from Water Jets to Big Bang**
Olga Ignatova[1], D. Chyzhyk[2], C. Willis[3], A. Kazachkov[1]
[1]V.Karazin Kharkiv National Univ., Ukraine, [2]Kharkiv National Univ. of Radio-Electronics, Ukraine, [3]Univ. of Northern Colorado.

071.20 **Develpoing computer program for calculating magnetic fields**
Wook Hee Koh[1], A. Koh[2]
[1]Hanseo University, Republic of Korea, [2]Irvine Valley College.

071.21 **Data Acquisition with Mathematica**
Wesley W. Bliven[1], N. Fitch[2], P. Tam[1]
[1]Humboldt State Univ, [2]University of Colorado at Boulder.

071.22 **Teaching Computational Physics Using Spreadsheets**
Jaebong Lee[1], K. Shin[1], S. Lee[1]
[1]Seoul National Univ., Republic of Korea.

071.23 **Doing Physics with Spreadsheets: Old Tricks for New Dogs**
A. John Mallinckrodt[1]
[1]Cal Poly Pomona.

071.24 **Bouncing Ball Video Analysis: The Conservation of Mechanical Energy**
Joel A. Bryan[1]
[1]Texas A&M University.

071.25 **Changing Student Attitudes using Andes, An Intelligent Homework System**
Brett van de Sande[1], K. VanLehn[1], D. Treacy[2], R. Shelby[2]
[1]University of Pittsburgh, [2]US Naval Academy.

071.26 **Using the Motion Visualizer Family of Programs to Enhance Classroom and On-Line Learning**
James E. Trimble, Jr[1]
[1]University of Tennessee.

071.27 **Choosing the Right Mixture of Techniques and Technologies**
Todd K. Timberlake[1]
[1]Berry College.

Session 072 AGNs, QSOs and Active Galaxies 1

AAS Poster, Monday, 9:20am-6:30pm, Exhibit Hall 4

072.01 **Redshift Effects on the Spectroscopic Properties of Active Galaxies**
Kelly Wallenstein[1], E. C. Moran[2]
[1]Wellesley College, [2]Wesleyan University.

072.02 **Applications Of Spectral Principle Component Analysis In AGN Research: Sample Selection and Beyond**
Zhaohui Shang[1], M. Brotherton[1]
[1]Univ. Of Wyoming.

072.03 **Quasar Metallicities and Host Galaxy Evolution**
Simon E. Leah[1], F. W. Hamann[1]
[1]University of Florida.

072.04 **Quasar Environments in the Sloan Digital Sky Survey**
Amanda Haapala[1], J. Scott[1]
[1]Towson University.

072.05 **Magnetorotational Instability in Strongly Magnetized Plasmas**
Vladimir I. Pariev[1], V. V. Mirnov[1], S. C. Prager[1]
[1]Univ. Of Wisconsin-Madison.

072.06 **Discovery of Bright Quasars at Low Galactic Latitude**
Induk Lee[1], M. Im[1]
[1]Seoul National University, Republic of Korea.

072.07 **Clustering of z=3 AGN in MUSYC-ECDFS**
Harold Francke[1], E. Gawiser[2], P. Lira[1], S. Virani[2], E. Treister[3], C. M. Urry[2], MUSYC Collaboration
[1]Universidad de Chile, Chile, [2]Yale University, [3]European Southern Observatory, Chile.

072.08 **Optical Variability of Infrared Power Law-Selected Galaxies & X-ray Sources in the GOODS South Field**
Alison J. Klesman[1], V. L. Sarajedini[1]
[1]Univ. Of Florida.

072.09 **Intrinsic Absorption in the HST Archive I: Search for Time Variable Systems**
Catherine Grier[1], M. Hawthorn[2], R. Ganguly[3], J. C. Charlton[4], M. Eracleous[4], K. R. Sembach[5]
[1]University of Illinois at Urbana-Champaign, [2]Cambridge, United Kingdom, [3]University of Wyoming, [4]Penn State, [5]STScI.

072.10 **Intrinsic Absorption in the HST Archive II: Partial Covering and Associated O VI Systems**
Rajib Ganguly[1], R. S. Lynch[2], J. C. Charlton[2], M. Eracleous[2], T. M. Tripp[3], C. Palma[2], K. R. Sembach[4], T. Misawa[2], J. R. Masiero[5], N. Milutinovic[6], T. M. Jones[2]
[1]Univ. of Wyoming, [2]Penn State University, [3]UMass, [4]STScI, [5]University of Hawaii, [6]University of Victoria, Canada.

072.11 **Dust Lanes, Nuclear Dusty Disks, and Isophotal Properties as Observed by HST: What Do They Tell Us about the 3-D Structure of Elliptical Radio Galaxy Hosts?**
Grant R. Tremblay[1], M. Chiaberge[1], C. J. Donzelli[1], W. B. Sparks[1], A. C. Quillen[2]
[1]Space Telescope Science Institute, [2]Department of Physics and Astronomy, University of Rochester.

072.12 **Probing the Assembly of Massive Galaxies via Quasar Hosts at z=4**
Kim K. McLeod[1], J. Bechtold[2], B. A. McLeod[3], S. Kimmel[4], T. Sepersky[1], R. Stoll[1], A. Zangari[1]
[1]Wellesley College, [2]Univerity of Arizona, [3]Smithsonian Astrophysical Observatory, [4]Williams College.

072.13 **Monitoring Microlensing Events In the Quasar RX J1131-1231**
George Chartas[1], C. S. Kochanek[2], X. Dai[2], N. Morgan[2], G. P. Garmire[1]
[1]Penn State University, [2]The Ohio State University.

072.14 **3D Simulations of Jet Interactions with Galaxy Cluster Environments**
Sean M. O'Neill[1], T. W. Jones[1], D. Ryu[2]
[1]Univ. of Minnesota, [2]Chungnam National University, Republic of Korea.

072.15 **AGN near Weak Lensing Selected, X-ray Confirmed Galaxy Clusters**
Dara J. Norman[1], Deep Lens Survey Collaboration
[1]NOAO/CTIO.

072.16 **FeII(UV)/MgII Ratio versus Luminosity in QSOs**
Ekaterina Verner[1], F. Bruhweiler[1], B. Peterson[2]
[1]Catholic University of America, [2]Siding Spring Observatory, Australia.

072.17 **Are There Low Radiative Efficiency Accretion Disks in Low Luminosity AGN?**
Marco Chiaberge[1], D. Macchetto[2]
[1]Space Telescope Science Institute, [2]Space Telescope Science Institute - ESA.

072.18 **Broad Line Regions in Low Luminosity Radio Galaxies: is the Distinction Between Broad- and Narrow-Line Galaxies Real?**
Jacob Noel-Storr[1], S. A. Baum[1], C. P. O'Dea[1]
[1]Rochester Inst. of Technology.

072.19 **Optical Ensemble Variability of Low to Moderate Redshift Galaxies in the Sloan Digital Sky Survey**
Tyler D. Desjardins[1], V. L. Sarajedini[1]
[1]Univ. Of Florida.

072.20 **Study of X-ray Spectral Parameters from Large Sample of RXTE Active Galaxies**
Barbara Mattson[1], K. Weaver[1], C. Reynolds[2]
[1]NASA's GSFC, [2]University of Maryland.

072.21 **An Archival HST Survey for Ultrafaint QSOs**
Bernhard Beck-Winchatz[1], S. F. Anderson[2]
[1]DePaul University, [2]University of Washington.

072.22 **The Broadband X-Ray Spectral Features of a Sample of Seyfert 1 Galaxies**
Urmila Padmanabhan[1], K. A. Weaver[2], T. Yaqoob[1]
[1]Johns Hopkins University, [2]GSFC.

072.23 **Quantification of Quasar Environments via Absorption Spectra**
Colleen M. McIntosh[1], J. Scott[1]
[1]Towson Univ..

072.24 **Studies of Quasar Variability With the Sloan Digital Sky Survey**
Brian C. Wilhite[1], R. J. Brunner[1], B. F. Lundgren[1], C. J. Grier[1]
[1]University of Illinois.

072.25 **The Proximity Effect and the UV Background at z~4**
Jennifer E. Scott[1], J. Bechtold[2]
[1]Towson Univ., [2]University of Arizona.

072.26 **A Search for the Earliest Luminous Quasars**
Eilat Glikman[1], S. G. Djorgovski[1], A. A. Mahabal[1], M. J. Graham[1], D. Thompson[1], G. Meylan[2], A. Eigenbrod[2], F. Courbin[2]
[1]Caltech, [2]EPFL, Switzerland.

072.27 **Observation of the GZK Cutoff by the HiRes Experiment**
Stefan Westerhoff[1], B. Connolly[1]
[1]Columbia University.

Session 073 Astronomers in Public Education

AAS Poster, Monday, 9:20am-6:30pm, Exhibit Hall 4

073.01 **The Beyond Einstein Explorers' Program (BEEP) - Getting Astronomers Involved in Afterschool Activities**
Anita Krishnamurthi[1], B. Barbier[2], S. Mitchell[2], J. Lochner[3]
[1]NASA GSFC/University of Maryland, [2]NASA GSFC/SP Systems, Inc., [3]NASA GSFC/USRA.

Session 074 Astronomy and Astrophysics with LISA

AAS Poster, Monday, 9:20am-6:30pm, Exhibit Hall 4

074.01 **LISA: Probing the Universe with Gravitational Waves**
Thomas A. Prince[1], P. Binetruy[2], J. Centrella[3], L. S. Finn[4], C. Hogan[5], G. Nelemans[6], E. S. Phinney[7], B. Schutz[8], LISA International Science Team
[1]Caltech/JPL, [2]APC - College de France, France, [3]GSFC, [4]Penn State University, [5]University of Washington, [6]Radboud University Nijmegen, The Netherlands, [7]Caltech, [8]Max-Planck-Institut fur Gravitationsphysik, Germany.

074.02 **LISA Mission Architecture**
Nicholas M. Jedrich[1], R. T. Stebbins[1], J. C. Livas[1], S. M. Merkowitz[1], R. G. Mink[1]
[1]NASA.

074.03 **The LISA Pathfinder Mission**
Robin T. Stebbins[1], LISA Pathfinder Science Team
[1]NASA Goddard Space Flight Center.

074.04 **System Validation and Verification Testing for the Laser Interferometry Space Antenna (LISA)**
Jeffrey C. Livas[1], N. Jedrich[1], S. M. Merkowitz[1], R. T. Stebbins[1]
[1]NASA's GSFC.

074.05 **Cancellation of the LISA Antenna Distortions due to the Earth**
Peter L. Bender[1]
[1]JILA, Univ. of Colorado and NIST.

074.06 **Measurements of Forces Between Surfaces for LISA**
Scott E. Pollack[1], S. Schlamminger[1], C. A. Hagedorn[1], J. H. Gundlach[1]
[1]University of Washington.

074.07 **Modular Gravitational Reference Sensor for High Precision Astronomical Space Missions**
Ke-Xun Sun[1], G. Allen[1], S. Buchman[1], R. L. Byer[1], J. W. Conklin[1], D. B. DeBra[1], D. Gill[1], A. Goh[1], S. Higuchi[1], P. Lu[1], N. Robertson[1], A. Swank[1]
[1]Stanford Univ..

074.08 **Tracking Cosmological Black Hole Mergers with LISA**
Ryan N. Lang[1], S. A. Hughes[1]
[1]MIT.

074.09 **Modeling Binary Black Hole Mergers**
John G. Baker[1]
[1]NASA/GSFC.

074.10 **Observing Massive Black Hole Binaries with LISA**
Sean McWilliams[1]
[1]NASA GSFC.

074.11 **Population Boundaries for Evolving White Dwarf Binaries on the LISA Sensitivity Curve**
Kopparapu R. Kumar[1], V. Gokhale[1], J. Frank[1], J. E. Tohline[1]
[1]Louisiana State Univ..

074.12 **Tidal Effects in Inspiraling Double White Dwarfs**
Vicky Kalogera[1], B. Willems[1], B. Hansen[2]
[1]Northwestern University, [2]UCLA.

074.13 **Gravitational Waves from Cosmic Superstrings**
Craig J. Hogan[1]
[1]Univ. of Washington.

074.14 **The Mock LISA Data Challenges: First Results and Future Prospects**
Michele Vallisneri[1], Mock LISA Data Challenge Taskforce
[1]Jet Propulsion Laboratory.

074.15 **Listening to the Universe with the Laser Interferometer Space Antenna**
Neil J. Cornish[1], J. Crowder[2], E. Porter[3]
[1]Montana State Univ., [2]Jet Propulsion Laboratory, [3]Albert Einstein Institutue, Germany.

074.16 **Bayesian Inference and Observations of Massive Black-hole Binaries with LISA**
Marc Van der Sluys[1], A. Stroeer[2], A. Vecchio[2], V. Kalogera[1]
[1]Northwestern University, [2]Northwestern Univ., Univ. of Birmingham.

074.17 **An Application of the Hilbert-Huang Transform to the LISA Mock Data Challenge**
John K. Cannizzo[1], J. Camp[2]
[1]NASA/GSFC/UMBC, [2]NASA/GSFC.

074.18 **Coated Fused Silica Fibers for Enhanced Sensitivity Torsion Pendulum**
Kenji Numata[1]
[1]Univ. of Maryland/NASA-GSFC.

Session 075 Astronomy Research by Students of All Ages and the Public

AAS Poster, Monday, 9:20am-6:30pm, Exhibit Hall 4

075.01 **The Use of a High School Observatory to Augment Our Understanding of the Metallicity Dependence of the Cepheid Period-Luminosity Relation**
James Young[1], S. Scott[1], S. Kanbur[1], A. ominsky[2], C. Ngeow[3]
[1]SUNY Oswego, [2]Southern Cayuga High School Observatory, [3]U. Illinois.

075.02 **The Arecibo Remote Command Center: Involving Students in Major Astronomical Research**
Andy Miller[1], A. Rodriguez-Zermeno[1], F. Jenet[1]
[1]Center for Gravitational Wave Astronomy/ Univ. Texas at Brownsville.

075.03 **Space Science Lab at PARI**
Michael W. Castelaz[1], M. Blake[1], D. Clavier[1], C. Whitworth[1], J. D. Cline[1]
[1]Pisgah Astronomical Research Inst..

075.04 **The CUREA Program at Mount Wilson**
Paula C. Turner[1], J. C. LoPresto[2], M. Simmons[3]
[1]Kenyon College, [2]Edinboro Univ. of Penns., [3]Mount Wilson Obs. Assoc..

075.05 **Astrophysical and Planetary Science Research at Four Minority Institutions**
Donald K. Walter[1], L. P. Johnson[2], S. A. Austin[2], C. Salgado[3], P. A. Morris[4]
[1]South Carolina State Univ., [2]Medgar Evers College, [3]Norfolk State University, [4]University of Houston - Downtown.

075.06 **Research-Infused STEM Reform at South Carolina State University**
Daniel M. Smith, Jr.[1], J. A. Anderson[1], K. Adzievski[1]
[1]South Carolina State University.

075.07 **Education and Public Outreach for Stardust@home: An Interactive Internet-based Search for Interstellar Dust**
Bryan J. Mendez[1], A. J. Westphal[1], A. L. Butterworth[1], N. Craig[1]
[1]UC Berkeley.

075.08 **THEMIS Education and Outreach Program's Involvement in Authentic Science in the classroom.**
Nahide G. Craig[1], L. M. Peticolas[1], V. Trautman[2]
[1]UC, Berkeley, [2]Petersburg City Schools.

Session 076 Circumstellar Disk Models

AAS Poster, Monday, 9:20am-6:30pm, Exhibit Hall 4

076.01 **Accretion of Terrestrial Planets from Oligarchs in a Turbulent Disk**
Masahiro Ogihara[1], S. Ida[1], A. Morbidelli[2]
[1]Tokyo Institute of Technology, Japan, [2]Observatory of Nice, France.

076.02 **Disks in Transition Around Pre-Main Sequence Stars**
Catherine Espaillat[1], N. Calvet[1], L. Hartmann[1]
[1]University of Michigan.

076.03 **Modification of Angular Velocity Distribution by Inhomogeneous Growth of MRI in Protoplanetary Disks**
Mariko Kato[1], K. Nakamura[1], R. Tandokoro[1], M. Fujimoto[2], S. Ida[1]
[1]Tokyo Institute of Technology, Japan, [2]JAXA/ISAS, Japan.

076.04 **The behaviors of Kelvin-Helmholtz Instability in protoplanetary disks**
Yusuke Kobayashi[1], K. Nakamura[1], M. Fujimoto[1]
[1]Tokyo Institute of Technology, Japan.

076.05 **Kelvin-Helmholtz vortices induced by MRI at the inner-edge of protoplanetary disks**
Keita Nakamura[1], M. Kato[1], R. Tandokoro[2], M. Fujimoto[3], S. Ida[1], H. Yurimoto[4]
[1]Tokyo Institute of Technology, Japan, [2]FUJITSU LABORATORIES LTD., Japan, [3]ISAS/JAXA, Japan, [4]Hokkaido University, Japan.

076.06 **A Test Suite for 3D Radiative Hydrodynamics Simulations of Protoplanetary Disks**
Aaron C. Boley[1], R. H. Durisen[1], A. Nordlund[2], J. Lord[3]
[1]Indiana University, [2]NBIfA, Denmark, [3]Whitman College.

076.07 **3D Radiative Hydrodynamics Simulations of Protoplanetary Disks: A Comparison Between Two Radiative Cooling Algorithms**
Jesse W. Lord[1], A. C. Boley[2], R. H. Durisen[2]
[1]Indiana University and Whitman College, [2]Indiana University.

076.08 **Monte-Carlo SED Models Of Young Stars With Accretion Disks In Taurus-Auriga and Orion Region**
Thompson S. LeBlanc[1], K. G. Stassun[1], E. L. Jensen[2]
[1]Vanderbilt University, [2]Swarthmore College.

076.09 **Proto Planetary Disk Model Inversion Using Artificial Neural Networks**
Gerald T. Ruch, Jr.[1], D. Wooden[2], C. E. Woodward[1]
[1]Univ. of Minnesota, [2]NASA Ames.

076.10 **Simulating Protoplanetary and Debris Disk's for ALMA**
Robert L. Stone[1]
[1]Radford University and NRAO.

Session 077 Clusters & Cosmology

AAS Poster, Monday, 9:20am-6:30pm, Exhibit Hall 4

077.01 **First Results from an HST/ACS Snapshot Survey of Intermediate Redshift, Intermediate X-ray Luminosity Clusters of Galaxies: Early Type Galaxies and Weak Lensing**
Christine Trombley[1], M. Donahue[1], S. Bruch[1], C. Conselice[2], B. McNamara[3], H. Hoekstra[4]
[1]Michigan State University, [2]University of Nottingham, United Kingdom, [3]University of Waterloo, Canada, [4]University of Victoria, Canada.

077.02 **Populations of Lyman Break Galaxies in Two Large Quasar Groups at 0.8<z<1.2**
Lutz Haberzettl[1], G. M. Williger[1], J. T. Lauroesch[1], D. Valls-Gabaud[2], C. P. Haines[3], R. G. Clowes[4], L. E. Campusano[5], R. Dave'[6]
[1]U. Louisville, [2]Obs. Meudon, France, [3]Oss. Astronomico di Capodimonte, Italy, [4]U. Central Lancashire, UK, [5]Univ. de Chile, Chile, [6]U. Arizona.

077.03 **Simulation of the Magnetothermal Instability in 3D and Application to Clusters of Galaxies**
Ian J. Parrish[1], J. M. Stone[1]
[1]Princeton University.

077.04 **Discovery of Distant Galaxy Clusters in the ROX Survey**
Deborah B. Haarsma[1], M. E. Donahue[2], A. R. Butler[1], S. S. Bruch[2], M. Dickinson[3]
[1]Calvin College, [2]MSU, [3]NOAO.

077.05 **THE EVOLUTION OF WEAK MgII ABSORBERS FROM 0 < z < 2.4.**
Anand Narayanan[1], T. Misawa[1], J. C. Charlton[1], T. Kim[2]
[1]Pennsylvania State Univ., [2]Astrophysikalisches Institut Potsdam, Germany.

077.06 **First Results from the XMM/IMACS Groups Project**
John S. Mulchaey[1], Y. Shen[2], J. Rasmussen[3], T. J. Ponman[3], S. Raychaudhury[3]
[1]Carnegie Obs., [2]Princeton University, [3]University of Birmingham, United Kingdom.

077.07 **Mapping the Intergalactic Medium in Chandra Deep Fields**
Lara A. Phillips[1]
[1]Five Colleges Astronomy Department, Amherst College.

077.08 **Chandra Observations of Abell 222 & Abell 223**
David S. Davis[1], M. Henriksen[2]
[1]UMBC/NASA's GSFC, [2]UMBC.

077.09 **Evidence for Evolution in Weak MgII Absorbers at z < 1.5**
Jessica L. Evans[1], C. W. Churchill[1], M. I. Murphy[2], A. M. Widhalm[1]
[1]New Mexico State Univ., [2]University of Cambridge, United Kingdom.

077.10 **The NOAO-XCS Survey Program**
Christopher J. Miller[1], A. K. Romer[2], S. A. Stanford[3], M. Hilton[4], M. Hosmer[5], N. Merhtens[2], XCS Consortium
[1]NOAO/CTIO, Chile, [2]University of Sussex, United Kingdom, [3]Lawrence Livermoore National Laboratory, [4]Liverpool John Moores University, United Kingdom, [5]Univsersity of Sussex, United Kingdom.

077.11 **Chandra Studies of Dark Matter and Galaxy Formation: Signatures from the Intracluster Medium**
Megan Donahue[1], M. Sun[1], K. Cavagnolo[1], G. Voit[1]
[1]Michigan State Univ..

077.12 **The Stellar Populations of Ultra-Compact Dwarf Galaxies**
Arna Karick[1], M. D. Gregg[1]
[1]UC Davis/LLNL.

077.13 **Spatial Probing of MgII Absorption in ``Halo" Gas through Adaptive Mesh Refinement Simulations of Galaxies**
Christopher W. Churchill[1], G. Kacprzak[1], D. Ceverino[1], J. Evans[1], A. Widhalm[1]
[1]New Mexico State Univ..

077.14 **Cosmic Ray Scattering in Compressible Turbulence**
Andrey Beresnyak[1], A. Lazarian[1]
[1]Univ. of Wisconsin-Madison.

077.15 **Chandra Spectral Analysis of the Intergalactic Gas in the Unusual Cluster RXJ 0419+0225**
Kristina Nyland[1], R. Dupke[1]
[1]Univ. Of Michigan.

077.16 **Sunyaev-Zel'dovich Effect Signals in Cluster Models**
Beth A. Reid[1], D. N. Spergel[1]
[1]Princeton Univ..

077.17 **The Beta Problem: The Incompatibility of X-ray and Sunyaev-Zeldovich Model Fitting**
Jack O. Burns[1], E. Hallman[1], P. Motl[2], M. Norman[3]
[1]Univ. Of Colorado at Boulder, [2]Louisana State University, [3]Univ. of California at San Diego.

077.18 **OVI and HI Around Nearby Galaxies**
Bart P. Wakker[1], B. D. Savage[1], K. R. Sembach[2]
[1]Univ. of Wisconsin, [2]Space Telescope Science Institute.

077.19 **Chandra Observation of the Cluster Environment of a WAT Radio Source in Abell 1446**
Edmund Douglass[1], E. Blanton[1], T. Clarke[2], C. Sarazin[3], M. Wise[4]
[1]Boston University, [2]NRL, [3]University of Virginia, [4]University of Amsterdam, The Netherlands.

077.20 **A Possible Mass-Density and Star Formation Density relation at z=5.7**
Peter L. Capak[1], N. Z. Scoville[1], Y. Taniguchi[2], S. Sasaki[2], S-COSMOS Team
[1]Caltech, [2]Ehime University, Japan.

077.21 **Group Analysis Reveals Previously Unrecognized Patterns in Stellar and Galactic Distributions**
Philip Mocz[1]
[1]Mililani High School.

077.22 **New Statistical Methods to Analyze the SDSS DR5 Galaxy Distribution**
Yongfeng Wu[1], D. Batuski[1], A. Khalil[1]
[1]Univ. of Maine.

077.23 **Exploring Galaxy Environments with Characteristic Field Mapping**
Shannon A. Snider[1]
[1]Michigan State University.

077.24 **A Weak Lensing Study of the Coma Cluster in SDSS**
Jeffrey Kubo[1], J. Annis[1], I. Dell'Antonio[2], H. Khiabanian[2], A. Stebbins[1]
[1]Fermi Nat'l. Accelerator Lab., [2]Brown University.

077.25 **Quantifying Galaxy Cluster Substructure**
David A. Ventimiglia[1], G. M. Voit[1], M. Donahue[1], S. Borgani[2], S. Ameglio[2]
[1]Michigan State University, [2]Università degli Studi di Trieste, Italy.

077.26 **Iron Abundance and Temperature Gradients in High Redshift Galaxy Clusters**
Steven R. Ehlert[1]
[1]Northwestern University.

077.27 **A Detection of Large-scale Intrinsic Alignments and Implications for Cosmic Shear**
Rachel Mandelbaum[1], C. M. Hirata[1], M. Ishak[2], U. Seljak[3]
[1]Institute for Advanced Study, [2]University of Texas (Dallas), [3]Princeton University.

077.28 **Constraining Lambda CDM and Brane-based Cosmologies using Gamma Ray Bursts**
Razieh Behkam[1], J. Rhoads[1]
[1]Arizona State Univ..

077.29 **Understanding a Cosmic Yardstick - Simulating Neutral Hydrogen in Disk Galaxies**
Alok Singhal[1], R. Fisher[2], K. O'Neil[2], E. Murphy[3]
[1]National Radio Astronomy Observatory and University of Virginia, [2]National Radio Astronomy Observatory, [3]University of Virginia.

077.31 **The Opposite of Dark Energy: Limits on Ultralight Energy in the Early Universe**
Robert J. Nemiroff[1]
[1]Michigan Technological University.

077.32 **Cosmology with the Cluster Mass Function**
Kenneth J. Rines[1]
[1]Smithsonian Astrophysical Observatory.

Session 078 Computation, Data Handling, and Image Analysis

AAS Poster, Monday, 9:20am-6:30pm, Exhibit Hall 4

078.01 **Theory SkyNode**
Richard P. Wagner[1], M. L. Norman[1]
[1]UC, San Diego.

078.02 **Datamining the NOAO NVO Portal: Automated Image Classification**
Pooja Vaswani[1], C. J. Miller[2], I. Barg[3], R. C. Smith[3]
[1]University of Arizona, [2]NOAO/CTIO, [3]NOAO.

078.03 **A New Telescope Control System Interface for the HET**
Brandt M. Westing[1], J. R. Fowler[2]
[1]The University of Texas - Austin, [2]Hobby-Eberly Telescope/McDonald Observatory.

078.04 **VOEventNet: Event Messaging for Astronomy**
Andrew J. Drake[1], G. Djorgovski[1], M. Graham[1], R. Williams[1], A. Mahabal[1], C. Donalek[1], E. Glikman[1], J. Bloom[2], T. Vastrand[3], R. White[3], D. Rabinowitz[4], C. Baltay[4]
[1]Caltech, [2]UCB, [3]LANL, [4]Yale.

078.05 **Real-time Transients from Palomar-QUEST Synoptic Sky Survey**
Ashish A. Mahabal[1], A. Drake[1], S. G. Djorgovski[1], C. Donalek[1], E. Glikman[1], M. J. Graham[1], R. Williams[1], C. Baltay[2], D. Rabinowitz[2], A. Bauer[2], N. Ellman[2], R. Lauer[2], PQ team (Caltech, Yale, NCSA, Indiana, ...)
[1]Caltech, [2]Yale University.

078.06 **SEDBuilder: A Federating Tool for the Virtual Observatory**
August A. Muench[1], D. Floyd[2], T. Murphy[3], P. Prema[4], R. Sinha[5]
[1]Smithsonian Astrophysical Observatory, [2]STSCI, [3]University of Sydney, Australia, [4]Institute of Astronomy, United Kingdom, [5]IUCAA, India.

078.07 **Status of the CDS Services, SIMBAD, VizieR and Aladin**
Francoise Genova[1], M. G. Allen[1], O. Bienayme[1], T. Boch[1], F. Bonnarel[1], L. Cambresy[1], S. Derriere[1], P. Dubois[1], P. Fernique[1], G. Landais[1], S. Lesteven[1], C. Loup[1], A. Oberto[1], F. Ochsenbein[1], A. Schaaff[1], B. Vollmer[1], M. Wenger[1], M. Louys[2], E. Davoust[3], G. Jasniewicz[4]
[1]Obs. de Strasbourg, France, [2]LSIIT, France, [3]LAT, France, [4]GRAAL, France.

078.08 **An Implementation of the VO Spectrum Model**
Kelly McCusker[1]
[1]Harvard-Smithsonian Center for Astrophysics.

078.09 **How to Find More Supernovae with Less Work: Object Classification Techniques for Difference Imaging**
Stephen J. Bailey[1], G. Aldering[1], C. Aragon[1], S. Bongard[1], M. Childress[1], S. Loken[1], P. Nugent[1], S. Perlmutter[1], K. Runge[1], R. Scalzo[1], R. Romano[1], R. Thomas[1], B. Weaver[1], C. Baltay[2], A. Bauer[2], D. Herrera[2], D. Rabinowitz[2], E. Pecontal[3], G. Rigaudier[3], P. Antilogus[4], S. Gilles[4], R. Pain[4], R. Pereira[4], C. Buton[5], Y. Copin[5]
[1]Lawrence Berkeley National Laboratory, [2]Yale University, [3]Centre de Recherche Astronomique de Lyon, France, [4]Laboratoire de Physique Nucleaire et de Haute Energies de Paris, France, [5]Institut de Physique Nucleaire de Lyon, France.

078.10 **Arecibo Observatory and the National Virtual Observatory**
Isobel Ojalvo[1]
[1]Rensselaer Polytechnic Institute.

078.11 **Moletai Meeting on CCD Strömvil Photometry**
A. G. D. Philip[1], R. P. Boyle[2], R. Janusz[2]
[1]ISO and Union College, [2]Vatican Observatory.

078.12 **Bayesian Source Separation for PAH Spectra**
Duane F. Carbon[1], M. K. Tse[2], K. H. Knuth[3]
[1]NASA/Ames Research Center, [2]University of Albany (SUNY), [3]University at Albany (SUNY).

Session 079 Cool dwarfs

AAS Poster, Monday, 9:20am-6:30pm, Exhibit Hall 4

079.01 **Spitzer Observations of Substellar Companions**
Sonali J. Shukla[1], P. Lowrance[2], J. Kirkpatrick[3]
[1]Vanderbilt University / Spitzer Science Center, California Institute of Technology, [2]Spitzer Science Center, California Institute of Technology, [3]Infrared Processing and Analysis Center, California Institute of Technology.

079.02 **Activity and Kinematics of Ultracool Dwarfs Including Flare Observations**
Sarah J. Schmidt[1], K. L. Cruz[2]
[1]University of Washington, [2]American Museum of Natural History.

079.03 **Discovery of a Nearby, Very Young L Dwarf**
Dagny Looper[1], J. Kirkpatrick[2], R. Cutri[2], T. Barman[3], T. Roellig[4], M. Cushing[5]
[1]U. Hawaii, [2]Caltech/IPAC, [3]Lowell Obs., [4]NASA-Ames, [5]U. Arizona.

079.04 **A Custom Near-IR Filter for Finding Young Brown Dwarfs**
Katelyn N. Allers[1], M. Liu[1]
[1]Univ. Of Hawaii.

079.05 **Recent Results of the NIRSPEC Brown Dwarf Spectroscopic Survey**
Emily L. Rice[1], I. S. McLean[1], L. Prato[2], M. R. McGovern[3], A. J. Burgasser[4], J. Kirkpatrick[5], S. S. Kim[6]
[1]UCLA, [2]Lowell Observatory, [3]Antelope Valley College, [4]MIT, [5]IPAC/Caltech, [6]Kyung Hee University, Republic of Korea.

Session 080 COSMOS

AAS Poster, Monday, 9:20am-6:30pm, Exhibit Hall 4

080.01 **The Luminosity Function of COSMOS Radio Sources**
Timothy Paglione[1], V. Smolcic[2], E. Schinnerer[2], K. Salvador[3], P. Ciliegi[4], M. Bondi[4], S. Tribiano[5]
[1]CUNY-York College, [2]MPIA, Germany, [3]AMNH, [4]INAF, Italy, [5]CUNY-BMCC.

080.02 **The Faint End Slope Of Starburst Galaxy Luminosity Functions In The COSMOS 2-Square Degree Field**
Charles Liu[1], P. Capak[2], B. Mobasher[3], T. A. Paglione[4], R. M. Rich[5], N. Z. Scoville[2], S. M. Tribiano[6], N. Tyson[7], COSMOS Collaboration
[1]CUNY College of Staten Island, [2]Caltech, [3]STScI, [4]CUNY York College, [5]UCLA, [6]CUNY BMCC, [7]AMNH.

080.03 **The COSMOS Survey: New Data Releases**
Patrick L. Shopbell[1], P. Capak[1], N. Scoville[1], COSMOS Team
[1]Caltech.

080.04 **A Multiwavelength Study of Millimeter Galaxies in the Bolocam-COSMOS Survey**
James E. Aguirre[1], Bolocam-COSMOS Collaboration
[1]NRAO Jansky Fellow at the University of Colorado, Boulder.

080.05 **The VLA-COSMOS 1.4 GHz Survey: The Properties of the Faint Radio Population and Star Formation Rates**
Vernesa Smolcic[1], E. Schinnerer[1], C. Carilli[2], M. Scodeggio[3], P. Franzetti[3], K. Jahnke[1], A. Martinez-Sansigre[1], M. Salvato[4], G. Zamorani[5]
[1]MPI fur Astronomie, Germany, [2]NRAO, [3]IASF INAF, Italy, [4]California Institute of Technology, [5]L'Istituto Nazionale di Astrofisica, Italy.

080.06 **The Chandra COSMOS Survey**
Martin Elvis[1], C-COSMOS Team
[1]Harvard-Smithsonian CfA.

Session 081 Disks Later in Life

AAS Poster, Monday, 9:20am-6:30pm, Exhibit Hall 4

081.01 **Mid-infrared Spectra of PAH Emission in Herbig AeBe Stars**
Luke D. Keller[1], G. C. Sloan[2], S. Shah[1], N. Chitrakar[1], W. J. Forrest[3], B. Sargent[3], D. M. Watson[3], A. Li[4], J. Najita[5], C. H. Chen[5], J. D. Green[3], T. F. Herter[2], P. D'Alessio[6], N. Calvet[7], L. Hartman[7], J. R. Houck[2]
[1]Ithaca College, [2]Cornell University, [3]University of Rochester, [4]University of Missouri, [5]NOAO, [6]UNAM, Mexico, [7]University of Michigan.

081.02 **Spectroscopy of the Post-AGB Disk around HR 4049**
Kenneth H. Hinkle[1], S. D. Brittain[2], D. L. Lambert[3]
[1]NOAO, [2]Clemson University, [3]University of Texas.

081.03 **Periodic Variations in the Emission Lines of Zeta Tauri**
Shellie L. Huether[1], K. S. Bjorkman[2]
[1]Univ. of Missouri-Rolla, [2]Univ. of Toledo.

081.04 **Be Star Spectra: Disk Variability and Radial Velocity Variations**
Erika Grundstrom[1], D. R. Gies[1], T. S. Boyajian[1], S. J. Williams[1], D. W. Wingert[1]
[1]Georgia State Univ..

081.05 **Probing the Circumstellar Disks of Be Stars with Contemporaneous Optical and IR Spectroscopy**
Karen S. Bjorkman[1], E. N. Hesselbach[1], J. P. Wisniewski[2], J. E. Bjorkman[1]
[1]Univ. of Toledo, [2]NASA GSFC.

081.06 **Mid-Infrared Spectra of Circumsteller Dust Debris around Main-sequence A and Late B Type Stars**
Farisa Morales[1], M. Werner[1], G. Bryden[1], C. Beichman[1], K. Su[2], G. Rieke[2]
[1]JPL/Caltech, [2]U of A.

Session 082 Formation and Detection of Habitable Planets

AAS Poster, Monday, 9:20am-6:30pm, Exhibit Hall 4

082.01 **Is the Binary-Planetary System of Gamma Cephei Dynamically Full?**
Joseph Castro[1], N. Haghighipour[1]
[1]Institute for Astronomy, University of Hawaii.

082.02 **Habitable Planetary Systems (un)like our own: Which of the Known Extra-Solar Systems Could Harbor Earth-like Planets?**
Sean Raymond[1], A. Mandell[2], S. Sigurdsson[2]
[1]Univ. of Colorado, [2]Pennsylvania State University.

082.03 **Laboratory demonstration of coronagraph imaging for the detection of Earth-like planets**
John T. Trauger[1], W. A. Traub[1]
[1]JPL.

Session 083 Galactic and Extragalactic Surveys Using AzTEC

AAS Poster, Monday, 9:20am-6:30pm, Exhibit Hall 4

083.01 **AzTEC: A New Millimeter-Wave Camera**
Jason Austermann[1], P. A. Ade[2], J. J. Bock[3], J. Glenn[4], S. R. Golwala[5], S. Kim[6], P. D. Mauskopf[2], T. A. Perera[1], C. R. Predmore[7], C. Roberts[1], K. S. Scott[1], G. W. Wilson[1]
[1]Univ. Of Massachusetts, Amherst, [2]Cardiff University, United Kingdom, [3]Jet Propulsion Laboratory, [4]University of Colorado, Boulder, [5]Caltech, [6]Sejong University, Republic of Korea, [7]Predmore Associates.

083.02 **Optimizing AzTEC Data Reduction for Extracting Point-like Objects**
Thushara Perera[1], J. Austermann[1], C. Battersby[1], C. Roberts[1], K. S. Scott[1], G. W. Wilson[1], M. S. Yun[1]
[1]Univ. Of Massachusetts Amherst.

083.03 **AzTEC Observations of the SHADES Fields**
Kimberly S. Scott[1], AzTEC/SHADES group
[1]Univ. Of Massachusetts.

083.04 **The Star Formation History of SHADES Sources**
Itziar Aretxaga[1], SHADES consortium and AzTEC team
[1]INAOE, Mexico.

083.05 **Milli-Jansky Sources in GOODS-N Detected with JCMT/AzTEC**
James D. Lowenthal[1], I. Aretxaga[2], J. Austermann[3], E. Chapin[4], K. Coppin[4], M. Crowe[4], L. Frey[4], A. Gibb[4], M. Halpern[4], D. H. Hughes[2], T. Perera[3], A. Pope[4], D. Scott[4], K. Scott[3], G. Wilson[3], M. S. Yun[3]
[1]Smith College, [2]INAOE, Mexico, [3]U. Massachusetts, [4]UBC, Canada.

083.06 **Nature of the 1100 Micron AzTEC-COSMOS Sources**
Min Su Yun[1], J. Aguirre[2], I. Aretxaga[3], J. Austermann[1], J. Bock[4], G. Fazio[5], J. Huang[5], D. Hughes[3], Y. Kang[6], S. Kim[6], J. Lowenthal[7], C. Ma[8], P. Mauskopf[9], T. Perera[1], D. Sanders[8], K. Scott[1], N. Scoville[4], G. Wilson[1], I. Yoon[1]
[1]Univ. of Massachusetts, [2]Univ. of Colorado/NRAO, [3]INAOE, Mexico, [4]Caltech, [5]SAO, [6]Sejong University, Republic of Korea, [7]Smith College, [8]Univ. of Hawaii, [9]Cardiff University, United Kingdom.

083.07 **A 1.1mm AzTEC Survey Tracing Accelerated Galaxy Formation Towards a Protocluster at z~3.8**
David H. Hughes[1], A. Montana[1], I. Aretxaga[1], M. Plionis[1], A. Porras[1], J. Wagg[1], E. Gaztanaga[2], J. Huang[3], G. Fazio[3], G. Wilson[4], M. Yun[4], J. Lowenthal[5], T. Perera[4], J. Austermann[4], K. Scott[4], J. Dunlop[6], R. Ivison[6], J. Stevens[7], I. Smail[8], P. Appleton[9]
[1]Instituto Nacional de Astrofisica, Optica y Electronica, Mexico, [2]IEEC, Spain, [3]CfA, [4]U. Massachusetts, [5]Smith College, [6]Institute of Astronomy, Royal Obs., UK, [7]U. Hertfordshire, UK, [8]U. Durham, UK, [9]IPAC.

083.08 **Joint Analysis of the Full AzTEC Sub-Millimeter Galaxy Data Set**
Grant Wilson[1], P. Ade[2], I. Aretxaga[3], J. Austermann[1], J. Bock[4], D. Hughes[3], Y. Kang[5], S. Kim[5], J. Lowenthal[6], P. Mauskopf[2], T. Perera[1], K. Scott[1], M. Yun[1]
[1]University of Massachusetts, [2]Cardiff University, United Kingdom, [3]INAOE, Mexico, [4]California Institute of Technology, [5]Sejong University, Republic of Korea, [6]Smith College.

083.09 **AzTEC Observations of 1.1 mm Emission from the Orion Nebula**
Sungeun Kim[1], I. Aretxaga[2], J. Austermann[3], J. Bock[4], D. Hughes[2], J. Lowenthal[5], P. Mauskopf[6], T. Perera[3], K. Scott[3], G. Wilson[3], I. Yoon[3], S. Youn[1], M. Yun[3]
[1]Sejong Univ., Republic of Korea, [2]INAOE, Mexico, [3]UMass, [4]Caltech, [5]Smith College, [6]Cardiff, United Kingdom.

083.10 **Constraints on the Star-forming Content of Extreme Molecular Cloud Environments using AzTEC**
Toby Moore[1], J. Allsopp[1], AzTEC Instrument Team
[1]Liverpool John Moores University, United Kingdom.

Session 084 Galactic ISM II

AAS Poster, Monday, 9:20am-6:30pm, Exhibit Hall 4

084.01 **An Upper Limit on Anomalous Dust Emission at 31~GHz in the Diffuse Cloud [LPH96]201.663+1.643**
Clive Dickinson[1]
[1]Caltech/JPL.

084.02 **A Study of the ρ Oph Cloud: Mapping the Stars and the Distribution and Motions of the Interstellar Gas**
Theodore P. Snow[1], J. D. Destree[1], D. E. Welty[2]
[1]Univ. of Colorado, [2]Univ. of Chicago.

084.03 **Laboratory Analysis of Carbon Dioxide Ice Mixtures in Support of Observations from the Spitzer Space Telescope**
Douglas White[1], P. Gerakines[1]
[1]University of Alabama at Birmingham.

084.04 **The Halo's Hot Gas, as Revealed by a Shadowing Observation of its O VI Resonance Line Emission**
Robin L. Shelton[1], E. B. Jenkins[2], S. M. Sallmen[3]
[1]University of Georgia, [2]Princeton University, [3]University of Wisconsin - La Crosse.

084.05 **Distances of Four High-Galactic Latitude Molecular Clouds**
Sharon L. Montgomery[1], C. E. Rombach[1], C. Y. Birney[1], D. N. Burrows[2]
[1]Clarion University, [2]Pennsylvania State University.

084.06 **New Maps of the 3-D Distribution of Cold and Warm Interstellar Gas within 500pc**
Barry Welsh[1], R. Lallement[2], J. Vergely[2]
[1]UC, Berkeley, [2]Service d'Aeronomie, CNRS, France.

084.07 **Radio and Recombination Lines from a Thermal Spur associated with the HII Region S54 : A Model to explain the Observational Results**
Diana E. Azcarate[1]
[1]Inst. Argentino de Radioastronomia, Argentina.

084.08 **Observational Evidence for X-ray Induced Plasma Damping of Grain Alignment**
Bengt-Goran Andersson[1]
[1]Johns Hopkins Univ..

084.09 **The Dynamical Structure of the Local Interstellar Medium**
Seth Redfield[1], J. L. Linsky[2]
[1]Univ. of Texas, [2]JILA and Univ. of Colorado.

084.10 **OH Study of the Massive Star-Forming Region IRAS 19111+1048**
Knicole Colon[1]
[1]The College of New Jersey.

084.11 **Dissipation and Heating in Supersonic MHD Turbulence**
M. Nicole Lemaster[1], J. M. Stone[1]
[1]Princeton Univ..

084.12 **Spitzer Observations of HD 34078 and IC 405: Bow Shock and Mid-IR Emission Variations**
Kevin France[1], S. R. McCandliss[2], R. E. Lupu[2]
[1]CITA / U Toronto, Canada, [2]JHU.

084.13 **Intrinsic Stellar Color and Reddening with the Sloan Digital Sky Survey**
Jennifer G. Boyles[1], K. A. Larson[1], Z. Ivezic[2]
[1]Western Washington University, [2]University of Washington.

084.14 **Analyzing the X-Ray Dust Halo and Extinction Toward X Per**
Lynne A. Valencic[1], R. K. Smith[2]
[1]NASA's GSFC, [2]Johns Hopkins University.

084.15 **High Resolution Observations of the Interstellar Medium Along the Future Solar Trajectory**
Ryland T. Brooks[1], S. Redfield[2]
[1]Colby College, [2]Univ. of Texas.

084.16 **H2/PAH emissions in the shocks and UV dominated regions of the embedded young cluster NGC2316**
Thangasamy Velusamy[1], W. D. Langer[1], D. Li[1]
[1]JPL/Caltech.

084.17 **Correlations between Tracers of Dense Molecular Gas and Star Formation Rate in GMCs**
Hongjun Ma[1], Y. Gao[1], J. Wu[2]
[1]Purple Mountain Observatory, China, [2]Harvard-CfA.

084.18 **Probing the Dust Structure in the LMC with Light Echoes**
Guillermo J. Damke[1], A. Rest[1], A. Newman[2], N. B. Suntzeff[3], R. C. Smith[1], D. L. Welch[4], A. Zenteno[1], C. Stubbs[5], A. Garg[5], P. Challis[5], A. C. Becker[6], G. A. Miknaitis[6], A. Miceli[6], K. H. Cook[7], M. Huber[7], S. Nikolaev[7], L. Morelli[8], D. Minniti[8], A. Clocchiatti[8], J. Prieto[9]
[1]NOAO/CTIO, [2]Washington University, [3]Texas A&M University, [4]Mc-Master Univ,, Canada, [5]Harvard Univ., [6]Univ. of Washington, [7]LLNL, [8]Pontificia Universidad Catolica de Chile, Chile, [9]Ohio State University.

084.19 **The Non-Linear Relationship between Silicate Absorption Depth and IR Extinction in Dense Clouds**
Jean E. Chiar[1], Y. Pendleton[2], K. Ennico[2], A. Boogert[3], T. Greene[2], C. Lada[4], T. Roellig[2], A. Tielens[2], M. Werner[5], D. Whittet[6]
[1]SETI Institute, [2]NASA Ames, [3]AURA/NOAO-Gemini South, Chile, [4]SAO, [5]IPAC, [6]Rensselaer Polytechnic Institute.

084.20 **The Photo-Dissociation Region Surrounding HR 5171AB**
Michael T. Schuster[1], M. Marengo[1], J. L. Hora[1], R. D. Gehrz[2], R. M. Humphreys[2], G. Fazio[1]
[1]Harvard-Smithsonian, CfA, [2]University of Minnesota.

084.21 **The effects of Geometry, Dust and Magnetic Fields upon Strong-line Abundance Indicators in HII Regions**
Humeshkar B. Nemala[1], G. J. Ferland[1]
[1]University of Kentucky.

084.22 **Numerical Simulations of Interstellar Gas with a Variable Continuum Source**
Gary J. Ferland[1], W. J. Henney[2], R. J. Williams[3]
[1]Univ. of Kentucky, [2]Centro de Radioastronomia y Astrofisica, Universidad Nacional Autonoma de Mexico, Mexico, [3]AWE, United Kingdom.

084.23 **Recent FUSE Observations of Diffuse O VI Emission in the Galactic Interstellar Medium**
William V. Dixon[1], R. Sankrit[2]
[1]Johns Hopkins University, [2]University of California, Berkeley.

084.24 **A Comparative Study of Velocity Statistics of Hydrodynamic and Magnetohydrodynamic Turbulence**
Nicholas Hall[1], G. Kowal[1], A. Lazarian[1], J. Cho[2]
[1]University of Wisconsin - Madison, [2]Chungnam National University, Republic of Korea.

Session 085 Ground-Based Instrumentation II

AAS Poster, Monday, 9:20am-6:30pm, Exhibit Hall 4

085.01 **The 21-Meter Space Tracking Antenna and Radio Telescope at Morehead State University**
Thomas Pannuti[1], B. K. Malphrus[1], M. Combs[1], J. Kruth[1], J. W. Atwood[1]
[1]Morehead State Univ..

085.02 **Atacama Large Millimeter Array Low Noise Analysis**
Manasseh O. Obi[1]
[1]Idaho State University.

085.03 **MUSTANG: A 90 GHz Bolometer Array for the Green Bank Telescope**
Brian S. Mason[1], S. Dicker[2], P. Korngut[1], D. Benford[3], M. Devlin[2], K. Irwin[4], H. Moseley[3], MUSTANG collaboration
[1]NRAO, [2]UPenn, [3]NASA GSFC, [4]NIST.

085.04 **Research Experience for Teachers at Green Bank: High-Precision Calibration, Baselines and Nonlinearities with the GBT**
Shelly Hynes[1], R. J. Maddalena[2], C. Figura[3]
[1]Louisiana School for Math, Science and the Arts, [2]National Radio Astronomy Observatory, [3]Wartburg College.

085.05 **Potential Astronomy Applications of Large Deep Space Network Arrays**
Dayton L. Jones[1], T. B. Kuiper[1], W. A. Majid[1]
[1]Jet Propulsion Laboratory.

085.06 **Ionospheric Phase Errors and Corrections at 1 m Wavelength**
William D. Cotton, Jr.[1], J. Uson[1]
[1]NRAO.

085.07 **A Web-based Portable RFI Monitor for LWA Site Selection**
Robert L. Mutel[1], T. Jaeger[1], G. Taylor[2]
[1]Univ. of Iowa, [2]Univ. of New Mexico.

085.08 **The Mileura Widefield Array**
Colin J. Lonsdale[1], International MWA partnership
[1]MIT.

085.09 **Construction of a Novel Interferometric Array of Small Radio Telescopes**
Dalit Engelhardt[1], P. Timbie[2]
[1]Boston University, [2]University of Wisconsin-Madison.

085.10 **Effectiveness of the Correlator Field of View Weighting Technique in Source Attenuation**
Dylan R. Nelson[1], S. S. Doeleman[2], C. J. Lonsdale[2], D. Oberoi[2], R. Cappallo[2]
[1]University of California Berkeley, [2]MIT, Haystack Observatory.

085.11 **First Astronomical Imaging Spectroscopy Obtained with a Multiplexed Superconducting Bolometer Array**
Dominic J. Benford[1], J. G. Staguhn[1], T. J. Ames[1], C. A. Allen[1], J. A. Chervenak[1], C. R. Kennedy[2], S. Lefranc[3], S. F. Maher[1], S. H. Moseley[1], F. Pajot[3], C. Rioux[3], R. A. Shafer[1], G. M. Voellmer[1]
[1]NASA / GSFC, [2]Notre Dame, [3]IAS, France.

085.12 **An Innovative Multicolor Submillimeter Camera Using Microwave Kinetic Inductance Detectors**
James A. Schlaerth[1], P. K. Day[2], J. Gao[3], J. Glenn[1], S. Golwala[3], S. Kumar[3], H. G. LeDuc[2], B. A. Mazin[2], H. T. Nguyen[2], J. E. Vaillancourt[3], A. Vayonakis[3], J. Zmuidzinas[3]
[1]University of Colorado, [2]JPL, [3]Caltech.

085.13 **Development of A Protype Infrared Exoplanet Tracker for All Sky Extrasolar Planet Survey**
Pengcheng Guo[1], J. Ge[1], S. Mahadevan[1], L. Ramsey[2]
[1]Univ. of Florida, [2]The Pennsylvania State University.

085.14 **Exploring Precision Radial Velocities in the NIR: PRVS Pathfinder**
Lawrence W. Ramsey[1], S. Bongiorno[1], L. Engel[1], S. Redman[1], A. Wolszczan[1], H. R. Jones[2], J. Barnes[2]
[1]Penn State Univ., [2]University of Hertfordshire, United Kingdom.

085.15 **The Tunable Spatial Heterodyne Spectrometer (TSHS): A High-Resolution Spectral Sensor for Broadband Studies of Diffuse Targets in the UV-Visible.**
Walter M. Harris[1], O. Dawson[1], L. Giersch[1]
[1]Univ. of Washington.

Session 086 LSST

AAS Poster, Monday, 9:20am-6:30pm, Exhibit Hall 4

086.01 **The LSST System**
Donald Sweeney[1], J. A. Tyson[2], LSST Collaboration
[1]LSST Corporation, [2]University of California, Davis.

086.02 **LSST Survey Strategy**
Zeljko Ivezic[1], A. J. Tyson[2], M. A. Strauss[3], S. Kahn[4], C. Stubbs[5], P. Pinto[6], K. Cook[7], LSST Collaboration
[1]Univ. of Washington, [2]Univ. of California, Davis, [3]Princeton University, [4]Stanford University, [5]Harvard University, [6]Univ. of Arizona, [7]Lawrence Livermore National Laboratory.

086.03 **Science Opportunities with the LSST**
Michael A. Strauss[1], LSST Collaboration
[1]Princeton Univ..

086.04 **LSST Survey Strategy: Cadence Design and Simulation**
Philip A. Pinto[1], K. H. Cook[2], F. Delgado[3], M. Miller[4], L. Denneau[5], A. Saha[4], P. A. Gee[6], J. A. Tyson[6], Z. Ivezic[7], LSST Collaboration
[1]Steward Obs., U. Arizona, [2]LLNL, NOAO, [3]CTIO, Chile, [4]NOAO, [5]U. Hawaii Institute for Astronomy, [6]UC, /Davis, [7]U. Washington.

086.05 **Calibration of LSST Instruments and Data**
David Burke[1], T. Axelrod[2], C. Claver[3], J. Frank[4], K. Gilmore[1], Z. Ivezic[5], V. Krabbendam[3], D. Monet[6], P. O'Connor[4], J. Oliver[7], E. Olszewski[2], P. Pinto[2], A. Saha[3], C. Smith[3], C. Stubbs[7], P. Takacs[4], J. A. Tyson[8]
[1]Stanford Linear Accelerator Center, [2]Steward Observatory, [3]National Optical Astronomy Observatory, [4]Brookhaven National Laboratory, [5]University of Washington, [6]U.S. Naval Observatory, [7]Harvard-Smithsonian Center for Astrophysics, [8]University of California.

086.06 **Calibrating Photometric Redshifts for LSST**
Jeffrey Newman[1], A. J. Connolly[2], J. A. Tyson[3], M. Schneider[3], V. E. Margoniner[3], D. M. Wittman[3], H. Aihara[4], S. Miyazaki[5], LSST Collaboration
[1]U.C. Berkeley, [2]U. Washington, [3]U.C. Davis, [4]U. Tokyo, Japan, [5]NAOJ-Subaru.

086.07 **The LSST Data Products**
Tim S. Axelrod[1], R. Allsman[2], A. Becker[3], J. Becla[4], A. Connolly[3], K. Cook[5], J. Gray[6], A. Jagatheesan[7], J. Kantor[2], M. Nieto-Santisteban[8], S. Nikolaev[5], R. Owen[3], R. Pike[9], R. Plante[10], N. Silvestri[3], C. Smith[11], A. Szalay[8], A. Thakar[8], J. A. Tyson[12], LSST Collaboration
[1]Steward Observatory / LSSTC, [2]LSSTC, [3]U Washington, [4]SLAC, [5]LLNL, [6]Microsoft Research, [7]SDSC, [8]JHU, [9]Google, [10]NCSA, [11]NOAO, [12]UCD.

086.08 **Four LSST probes of Dark Energy**
J. A. Tyson[1], H. Zhan[1], L. Knox[1], LSST Collaboration
[1]UC, Davis.

086.09 **Cosmology with Photometric Baryon Acoustic Oscillation Measurements**
Hu Zhan[1], A. J. Hamilton[2], L. Knox[1], J. A. Tyson[1], LSST Collaboration
[1]UC Davis, [2]JILA, U. Colorado.

086.10 **Weak Lensing with LSST**
David M. Wittman[1], B. Jain[2], M. Jarvis[2], L. Knox[1], V. Margoniner[1], M. Takada[3], J. Tyson[1], H. Zhan[1], LSST Weak Lensing Science Collaboration
[1]UC, Davis, [2]U. Penn, [3]Tohoku University, Japan.

086.11 **Supernova Science and Cosmology with the LSST**
W. M. Wood-Vasey[1], P. Pinto[2], L. Wang[3], H. Zhan[4], Y. Wang[5], LSST Supernova Science Collaboration
[1]Harvard-Smithsonian, CfA, [2]Steward Observatory, University of Arizona, [3]Texas A&M, [4]UC Davis, [5]University of Oklahoma.

086.12 **Gravitationally Lensed Quasars - Lessons from SDSS and Predictions for LSST**
R. D. Blandford[1], M. Oguri[1], P. Marshall[2], E. A. Baltz[1], M. Bradac[1], C. D. Fassnacht[2], LSST collaboration
[1]SLAC, [2]University of California.

086.13 **Transients and Variables**
Shrinivas Kulkarni[1], A. Becker[2], J. S. Bloom[3], K. H. Cook[4], S. Kahn[5], T. Tyson[3], LSST Transient Object Collaboration
[1]Caltech, [2]U. Washington, [3]UC, [4]Lawrence Livermore National Laboratory, [5]Stanford University.

086.14 **AGN Science with the LSST**
Niel Brandt[1], LSST AGN Science Collaboration
[1]Penn State Univ..

086.15 **Mapping the Milky Way with LSST**
James Bullock[1], C. M. Rockosi[2], Z. Ivezic[3], A. Saha[4], LSST Milky Way Science Collaboration
[1]University of California Irvine, [2]University of California Santa Cruz, [3]University of Washington, [4]Space Telescope Science Institute.

086.16 **Stellar Populations with the LSST**
Abhijit Saha[1], K. Olsen[2], LSST Stellar Populations Collaboration
[1]NOAO, [2]Cerro Tololo Inter-American Observatory, Chile.

086.17 **LSST: Taking Inventory of the Solar System**
Steven R. Chesley[1], A. J. Connolly[2], A. W. Harris[3], Z. Ivezic[4], J. Kubica[5], LSST Solar System Science Collaboration
[1]JPL, [2]Univ. Pittsburgh, [3]Space Sci. Inst., [4]Univ. Wash., [5]Carnegie Mellon Univ..

086.18 **An Overview of the LSST Telescope and Site**
Chuck F. Claver[1], V. L. Krabbendam[1], J. Andrew[1], J. Barr[1], J. Burge[2], W. Gressler[1], D. Neill[1], S. Olivier[3], D. Phillion[3], J. Sebag[1], L. Seppala[3], R. Upton[1], LSST Collaboration
[1]NOAO, [2]University of Arizona, Steward Observatory, [3]LLNL.

086.19 **The Baseline Design of the LSST Camera**
Steven Kahn[1], LSST Collaboration
[1]Stanford University / Stanford Linear Accelerator Center.

086.20 **The LSST Sensor Development Program**
Veljko Radeka[1], J. C. Geary[2], K. Gilmore[3], M. Nordby[3], J. A. Tyson[4], J. Oliver[5], D. Figer[6], C. Stubbs[7]
[1]Brookhaven National Laboratory, [2]SAO, [3]Stanford Linear Accelerator Center, [4]UCalifornia, Davis, [5]Harvard U., [6]RIT, [7]CfA.

086.21 **LSST Camera Electronics**
Paul O'Connor[1], J. Oliver[2], J. Geary[3], R. Van Berg[4], V. Radeka[1]
[1]Brookhaven National Lab., [2]Harvard U., [3]SAO, [4]U. Pennsylvania.

086.22 **Maximizing Observations in the Large Synoptic Survey Telescope Cadence Simulator (OpSim) and Uncovering Its Abilities: Evaluating The Search for Variable Stars**
Casey R. Coffey[1], A. Saha[2], M. Miller[2]
[1]Westminster College, [2]National Optical Astronomy Observatory.

Session 087 M33: Our Other Neighbor

AAS Poster, Monday, 9:20am-6:30pm, Exhibit Hall 4

087.01 **Chandra ACIS Survey of M33 (ChASeM33): A Deep X-ray Survey of theNearest Face-on Spiral**
Paul P. Plucinsky[1], M. Sasaki[1], T. J. Gaetz[1], B. Williams[2], K. S. Long[3], R. P. Kirshner[1], W. Pietsch[4], F. Haberl[4], D. J. Helfand[5], J. P. Hughes[6], P. F. Winkler[7], W. P. Blair[8], P. Ghavamian[8], R. J. Edgar[1], T. G. Pannuti[9], T. Mazeh[10], A. Shporer[10], D. Breitschwerdt[11], L. Bianchi[8], M. A. de Avillez[12], D. Thilker[8], R. K. Smith[13], J. E. Grindlay[1], K. Kuntz[8], R. Tuellmann[14]
[1]CfA, [2]U. Washington, [3]STScI, [4]MPIf Extraterrestriche Physik, Germany, [5]Columbia U., [6]Rutgers U., [7]Middlebury College, [8]JHU, [9]Morehead State U., [10]Tel Aviv U., Israel, [11]U. Vienna, Austria, [12]U. Evora, Portugal, [13]NASA GSFC & JHU, [14]Ruhr-U. Bochum, Germany.

087.02 **Chandra ACIS Survey of M33 (ChASeM33): The X-ray Point Source Population of M33**
Manami Sasaki[1], B. Williams[2], P. P. Plucinsky[1], W. Pietsch[3], T. J. Gaetz[1], K. S. Long[4], T. Mazeh[5], A. Shporer[5], F. Haberl[3], T. G. Pannuti[6], P. Ghavamian[7], L. Bianchi[7], A. Tolea[7], ChASeM33 team
[1]CfA, [2]University of Washington, [3]Max-Planck Institute for Extraterrestrial Physics, Germany, [4]STScI, [5]Tel Aviv University, Israel, [6]Morehead State University, [7]JHU.

087.03 **Chandra ACIS Survey of M33 (ChASeM33): Supernova Remnants**
Knox S. Long[1], P. Winkler[2], W. P. Blair[3], P. Ghavamian[3], J. P. Hughes[4], T. J. Gaetz[5], D. J. Helfand[6], R. P. Kirshner[5], T. G. Pannuti[7], P. P. Plucinski[5], M. Sasaki[5], ChASEM33 team
[1]STScI, [2]Middlebury College, [3]JHU, [4]Rutgers Univ., [5]Harvard-Smithsonian CfA, [6]Columbia Univ., [7]Morehead State Univ..

087.04 **Chandra ACIS Survey of M33 (ChASeM33): X-ray Imaging and Spectroscopy of M33SNR21, the Brightest X-ray Supernova Remnant in M33**
Terrance J. Gaetz[1], J. P. Hughes[2], W. P. Blair[3], P. F. Winkler[4], P. Ghavamian[3], K. S. Long[5], T. G. Pannuti[6], B. Williams[7], R. J. Edgar[1], P. P. Plucinsky[1], M. Sasaki[1], R. P. Kirshner[8], M. Avillez[9], D. Breitschwerdt[10], ChASeM33 team
[1]SAO/CfA, [2]Rutgers University, [3]JHU/CAS, [4]Middlebury College, [5]STScI, [6]SSC/Morehead State University, [7]Univ. Washington, [8]Harvard/CfA, [9]Univ. Evora, Portugal, [10]Univ. Wien, Austria.

087.05 **Stellar Populations of the Disk of M33**
Roberto J. Avila[1], J. A. Holtzman[1], D. R. Garnett[2], A. Sarajedini[3]
[1]New Mexico State Univ., [2]Steward Observatory, UofA, [3]University of Florida.

087.06 **A Spectroscopic Study of M31 dSphs -- Kinematics, Chemical Abundances, and Radial Distributions in And I, II, and III**
Steven R. Majewski[1], J. Kalirai[2], M. Geha[3], P. Guhathakurta[2], K. Gilbert[2], J. Ostheimer[1], R. Patterson[1]
[1]Univ. of Virginia, [2]University of California, [3]HIA, Canada.

Session 088 MIPSGAL

AAS Poster, Monday, 9:20am-6:30pm, Exhibit Hall 4

088.01 **MIPSGAL I & II: A Survey of the Inner Galactic Plane at 24 and 70 Microns, The Mosaics**
Sean J. Carey[1], A. Noriega-Crespo[1], D. R. Mizuno[2], S. Shenoy[1], R. Paladini[1], K. E. Kraemer[3], T. A. Kuchar[2], F. R. Marleau[1], S. D. Price[3], D. L. Padgett[1], R. Indebetouw[4], J. G. Ingalls[1], B. Ali[5], G. B. Berriman[5], F. Boulanger[6], R. M. Cutri[5], W. B. Latter[5], P. Martin[7], M. Miville-Deschenes[6], S. Molinari[8], L. M. Rebull[1], R. F. Shipman[9], L. Testi[10]
[1]Spitzer Science Center / Caltech, [2]Boston College, [3]Air Force Research Laboratory, [4]University of Virginia, [5]IPAC / Caltech, [6]IAS, France, [7]CITA, Canada, [8]Istituto Fisica Spazio Interplanetario, Italy, [9]SRON, The Netherlands, [10]Arcetri Observatory, Italy.

088.02 **Data processing of MIPSGAL 24 micron images**
Donald R. Mizuno[1], A. Noriega-Crespo[2], D. L. Padgett[2], S. J. Carey[2], R. Paladini[2], S. Shenoy[2], K. Kraemer[3], T. Kuchar[1], F. Marleau[2], S. Price[3]
[1]Boston College, [2]Spitzer Science Center, [3]Air Force Research Laboratory.

088.03 **The MIPSGAL 24 Micron Point Source Catalog: Preliminary Results**
Sachindev S. Shenoy[1], F. Marleau[1], D. Mizuno[2], S. J. Carey[1], A. Noriega-Crespo[1], K. E. Kraemer[3], S. D. Price[3], T. A. Kuchar[2], D. L. Padgett[1], R. Paladini[1]
[1]SSC - Caltech, [2]Boston College, [3]Air Force Research Laboratory.

088.04 **Data Processing of MIPSGAL 70 Micron Images**
Roberta Paladini[1], D. Frayer[1], A. Noriega-Crespo[1], S. Carey[1], D. Mizuno[2], S. Shenoy[1], K. Kramer[2], T. Kuchar[2], F. Marleau[1], S. Price[2], D. Padgett[1], J. Ingalls[1]
[1]SSC/Caltech, [2]Air Force Research Laboratory.

088.05 **Dusty Sculptures in the MIPSGAL Survey**
Nicolas Flagey[1], A. Noriega-Crespo[2], S. Carey[2], MIPSGAL Team
[1]Institut d'Astrophysique Spatiale, Orsay, FRANCE & Spitzer Science Center, [2]Spitzer Science Center.

088.06 **The Astronomical Zoo in MIPSGAL I and II**
Thomas A. Kuchar[1], D. Mizuno[1], S. Shenoy[2], R. Paladini[2], K. Kraemer[3], S. Price[3], F. Marleau[2], D. Padgett[2], R. Indebetouw[4], J. Ingalls[2], B. Ali[2], B. Berriman[2], F. Boulanger[5], R. Cutri[2], W. Latter[2], M. Miville-Deschenes[5], S. Molinari[6], L. Rebull[2], L. Testi[7], R. Shipman[8], P. Martin[9], S. Carey[2], A. Noriega-Crespo[2]
[1]Boston College, [2]Spitzer Science Center, [3]Air Force Research Laboratory, [4]University of Virginia, [5]Université Paris Sud, France, [6]Istituto di Fisica dello Spazio Interplanetario, Italy, [7]Osservatorio Astrofisico di Arcetri, Italy, [8]Netherlands Institute for Space Research, The Netherlands, [9]University of Toronto, Canada.

Session 089 Stellar Populations III

AAS Poster, Monday, 9:20am-6:30pm, Exhibit Hall 4

089.01 **FUSE Observations of the Unprecedentedly Deep "Quiescent" Magnetic Activity State of alpha Centauri A**
Jennifer M. Carton[1], L. E. DeWarf[1], E. F. Guinan[1]
[1]Villanova U..

089.02 **Results from the Nearby Stars (NStars) Program: Candidate Solar Twinsand Chromospheric Diversity in G and K dwarfs**
Richard O. Gray[1], C. J. Corbally[2], R. F. Garrison[3], M. T. McFadden[1], A. A. O'Donoghue[4], E. J. Bubar[5]
[1]Appalachian State Univ., [2]Vatican Obs. Research Group, [3]David Dunlap Obs., Canada, [4]St. Lawrence Univ., [5]Clemson Univ..

089.03 **Global Simulations of the Magnetorotational Instability in a Spherical Geometry**
Kaitlin M. Kratter[1], L. J. Dursi[2], U. Pen[2]
[1]Univ. of Toronto, Canada, [2]CITA, Canada.

089.04 **Time Variation in the Magnetic Activity of Cool Stars**
Andrew A. West[1], J. T. Wright[1], G. W. Marcy[1], M. Agueros[2], L. M. Walkowicz[3], E. J. Hilton[3], S. L. Hawley[3], J. J. Bochanski[3], K. R. Covey[4]
[1]UC, Berkeley, [2]Columbia University, [3]University of Washington, [4]CfA.

089.05 **The Old Feeble Coronae of Solar-like Dwarf Stars in the Arcturus Moving Group**
Alexander Brown[1], E. Hodges-Kluck[1], T. R. Ayres[1], G. M. Harper[1]
[1]Univ. of Colorado.

089.06 **The Age-Activity Relation for M dwarfs Using 25,000 SDSS Spectra**
Suzanne L. Hawley[1], A. A. West[2], J. J. Bochanski[1], K. R. Covey[3]
[1]Univ. of Washington, [2]Univ. of California, [3]CfA.

089.07 **Flare Rate Analysis of M-Dwarf Lightcurves**
Adam F. Kowalski[1], E. J. Hilton[1], A. C. Becker[1], S. L. Hawley[1]
[1]University of Washington.

089.08 **Simulations of Convection and Magnetism in Fully Convective Stars**
Matthew K. Browning[1], G. Basri[1]
[1]UC Berkeley.

Session 090 More Supernovae

AAS Poster, Monday, 9:20am-6:30pm, Exhibit Hall 4

090.01 **Targeting Supernovae in Very High Redshift Galaxy Clusters with HST: Preliminary Results**
Kyle Barbary[1], S. Perlmutter[2], G. Aldering[1], K. S. Dawson[1], G. Goldhaber[1], N. Kuznetsova[1], J. Meyers[1], D. Rubin[1], D. J. Schlegel[1], A. L. Spadafora[1], N. Suzuki[1], R. Amanullah[3], E. Linder[3], C. Lidman[4], M. Kowalski[5], T. Hattori[6], N. Kashikawa[6], A. Fruchter[7], V. Fadeyev[8], M. Doi[9], Y. Ihara[9], K. Konishi[9], T. Morokuma[9], N. Takanashi[9], N. Yasuda[9]
[1]LBNL, [2]UC-Berkeley, [3]SSL, [4]ESO, Chile, [5]Humbolt U. Berlin, Germany, [6]NAOJ, Japan, [7]STScI, [8]UCSC, [9]U Tokyo, Japan.

090.02 **A Probabilistic Approach to Classifying Supernovae Using Photometric Information**
Brian Connolly[1], N. Kuznetsova[2]
[1]Columbia University, [2]Lawrence Berkeley National Lab.

090.03 **Combining Supernova Datasets for Cosmological Measurements**
David Rubin[1], M. Kowalski[2], S. Perlmutter[3], G. Aldering[1], R. Amanullah[4], K. Barbary[1], K. S. Dawson[1], G. Goldhaber[1], N. Kuznetsova[1], J. Meyers[1], D. J. Schlegel[1], A. L. Spadafora[1], M. Strovink[1], N. Suzuki[1], A. Conley[5], V. Fadeyev[6], A. Goobar[7], I. Hook[8], C. Lidman[9], R. Pain[10], P. Ruiz-Lapuente[11], L. Wang[12], Supernova Cosmology Project
[1]LBNL, [2]Humboldt University, Germany, [3]UC Berkeley, [4]SSL, [5]University of Toronto, Canada, [6]UCSC, [7]Stockholm University, Sweden, [8]University of Oxford, United Kingdom, [9]ESO, Chile, [10]IN2P3, France, [11]University of Barcelona, Spain, [12]Texas A&M.

090.04 **The Carnegie Supernova Project: First Results From the High-Redshift Campaign**
Christopher R. Burns[1], P. Wyatt[1], W. Freedman[1]
[1]Carnegie Observatories.

090.05 **CfA Nearby Supernova Ia Light Curves and Exploring Correlations Between Light Curve Shape And Host Galaxy Type**
Malcolm Hicken[1], P. Berlind[1], S. Blondin[1], M. Calkins[1], P. Challis[1], G. Esquerdo[1], C. Hergenrother[1], R. Kirshner[1], D. Latham[1], M. Modjaz[1], M. Wood-Vasey[1], A. Rest[2], T. Matheson[3]
[1]Harvard-Smithsonian, CfA, [2]CTIO, Chile, [3]NOAO.

090.06 **First Two Years: Infrared Light Curves of Type Ia Supernovae with the Peters Automated Infrared Imaging Telescope (PAIRITEL)**
Andrew S. Friedman[1], W. M. Wood-Vasey[1], M. Modjaz[1], R. Kirshner[1], J. S. Bloom[2], C. H. Blake[1], A. H. Szentgyorgyi[1], E. E. Falco[1], D. Starr[2], M. Skrutskie[3]
[1]Harvard-CfA, [2]UC, Berkeley, [3]University of Virginia.

090.07 **Effects of Gravitational Lensing on SNe Discovered Behind Massive Galaxy Clusters**
Mark Wagner[1], T. Pritchard[1], K. Dawson[1], X. Huang[1], S. Perlmutter[1], G. Smoot, III[1], N. Suzuki[1], Supernova Cosmology Project
[1]LBNL.

090.08 **SALT2: Using Distant Supernovae to Improve the Use of Type Ia Supernovae as Distance Indicators**
Julien Guy[1], SNLS Collaboration
[1]LPNHE IN2P3/ CNRS, France.

090.09 **Photometric Calibration of the Supernova Legacy Survey Fields**
Nicolas Regnault[1], SNLS Collaboration
[1]LPNHE - IN2P3 - CNRS, France.

090.10 **Resolving Supernovae, H0, and the Equation of State with HST**
Louis-Gregory Strolger[1], A. C. Rohde[1], M. J. Gorski[1], A. G. Riess[2], H. Lampeitl[2], H. C. Ferguson[2], A. R. Martel[2]
[1]Western Kentucky Univ., [2]Space Telescope Science Institute.

090.11 **Constraints on Dark Energy from the ESSENCE Supernova Survey**
Gajus A. Miknaitis[1], W. Wood-Vasey[2], ESSENCE team
[1]Fermi National Accelerator Lab., [2]CfA/Harvard.

Session 091 Neutron Stars

AAS Poster, Monday, 9:20am-6:30pm, Exhibit Hall 4

091.01 **Measurement of Orbital Decay in the Double Neutron Star Binary PSR B2127+11C**
Bryan A. Jacoby[1], P. B. Cameron[2], F. A. Jenet[3], S. B. Anderson[2], R. N. Murty[4], S. R. Kulkarni[2]
[1]Naval Research Laboratory, [2]California Institute of Technology, [3]University of Texas at Brownsville, [4]Harvard University.

091.02 **Isolated Neutron Stars: Magnetic Fields, Distances, and Spectra**
David L. Kaplan[1], M. H. van Kerkwijk[2]
[1]MIT, [2]University of Toronto, Canada.

091.03 **Properties of Rotating Neutron Stars Using Density Dependent Relativistic Hadron Field Theory**
Philip Rosenfield[1], F. Weber[1], H. Lenske[2]
[1]San Diego State Univ., [2]Institut fur Theoretische Physik, Universitat Giessen, Germany.

091.04 **New Insights into Atoll X-Ray Binaries: Fourier Resolved Spectroscopy of 4U 1728-34**
Chris R. Shrader[1], D. Kazanas[1], P. Reig[2], I. Papidakis[2]
[1]NASA's GSFC, [2]University of Crete, Greece.

Session 092 Planetary and Pre-Planetary Nebulae

AAS Poster, Monday, 9:20am-6:30pm, Exhibit Hall 4

092.01 **Probing Nucleosynthesis in Intermediate Mass Stars via Planetary Nebulae Abundances**
Jackie Milingo[1], J. K. Teske[2], R. B. Henry[3], K. B. Kwitter[4], S. P. Souza[4]
[1]Gettysburg College, [2]American University, [3]University of Oklahoma, [4]Williams College.

092.02 **The Radio Evolution of NGC7027**
R. A. Perley[1], A. Zijlstra[2], P. van Hoof[3]
[1]NRAO, [2]Department of Physics, UMIST, United Kingdom, [3]Royal Observatory of Belgium, Belgium.

092.03 **Far-UV Temperature Diagnostics for Hot Central Stars of Planetary Nebulae**
George Sonneborn[1], R. Iping[2], J. Herald[3]
[1]NASA's GSFC, [2]NASA's GSFC & CUA, [3]Johns Hopkins University.

092.04 **The Hubble Catalog of Planetary and protoPlanetary Nebulae**
Bruce Balick[1], K. Pomeroy[1], S. Hayward[1], J. Baerny[1]
[1]Univ. of Washington.

092.05 **Spitzer IRS Spectral Observations of the 21 and 30 Micron Emission Features in Several Galactic Proto-Planetary Nebulae**
Bruce J. Hrivnak[1], K. Volk[2], S. Kwok[3]
[1]Valparaiso Univ., [2]Gemini Obs., [3]Univ. Hong Kong, China.

092.06 **Chandra X-ray Detection of a Shocked Polar Jet in the Symbiotic Mira System Hen 2-104**
Rodolfo Montez, Jr.[1], J. H. Kastner[1], R. Sahai[2]
[1]Rochester Institute of Technology, [2]JPL/Caltech.

092.07 **Deuterium Astration in the Planetary Nebula Sh 2-216?**
Cristina M. Oliveira[1], P. Chayer[1], H. Warren Moos[1], J. W. Kruk[1], T. Rauch[2]
[1]Johns Hopkins Univ., [2]Universitat Tubigen, Germany.

092.08 **The Ejection of Jets and Tori in Proto-Planetary Nebulae**
Patrick J. Huggins[1]
[1]New York University.

Session 093 Properties of Cool Giant Stars

AAS Poster, Monday, 9:20am-6:30pm, Exhibit Hall 4

093.01 **The Wilson-Bappu Effect - Fifty Years Later**
Rachel A. Matson[1], R. E. Stencel[1]
[1]University of Denver.

093.02 **Abundances of Extremely Metal-Poor Stars, aNnew HIRES Sample**
David K. Lai[1], M. Bolte[2], J. A. Johnson[3], S. Lucatello[4]
[1]UC, Santa Cruz, [2]UC, Santa Cruz/UCO Lick, [3]Ohio State University, [4]INAF-Osservatorio Astronomico di Padova, Italy.

093.03 **The Abundances of Na, Mg, & Al in the Hyades: Giants, Dwarfs, and Mixing**
Simon C. Schuler[1], J. R. King[2], L. The[2]
[1]NOAO/CTIO, Chile, [2]Clemson University.

093.04 **Heavy Element Abundances in the Photospheres of Cool Supergiants**
Glenn M. Wahlgren[1], M. Lundqvist[2], K. G. Carpenter[3]
[1]CUA/NASA-GSFC, [2]Lund Observatory, Sweden, [3]NASA-GSFC.

093.05 **Brighter Still! A Summary of Photometric Data from the HST Eta Carinae Treasury Project**
John C. Martin[1], K. Davidson[2], M. D. Koppelman[2], R. M. Humphreys[2]
[1]University of Illinois Springfield, [2]University of Minnesota.

093.06 **Late-Type Red Supergiants: Too Cool for the Clouds?**
Emily M. Levesque[1], P. Massey[2], K. A. Olsen[3], B. Plez[4]
[1]Institute for Astronomy, University of Hawaii, [2]Lowell Observatory, [3]CTIO, NOAO, Chile, [4]GRAAL, Universite de Montepellier II, France.

093.07 **A Search for Companions to AGB Stars**
Krzysztof Findeisen[1], R. Sahai[2], A. Gil de Paz[3], C. Sanchez Contreras[4]
[1]Cornell University, [2]Jet Propulsion Laboratory, Caltech, [3]Universidad Complutense de Madrid, Spain, [4]Instituto de Estructura de la Materia, CSIC, Spain.

093.09 **A Spitzer Survey of Mass Losing Stars in the Galactic Bulge**
Raghvendra Sahai[1], M. Stute[1], M. Morris[2], I. Glass[3], J. Blommaert[4], M. Groenewegen[4], M. Schultheis[5], A. Omont[6], K. Kraemer[7]
[1]JPL, [2]UCLA, [3]SAAO, South Africa, [4]K.U.Leuven, Belgium, [5]Observatoire de Besancon, France, [6]IAP, France, [7]AFRL.

Session 094 Putting Education into Outreach

AAS Poster, Monday, 9:20am-6:30pm, Exhibit Hall 4

094.01 **Collaboration for Education with the Apple Learning Interchange**
Patrick A. Young[1], T. Zimmerman[2], K. A. Knierman[3]
[1]Los Alamos National Laboratory, [2]Apple Computer, [3]Steward Observatory.

094.02 **Astronomy in the Digital Universe**
Bernard M. Haisch[1], J. Lindblom[1], Y. Terzian[2]
[1]Digital Universe Foundation, [2]Cornell University.

094.03 **Opportunitites for Scientist Participation in Chandra Education and Public Outreach**
Kathleen Lestition[1], P. Edmonds[1], K. Kowal-Arcand[1], M. Watzke[1]
[1]SAO.

094.04 **Astro-Science Workshop: Education and Public Outreach at the Adler Planetarium**
Lauren R. Grodnicki[1], M. Hammergren[2], A. Puckett[1]
[1]Univ. of Chicago, [2]Adler Planetarium.

094.05 **Solar Education and Outreach at Columbus State University's Mead Observatory**
Michael Johnson[1], J. Hood[1], S. T. Cruzen[1]
[1]Columbus State University.

094.06 **The SNAP Education and Public Outreach Program**
Lynn R. Cominsky[1], P. Plait[1], S. Silva[1], SNAP Collaboration
[1]Sonoma State Univ..

094.07 **The Sky is the Limit: Benefits from Partnering with the Project ASTRO National Network!**
Constance E. Walker[1], D. Zevin[2], W. van der Veen[3], A. Fraknoi[4], R. Wilson[1], S. Gurton[2], V. White[2], C. Clemens[5], J. Harvey[6]
[1]National Optial Astronomy Observatory, [2]Astronomical Society of the Pacific, [3]New Jersey Astronomy Center for Education, [4]Foothill College & ASP, [5]Harvard-Smithsonian CfA, [6]Gemini Observatory.

094.08 **Space Science Outreach in the Virtual World of Second Life**
Anthony W. Crider[1], International Spaceflight Museum
[1]Elon University.

094.09 **The Sunnel: Engaging Visitors in Solar Research via a Tunnel Through the Sun**
Nora H. DeMuth[1], C. E. Walker[2]
[1]El Camino College, [2]National Optical Astronomy Observatory.

094.10 **Slackerpedia Galactica**
Aaron Price[1], M. Koppelman[2], M. Robinson[3], D. L. Welch[4], T. Searle[5], R. Turner[5]
[1]AAVSO/Tufts University, [2]University of Minnesota, [3]Swinburne University of Technology, Australia, [4]McMaster University, Canada, [5]AAVSO.

094.11 **"It's Our Universe": Astronomy Outreach in Appalachian Ohio**
Mangala Sharma[1], G. Eberts[1], M. Hartwick[2], L. Miller[3]
[1]Ohio Univ, [2]Southeast Ohio Astronomical Society, [3]Athens Public Library.

094.12 **Arecibo Observatory for All**
Gloria M. Isidro[1], C. A. Pantoja[1], P. Bartus[1], C. La Rosa[1]
[1]University of Puerto Rico.

094.13 **Effectively Engaging Family Groups in Learning Astronomy**
Jacob Noel-Storr[1]
[1]Rochester Inst. of Technology.

Session 095 Radio Galaxy Surveys

AAS Poster, Monday, 9:20am-6:30pm, Exhibit Hall 4

095.01 **The Arecibo Legacy Fast ALFA Survey: HI Sources in the Northern Virgo Cluster Region**
Rebecca A. Koopmann[1], ALFALFA Consortium
[1]Union College.

095.02 **The Arecibo Legacy Fast ALFA HI Survey: The Rich Galaxy Group Zwicky 1400+0949**
Thomas J. Balonek[1], B. M. Walsh[1], ALFALFA Consortium
[1]Colgate Univ..

095.03 **A Neutral Hydrogen Survey of the NGC 7332 Region with the Arecibo L-band Feed Array**
Robert F. Minchin[1], E. Momjian[1], L. Cortese[2], K. L. O'Neil[3], P. A. Henning[4], J. I. Davies[2], AGES Team
[1]Arecibo Obs., [2]Cardiff University, United Kingdom, [3]National Radio Astronomy Observatory, [4]University of New Mexico.

095.04 **The ALFA Zone of Avoidance Survey: Results from the Precursor Observations**
Chris M. Springob[1], P. A. Henning[2], B. Catinella[3], F. Day[2], R. Minchin[3], E. Momjian[3], B. Koribalski[4], K. L. Masters[5], E. Muller[4], C. Pantoja[6], M. Putman[7], J. L. Rosenberg[8], S. Schneider[9], L. Staveley-Smith[10]
[1]Naval Research Laboratory, [2]Univ. of New Mexico, [3]National Astronomy and Ionosphere Center, [4]Australia Telescope National Facility, Australia, [5]Harvard-Smithsonian, CfA, [6]Univ. of Puerto Rico, [7]Univ. of Michigan, [8]George Mason Univ., [9]Univ. of Massachusetts, [10]Univ. of Western Australia, Australia.

Session 096 Research in K-12 Astronomy Education for Students, Their Teachers, and Their Families both in and out of the Classroom

AAS Poster, Monday, 9:20am-6:30pm, Exhibit Hall 4

096.01 **The Search: for Life Beyond Earth**
Neal E. Hurlburt[1], J. Blair[2], S. Lubbs[2], D. Miller[2]
[1]Lockheed Martin Corp., [2]Evergreen Valley High School.

096.02 **Stones from the Sky: Introducing Middle School Students to Meteorites**
Angela R. Sarrazine[1], E. Albin[1]
[1]Fernbank Science Center.

096.03 **Education and Public Outreach using Venus Express**
Rosalyn A. Pertzborn[1], S. S. Limaye[1], H. Y. Pi[1]
[1]University of Wisconsin.

096.04 **The eXtreme Universe: A Portable Planetarium Program**
Philip Plait[1], S. Silva[1], T. Graves[1], J. Reed[1], L. Cominsky[1]
[1]Sonoma State Univ..

096.05 **Demystifying Scientific Data**
Esther A. Santos[1], P. Nassiff[2], P. Pratap[3]
[1]Nashua High School South, [2]Burlington High School, [3]MIT Haystack Observatory.

096.06 **The Impact of Science Graduate Students in Urban Science Classrooms: The SFOS Program at Cal State Los Angeles**
Susan Terebey[1], D. Mayo[1]
[1]Cal. State Univ. at Los Angeles.

096.07 **How Astronomers Can Help Prepare Future Teachers**
Christine Shupla[1], L. Ruberg[2], T. F. Slater[3], G. Schultz[4]
[1]Lunar & Planetary Institute, [2]CET, Wheeling Jesuit University, [3]University of Arizona CAPER Team, [4]Center for Science Education, UC Berkeley.

Session 097 Sloan Digital Sky Survey

AAS Poster, Monday, 9:20am-6:30pm, Exhibit Hall 4

097.01 **Environments of Low-Redshift Merging Galaxies**
Christina Ignarra[1], M. R. Blanton[1]
[1]New York University.

097.02 **A Search for Low Surface Brightness Galaxies in the Ultraviolet with GALEX**
Ted K. Wyder[1], GALEX Science Team
[1]Caltech.

097.03 **Active Galaxies in Redshift Surveys**
Pietro Reviglio[1], D. Helfand[1]
[1]Columbia Univ..

097.04 **Constraints on the Stellar Initial Mass Function from the Integrated Light Properties of Galaxies in the Sloan Digital Sky Survey**
Erik A. Hoversten[1], K. Glazebrook[2]
[1]Johns Hopkins Univ., [2]Swinburne University, Australia.

097.05 **The Clustering Properties of UV-selected Galaxies at Low Redshift from GALEX-SDSS Data**
Sebastien Heinis[1], T. Budavari[1], A. Szalay[1], M. Neyrinck[2], I. Szapudi[2], B. Milliard[3], S. Arnouts[3], GALEX Team
[1]Johns Hopkins Univ., [2]University of Hawaii, [3]Laboratoire d'Astrophysique de Marseille, France.

097.06 **Arecibo Survey of HI Emission from Disk Galaxies at Intermediate Redshift**
Barbara Catinella[1], M. P. Haynes[2], J. P. Gardner[3], A. J. Connolly[3], R. Giovanelli[2]
[1]NAIC-Arecibo Obs., [2]Center for Radiophysics and Space Research and NAIC, Cornell Univ., [3]Pittsburgh Univ..

097.07 **The Star Formation History of Early-Type Galaxies**
Vaishali Bhardwaj[1], M. Blanton[2]
[1]UC Berkeley, [2]NYU.

097.08 **Dust Lanes as Markers of the Mass Transition in Edge-on Galaxies**
Mirela Obric[1], A. A. West[2], J. Dalcanton[1]
[1]University of Washington, [2]University of California, Berkeley.

097.09 **A Multi-Wavelength Catalog of Radio Objects Detected by NVSS and FIRST, and (some by) WENSS, GB6, and SDSS**
Amy E. Kimball[1], Z. Ivezic[1]
[1]Univ. of Washington.

097.10 **Reconstruction of SDSS Nearby Galaxies**
Laura K. Kushner[1], M. Obric[1], A. A. West[2], J. Dalcanton[1]
[1]University of Washington, [2]University of California, Berkeley.

097.11 **Correlation of Galaxy Types in the 2MASS Redshift Survey with 2MASS/SDSS Colors and HI Content**
Ferah Munshi[1], K. L. Masters[2], J. Huchra[2]
[1]University of California, Berkeley, [2]CfA, Harvard University.

097.12 **Improvement in the SDSS Photometric Calibration for Red Stars**
James R. Davenport[1], J. Bochanski[1], K. Covey[2], S. Hawley[1]
[1]Univ. Of Washington, [2]Harvard.

097.13 **Minor Galaxy Interactions in the SDSS**
Deborah Freedman Woods[1], M. J. Geller[2]
[1]Harvard Univ., [2]SAO.

Session 098 SNAP Mission

AAS Poster, Monday, 9:20am-6:30pm, Exhibit Hall 4

098.01 **SNAP Telescope Performance for Weak Lensing Surveys**
Michael Lampton[1], M. Sholl[1], P. Jelinsky[1], H. Stabenau[2], SNAP Collaboration
[1]UC, Berkeley, [2]University of Pennsylvania.

098.02 **Characterization of LBNL SNAP CCD's: Quantum efficiency, reflectivity, and point-spread function**
Donald E. Groom[1], C. J. Bebek[1], M. Fabricius[1], J. A. Fairfield[1], A. Karcher[1], W. F. Kolbe[1], N. A. Roe[1], J. Steckert[1]
[1]Lawrence Berkeley Nat'l Lab..

098.03 **Current-Integrating Amplifier and Computer Interface for SNAP Photodiode Readout**
Stephen J. Battazzo[1], B. Adams[2], M. Gebhard[2], N. Mostek[2], S. Mufson[2]
[1]Indiana University (REU)/University of Oregon, [2]Indiana University.

098.04 **SNAP Focal Plane Development**
Chris Bebek[1], SNAP Collaboration
[1]LBNL.

098.05 **Auxiliary Science with SNAP Surveys**
Timothy McKay[1], SNAP collaboration
[1]Univ. of Michigan.

098.06 **SNAPsim: A Software Package for Simulating of Astronomical Observations**
Alex G. Kim[1], SNAP Collaboration
[1]LBNL.

098.07 **SNAP: The Power of Supernovae, Weak Lensing, and Space**
Eric Linder[1], SNAP Collaboration
[1]Berkeley Lab/UC Berkeley.

098.08 **Computation and Data Product Model for the SNAP Mission**
William Carithers[1], G. E. Kushner[1]
[1]LBNL.

098.09 **The SNAP Mission Overview**
Patrick Jelinsky[1], SNAP Collaboration
[1]UC, Berkeley.

098.10 **Near Infrared Detectors for SNAP: Towards Precision Photometry**
Michael Schubnell[1], SNAP Collaboration
[1]Univ. of Michigan.

098.11 **A Monochromatic Illumination and Cryogenic Calibration System for SNAP Calibration Studies**
Stuart Mufson[1], N. Mostek[1], C. R. Bower[1], S. S. Allam[2], C. J. Bebek[3], R. C. Bohlin[4], S. Deustua[5], S. M. Kent[2], M. L. Lampton[6], M. Richmond[7], D. T. Tucker[2], B. E. Woodgate[8], SNAP Collaboration
[1]Indiana Univ., [2]FNAL, [3]LBNL, [4]STScI, [5]AAS, [6]UC Berkeley, [7]RIT, [8]GSFC.

098.12 **Effects of Zero Points Calibration Uncertainties in Dark Energy Supernova Surveys**
Lorenzo Faccioli[1], A. G. Kim[1], R. Miquel[2]
[1]Lawrence Berkeley National Laboratory, [2]ICREA / IFAE, Spain.

098.13 **Observational Cadence vs. Exposure Time Trade-off for Supernova Surveys**
Natalia Kuznetsova[1], SNAP Simulation Team
[1]Lawrence Berkeley National Lab.

098.14 **Packaging for SNAP CCDs**
Charles Baltay[1], A. Bauer[1], W. Emmet[1], T. Hurteau[1], D. Rabinowitz[1], A. Szymkowiak[1], C. Bebek[2], K. Dawson[2], J. Emes[2], D. Groom[2], S. Holland[2], A. Karcher[2], B. Kolbe[2], N. Roe[2], T. Diehl[3], M. Demarteau[3], P. Derwent[3], B. Bigelow[4]
[1]Yale U., [2]LBNL, [3]Fermi National Lab, [4]U. Michigan.

098.15 **Radiation Tolerance of SNAP CCDs**
Koki Takasaki[1], SNAP collaboration
[1]UC, Berkeley.

098.16 **Calibration of Interference Filter Transmission using Light Emitting Diodes**
Nick J. Mostek[1], S. L. Mufson[1], C. R. Bower[1], S. S. Allam[2], C. J. Bebek[3], R. C. Bohlin[4], S. Deustua[5], S. M. Kent[2], M. L. Lampton[6], M. Richmond[7], D. L. Tucker[2], B. E. Woodgate[8], SNAP Collaboration
[1]Indiana Univ., [2]FNAL, [3]LBNL, [4]STScI, [5]AAS, [6]UC Berkeley, [7]RIT, [8]GSFC.

098.17 **Critical Parameters for Supernova Cosmology**
Lifan Wang[1], K. Kannan[1], A. Kim[2]
[1]Texas A&M University, [2]Lawrence Berkeley National Laboratory.

098.18 **Development of Spectrophotometric Standards to Support the SNAP**
J. Allyn Smith[1], R. C. Bohlin[2], S. E. Deustua[3], S. S. Allam[4], S. M. Kent[4], M. L. Lampton[5], N. Mostek[6], S. L. Mufson[6], M. W. Richmond[7], G. Smadja[8], D. L. Tucker[4], B. Woodgate[9], SNAP Collaboration
[1]Austin Peay State Univ., [2]STScI, [3]AAS, [4]Fermilab, [5]UC Berkeley, [6]Indiana Univ., [7]R.I.T., [8]IPN-CNRS, France, [9]NASA-GSFC.

098.19 **Dark Energy Science Constraints on Calibration: Design of the SNAP Calibration System**
Susana E. Deustua[1], S. Allam[2], R. Bohlin[3], S. Kent[4], M. L. Lampton[5], N. Mostek[6], S. L. Mufson[6], M. Richmond[7], J. A. Smith[8], D. Tucker[4], B. Woodgate[9], G. Smadja[10], SNAP Collaboration
[1]American Astronomical Society, [2]Fermi National Laboratory, [3]STScI, [4]FNAL, [5]LBNL, [6]Indiana University, [7]RIT, [8]Austin Peay, [9]NASA's GSFC, [10]Institut de Physique Nucleair de Lyon, France.

098.20 **The SNAP Integral Field Spectrograph**
Roger F. Malina[1], A. Ealet[2], E. Prieto[3], M. Aumeunier[4], A. Bonissent[2], C. Cerna[2], G. Smadja[5], SNAP Collaboration
[1]LAM, CNRS, France, [2]CPPM, CNRS, France, [3]LAM, CNRS, France, [4]LAM/CPPM, CNRS, France, [5]IPNL, CNRS, France.

Session 099 Source Surveys, Catalogs and Astrometry

AAS Poster, Monday, 9:20am-6:30pm, Exhibit Hall 4

099.01 **Time-Series Data and the Virtual Observatory**
Mark Huber[1], A. Drake[2], K. Vivas[3], D. Gasson[4], K. Cook[1], S. Nikolaev[1]
[1]LLNL, [2]Caltech, [3]CIDA, Venezuela, [4]NOAO.

099.02 **Basic Stellar Parameters for SIM Planet Quest Reference Grid Stars**
Dmitry Bizyaev[1], V. V. Smith[1], K. Cunha[1]
[1]NOAO.

099.03 **Milliarcsecond Accurate Astrometry for Extension of the ICRF in the Southern Hemisphere**
Alan L. Fey[1], R. Ojha[1], K. Johnston[1], D. Jauncey[2], J. Reynolds[2], A. Tzioumis[2], J. Lovell[2], J. Quick[3], G. Nicolson[3], S. Ellingsen[4], P. McCulloch[4]
[1]U.S. Naval Obs., [2]ATNF, CSIRO, Australia, [3]Hartebeesthoek Radio Astronomy Obs., South Africa, [4]School of Math. and Physics, Australia.

099.04 **Atmospheric Gravity Waves as a Source of Anomalous Refraction Observed in High Precision Astrometry**
Suzanne Taylor[1], J. McGraw[1], J. Pier[2], P. Zimmer[1]
[1]University of New Mexico, [2]USNO Flagstaff Station.

099.05 **ALPACA: An Inexpensive but Uniquely Powerful Imaging Survey Telescope**
Arlin P. Crotts[1], ALPACA Consortium
[1]Columbia Univ..

099.06 **OT060420 and the Systematic Automated All-sky Search for Bright Optical Transients**
Lior Shamir[1], R. Nemiroff[1]
[1]Michigan Tech.

099.07 **Improved UBVRCI C to u'g'r'i'z' Transformation Equations: Updated Main Sequence and Giant Star Relations**
Eric J. Hausel[1], D. Allen[2], C. Rodgers[1], R. Canterna[1], M. Pierce[1], J. A. Smith[3]
[1]University of Wyoming, [2]Lowell Observatory, [3]Austin Peay State University.

099.08 **New DDO Photometric Equatorial Standard Stars Between 9.0 < M48 < 16.0: Preliminary Results**
Christopher T. Rodgers[1], R. Canterna[1], D. Allen[2], E. Hausel[1], J. A. Smith[3]
[1]Univ. of Wyoming, [2]Lowell Observatory, [3]Austin Peay State University.

Session 100 Star Clusters II and HST/ACS Survey of Galactic Globular Clusters

AAS Poster, Monday, 9:20am-6:30pm, Exhibit Hall 4

100.01 **M82 at the Highest Resolution**
William D. Vacca[1], A. M. Gilbert[2], J. R. Graham[3], N. McCrady[4]
[1]SOFIA-USRA, [2]IGPP-LLNL, [3]UC Berkeley, [4]UCLA.

100.02 **Old Globular Clusters in Nearby Dwarf Irregular Galaxies**
Iskren Georgiev[1], P. Goudfrooij[1], T. H. Puzia[2], M. Hilker[3]
[1]STScI, [2]Herzberg Institute of Astrophysics, Canada, [3]ESO, Germany.

100.03 **Searching for the Young Super-Star Clusters in NGC 3627**
Adam Ginsburg[1]
[1]Rice University / NRAO.

100.04 **Properties of Globular Cluster Populations of Early-Type E+A Galaxies**
Aparna Maybhate[1], P. Goudfrooij[1], F. Schweizer[2], T. Puzia[1], D. Carter[3]
[1]STScI, [2]Carnegie Observatories, [3]Liverpool John Moores University, United Kingdom.

100.05 **Resolved Massive Stellar Clusters in Nearby Starburst Galaxies**
Andrea M. Gilbert[1], W. D. Vacca[2]
[1]IGPP-LLNL, [2]SOFIA-USRA.

100.06 **Multi-band Photometry of Globular Cluster Systems**
Sooyoung Kim[1], S. Yoon[1], H. Kim[1]
[1]Yonsei University, Republic of Korea.

100.07 **Imaging of Globular Clusters in NGC 4365 with IRAC on the Spitzer Space Telescope**
Andrew R. Esselman[1], S. E. Zepf[2], A. Kundu[2], M. Hempel[2]
[1]Whitman College, [2]Michigan State University.

100.08 **The Cluster Formation Function in Galaxies**
Paul W. Hodge[1], K. Krienke[2]
[1]Univ. of Washington, [2]Seattle Pacific University.

100.09 **The HST/ACS Survey of Galactic Globular Clusters: Overview and New Photometry for Nine Clusters**
Ata Sarajedini[1], J. Anderson[2], A. Aparicio[3], L. Bedin[4], B. Chaboyer[5], A. Dotter[5], M. Hempel[1], I. R. King[6], S. R. Majewski[7], A. Marin-Franch[1], A. Milone[8], N. E. Paust[9], G. Piotto[8], I. N. Reid[9], A. Rosenberg[3], M. Siegel[10]
[1]Univ. of Florida, [2]Rice University, [3]IAC, Spain, [4]ESO, Germany, [5]Dartmouth College, [6]Univ. of Washington, [7]Univ. of Virginia, [8]Univ. of Padova, Italy, [9]STScI, [10]Univ. of Texas.

100.10 **The HST/ACS Survey of Galactic Globular Clusters: New Stellar Evolution Tracks, Isochrones and Luminosity Functions**
Brian C. Chaboyer[1], A. Dotter[1], E. Baron[2], J. Ferguson[3], D. Jevremovic[2], A. Sarajedini[4]
[1]Dartmouth College, [2]University of Oklahoma, [3]Wichita State University, [4]University of Florida.

100.11 **The HST/ACS Survey of Galactic Globular Clusters: Luminosity Functions**
Nathaniel Paust[1], I. Reid[1], I. King[2], A. Aparicio[3], G. Piotto[4]
[1]STScI, [2]Dept. of Astronomy, University of Washington, [3]Departamento de Astrofisica, Universidad de La Laguna: and Instituto de Astrofisica de Canarias, Spain, [4]Dip. di Astronomica, Univ. degli stui di Padova, Italy.

100.12 **The HST/ACS Survey of Galactic Globular Clusters: The Sagittarius Dwarf Spheroidal System**
Michael Siegel[1], S. R. Majewski[2], A. Sarajedini[3], B. Chaboyer[4], A. Rosenberg[5]
[1]University of Texas, [2]University of Virginia, [3]University of Florida, [4]Dartmouth College, [5]Instituto de Astrofisica de Canarias, Spain.

100.13 **The HST/ACS Survey of Galactic Globular Clusters: Relative Ages**
Alfred Rosenberg[1], A. Marín-Franch[2], A. Aparicio[1], G. Piotto[3], B. Chaboyer[4], A. Sarajedini[2]
[1]Instituto de Astrofísica de Canarias, Spain, [2]Department of Astronomy, University of Florida, [3]Astronomy Department, Padova University, Italy, [4]Department of Physics and Astronomy, Dartmouth College.

100.14 **The HST/ACS Survey of Galactic Globular Clusters: Absolute Ages of Selected Clusters**
Iain N. Reid[1], J. Anderson[2], A. Aparicio[3], B. Chaboyer[4], A. Dotter[4], G. Piotto[5], A. Marin-Franch[6], A. Rosenberg[3]
[1]STScI, [2]Rice U., [3]Inst. Astrofisica de Canarias, Spain, [4]Dartmouth College, [5]Univ. di Padova, Italy, [6]U. Florida.

Session 101 Structure of Stellar Winds

AAS Poster, Monday, 9:20am-6:30pm, Exhibit Hall 4

101.01 **The dM/dt of O-rich OH/IR Stars is Strongly Modulated**
B. M. Lewis[1]
[1]Arecibo Obs..

101.02 **Observations of Post-Asymptotic Giant Branch Objects in the Magellanic Clouds with the Spitzer Infrared Spectrograph**
Kathleen E. Kraemer[1], G. C. Sloan[2], J. Bernard-Salas[2], E. Peeters[3], P. R. Wood[4], S. D. Price[1], J. Cami[3], J. R. Houck[2], M. P. Egan[5], S. Guiles[2]
[1]Air Force Research Lab, [2]Cornell U., [3]U. Western Ontario, Canada, [4]Mt. Stromlo Obs., Australia, [5]National Geospatial-Intelligence Agency.

101.03 **Synthesis of Observables from Numerical Simulations of Magnetized Hot-Star Winds**
Stephen St. Vincent[1], D. H. Cohen[1], A. ud-Doula[2], R. H. Townsend[2], S. P. Owocki[2]
[1]Swarthmore College, [2]Bartol Research Institute, University of Delaware.

101.04 **X-ray Emission Line Profiles from Clump Bow Shocks in Stellar Winds**
Alexander Burke[1], R. Ignace[2], J. P. Cassinelli[3]
[1]Vassar College, [2]East Tennessee State University, [3]Univ. of Wisconsin.

101.05 **High Resolution Radio Observations of the Nebulae of Luminous Blue Variable Stars**
Allison Mercer[1], M. Chizek[1], C. C. Lang[1], D. F. Figer[2], P. Najarro[3]
[1]Univ. of Iowa, [2]Rochester Institute of Technology, [3]CSIC, Spain.

101.06 **Velocity Structure in the Chromosphere and Wind of VV Cephei**
Wendy H. Bauer[1], P. D. Bennett[2], A. Brown[3]
[1]Wellesley College, [2]Eureka Scientific, [3]CASA, University of Colorado.

101.07 **Multi-dimensional Simulations of Helium Shell Flash Convection**
Robert M. Hueckstaedt[1], B. Freytag[2], F. Herwig[3], F. Timmes[1]
[1]Los Alamos National Laboratory, [2]Centre de Recherche Astronomique de Lyon - Ecole Normale Supérieure, France, [3]Keele Astrophysics Group, School of Physical and Geographical Sciences, Keele University, UK.

101.08 **The 3D Morphology of VY CMa**
Terry J. Jones[1], R. M. Humphreys[1], A. Helton[1], G. Wallerstein[2], G. Herbig[3]
[1]Univ. of Minnesota, [2]Univ. of Washington, [3]Institute for Astronomy.

101.09 **VY Canis Majoris: The Astrophysical Basis of Its Luminosity**
Robert D. Gehrz[1], R. M. Humphreys[1], T. J. Jones[1]
[1]Univ. of Minnesota.

101.10 **VLBA Observations of the SiO Masers in the Eruptive Variable V838 Monocerotis**
Mark J. Claussen[1], H. E. Bond[2], S. Starrfield[3], K. H. Healy[3]
[1]NRAO, [2]STScI, [3]Arizona State University.

101.11 **Observations of the 6 Centimeter Lines of OH in OH/IR Stars and Star Forming Regions**
Laura K. Zschaechner[1], V. L. Fish[2], L. O. Sjouwerman[2], Y. M. Pihlstrom[3], M. J. Claussen[2]
[1]University of Montana, [2]National Radio Astronomy Observatory, [3]University of New Mexico.

101.12 **Joint VLBA/VLTI Observations of the Mira Variable GX Mon**
David A. Boboltz[1], M. Wittkowski[2], K. Ohnaka[3], T. Driebe[3]
[1]USNO, [2]ESO, Germany, [3]MPIfR, Germany.

Session 102 Variable Stars and Distance Scale

AAS Poster, Monday, 9:20am-6:30pm, Exhibit Hall 4

102.01 **Hubble Space Telescope Fine Guidance Sensor Parallaxes of Galactic Cepheid Variable Stars: Period-Luminosity Relations and Applications**
George F. Benedict[1], B. E. McArthur[1], M. W. Feast[2], T. G. Barnes[3], T. E. Harrison[4], R. J. Patterson[5], J. W. Menzies[6], J. L. Bean[1], W. L. Freedman[7]
[1]Univ. of Texas, Austin, [2]Univ. of Capetown, South Africa, [3]NSF, [4]NMSU., [5]Univ. of Virginia, [6]SAAO, South Africa, [7]Carnegie Inst..

102.02 **A Theoretical Investigation into Period-Color relations for Cepheids in the Small Magellanic Cloud**
Shashi Kanbur[1], C. Ngeow[2], G. Feiden[1]
[1]SUNY at Oswego, [2]University of Illinois.

102.03 **A Testimator Based Approach to Investigate the Non-linearity of the LMC Cepheid Period-Liminosity Relation**
Richard Stevens[1], A. Nanthakumar[1], C. Ngeow[2], S. Kanbur[1]
[1]SUNY Oswego, [2]University of Illinois.

102.04 **A Theoretical Investigation into the Properties of RR Lyraes at Maximum and Minimum Light.**
Greg Feiden[1], S. Kanbur[1], R. Szabo[2], C. Ngeow[3]
[1]SUNY Oswego, [2]University of Florida, [3]University of Illinois.

102.05 **An Empirical Investigation of the Effect of Metallicityon Linear vs. Non-linear Cepheid Period-Luminosity relations.**
Daniel Crain[1], S. kanbur[1], C. Ngeow[1]
[1]SUNY Oswego.

102.06 **A Cepheid Distance to the Coma Cluster: Initial Progress Report**
Michael Gregg[1], K. Cook[2], L. Macri[3], D. Alves[1], D. Welch[4], P. Stetson[5], J. Mould[3]
[1]UC, Davis, [2]LLNL/NOAO, [3]NOAO, [4]Macmaster University, Canada, [5]DAO, Canada.

102.07 **Improving the Distance Scale: NICMOS and ACS/HRC observations of Cepheids in the Maser Galaxy NGC 4258**
Lucas M. Macri[1], K. Stanek[2], D. Bersier[3], L. Greenhill[4], M. Reid[4]
[1]NOAO, [2]OSU, [3]Liverpool JMU, United Kingdom, [4]CfA.

Session 103 White Dwarfs: Search, Survey, Study, and Understand?

AAS Poster, Monday, 9:20am-6:30pm, Exhibit Hall 4

103.01 **White Dwarf Kinematics vs Mass**
Chris Wegg[1], E. S. Phinney[1]
[1]Caltech.

103.02 **The Search for White Dwarfs in the Sandage Two-color Survey of the Galactic Plane**
Howard H. Lanning[1], S. Lepine[2]
[1]NOAO, [2]Dept. of Astrophysics, American Museum of Natural History.

103.03 **Improved Photometric Distances for White Dwarfs**
Jay B. Holberg[1], E. M. Sion[2], T. D. Oswalt[3]
[1]Univ. of Arizona, [2]Villanova University, [3]Florida Institute of Technology.

103.04 **The Space Motions of DQ White Dwarfs**
Ralph Wasatonic[1], E. Sion[1], G. McCook[1], J. Holberg[2]
[1]Villanova University, [2]University of Arizona.

103.05 **The Hunt for Nearby White Dwarfs**
John P. Subasavage, Jr.[1], P. Bergeron[2], T. J. Henry[1], P. Dufour[2], N. C. Hambly[3], T. D. Beaulieu[1], RECONS
[1]Georgia State University, [2]University of Montreal, Canada, [3]University of Edinburgh, United Kingdom.

103.06 **Meet Your Local White Dwarf Neighbors: A Census of the 20 pc Sample**
Sean Foran[1], E. Sion[1], J. Holberg[2], G. McCook[1]
[1]Villanova University, [2]University of Arizona.

103.07 **FUSE Observations of the Very Cool DB White Dwarf GD408**
Pierre Chayer[1], S. Desharnais[2], F. Wesemael[2], J. W. Kruk[1]
[1]Johns Hopkins Univ., [2]University of Montreal, Canada.

103.08 **Kinematical and Statistical Study of Magnetic White Dwarfs**
Edward M. Sion[1], R. Wasatonic[1], G. McCook[1], J. Holberg[2]
[1]Villanova Univ., [2]Univ. Arizona.

103.09 **G29-38: Mode Identification**
Susan E. Thompson[1]
[1]Colorado College.

103.10 **FUSE Observation of the Ultra-Massive White Dwarf GD 50**
Jean Dupuis[1], P. Chayer[2], S. Vennes[3], V. Hénault-Brunet[4]
[1]Canadian Space Agency, Canada, [2]Johns Hopkins University, [3]Florida Institute of Technology, [4]McGill University, Canada.

103.11 **A New Look at GD358: Using Nonlinear Light Curves to Constrain Convection**
Judith L. Provencal[1], H. Shipman[1], M. Montgomery[2], Whole Earth Telescope Team
[1]U. Delaware Delaware Asteroseismic Research Center, [2]U. Texas.

103.12 **Quantifying Turbulence: A Nonlinear Approach**
Nada Jevtic[1], J. S. Schweitzer[2]
[1]Richard Stockton College, [2]University of Connecticut.

Session 104 X-ray to IR Observations of Compact X-ray Objects

AAS Poster, Monday, 9:20am-6:30pm, Exhibit Hall 4

104.01 **Shedding New Light on the Stellar Graveyard: Compact Objects in the Mid-IR**
Magaretha L. Pretorius[1], S. Wachter[1], D. Hoard[1]
[1]California Institute of Technology.

104.02 **Radio Emission Signatures of the Crab Pulsar's High Frequency Interpulse**
Timothy H. Hankins[1], J. A. Eilek[1]
[1]New Mexico Tech..

104.03 **Multi-Wavelength Studies of Potential X-ray Counterparts to Unidentified EGRET Gamma-Ray Sources**
Mallory Roberts[1]
[1]Eureka Scientific.

Session 105 YSO / Star Formation II

AAS Poster, Monday, 9:20am-6:30pm, Exhibit Hall 4

105.01 **Characterizing Star Formation Activity in Infrared Dark Cloud Cores**
Edward T. Chambers[1], J. M. Jackson[1], J. M. Rathborne[2], R. Simon[3]
[1]Boston Univ., [2]Harvard-Smithsonian CfA, [3]Univ. zu Koln, Germany.

105.02 **Infrared Spectroscopy of Low Mass Stars in the Cepheus A Star Forming Region**
Eric S. Boyd[1], A. Steinhauer[1], E. Lada[2]
[1]SUNY Geneseo, [2]University of Florida.

105.03 **Current Star Formation in the Perseus and Ophiuchus Molecular Clouds**
Jes K. Jorgensen[1], D. Johnstone[2], H. Kirk[3], P. C. Myers[1], Y. L. Shirley[4], L. E. Allen[1]
[1]CfA, [2]HIA, [3]U. Victoria, [4]Steward Obs..

105.04 **HST NICMOS Polarization Observations of Massive YSOs**
Janet P. Simpson[1], M. G. Burton[2], S. W. Colgan[1], A. S. Cotera[3], E. F. Erickson[1], D. C. Hines[4], B. A. Whitney[4]
[1]NASA/Ames, [2]U. New South Wales, Australia, [3]SETI Inst., [4]Space Sci. Inst..

105.05 **Spectroscopic Investigation of Companion Stars in Herbig AeBe Binary Systems**
Anne Sweet[1], B. Rodgers[2], G. Doppmann[2], N. van der Bliek[3], S. Thomas[3], M. J. Cordero[1]
[1]CTIO REU, Chile, [2]Gemini Observatory, Chile, [3]CTIO, Chile.

105.06 **Observations and Models of Very Low Luminosity Objects Discovered with the Spitzer Space Telescope**
Michael M. Dunham[1]
[1]The University of Texas at Austin.

105.07 **Star Formation in the Small Magellanic Cloud: the young star cluster NGC 602**
Antonella Nota[1], L. R. Carlson[2], E. Sabbi[3], M. Sirianni[1], J. L. Hora[4], M. Meixner[3], M. Clampin[5], J. Gallagher, III[6], S. Oey[7], A. Pasquali[8], L. J. Smith[9], M. Tosi[10], R. Walterbos[11]
[1]STScI/ESA, [2]JHU, [3]STScI, [4]Harvard/CfA, [5]NASA/Goddard, [6]U. Wisconsin, [7]U. Michigan, [8]MPIA, Germany, [9]U. College London, UK, [10]INAF-Oserv. Astronomico di Bologna, Italy, [11]NMSU.

105.08 **The Effect of Varied Initial Conditions on the Evolution of Protoplanetary Disks**
Scott A. Michael[1], R. H. Durisen[1], A. C. Boley[1]
[1]Indiana Univ..

105.09 **Radiative Transfer Model Fitting of Hubble NICMOS Data for the Class I Protostar TMC-1A (IRAS 04365+2535)**
Susan Terebey[1]
[1]Cal. State Univ. at Los Angeles.

105.10 **Statistics of Turbulence Probed by Water Masers in Star Forming Regions**
Benjamin H. Ripman[1], V. Strelnitski[1]
[1]Maria Mitchell Observatory.

105.11 **Multiplicity and the Nature of Companions in Herbig Ae/Be Systems**
Bernadette Rodgers[1], N. van der Bliek[2], S. Thomas[3], G. Doppmann[4]
[1]Gemini Obs., Chile, [2]NOAO CTIO, Chile, [3]UCO Lick Obs, [4]NOAO.

105.12 **Monte Carlo Simulations Of The Rotational Evolution Of PMS Stars**
Lucas A. Cieza[1], N. Baliber[2], N. Counselor[1]
[1]Univ. Of Texas, Austin, [2]Univ. Of California at Santa Barbara.

105.13 **Spitzer Observations of YSO's in the Witch Head Nebula (IC 2118)**
Tim S. Spuck[1], M. T. Heath[1], L. M. Rebull[2], T. E. Roelofsen Moody[3], B. Sepulveda[4], E. Sharma[4], C. Weehler[5], S. P. Weiser[1]
[1]Oil City Area Sr. High School, [2]SSC/JPL/Caltech, [3]New Jersey Astronomy Ctr. for Education, [4]Lincoln High School, [5]Luther Burbank High School.

105.14 **The Velocity Field and the Spatial Distribution of the "Hot Spots" in Methanol Masers: a Statistical Study**
Phuongmai N. Truong[1], B. H. Ripman[2], V. Strelnitski[3]
[1]Texas A&M Univ., [2]Bowdoin College, [3]Maria Mitchell Obs..

105.15 **Spitzer Imaging of NGC 2467: Evidence for Triggered Low-Mass Star Formation in HII Region Environments**
Keely D. Snider[1], J. J. Hester[1], S. J. Desch[1], K. R. Healy[1], J. Bally[2]
[1]Arizona State Univ., [2]University of Colorado.

105.16 **Self-Gravitational Collapse Of A Slowly Rotating Interstellar Gas Cloud**
John K. Wall[1]
[1]Retired.

105.17 **Spitzer Observations of Massive Protostars Associated with Methanol Masers**
Audrey E. Simmons[1], S. L. Skinner[1], M. Guedel[2]
[1]Univ. of Colorado, [2]Paul Scherrer Inst., Switzerland.

105.18 **Large Magnetic Fields and OH Maser Motions in W75 N**
Vincent L. Fish[1], M. J. Reid[2]
[1]NRAO Jansky Fellow, [2]Harvard-Smithsonian Center for Astrophysics.

105.19 **New Young Stellar Aggregates in Perseus as Revealed by the Spitzer/MIPS c2d Legacy Program**
Luisa M. Rebull[1], K. Stapelfeldt[2], c2d team
[1]SSC/Caltech/JPL, [2]JPL.

105.20 **Cluster Formation in Isolation: Spitzer's View of Bok Globule CB 34**
Dawn E. Peterson[1], R. A. Gutermuth[2], M. F. Skrutskie[1], S. T. Megeath[3], J. L. Pipher[4], L. E. Allen[2], P. C. Myers[2]
[1]Univ. of Virginia, [2]Harvard-Smithsonian CfA, [3]U. Toledo, [4]U. Rochester.

105.21 **The Near-IR to Submillimeter Opacity Ratio toward Low-mass Star-forming Cores**
Yancy L. Shirley[1], T. L. Huard[2], A. M. Stutz[1], D. J. Wilner[2], K. M. Pontoppidan[3], L. G. Mundy[4], N. J. Evans II[5]
[1]Univ. of Arizona, [2]CfA, [3]Caltech, [4]Univ. of Maryland, [5]Univ. of Texas.

105.22 **Variations in the Extinction Law, Ice Abundance, and Dust Grains in Molecular Cloud Cores**
Tracy L. Huard[1], K. M. Pontoppidan[2], A. Boogert[3], C. Knez[4], Y. L. Shirley[5]
[1]Harvard-Smithsonian CfA, [2]Caltech, [3]NOAO Gemini Science Center, Chile, [4]University of Maryland, [5]Steward Observatory.

Job Center
Attendee Services, Monday, 9:20am-5:00pm, Exhibit Hall 4

Gadgets and Gizmos
Attendee Services, Monday, 9:20am-5:00pm, South Lobby

MasteringPhysics
Commercial Workshop, Monday, 9:30-11:00am, 305

With more than 80,000 users for calculus-based physics alone, MasteringPhysics is the most widely used physics homework and tutorial system in the world. Its unprecedented popularity is due to two unique advantages. First, MasteringPhysics is the most sophisticated h/w system available - allowing for multi-part, multi-step free-response problems, an unmatched variety of wrong-answer feedback, individualized help (comprising hints or simpler sub-problems upon request), all driven by the largest metadatabase of student problem-solving in the world. Secondly, MasteringPhysics is the most educationally proven system - 8 years in development and testing, NSF-sponsored published research (and subsequent studies) shows that the system has dramatic educational results with correlated gains in class finals of up to 8 times that from traditional hand-graded homework, and gains in conceptual understanding (as measured using the FCI) higher than that from group problems.

Our workshop will explain how to introduce MasteringPhysics into your course quickly and easily, the benefits to you and your students, the latest physics education research using the system, even guidelines for authoring your own problems and possible research techniques. We welcome anyone who is interested in new ways to offer more effective tutoring and testing in their calculus- and algebra/trig-based physics courses.

Chair, Claire Masson[1]
[1]Pearson Education.

Experience Digital Physics Curriculum I

Commercial Workshop, Monday, 9:30-11:00am, 302

View and experiment with a new digital physics textbook and virtual physics labs. Learn how a fully integrated digital physics curriculum can aid your instruction. Application of multi-learning styles and inquiry-based learning in a self-paced package provide students with the opportunity to experiment and explore.

Chair, Mark Bretl[1]

[1]*Kinetic Books.*

Session 106 Education with Large Astronomical Surveys

AAS Special, Monday, 10:00-11:30am, 613-14

Chair, Carol A. Christian[1]

[1]*STScI.*

106.01 **Education / Outreach with Large Surveys Overview**
Carol A. Christian[1]
[1]*STScI.*

106.02 **LSST Survey Data - Models for EPO Interaction**
Kirk Borne[1]
[1]*GMU / LSST / QSS Group Inc..*

106.03 **Hands on Universe Applications**
Carl Pennypacker[1]
[1]*Lawrence Berkeley Lab..*

106.04 **Teacher Education**
Vivian Hoette[1]
[1]*Yerkes Observatory.*

106.05 **LSST EPO - Plans & Challenges**
Suzanne Jacoby[1]
[1]*LSST Corporation.*

106.06 **Education with SDSS Data: Activities and Lessons Learned**
M. J. Raddick[1]
[1]*JHU.*

106.07 **The Challenges of Using Virtual Observatories in the Classroom**
Robert T. Sparks[1]
[1]NOAO.

106.08 **Introducing High School Science Teachers to Quasar Research Using the Cyberinfrastructure**
Michelle Nichols (Yehling)[1], L. Fortson[1]
[1]Adler Planetarium & Astronomy Museum.

106.09 **The Amateurs' Love Affair with Large Datasets**
Aaron Price[1], S. H. Jacoby[2], A. Henden[3]
[1]AAVSO/Tufts University, [2]LSST Corporation, [3]AAVSO.

Session 107 The Future of Astronomy and Astrophysics at NASA

AAS Special, Monday, 10:00-11:30am, 611-12

Chair, Jack O. Burns[1]
[1]Univ. of Colorado at Boulder.

107.01 **CAPP Panel Discussion: The Future of Astronomy & Astrophysics at NASA**
Jack O. Burns[1]
[1]Univ. of Colorado at Boulder.

Session 108 HAD III

HAD Oral, Monday, 10:00-11:30am, 608-10
Session begins with a very brief introduction to posters.

Chair, Sara Schechner[1]
[1]Harvard U..

108.01 **The Tunguska Event and the History of Near-Earth Objects**
Donald K. Yeomans[1]
[1]JPL.

108.02 **Einstein's Jury -- The Race to Test Relativity**
Jeffrey Crelinsten[1]
[1]The Impact Group, Canada.

108.03 **The Numbers of Scientific Papers Depend Only on the Numbers of Scientists**
Helmut A. Abt[1]
[1]Kitt Peak National Obs..

108.04 **Quasars and the Caltech-Carnegie Connection**
Edward R. Waluska[1]
[1]James Cook University, Australia.

Session 109 AGN Variability, Interactions and Environments

AAS Oral, Monday, 10:00-11:30am, 3A

109.01 **Discovery of a Probable Triple Quasar**
Stanislav G. Djorgovski[1], F. Courbin[2], G. Meylan[2], D. Sluse[2], D. Thompson[3], A. Mahabal[1], E. Glikman[1]
[1]Caltech, [2]EPFL, Switzerland, [3]LBTO.

109.02D **The X-ray Variability of Seyfert Galaxies**
Kevin Marshall[1]
[1]Georgia State Univ..

109.03 **Monitoring of a Dramatically Variable C IV Mini-BAL in the Quasar HS1603+3820**
Toru Misawa[1], M. Eracleous[1], J. C. Charlton[1], N. Kashikawa[2]
[1]Penn State Univ., [2]National Astronomical Observatory of Japan, Japan.

109.05 **Reverberation Mapping of the BLRG 3C390.3**
Matthias Dietrich[1], B. M. Peterson[1]
[1]The Ohio State University.

109.06 **HCN Observations of Four High Redshift Galaxies and QSOs**
Yu Gao[1], C. Carilli[2], P. Vanden Bout[3], P. Solomon[4]
[1]Purple Mountain Observatory, China, [2]NRAO-AOC, [3]NRAO-CV, [4]University at Stony Brook.

109.07 **Radially-Inflowing Molecular Gas Deposited by a X-ray Cooling Flow**
Jeremy Lim[1], Y. Ao[2], V. Dinh[1]
[1]ASIAA, Taiwan, [2]Purple Mountain Observatory, Chinese Academy of Sciences, China.

109.08 **Intergalactic Metal Pollution at the Highest Observable Redshifts**
Emma V. Ryan-Weber[1], M. Pettini[1], P. Madau[2]
[1]IoA, Cambridge, UK, [2]University of California, Santa Cruz.

Session 110 Circumstellar Disks: Early

AAS Oral, Monday, 10:00-11:30am, 204

110.01D **High-Resolution Imaging and Modeling of Circumstellar Debris: Architectures of Planetary Systems**
Michael Fitzgerald[1], P. Kalas[1], J. R. Graham[1], G. Duchêne[2], C. Pinte[2]
[1]UC Berkeley, [2]Laboratoire d'Astrophysique, Obs. de Grenoble, France.

110.02 **SiO Outflow Observations of Young Massive Stellar Objects with Linearly Distributed Methanol Maser Emission**
James M. De Buizer[1], R. Redman[2], P. Feldman[2], S. Longmore[3], J. Caswell[4]
[1]Gemini Obs., Chile, [2]NRC/HIA, Canada, [3]UNSW, Australia, [4]ATNF, Australia.

110.03 **The Likelihood of Supernova Enrichment of Circumstellar Disks**
Jonathan P. Williams[1]
[1]Univ. of Hawaii.

110.04 **New Debris Disks Around Solar-Type Stars Imaged with the HST/ACS Coronagraph**
John E. Krist[1], K. Stapelfeldt[1], G. Bryden[1], C. Chen[2]
[1]JPL, [2]NOAO.

110.05 **Modeling Scattered Light Images from a Planet-Forming Disk**
Hannah Jang-Condell[1], A. P. Boss[1]
[1]Carnegie Inst. of Washington.

Session 111 Dust, Starbursts and Obscured AGN

AAS Oral, Monday, 10:00-11:30am, 6A

111.01 **The Revealing Dust: Mid-infared Diagnostics of Nuclear Activity in Hickson Compact Groups**
Sarah Gallagher[1], K. E. Johnson[2], A. E. Hornschemeier[3], J. C. Charlton[4], J. E. Hibbard[5]
[1]UCLA, [2]UVA, [3]GSFC, [4]PSU, [5]NRAO.

111.02 **The Top 15 Luminous Obscured Quasars: SED, Luminosity and Absorption Properties**
Mari Polletta[1], D. Weedman[2], C. Lonsdale[1], S. Hoenig[3], H. Smith[1], J. Houck[4]
[1]UC, San Diego, [2]Department of Astronomy, Cornell University, [3]Max-Planck-Institut fur Radioastronomie, Germany, [4]IRS Science Center, Center for Radiophysics & Space Research, Cornell University.

111.03D **The Nature of Dust-Reddened Quasars**
Tanya Urrutia[1], R. R. Becker[1], M. Lacy[2], M. D. Gregg[1]
[1]UC, Davis, [2]Spitzer Science Center, Caltech.

111.04 **A HCN and HCO+ Multi-transition Line Survey in Active Galaxies: AGN versus Starburst Environments**
Melanie Krips[1], R. Neri[2], S. Garcia-Burillo[3], F. Combes[4], S. Martin[1], A. Eckart[5], G. Petitpas[1], A. Peck[1]
[1]Harvard-Smithsonian Center for Astrophysics, SMA project, [2]IRAM, France, [3]OAN, Spain, [4]LERMA, France, [5]University of Cologne, Germany.

111.05D **Using X-rays to Probe the Physical Properties of Astrophysical Dust**
Andreea Petric[1], F. Paerels[1]
[1]Columbia Univ..

111.06D **Dust within Central Regions of Seyfert Galaxies**
Rajesh P. Deo[1]
[1]Georgia State Univ..

Session 112 Formation History of Galaxies

AAS Oral, Monday, 10:00-11:30am, 605-07

112.01 **The Current Mass Function of Galaxies**
Michael Pierce[1], R. C. Berrington[1]
[1]Univ. Of Wyoming.

112.02D **High Resolution Optical Velocity Fields of LSB Galaxies and the Density Profiles of Dark Matter Halos**
Rachel Kuzio de Naray[1]
[1]Univ. Of Maryland.

112.03 **Structure and Formation of Massive Galaxies with Old Stellar Populations at z=1.5**
Elizabeth J. McGrath[1], A. Stockton[1]
[1]Inst. for Astronomy.

112.04 **New Constraints on the History of Star Formation of Elliptical Galaxies**
Ricardo P. Schiavon[1], G. J. Graves[2], R. W. O'Connell[1], S. M. Faber[2]
[1]Univ. of Virginia, [2]University of California.

112.05 **The Spatial Distributions of Globular Cluster Systems**
Eric Peng[1], M. Takamiya[2], P. Cote[1], M. J. West[3], J. P. Blakeslee[4], L. Ferrarese[1], A. Jordan[5], S. Mei[6]
[1]NRC-HIA, Canada, [2]University of Hawaii, [3]Gemini Observatory, Chile, [4]Washington State University, [5]ESO, Germany, [6]l'Observatoire de Paris, France.

112.06 **An X-ray, IR, and Submillimeter Flare of Sagittarius A***
Daniel P. Marrone[1], F. K. Baganoff[2], M. Morris[3], J. M. Moran[4], A. Ghez[3], S. Hornstein[3], D. Dowell[5], M. W. Bautz[2], G. R. Ricker[2], W. N. Brandt[6], G. P. Garmire[6], J. Lu[3], K. Matthews[7], G. Bower[8], J. Zhao[4], R. Rao[9]
[1]U Chicago, [2]MIT Kavli Institute, [3]UCLA, [4]Harvard-Smithsonian CfA, [5]JPL, [6]Penn State U., [7]Caltech, [8]UC Berkeley, [9]ASIAA, Taiwan.

112.07 **Flaring Activity of SgrA*: Adiabatic Expansion of Nonthermal Plasma**
Farhad Yusef-Zadeh[1], M. Wardle[2], D. A. Roberts[3], C. O. Heinke[1], C. D. Dowell[4], W. D. Cotton[5], G. C. Bower[6], F. K. Baganoff[7]
[1]Northwestern Univ., [2]Macquarie University, Australia, [3]Northwestern Univ. & Adler Planetarium, [4]Cal Tech, [5]NRAO, [6]UC Berkeley, [7]MIT.

Session 113 Galaxy Clusters I

AAS Oral, Monday, 10:00-11:30am, 6B

113.01D **Hydrodynamic Models of AGN Feedback in Cooling Core Clusters**
John C. Vernaleo[1], C. S. Reynolds[1]
[1]Univ. of Maryland.

113.02 **Color and Morphological Evolution in Galaxy Clusters since z ~ 1.5**
Mark Brodwin[1], P. Eisenhardt[1], A. H. Gonzalez[2], A. Stanford[3], D. Stern[1], S. Perlmutter[4], SCP, NDWFS, IRAC, FLAMEX, AGES
[1]JPL/Caltech, [2]University of Florida, [3]UC Davis, [4]UC Berkeley.

113.03D **Characteristics of Megaparsec-scale Structures in the Horologium-Reticulum Supercluster of Galaxies**
Matthew C. Fleenor[1], J. A. Rose[1], W. A. Christiansen[1], M. Johnston-Hollitt[2], R. W. Hunstead[3], W. Saunders[4]
[1]University of North Carolina, [2]University of Tasmania, Australia, [3]Sydney University, Australia, [4]Anglo-Australian Observatory, Australia.

113.04 **A Robust Estimator of the Small Scale Galaxy Correlation Function**
Nikhil Padmanabhan[1], M. White[2], D. J. Eisenstein[3]
[1]Lawrence Berkeley National Laboratory, [2]University of California, Berkeley, [3]University of Arizona.

113.05 **Search for Fossil Groups using NVO Technologies**
Walter A. Santos, Jr.[1], O. Lopez-Cruz[2], D. Lindler[3], T. Tamura[4], C. Mendes de Oliveira[1], L. Sodre, Jr.[1]
[1]Astronomy Institute - University of Sao Paulo, Brazil, [2]INAOE, Mexico, [3]Sigma Space Corporation, [4]ISAS/JAXA, Japan.

113.06D **Mapping the Local Density and Velocity Fields**
David J. Radburn-Smith[1]
[1]STScI.

Session 114 Nearby Galaxies and ANGST

AAS Oral, Monday, 10:00-11:30am, 3B

114.01 **The ACS Nearby Galaxy Survey Treasury: Overview**
Julianne Dalcanton[1]
[1]Univ. of Washington.

114.02 **The ACS Nearby Galaxies Survey Treasury: Recovering Spatially Resolved Recent Star Formation Histories**
Evan D. Skillman[1], ANGST team
[1]Univ. of Minnesota.

114.03 **The ACS Nearby Galaxies Survey Treasury: First Age and Metallicity Distributions**
Benjamin F. Williams[1], J. Dalcanton[1], D. Weisz[2], A. Dolphin[3], A. Seth[4], E. Skillman[2], R. Covarrubias[1], J. Harris[3], ANGST team
[1]Univ. of Washington, [2]U. Minnesota, [3]Steward Observatory, [4]CfA.

114.04 **The ACS Nearby Galaxies Survey Treasury: The Recent Star Formation History of DDO 06**
Daniel R. Weisz[1], ANGST team
[1]Univ. of Minnesota.

114.05 **Modes of Star Formation in an Early Universe Laboratory: An HST/ACS Survey of Hickson Compact Groups**
Jane C. Charlton[1], S. C. Gallagher[2], C. Gronwall[1], J. English[3], P. R. Durrell[4], R. Chandar[5], K. E. Johnson[6], W. N. Brandt[1], D. M. Elmegreen[7], M. Eracleous[1], G. P. Garmire[1], J. E. Hibbard[8], P. Hickson[9], A. E. Hornschemeier[10], S. Hunsberger[1], K. A. Knierman[11], A. Maybhate[12], C. Mendes de Oliveira[13], J. S. Mulchaey[5], C. Palma[1], B. C. Whitmore[12], A. I. Zabludoff[11], S. G. Zonak[14]
[1]Penn State Univ., [2]UCLA, [3]U. Manitoba, Canada, [4]Youngstown State Univ., [5]OCIW, [6]Univ. of Virginia, [7]Vassar College, [8]NRAO, [9]Univ. of British Columbia, Canada, [10]NASA Goddard, [11]Univ. of Arizona, [12]STScI, [13]Univ. of Sao Paulo, Brazil, [14]Univ. of Maryland.

114.06D **The Star Formation Rate Density of the Local Universe from SINGG**
Daniel Hanish[1], G. R. Meurer[1], SINGG Team
[1]Johns Hopkins Univ..

114.07 **The Stellar Populations in the Outer Banks of Massive Disk Galaxies**
Roelof De Jong[1], GHOSTS team
[1]STScI.

Session 115 Pulsars and White Dwarfs I

AAS Oral, Monday, 10:00-11:30am, 201

115.01 **A New Analytical Model for Bulk and Thermal Comptonization in Accretion Powered X-Ray Pulsars**
Peter A. Becker[1], M. T. Wolff[2]
[1]George Mason University, [2]Naval Research Laboratory.

115.02D **Probing Binary Evolution Using the Pulsar Fossil Record**
Robert D. Ferdman[1], I. H. Stairs[1], M. Kramer[2], M. A. McLaughlin[3], A. Faulkner[2], D. C. Backer[4], P. Demorest[4], D. J. Nice[5], M. Burgay[6], F. Camilo[7], N. D'Amico[6], G. Hobbs[8], D. R. Lorimer[3], A. G. Lyne[2], R. Manchester[8], A. Possenti[6]
[1]UBC, Canada, [2]Jodrell Bank Obs., UK, [3]West Virginia U., [4]U. California, [5]Bryn Mawr College, [6]INAF, Italy, [7]Columbia U., [8]ATNF, Australia.

115.03D **X-ray Emission from Millisecond Pulsars**
Slavko Bogdanov[1]
[1]Harvard University.

115.04 **New XMM Observations of the Accreting Millisecond X-ray Pulsar SAX J1808.4-3658 in Quiescence**
Craig O. Heinke[1], R. Wijnands[2], P. G. Jonker[3], R. E. Taam[1]
[1]Northwestern Univ., [2]U. Amsterdam, The Netherlands, [3]Utrecht U., The Netherlands.

115.05 **The Distribution of Ages, Magnetic Fields and Spin Periods of Millisecond Pulsars**
Bulent Kiziltan[1], S. E. Thorsett[1]
[1]Department of Astronomy & Astrophysics, U.of California, Santa Cruz.

115.06 **Big, Smart Dishes to Find Thousands of New Radio Pulsars**
Joeri van Leeuwen[1]
[1]UC, Berkeley.

115.07 **The External Pollution of GD 362: The Bulk Composition of an Extra-Solar Asteroid?**
Carl Melis[1], D. Koester[2], B. Zuckerman[1], B. Hansen[1], M. Jura[1]
[1]UC, Los Angeles, [2]University of Kiel, Germany.

Session 116 Advanced Physics in the Pre-High School AP, IB and Dual Enrollment Courses

AAPT Invited, Monday, 10:00-11:30am, 310

Chair, Paul Hickman[1]
[1]Science Education Consultant.

Session 117 The Once & Future Role of Women in Astronomy

AAPT Invited, Monday, 10:00-11:30am, 615

Chair, Jill Marshall[1]

[1]*UT at Austin.*

117.01 **Dorrit Hoffleit: A Century of being a Woman in Astronomy**
Dorrit Hoffleit[1], **P. L. Gay**[2]
[1]*Yale University,* [2]*Southern Illinois University Edwardsville.*

117.02 **Women in Physics and Astronomy**
Rachel Ivie[1]
[1]*American Institute of Physics.*

117.03 **The Progress, Status, and "Roles" of Women in Astronomy**
Lynne Hillenbrand[1]
[1]*Caltech.*

Session 118 Nanoscale Physics in the Classroom

AAPT Special, Monday, 10:00-11:30am, 616

Chair, Paul W. Zitzewitz[1]

[1]*University of Michigan-Dearborn.*

118.01 **National Center for Learning and Teaching in Nanoscale Science and Engineering (NCLT)**
Nicholas Giordano[1]
[1]*Purdue University.*

118.02 **Resource Materials for Nanoscale Science and Technology Education**
George Lisensky[1]
[1]*Beloit College.*

118.03 **Small Talk: Conversations about Nanotechnology through Podcasts**
Stephanie V. Chasteen[1], **P. Doherty**[1]
[1]*Exploratorium Teacher Institute.*

118.04 **Nanoscale Physics Inquiry Activities**
Jill N. Johnsen[1]
[1]*Exploratorium.*

Session 119 Resource Collections and Communities Online through ComPADRE

AAPT Special, Monday, 10:00-11:30am, 303

Chair, Bruce Mason[1]

[1]*OU.*

119.01 **Overview of the Student Collection on ComPADRE**
David Donnelly[1]
[1]*Texas State University - San Marcos.*

119.02 **AstronomyCenter.org: Your Online Destination for Astronomy Education Resources**
Gina Brissenden[1], **S. Deustua**[2]
[1]*Univ. of Arizona,* [2]*American Astronomical Society.*

119.03 **Physics To Go: an Outreach Digital Library**
Edward V. Lee[1]
[1]*American Physical Society.*

119.04 **The Physics Front: Resources for High School Physics & Physical Science Teachers**
Cathy M. Ezrailson[1]
[1]*Texas A&M University.*

Session 120 Significant Advances in Low Temperature Physics

AAPT Special, Monday, 10:00-11:30am, 307-08

Chair, Warren Hein[1]

[1]*AAPT.*

120.01 **Absolute Zero**
Russell J. Donnelly[1], **D. Sheibley**[2], **M. Belloni**[2], **D. Stamper-Kurn**[3], **W. F. Vinen**[4]
[1]*University of Oregon,* [2]*Davidson College,* [3]*UC, Berkeley,* [4]*University of Birminham, United Kingdom.*

120.02 **Ultracold Quantum Gases**
Daniel Stamper-Kurn[1]
[1]*University of California, Berkeley.*

120.03 **Significant Advances in Low Temperature Physics**
William F. Vinen[1]
[1]*University of Birmingham, UK, United Kingdom.*

Session 121 SPS Undergraduate Research Outreach

AAPT Oral, Monday, 10:00-11:30am, 617

Chair, Gary White[1]
[1]*American Institute of Physics.*

121.01 **SPS Intern Contributions to ComPADRE and SOCK**
Katherine N. Zaunbrecher[1]
[1]*University of Louisiana at Lafayette.*

121.02 **Astronomy and Education**
Kristen Greenholt[1], **S. Deustua**[2]
[1]*Society of Physics Students,* [2]*American Astronomical Society.*

121.03 **Studying a Quantum 'Bounce'**
David L. Sheibley[1], **M. Belloni**[1]
[1]*Davidson College.*

121.04 **Microsized Objects in Optical Tweezers with Orbital Angular Momentum**
Kyle A. Brandenburg[1]
[1]*Xavier University.*

121.05 **True Color Holography with Three Wavelengths**
Jeremy R. Swearingen[1]
[1]*Xavier University.*

121.06 **The Effects of Magnetic Fields on Cooling Fans**
Raphael G. Cherney[1]
[1]*Brownell-Talbot School.*

121.07 **Evaluation of a Novel Design for an Electrostatic Quadrupole Triplet Ion Beam Lens**
L. R. Burns[1], **J. D. Bouas**[1], **S. Matteson**[1], **D. L. Weathers**[1]
[1]*Ion Beam Modification and Analysis Laboratory (IBMAL) — University of North Texas.*

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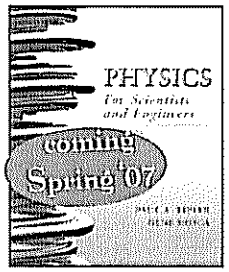

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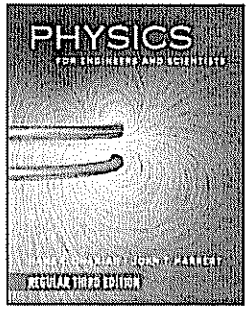

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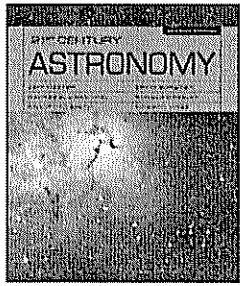

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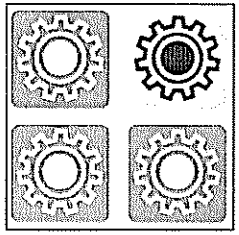

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121.08 **Packets in the Classical Asymmetric Infinite Square Well**
Robert W. Correll[1]
[1]*Davidson College.*

121.09 **Sonoluminescence at Carthage: Sound into Light**
Lukas K. Swanson[1], **D. Arion**[1], **K. Crosby**[1]
[1]*Carthage College.*

Session 122 Warner Prize for Astronomy

Plenary, Monday, 11:40am-12:30pm, Ballroom 6

122.01 **The Formation of The Solar System and The Origin of Planetary Spins**
Re'em Sari[1]
[1]*Caltech.*

Extended FUSE Operations Beyond FY08

AAS Splinter Meeting, Monday, 12:30-2:00pm, 607

The FUSE satellite has made a remarkable recovery from attitude control problems in late 2004. The scientific instrument remains healthy, and provides a unique capability for far-UV spectroscopy that will not be duplicated in the foreseeable future. We seek community input on an operations concept that would extend FUSE operations at reduced costs beyond the current mission horizon of September 2008. What are the primary science drivers for this time frame? What level of operations are required to support the science? The results of these discussions will likely drive automation and development of concept decisions in the upcoming months as we bring the concept to NASA for consideration.

Chair, William P. Blair[1]
[1]*John Hopkins University.*

Accessing and Using Sloan Digital Sky Survey Data

AAS Splinter Meeting, Monday, 12:30-2:00pm, 608

Presentations of a few specific cases showing astronomers how to access data from the Sloan Digital Sky Survey, with questions and answers from Jordan Raddick and other members of the SDSS collaboration. The session will be similar to the session given at the summer meeting in Calgary.

Chair, Jordan Raddick[1]
[1]*Johns Hopkins University.*

NRAO Town Meeting

AAS Town Hall Meeting, Monday, 12:45-1:45pm, 6A

This Town Meeting will inform the AAS membership about the status of key NRAO science operations and construction projects. Brief presentations will update the membership regarding: (a) Atacama Large Millimeter Array (ALMA) construction and planning for the North American ALMA Science Center; (b) Expanded Very Large Array (EVLA) construction and science commissioning; (c) science operations and instrument development plans at the Green Bank Telescope (GBT); and (d) science operations and instrument development at the Very Long Baseline Array (VLBA). At least half of the Town Meeting will be allocated for answering audience questions.

Chair, K Y. Lo[1]
[1]*NRAO.*

Session 123 Presidential Address and Awards Presentation

AAPT Invited, Monday, 1:00-2:00pm, Ballroom 6

1:00 Presentation by Richard Peterson of Distinguished Service Citations to the following recipients:
Robert Beichner, North Carolina State Univ.
John Mallinckrodt, California State Polytechnic Univ
Deborah Rice, Kirkwood High School
Paul Stokstad, PASCO scientific
David and Christine Vernier, Vernier Software

1:15 Presentation of Melba Newell Phillips Award to Clifford Swartz
1:25 Presentation by James Stith of the American Institute of Physics Science Writing Award for a Work Aimed at Chileren to David Garrison, Shannon Hunt, and Jude Isabella, Editors of YES! Magazine
1:30 Presentation by Earl Blodgett of the SPS Outstanding Chapter Advisor Award to James Borgardt
1:35 Presidential Address by Kenneth Heller

Chair, Richard Peterson[1]
[1]*Bethel Univ..*

Session 124 Formation and Detection of Habitable Planets

AAS Special, Monday, 2:00-3:30pm, 611-12

Chair, Nader Haghighipour[1]
[1]Univ. of Hawaii.
Chair, Karen J. Meech[1]
[1]Inst. for Astronomy.

124.01 **The Limits of Organic Life in Planetary Systems**
John Baross[1]
[1]University of Washington.

124.02 **What Comets Tell us About Prebiotic Chemistry in Protoplanetary Disks**
Karen Meech[1]
[1]Institute for Astronomy, University of Hawaii.

124.03 **Planetary Environmental Signatures for Habitability and Life**
Victoria Meadows[1]
[1]Spitzer Science Center.

124.04 **Detection of Habitable Planets**
Wesley A. Traub[1]
[1]JPL.

124.05 **Habitable Planet Formation; A Review of Current Status**
Nader Haghighipour[1]
[1]Institute for Astronomy, University of Hawaii.

124.06 **Kepler Mission Development**
William J. Borucki[1], D. Koch[1], N. Batalha[2], T. Brown[3], D. Caldwell[4], J. Christensen-Dalsgaard[5], E. Dunham[6], T. Gautier[7], J. Geary[8], R. Gilliland[9], J. Jenkins[4], D. Latham[8], D. Monet[10]
[1]NASA/Ames, [2]San Jose State Univ., [3]Las Cumbres Obs., [4]SETI Inst., [5]Aarhus Univ., Denmark, [6]Lowell Obs., [7]JPL, [8]SAO, [9]STScI, [10]USNO.

Session 125 Galactic and Extragalactic Surveys Using AzTEC

AAS Special, Monday, 2:00-3:30pm, 204

Chair, Gary Davis[1]
[1]Joint Astronomy Centre.

125.01 **Session Overview and AzTEC Instrument Performance**
Grant Wilson[1], P. A. Ade[2], I. Aretxaga[3], J. Austermann[1], J. J. Bock[4], D. Hughes[3], Y. Kang[5], S. Kim[5], J. Lowenthal[6], P. Mauskopf[2], K. Scott[1], M. Yun[1]
[1]U. Massachusetts, [2]Cardiff University, United Kingdom, [3]INAOE, Mexico, [4]Caltech, [5]Sejong University, Republic of Korea, [6]Smith College.

125.02 **AzTEC Observations of the SHADES Fields at λ=1.1mm**
Mark Halpern[1], J. Dunlop[2], SHADES and AzTEC consortia
[1]UBC, Canada, [2]Institute for Astronomy, United Kingdom.

125.03 **AzTEC COSMOS Survey**
Min Su Yun[1], P. A. Ade[2], I. Aretxaga[3], J. Austermann[1], J. J. Bock[4], D. Hughes[3], Y. Kang[5], S. Kim[5], J. Lowenthal[6], P. Mauskopf[2], K. Scott[1], G. Wilson[1]
[1]Univ. of Massachusetts, [2]Cardiff University, United Kingdom, [3]INAOE, Mexico, [4]Caltech, [5]Sejong University, Republic of Korea, [6]Smith College.

125.04 **A Deep AzTEC Map of the GOODS-North Field**
Douglas Scott[1], E. Chapin[1], I. Aretxaga[2], J. Austermann[3], K. Coppin[1], M. Crowe[1], L. Frey[1], A. Gibb[1], M. Halpern[1], D. Hughes[2], Y. Kang[4], S. Kim[4], J. Lowenthal[5], T. Perera[3], A. Pope[1], K. Scott[3], G. Wilson[3], M. Yun[3]
[1]University of British Columbia, Canada, [2]INAOE, Mexico, [3]University of Massachusetts, [4]Sejong University, Republic of Korea, [5]Smith College.

125.05 **An AzTEC 1.1mm Survey of a Highly-biased Extragalactic Field - Tracing Accelerated Galaxy Formation at z~3.8 towards 4C41.17**
David Hughes[1], P. A. Ade[2], I. Aretxaga[1], J. Austermann[3], J. J. Bock[4], J. Dunlop[5], E. Gaztanagal[1], R. Ivison[5], Y. Kang[6], S. Kim[6], J. Lowenthal[7], P. Mauskopf[2], A. Montana[1], M. Plionis[1], K. Scott[3], I. Smail[8], J. Stevens[9], J. Wagg[1], G. Wilson[3], M. Yun[3]
[1]Inst. Nacional de Astrofisica, Optica y Electronica, Mexico, [2]Cardiff U., UK, [3]U. Massachusetts, [4]Caltech, [5]IoA, Royal Obs., UK, [6]Sejong U., Republic of Korea, [7]Smith College, [8]U. Durham, UK, [9]U. Hertfordshire, UK.

Session 126 Job Applicants: Top 10 Questions You Should Ask

AAS Special, Monday, 2:00-3:30pm, 201

Chair, Anita Krishnamurthi[1]
[1]NASA's GSFC.

Chair, Kirk Borne[1]
[1]George Mason University.

126.01 **AAS Committee on Employment Panel Introduction**
Kirk Borne[1], **M. N. Fanelli**[2], **L. J. Storrie-Lombardi**[3], **A. Krishnamurthi**[4]
[1]George Mason University, [2]Texas Christian Univ., [3]Caltech, [4]NASA's GSFC.

Session 127 Circumstellar Disks: Not So Early

AAS Oral, Monday, 2:00-3:30pm, 608-10

127.01 **HST/ACS Coronagraphic Observations of the HD 163296 Circumstellar Disk**
John P. Wisniewski[1], **M. Clampin**[1], **C. Grady**[2], **D. Ardila**[3], **H. Ford**[4], **D. Golimowski**[4], **G. Illingworth**[5], **J. Krist**[6], **HST ACS Science Team**
[1]NASA GSFC, [2]Eureka Scientific/NASA GSFC, [3]Spitzer Science Center, [4]JHU, [5]Lick Observatory, [6]JPL.

127.02 **The Circumstellar Environment of HD 97048: HST/ACS Scattered-Light Imaging and Dust Modeling**
Ryan L. Doering[1], **M. Meixner**[2], **S. T. Holfeltz**[2], **J. E. Krist**[3], **D. R. Ardila**[4], **I. Kamp**[5], **M. C. Clampin**[6], **S. H. Lubow**[2]
[1]Univ. of Illinois, Urbana, [2]STScI, [3]Jet Propulsion Laboratory, [4]Spitzer Science Center/IPAC, [5]ESA/STScI, [6]NASA Goddard Space Flight Center.

127.03 **Models of Be Star Disks Constrained by Long-baseline Interferometry**
Christopher Tycner[1], **C. E. Jones**[2], **T. A. Sigut**[2], **L. Thomson**[2], **A. Molak**[2]
[1]U.S. Naval Observatory, [2]Univ. of Western Ontario, Canada.

127.04D **Observations of Intermediate Mass Stars and their Circumstellar Environments with Nulling Interferometry**
Wilson M. Liu[1]
[1]Univ. of Arizona.

127.05 **Infrared Emission from Aliphatic and Aromatic Hydrocarbons in Cool Radiative Environments**
Gregory C. Sloan[1], **M. Jura**[2], **W. W. Duley**[3], **K. E. Kraemer**[4], **L. D. Keller**[5], **B. A. Sargent**[6], **A. Li**[7], **J. Bernard-Salas**[1], **W. J. Forrest**[6], **J. D. Green**[6], **C. J. Bohac**[6], **D. M. Watson**[6], **J. R. Houck**[1]
[1]Cornell Univ., [2]UCLA, [3]Univ. Waterloo, Canada, [4]Air Force Research Lab., [5]Ithaca College, [6]Univ. Rochester, [7]Univ. Missouri.

Session 128 Education Across the Spectrum

AAS Oral, Monday, 2:00-3:30pm, 605-07

128.01 **Johannes Kepler's Intelligent Design**
Paul M. Wallace[1]
[1]Berry College.

128.02 **Is Debunking Intelligent Design an Effective Approach to Teaching?**
Alex Storrs[1], **T. F. Slater**[2], **CAPER team**
[1]Towson Univ., [2]Univ. of Arizona.

128.03 **And now... Equations!**
Ran Sivron[1]
[1]Baker Univ..

128.04 **Using Streaming Video in Delivery of an On-Line Astronomy Course**
Terrence F. Flower[1]
[1]College of St. Catherine.

128.05 **"Workshop Astronomy" at Dickinson College**
Windsor A. Morgan, Jr.[1]
[1]Dickinson College.

128.06 **Integrating Observatories and Planetaria into Survey Astronomy Laboratory Curricula**
Michael N. Fanelli[1]
[1]Texas Christian Univ..

128.07 **A Study of 8th Grade Students Learning the Moon's Phases Using Various Multimedia Platforms**
Timothy Young[1], M. Guy[1]
[1]Univ. of North Dakota.

Session 129 Galaxy Clusters II

AAS Oral, Monday, 2:00-3:30pm, 6B

129.01 **The Clustering of Galaxy Groups: Dependence on Mass and Other Properties**
Andreas A. Berlind[1]
[1]New York Univ..

129.02D **The Equilibrium Structure of Dark Matter Halos in a Λ-Dominated Universe**
Michael T. Busha[1], A. E. Evrard[1], F. C. Adams[1]
[1]Univ. Of Michigan.

129.03D **Environment, Kinematics, & Star Formation History of Infalling [OII] Emitters in z=0.4 cluster Abell 851**
Taro Sato[1], C. L. Martin[1]
[1]UC, Santa Barbara.

129.04 **Simulating Cosmic Reionization from Pop II and III Stars**
Hy Trac[1], R. Cen[1]
[1]Princeton University.

129.05 **A z=0.45 DLA With Only Weak MgII Absorption?**
Therese Jones[1], J. C. Charlton[1], A. C. Mshar[1], G. J. Ferland[2], P. C. Stancil[3]
[1]Penn State Univ., [2]University of Kentucky, [3]University of Georgia.

129.06D **From Galaxy Clustering to Dark Matter Clustering**
Jaiyul Yoo[1], D. H. Weinberg[1]
[1]The Ohio State Univ..

Session 130 Instrumentation for Ground-Based and Airborne Observatories

AAS Oral, Monday, 2:00-3:30pm, 3B

130.01 **The Hertz/SMT Submillimeter Polarimeter**
David T. Chuss[1], D. J. Benford[1], S. H. Moseley[1], J. G. Staguhn[1], G. M. Voellmer[1], E. J. Wollack[1], M. Krejny[2], G. Novak[2], C. Y. Drouet d'Aubigny[3], D. R. Golish[3], C. Kulesa[3], C. K. Walker[3], R. F. Loewenstein[4]
[1]NASA's GSFC, [2]Northwestern University, [3]University of Arizona, [4]Yerkes Observatory, University of Chicago.

130.02 **SHARP: The SHARC-II polarimeter at the Caltech Submillimeter Observatory**
John E. Vaillancourt[1], M. Attard[2], C. D. Dowell[3], R. H. Hildebrand[4], M. Houde[2], L. Kirby[4], M. Krejny[5], H. Li[6], G. Novak[5], H. Shinnaga[7]
[1]Caltech, [2]U. Western Ontario, Canada, [3]JPL/Caltech, [4]U. Chicago, [5]Northwestern, [6]Harvard-Smithsonian CfA, [7]CSO.

130.03 **Gemini North Laser Adaptive Optics Performance: First Science Data**
Chadwick A. Trujillo[1], F. Rigaut[1], D. Gratadour[1], M. Bec[1], T. Beck[1], S. Chan[1], A. Matulonis[1], G. Trancho[1], B. Walls[1], A. Stephens[1], M. Boccas[1], K. Grace[1], P. Gundu[1], C. d'Orgeville[1], M. Sheehan[1], J. White[1], K. White[1], R. Wyman[1], G. Herriot[2], J. Veran[2]
[1]Gemini Obs., [2]NRC-HIA, Canada.

130.04 **Progress Report on GISMO, a 2 mm Bolometer Camera Optimized for the Study of High Redshift Galaxies**
Johannes Staguhn[1], D. Benford[1], C. Allen[1], S. Moseley[1], T. Ames[1], R. Arendt[1], W. Brunswig[2], D. Chuss[1], E. Dwek[1], A. Kovacs[3], S. Maher[1], C. Marx[1], T. Miller[1], S. Navarro[2], E. Sharp[1], A. Sievers[2], G. Voellmer[1], E. J. Wollack[1]
[1]NASA's GSFC, [2]IRAM, Spain, [3]MPIfR, Germany.

130.05D **A Survey of 3.3 Micron PAH Emission Using FLITECAM**
Erin C. Smith[1]
[1]UCLA.

130.06 **High Contrast and Extreme AO Experiments on the Palomar Hale Telescope**
Gene Serabyn[1]
[1]JPL.

Session 131 Pulsars and White Dwarfs II

AAS Oral, Monday, 2:00-3:30pm, 3A

131.01 **Spitzer Space Telescope Observations of SGR and AXP Environments**
Stefanie Wachter[1], C. Kouveliotou[2], S. Patel[3], D. Figer[4], P. Woods[5]
[1]Caltech, [2]MSFC, [3]NSSTC/USRA/MSFC, [4]Rochester Institute of Technology, [5]Dynetics.

131.02 **Deep Searches for Radio Pulses and Bursts from AXPs**
Fronefield Crawford, III[1], J. W. Hessels[2], V. M. Kaspi[3]
[1]Franklin & Marshall College, [2]Astronomical Institute "Anton Pannekoek", University of Amsterdam, The Netherlands, [3]McGill University, Canada.

131.03 **Observational Implications of a Fall-back Crust around a Quarknova Compact Remnant: Application to AXPs and SGRs**
Denis A. Leahy[1], R. Ouyed[1], B. Niebergal[1]
[1]Univ. of Calgary, Canada.

131.04 **Proper Motion of Compact Objects**
Patrick B. Cameron[1], S. R. Kulkarni[1]
[1]Caltech.

131.05 **SPITZER IRS Spectroscopy of Highly-Obscured X-ray Binaries**
Dae-Sik Moon[1], D. L. Kaplan[2], W. T. Reach[3], F. A. Harrison[4], J. Lee[5]
[1]University of Toronto, Canada, [2]MIT, [3]Spitzer Science Center, [4]Caltech, [5]UCLA.

131.06 **Cool Companions of White Dwarfs from 2MASS**
D W. Hoard[1], S. Wachter[1], L. K. Sturch[2], A. M. Widhalm[3], K. P. Weiler[4], J. W. Wellhouse[3], M. Gibiansky[2]
[1]California Institute of Technology, [2]Harvey Mudd College, [3]New Mexico State University, [4]DePaul University.

131.07 **Pulsar Timing and Gravitational Wave Detection: Current Status and Future Prospects**
Fredrick Jenet[1]
[1]Center for Gravitational Wave Astronomy/Univ. of Texas at Brownsville.

131.08D **Energetic Outflows from Young Neutron Stars**
Joseph Gelfand[1]
[1]Harvard Univ..

Session 132 UDF, GOODS and High Redshift Galaxies

AAS Oral, Monday, 2:00-3:30pm, 613-14

132.01 **Evolution of the Rest-Frame UV LF from z~8 to z~4**
Rychard Bouwens[1], G. D. Illingworth[1]
[1]UC, Santa Cruz.

132.02 **Spitzer/IRAC Confirmation of z850-dropout Galaxies in the Hubble Ultra Deep Field: Stellar Masses and Ages at z~7**
Ivo F. Labbe[1], R. Bouwens[2], G. Illingworth[2], M. Franx[3]
[1]OCIW, [2]UCSC/Lick, [3]Leiden Observatory, The Netherlands.

132.03 **16 micron Imaging of the GOODS Fields**
Harry I. Teplitz[1], R. Chary[1], J. W. Colbert[1], B. Siana[1], D. Elbaz[2], M. Dickinson[3], C. Papovich[4]
[1]Spitzer Science Center, [2]Saclay, France, [3]NOAO, [4]UA.

132.04D **Exploring the Optical and Infrared Evolution of Galaxies Since z=1**
Jason Melbourne[1]
[1]UC, Santa Cruz.

132.05 **Revisiting the Hubble Sequence : Comparative Studies with Sloan Digital Sky Survey and the Hubble Ultra Deep Field**
Preethi Nair[1], R. G. Abraham[1]
[1]University of Toronto, Canada.

132.06 **Discovery of a galaxy at redshift 6.96 and its implications on galaxy formation era**
Masanori Iye[1], K. Ota[2], N. Kashikawa[1]
[1]National Astronomical Obs., Japan, [2]University of Tokyo, Japan.

132.07 **The Advanced Camera Galaxy Redshift Survey**
Brenda L. Frye[1], N. Benitez[2], D. Coe[2], H. Ford[3], D. Bowen[4], G. Illingworth[5], P. Guhathakurta[5], M. Franx[6], ACS Science Team
[1]Dublin City Univ., Ireland, [2]Instituto de Astrofisica de Andalucia, Spain, [3]JHU, [4]Princeton, [5]UC Santa Cruz, [6]Leiden Univ., Netherlands Antilles.

132.08 **IRAC-selected Extremely Red Objects in the GOODS Fields**
Haojing Yan[1], GOODS Team
[1]Carnegie Observatories.

Session 133 YSOs and Early Type Stars

AAS Oral, Monday, 2:00-3:30pm, 6A

133.03D **Molecular Clouds and Star Formation: A Multi-wavelength Study of Perseus, Serpens, and Ophiuchus**
Melissa Enoch[1]
[1]Caltech.

133.02 **SMA Observations of IRDC Cores: An Active Hot Core and a Quiescent Cold Core**
James M. Jackson[1], J. Rathborne[2], E. Chambers[1], Q. Zhang[2], R. Simon[3]
[1]Boston Univ., [2]Center for Astrophysics, [3]University of Cologne, Germany.

133.03 **VLBA Determination of the Distance to Taurus and Ophiuchus with 1% Precision**
Laurent Loinard[1]
[1]Centro de Radioastronomia y Astrofisica, UNAM, Mexico.

133.04 **Long-term Infrared Variability of FU Ori- and EX Lup-type Stars**
Agnes Kospal[1], P. Abraham[2], D. Ardila[3]
[1]Konkoly Obs./Caltech, [2]Konkoly Observatory, Hungary, [3]Caltech.

133.05 **X-ray Variability in the Young Massive Triple θ2 Ori A**
Norbert S. Schulz[1], P. Testa[1], D. P. Huenemoerder[1], K. Ishibashi[1], C. R. Canizares[1]
[1]Kavli Institute for Astrophysics and Space Research, MIT.

133.06D **Metallicity-Induced Fragmentation and the Transition from Pop III to Pop II**
Britton D. Smith[1], S. Sigurdsson[1]
[1]Pennsylvania State Univ..

133.07 **Quantitative Analysis of Resolved X-ray Emission Line Profiles of O Stars**
David H. Cohen[1], M. A. Leutenegger[2], A. ud-Doula[3], S. P. Owocki[3]
[1]Swarthmore College, [2]Columbia U., [3]Bartol Research Inst., U. Delaware.

Session 134 Recruiting the Next Generation of Physics Teachers

AAPT Invited, Monday, 2:00-3:30pm, 310

Chair, Paul Hickman[1]
[1]Science Education Consultant.

134.01 **Recruiting the Next Generation of Physics Teachers: National Concerns**
Theodore Hodapp[1]
[1]American Physical Society.

Session 135 Student Difficulties with Mathematics in Upper-Division Physics

AAPT Invited, Monday, 2:00-3:30pm, 307-08

Chair, Edward Redish[1]
[1]University of Maryland.

135.01 **Easing the Transition to Upper-division Physics**
Corinne Manogue[1], Paradigms in Physics
[1]Oregon State University.

135.02 **Investigating Student Connections Between Mathematics and Thermal Physics**
John R. Thompson[1]
[1]University of Maine.

135.03 **Students' Construction of Understanding of Abstract Vector Spaces**
Thomas J. Bing[1]
[1]University of Maryland.

Session 136 Physics Teaching Around the World

AAPT Oral, Monday, 2:00-3:30pm, 619

Chair, Gordon Ramsey[1]
[1]Argonne Nat'l Lab..

136.01 **Teaching Gravitational Wave Astronomy in China**
Robert J. Stone[1]
[1]University of Texas-Brownsville.

136.02 **Fifth Global Colloquium on Engineering Education**
Gerhard L. Salinger[1]
[1]National Science Foundation.

136.03 **A Model for Bilingual Physics Teaching: "The Feynman Lectures"**
Heqing W. Metzner[1]
[1]Tangshan Teachers College Physics Department, China.

136.04 **Implementing active-learning strategies to improve physics learning in Latin America**
Hugo Alarcon[1], G. Zavala[1], R. Fernandez[2], J. Benegas[3]
[1]TecnolÃ³gico de Monterrey, Campus Monterrey, Mexico, [2]Universidad Catolica del Norte, Chile, [3]Universidad Nacional de San Luis, Argentina.

136.05 **A Masterclass in Particle Physics for High School Students**
Kenneth Cecire[1], T. Entwistle[2]
[1]Hampton University, [2]Ward Melville High School.

136.06 **Assessing Teaching Med-Nursing Physics Replacing Introductory Physics in Nursing College**
Wen-Ruey Wang[1], Y. Lin[1], K. Chen[1]
[1]Central Taiwan University of Science and Technology, (CTUST), Taichung, Taiwan, Taiwan.

136.07 **Ten Years of GLAPHI Method Developing Scientific Research Abilities**
Hector R. Vega-Carrillo[1]
[1]Universidad Autonoma de Zacatecas, Mexico.

Session 137 Undergraduates Research Astronomy and Physics

AAPT Oral, Monday, 2:00-3:30pm, 616

Chair, Chris D. Impey[1]
[1]Univ. of Arizona.

137.01 **Demonstration of Electrostatic Orbits in Weightlessness**
John Janeski[1], K. Andring[1], S. Banerjee[1], D. Campbell[1], D. Keedy[1], B. Hoffmeister[1], S. Quinn[1]
[1]Rhodes College.

137.02 **Building the CHEPREO Undergraduate Learning Community**
Laird H. Kramer[1], G. O'Brien[1], P. Pamela[1], J. M. Saul[1]
[1]Florida International University.

137.03 **SiO Maser Monitoring at the University of Minnesota, Morris**
Gordon McIntosh[1]
[1]University of Minnesota, Morris.

137.04 **Correlation of R Cassiopeia's SiO Maser Properties**
Anne Hayes[1], G. McIntosh[1]
[1]University of Minnesota, Morris.

137.05 **Orbital Parameters of R Aquarii**
Gustav Rustan[1], G. McIntosh[1]
[1]University of Minnesota, Morris.

137.06 **Superhumps and Period Variability of V795 Her**
Daniel R. Malutich[1], R. P. Olenick[1], I. B. Voloshina[2]
[1]University of Dallas, [2]Moscow State University, Russian Federation.

Professional Concerns of Women in Physics Crackerbarrel

AAPT Crackerbarrel, Monday, 2:00-3:30pm, 615

Chair, Dean Hudek[1]
[1]Brown University.

Session 138 Hypervelocity Stars

Plenary, Monday, 3:40-4:30pm, Ballroom 6

138.01 **Hypervelocity Stars Ejected from the Galactic Center**
Warren R. Brown[1]
[1]Smithsonian Astrophysical Observatory.

Session 139 Probing the Gas Content of Galaxy Groups: A Radio Perspective

Plenary, Monday, 4:40-5:30pm, Ballroom 6

139.01 **Probing the Gas Content of Galaxy Groups: A Radio Perspective**
Eric M. Wilcots[1]
[1]Univ. of Wisconsin.

Session 140 Hot Topics in Nanoscience

AAPT Invited, Monday, 6:00-8:00pm, 616

Chair, Melissa Eblen-Zayas[1]
[1]*Carleton College.*

140.01 **Nanoelectronic Devices - What We Can Do and Why It's Fun**
Douglas Natelson[1]
[1]*Rice University.*

140.02 **Atomic Scale Friction and Microscale Machines: These Squeaky Wheels will get no Grease.**
Jacqueline Krim[1]
[1]*North Carolina State University.*

140.03 **Voyage at the Nanoscale**
Gregory J. Salamo[1]
[1]*University of Arkansas.*

Session 141 Learning Sciences and Learning Technologies: A Convergence

AAPT Invited, Monday, 6:00-8:00pm, 303

Chair, S. R. Chaudhury[1]
[1]*Christopher Newport University.*

141.01 **The Mathematics of Motion in Middle School: Findings from a Large Scale Study**
Jeremy Roschelle[1]
[1]*SRI International.*

141.02 **Supporting Classroom Interaction with Networked Tablet PCs**
Richard Anderson[1]
[1]*Univ. of Washington.*

141.03 **Technology-Enhanced Learning in Science (TELS)**
Marcia Linn[1]
[1]*UC, Berkeley.*

141.04 **Understanding the Atomic-Scale World with the Molecular Workbench**
Robert F. Tinker[1]
[1]*The Concord Consortium.*

Session 142 Women Using Physics: Alternative Career Paths

AAPT Invited, Monday, 6:00-8:00pm, 615

Chair, Margaret Hill[1]
[1]*Southeast Missouri State University.*

142.01 **Reflections on a Career in Radio Science**
Irene C. Peden[1]
[1]*University of Washington.*

142.02 **Women Using Physics: Alternate Career Paths, The Private Sector**
Jessica Tams[1]
[1]*FUN Technologies.*

142.03 **Physics in Aerospace and Military Applications**
Hong Tat[1]
[1]*Boeing Company.*

Session 143 Electronic Journaling: Fostering Reflection and Building Community

AAPT Special, Monday, 6:00-8:00pm, 310

Chair, Ingrid Novodvorsky[1]
[1]*University of Arizona.*

143.01 **Connecting Master Teachers to Build a Community of Support for Teachers of Physics**
Paul Hickman[1], **M. Fetters**[2]
[1]*Science Education Consultant,* [2]*Western Michigan University.*

143.02 **Interactive, Collaborative, Electronic Learning Logs in the Physics Classroom**
Chris Gosling[1]
[1]*Saranac Lake High School / SUNY Buffalo State.*

Session 144 Bringing Physics by Inquiry to K-12 Classrooms, Part I

AAPT Oral, Monday, 6:00-8:00pm, 211

Chair, Peter Shaffer[1]

[1]*Univ. of Washington.*

144.01 **Teaching Inquiry Science in the Elementary-school Classroom**
Dan Jordan[1], **D. L. Messina**[2], **L. C. McDermott**[2]
[1]*Olympic View Elementary School,* [2]*University of Washington.*

144.02 **Bringing Inquiry Science to K-5 Classrooms**
Paula L. Schachtel[1], **D. L. Messina**[2], **L. C. McDermott**[2]
[1]*Seattle Public Schools,* [2]*University of Washington.*

144.03 **Teaching Inquiry Science in the Middle-school Classroom**
Eleanor I. Martino[1], **D. L. Messina**[2], **L. C. McDermott**[2]
[1]*Seattle Country Day School,* [2]*University of Washington.*

144.04 **Assessing an inquiry-oriented mechanics unit for high school students**
Michael P. O'Byrne[1], **M. R. Stetzer**[2], **L. C. McDermott**[2]
[1]*Interlake High School,* [2]*University of Washington.*

144.05 **Adapting an Inquiry-oriented Kinematics Curriculum for High School Students***
Matthew D. Randall[1], **M. R. Stetzer**[2], **L. C. McDermott**[2]
[1]*College of Education, University of Washington,* [2]*University of Washington.*

144.06 **An Inquiry-oriented Mechanical Waves Unit for High School Students***
Thomas J. Knapton[1], **R. G. Piccioni**[1], **M. Kryjevskaia**[2], **L. C. McDermott**[2]
[1]*Garfield High School,* [2]*University of Washington.*

144.07 **Adapting an electric circuits curriculum for the high school classroom**
Scot A. Hovan[1], **M. R. Stetzer**[2], **L. C. McDermott**[2]
[1]*Mahtomedi High School,* [2]*University of Washington.*

Session 145 Students' Use of Mathematics in Physics Contexts

AAPT Oral, Monday, 6:00-8:00pm, 307-08

Chair, Francis Tam[1]

[1]*Frostburg State Univ..*

145.01 **Do We Need Remedial College Math Courses?**
Anne O. Hughes[1], **D. Khatri**[1]
[1]*University of the District of Columbia.*

145.02 **Equations In Science: Are They Hindering the Development of Reasoning Skills?**
Suzanne White Brahmia[1]
[1]*Rutgers University.*

145.03 **Connecting Math and Motion: A Covariational Approach**
Robert J. Culbertson[1], **A. S. Thompson**[1]
[1]*Arizona State University.*

145.04 **Principles of Covariation in the Introductory Physics Classroom**
Adam S. Thompson[1], **R. J. Culbertson**[1]
[1]*Arizona State University.*

145.05 **Teaching Kinematics as a Way to understand Calculus and Graphs**
Genaro Zavala[1], **H. Alarcon**[1]
[1]*Tecnologico de Monterrey, Mexico.*

145.06 **Student Understanding of Probability and Introductory Statistical Physics in Upper-division Courses on Thermal Physics**
Michael E. Loverude[1]
[1]*California State University Fullerton.*

145.07 **Student Solutions to First-Order Differential Equations in Intermediate Mechanics**
Michael C. Wittmann[1], **K. E. Black**[1]
[1]*University of Maine.*

145.08 **Using Mathematics to Inform Conceptual Reasoning about Quantum Tunneling**
Jeffrey T. Morgan[1], **M. C. Wittmann**[2]
[1]*University of Northern Iowa,* [2]*University of Maine.*

Session 146 Apparatus for Astronomy Education

AAPT Poster, Monday, 6:00-8:00pm, 617

Chair, M. A. H. Klassen[1]
[1]*Swarthmore College.*

146.01 **Teaching Astronomy at Columbus State University using Small Radio Telescopes**
Zodiac T. Webster[1]
[1]*Columbus State University.*

146.02 **Experimental and Theoretical Challenges of Creating Electrostatic Orbits in Weightlessness**
Kevin W. Andring[1], **B. Hoffmeister**[1], **S. Banerjee**[1], **J. Janeski**[1], **S. Quinn**[1], **D. Keedy**[1], **D. Campbell**[1]
[1]*Rhodes College.*

146.03 **Using Microsoft PowerPoint as an Astronomical Image Analysis Tool**
Bernhard Beck-Winchatz[1]
[1]*DePaul University.*

146.04 **Simulating the Nature of Science: Cosmology Distilled**
Tim Erickson[1]
[1]*eeps media.*

CTIO Blanco Telescope Dark Energy Camera

AAS Splinter Meeting, Monday, 6:00-7:30pm, 611

The 0.5 Gpixel Dark Energy Camera is expected to be commissioned on the Blanco telescope in 2010. With a 2 degree diameter field and red- sensitive CCDs it will provide a major increase in capability over the present Mosaic Imager. The camera will come with SDSS g,r,i,z filters which will be used to carry out the Dark Energy Survey, this can be thought of as a "super Sloan" imaging survey of 5000 sq. degrees of the southern sky. In this meeting the capabilities of the camera and the data products resulting from the Dark Energy Survey will be briefly described. Community comment is sought: in particular input is desired on what additional filters should be provided, so that a priority list can be developed.

Chair, Alistair R. Walker[1]
[1]*CTIO.*

Future of NASA Scientific Ballooning in Astronomical Research

AAS Splinter Meeting, Monday, 6:00-8:00pm, 6A

Since the dawn of space science, scientific ballooning has been a key research tool and advances in the capability of ballooning can keep it at the forefront of research. Balloon payloads can incorporate cutting edge technologies that are not yet ready for a space mission. Balloon platforms provide a cost effective means to test and demonstrate these new technologies in a space environment. Ballooning has often been the pathfinder major space missions and made early results available years in advance. Balloon payloads have also been one of the most important training grounds for the next generation of instrumentalists. This session is to update the community on new developments in the balloon program and seek input from the community on the future for this important community resource.

Chair, Jack Tueller[1]
[1]*NASA's GSFC.*

Meet JWST Reception and Talks

AAS Town Hall Meeting, Monday, 6:15-9:00pm, 6E

Northrop Grumman, Goddard Space Flight Center, and the Space Telescope Science Institute are pleased to invite you to a reception and series of talks to allow you to meet many of the key people responsible for the development of the James Webb Space Telescope (JWST) and to hear them discuss compelling aspects of the mission. The reception will be held in the lobby of Room 6E at 6:15-7:00pm Monday evening, January 8. The JWST talks are from 7-8pm, and then the reception continues from 8-9pm.

The organized presentations will cover JWST's scientific promise and technology challenges. These will include introductions by Maureen Heath, Northrop Grumman VP for Civil Space, and Ed Weiler, GSFC Director. John Mather, JWST Senior Project Scientist and Nobel Laureate, will speak on lessons learned from COBE and the Science of JWST. Bob Giampaoli, Northrop Grumman Chief Engineer, will describe the challenges of deploying the JWST optics and sunshield. Mark Clampin, Observatory Project Scientist, will present the status of the key enabling technologies. Comments and questions will be welcome.

Tours of the JWST full scale model will be held throughout the four day AAS meeting. Tours will not be given during the Meet JWST Event.

Chair, Peter Stockman[1]
[1]*STScI.*

Graduate Student - Employer Networking

AAS Event, Monday, 6:30-7:30pm, N. Galleria Lobby - 2nd Floor

Graduate students and those hoping to recruit them for employment in research, academia or industry are welcome to attend this evening networking event. The chair of the Employment Committee will be present to discuss the activities of the employment committee and how graduate students can benefit from them as well as briefly introducing the recruiters present. Tickets are required and are available free of charge to grad students and recruiters through the meeting registration form and will be placed in their registration envelope. Light snacks and refreshments will be provided. Organizations hoping to recruit graduate students may reserve poster display for a small fee. Contact aas@aas.org for further details.

Chair, Anita Krishnamurthi[1]

[1]*NASA's GSFC.*

Herschel: The Coming of Observing Opportunities

AAS Splinter Meeting, Monday, 7:00-9:30pm, 605-07

The NASA Herschel Science Center is hosting this session to provide up to date information on the capabilities and status of Herschel, the 4th Cornerstone Mission of the European Space Agency, with NASA participation. The first announcement of opportunity for Herschel observing proposals -- Key Programs -- will be issued soon. This opportunity will be discussed, as will the role of the NASA Herschel Science Center for US-based investigators, including data analysis funding for successful proposals.

Chair, William B. Latter[1]

[1]*IPAC/Caltech.*

TUESDAY

Speaker Ready Room

Attendee Services, Tuesday, 7:30am-6:00pm, 603-04

See Saturday's listing for AV instructions.

Registration

Attendee Services, Tuesday, 8:00am-5:00pm, South Lobby

Cyber Café

Attendee Services, Tuesday, 8:00am-6:30pm, South Lobby

See Sunday's listing for details.

Chair, Scott Idem[1]

[1]*American Astronomical Society.*

Session 147 Supernova Neutrino Astrophysics

Plenary, Tuesday, 8:30-9:20am, Ballroom 6

147.01 **Supernova Neutrino Astrophysics and Associated Nucleosynthesis**
Wick Haxton[1]
[1]*University of Washington.*

Session 148 Poster Session III

AAPT Poster, Tuesday, 9:20am-6:30pm, Exhibit Hall 4

148.01 **Exploring Systematic Error With Digital Video**
M. A. H. Klassen[1], **P. C. Bloom**[2]
[1]*Swarthmore College,* [2]*North Central College.*

148.02 **100% Online College Physics at Chemeketa Community College**
Erik L. Jensen[1]
[1]*Chemeketa Community College.*

148.03 **Effect of a Web-based Tutoring System on Introductory Physics Students***
Tom Carter[1], **T. Smith**[2], **M. Wittman**[2]
[1]*College of DuPage,* [2]*University of Maine.*

148.04 **Bibliographic Research Projets**
Carlos Delgado[1]
[1]*Community College of Southern Nevada.*

148.05 **Characteristics of the General Physics student population.**
Gary L. Hunt[1]
[1]*Boise State University.*

148.06 **Intervention activities to improve the reasoning ability of students at risk in introductory physics**
Vincent P. Coletta[1], **J. Phillips**[1]
[1]*Loyola Marymount University.*

148.07 **Bachelor of Science in Medical Physics Program at Ryerson Univ.**
Tetyana Antimirova[1]
[1]*Ryerson University, Canada.*

148.08 **Does it Matter Where You Sit?**
Brian A. Pyper[1], **S. Thompson**[1]
[1]*BYU-Idaho.*

148.09 **Peer-assessment of Homework Using Rubrics**
Sahana Murthy[1]
[1]*Massachusetts Institute of Technology.*

148.10 **Seeing Physics Outside the Classroom Through Journal Writing**
J. Johanna Hopp[1]
[1]*University of Wisconsin Stout.*

148.11 **Path Integral Understanding in the Context of the Electromagnetic Theory**
Maria D. Gonzalez[1]
[1]*NMSU.*

148.12 **Using Case Studies in Calculus-based Physics**
Debora M. Katz[1]
[1]*USNA.*

148.13 **Results From the CHEPREO Undergraduate Learning Community**
Laird H. Kramer[1], **G. O'Brien**[1], **P. Pamela**[1], **J. M. Saul**[1]
[1]*Florida International University.*

148.14 **Preparation for Physics Redux**
Edward Adelson[1]
[1]*The Ohio State University.*

148.15 **Fostering Critical Thinking in a First Year Seminar Course**
Jennifer Blue[1], **B. A. Taylor**[1], **J. Yarrison-Rice**[1]
[1]*Miami University.*

148.16 **Crash Videos Spark Inelastic Collisions Interest**
George R. Bart[1]
[1]*Truman College.*

148.17 **Interactive Low Tech Lecture Demos for Introductory Physics**
Marina M. Milner-Bolotin[1]
[1]*University of British Columbia, Canada.*

148.18 **Using Students' Design Tasks to Develop Scientific Abilities***
Xueli Zou[1]
[1]*California State University, Chico.*

148.19 **Reflection Shadows: An Unusual Example for Elementary Ray Optics**
Lee C. Widmer[1]
[1]*University of Cincinnati.*

148.20 **The Effect of Uncertainty Focused Laboratory Instruction on Undergraduate Students**
Kwangmoon Shin[1], **J. Lee**[1], **Y. Kang**[1], **S. Lee**[1]
[1]*Seoul National University, Republic of Korea.*

148.21 **Measuring Systematic Errors With Curve Fits**
Mark E. Rupright[1]
[1]*Florida Atlantic University.*

148.22 **Opto-Mechanical Integration**
Jenny Magnes[1], **D. Burt**[1], **J. Hartke**[1]
[1]*U.S. Military Academy.*

148.23 **Extending the Rubber Band Lab for Upper Division Thermodynamics Courses.**
Stephen C. Hall[1], K. T. Gimre[1], K. H. Gimre[1], E. A. Townsend[1]
[1]Pacific University.

148.24 **Teaching Electromagnetic Waves in College Physics Laboratory**
Roman Y. Kezerashvili[1], L. Leng[1]
[1]Physics Department, New York City College of Technology, CUNY.

148.25 **Sensitive Altimeter; A Basic Electronics Project for Undergraduates**
Harry E. Bates[1], J. Klupt[1], C. Bolling[1], M. J. Earle[1], B. P. Hofmann[1], J. Osman[1], J. L. Sunderland[1], M. Vincent[1]
[1]Towson University.

148.26 **Classical Mechanics Laboratory**
Juliet W. Brosing[1]
[1]Pacific University.

148.27 **Static Friction - Unsung Hero of Everyday Introductory Biomechanics**
Nancy Beverly[1]
[1]Mercy College.

148.28 **The Scientific Method in a Cup**
Bradley W. Carroll[1], M. B. More[1]
[1]Weber State University.

148.29 **Building a Gravitational Analogy of Electric Circuits Using LEGOs®**
James J. Butler[1], E. A. Townsend[2]
[1]Pacific University, [2]National Institute of Standards and Technology.

148.30 **A 2006 SPS Summer Intern's Experiences, Reflections, and Future Ambitions**
Ann Deml[1]
[1]University of Wisconsin - River Falls.

Session 149 AGNs, QSOs and Active Galaxies 2

AAS Poster, Tuesday, 9:20am-6:30pm, Exhibit Hall 4

149.01 **Redshift Studies of Scintillating and Non-scintillating Extragalactic Radio Sources: Direct Detection of the Ionized Intergalactic Medium?**
Roopesh Ojha[1], T. Pursimo[2], D. L. Jauncey[3], J. E. Lovell[3], J. Macquart[4], M. S. Dutka[5]
[1]USNO, [2]Nordic Optical Telescope, Spain, [3]ATNF, Australia, [4]Caltech, [5]University of Maryland.

149.02 **Scintillating and Nonscintillating AGNs: Their Structure and Intergalactic Scattering**
T. J. Lazio[1], R. Ojha[2], A. Fey[2], L. Kedziora-Chudczer[3], J. Cordes[4], D. Jauncey[5], J. Lovell[5]
[1]NRL, [2]USNO, [3]U. Sydney, Australia, [4]Cornell U., NAIC, [5]ATNF, Australia.

149.03 **Radio Emission on Subparsec Scales from the Intermediate-Mass Black Hole in NGC4395**
J. M. Wrobel[1], L. C. Ho[2]
[1]NRAO, [2]OCIW.

149.04 **Bayesian Quasar Classification in the Optical/Mid-IR**
Gordon T. Richards[1], R. Brunner[2], A. Gray[3], M. Lacy[4], A. Myers[2], R. Nichol[5], R. Riegel[3]
[1]Drexel Univ., [2]Illinois, [3]Georgia Tech, [4]SSC, [5]Portsmouth, UK.

149.05 **A Relation Between the Mid-Infrared [NeV]λ14.3μm and [NeIII]λ15.6μm Lines in Active Galactic Nuclei**
Charles R. Lawrence[1], V. Gorjian[1], K. Cleary[1], M. W. Werner[1]
[1]JPL.

149.06 **Mid-Infrared Silicate Features as an Indicator of the Dust Density Distribution in ULIRGs**
Matthew Sirocky[1], N. A. Levenson[1], M. Elitzur[1], H. W. Spoon[2], J. Marshall[2]
[1]U. of Ky, [2]Cornell.

149.07 **Searching for Mid-Infrared AGN Variability in Spitzer's IRAC Calibration Field**
Lauren B. Hund[1], M. L. Ashby[2], J. L. Hora[2], J. Surace[3]
[1]Furman U., [2]Harvard-Smithsonian CfA, [3]Spitzer Science Ctr., Caltech.

149.08 **Modeling of IR Emission from Externally Heated Dust Clouds**
Moshe Elitzur[1], A. E. Kimball[2], Z. Ivezic[2], M. Nenkova[3]
[1]Univ. of Kentucky, [2]Univ. of Washington, [3]Seneca College, Canada.

149.09 **Red AGNs: Dust Absorption or Intrinsic Continuum Difference?**
Monica Young[1], M. Elvis[2], G. Risaliti[3]
[1]Boston Univ., CfA, [2]CfA, [3]CfA, INAF–Oss. Astronomico di Arcetri.

149.10 **Decomposing Dusty Galaxies: Probing the Nature of the Obscured Energy Source in ULIRGs**
Jason A. Marshall[1], L. Armus[2], V. Charmandaris[3], H. Spoon[1], V. Desai[4], T. L. Herter[1]
[1]Cornell Univ., [2]Spitzer Science Center, [3]Univ. of Crete, Greece, [4]Caltech.

149.11 **Gemini Observations of Mid-IR Emission from the Nucleus of Centaurus A**
James T. Radomski[1], C. Packham[2], N. A. Levenson[3], E. Perlman[4], L. L. Leeuw[5], H. Matthews[6], R. Mason[7], J. M. De Buizer[1], C. M. Telesco[2], M. Orduna[2]
[1]Gemini Obs., Chile, [2]U. Florida, [3]U. Kentucky, [4]U. Maryland, Baltimore County, [5]Rhodes U., South Africa, [6]HIA, Canada, [7]Gemini Obs..

149.12 **Characterization of the Baldwin Effect for AGN in the Mid Infrared**
Mark Keremedjiev[1], L. Hao[2]
[1]University of Florida, [2]Cornell University.

149.13 **Optical Color Selection of Faint AGN in the COSMOS Field**
Caitlin M. Casey[1], C. D. Impey[1]
[1]Steward Observatory, University of Arizona.

149.14 **Preliminary SEDs of TypeI AGNs of COSMOS Survey**
Heng Hao[1], M. Elvis[2], D. English[2], J. R. Trump[3], P. Capak[4], M. Brusa[5], V. Mainieri[5], M. Salvato[4], S. Gezari[4], D. Schiminovich[6], N. Scoville[4], C. Impey[3], J. Huchra[1]
[1]Harvard Univ., [2]CfA, [3]U. Arizona, [4]Caltech, [5]MPI fur Extraterrestrische Physik, Germany, [6]Columbia U..

149.15 **The Spectral Energy Distributions of Normal & Weakly-Active Galaxies**
John K. Parejko[1], A. Constantin[1], M. S. Vogeley[1], F. Hoyle[2]
[1]Drexel Univ., [2]Widener Univ..

149.16 **Multiwavelength Properties of Radio-loud Quasars**
Brendan P. Miller[1], N. Brandt[1], D. P. Schneider[1]
[1]Penn State Univ..

149.17 **Multiwavelength Observations of the Dwarf Seyfert 1 Galaxy POX 52**
Carol E. Thornton[1], A. J. Barth[1], L. C. Ho[2], R. E. Rutledge[3], J. E. Greene[4]
[1]UC Irvine, [2]Carnegie Observatories, [3]McGill University, Canada, [4]Princeton University.

149.18 **Measuring Accelerations in Water Vapor Megamasers using the Hough Transform**
Destry R. Saul[1], J. Braatz[2]
[1]UC Berkeley / NRAO, [2]NRAO.

149.19 **Time Variation in OH Megamaser Emission and Absorption toward Radio Supernovae in Arp 220**
Katherine R. de Kleer[1], C. J. Lonsdale[1], P. J. Diamond[2], C. J. Lonsdale[3], G. Smith[4], H. Thrall[2]
[1]MIT Haystack Observatory, [2]Jodrell Bank Observatory, United Kingdom, [3]California Institute of Technology, [4]University of California, San Diego.

149.20 **Triggering AGN Through Gravitational Perturbations: An Example of a Student Project Using SDSS-DR5**
Richard F. Gelderman[1], S. McMurray[1], S. Smith[1]
[1]Western Kentucky Univ..

Session 150 And Yet More Supernovae

AAS Poster, Tuesday, 9:20am-6:30pm, Exhibit Hall 4

150.01 **Optical/UV Properties of High-z Supernovae Ia**
Ryan J. Foley[1], ESSENCE Collaboration
[1]UC, Berkeley.

150.02 **Circles on the Sky: Confirmation of a Light Echo from the Type Ia Supernova 1995E**
Peter M. Garnavich[1], J. L. Quinn[2], K. Krisciunas[1]
[1]Univ. of Notre Dame, [2]Central Michigan University.

150.03 **Direct Analysis of Spectra of the Unusual Type Ib Supernova 2005bf**
Jerod T. Parrent[1], D. Branch[1], M. Troxel[1], D. Casebeer[1], D. Jeffery[1], E. Baron[1], A. V. Filippenko[2]
[1]Univ. of Oklahoma, [2]Univ. of California Berkeley.

150.04 **Uncertainties in Supernova Yields**
Patrick A. Young[1], C. L. Fryer[1]
[1]Los Alamos National Laboratory.

150.05 **Determining the Type, Redshift, and Phase of a Supernova Spectrum**
Stephane Blondin[1], M. E. Salvo[2], J. L. Tonry[3]
[1]Harvard-Smithsonian, CfA, [2]RSAA, ANU, Australia, [3]IfA.

150.06 **Generating Pulsar Spin in Supernovae**
John M. Blondin[1], A. Mezzacappa[2]
[1]North Carolina State Univ., [2]Oak Ridge National Laboratory.

150.07 **Near-Explosion Lightcurves of SNe Ia from the SuperMACHO Survey**
Arti Garg[1], C. W. Stubbs[1], P. Challis[1], W. Wood-Vasey[1], S. Blondin[1], M. E. Huber[2], K. Cook[2], S. Nikolaev[2], A. Rest[3], R. Smith[3], K. Olsen[3], N. B. Suntzeff[4], C. Aguilera[3], J. L. Prieto[5], A. Becker[6], A. Miceli[6], G. Miknaitis[7], A. Clocchiatti[8], D. Minniti[8], L. Morelli[8], D. L. Welch[9]
[1]Harvard Univ., [2]LLNL, [3]CTIO/NOAO, Chile, [4]Texas A and M, [5]Ohio State U., [6]U. Washington, [7]Fermi National Accelerator Lab., [8]Univ. Catolica, Chile, [9]McMaster Univ., Canada.

150.08 **Imaging and Spectroscopy of Ancient Supernovae Light Echoes in the LMC**
Douglas L. Welch[1], A. Rest[2], R. C. Smith[2], K. Olsen[2], A. Zenteno[2], C. Aguilera[2], G. Damke[2], N. B. Suntzeff[3], T. Matheson[4], M. Bergmann[5], C. Stubbs[6], A. Garg[6], P. Challis[6], A. C. Becker[7], A. Miceli[7], R. Covarrubias[7], G. A. Miknaitis[8], J. Prieto[9], M. Huber[10], S. Nikolaev[10], K. H. Cook[10], D. Minniti[11], A. Clocchiatti[11], L. Morelli[11], A. Newman[12]
[1]McMaster Univ., Canada, [2]CTIO/NOAO, Chile, [3]TAMU, [4]NOAO, [5]Gemini, Chile, [6]Harvard, [7]U. Washington, [8]FNAL, [9]Ohio State, [10]IGPP/LLNL, [11]PUC, Chile, [12]Washington U..

150.09 **The Discovery of an Eruptive Variable in the LMC with Light Echoes**
R. Chris Smith[1], A. Rest[1], N. B. Suntzeff[2], D. L. Welch[3], G. Damke[1], A. Zenteno[1], C. Stubbs[4], A. Garg[4], A. Newman[5], A. Becker[6], G. Miknaitis[7], A. Miceli[6], K. H. Cook[8], S. Nikolaev[8], L. Morelli[9], D. Minniti[9], A. Clocchiatti[9], J. Prieto[10]
[1]NOAO/CTIO, [2]Texas A&M University, [3]McMaster University, Canada, [4]Harvard University, [5]Washington University, [6]University of Washington, [7]Fermilab, [8]LLNL, [9]Pontificia Universidad Catolica de Chile, Chile, [10]Ohio State University.

150.10 **A Survey for Ancient Supernova Light Echoes in the Milky Way Galaxy**
Armin Rest[1], N. B. Suntzeff[2], R. C. Smith[1], D. L. Welch[3], G. Damke[1], A. Zenteno[1], C. Stubbs[4], A. Garg[4], P. Challis[4], A. Newman[5], A. C. Becker[6], G. A. Miknaitis[6], A. Miceli[6], K. H. Cook[7], M. Huber[7], S. Nikolaev[7], L. Morelli[8], D. Minniti[8], A. Clocchiatti[8], J. Prieto[9]
[1]NOAO/CTIO, [2]Texas A&M University, [3]McMaster University, Canada, [4]Harvard, [5]Washington University, [6]University of Washington, [7]LLNL, [8]Pontificia Universidad Catolica de Chile, Chile, [9]Ohio State University.

150.11 **Shock Wave Stability in Core Collapse Supernovae**
F. D. Swesty[1], E. S. Myra[1]
[1]SUNY-Stony Brook.

150.12 **Galactic Analogs of the Rings around SN1987A and the Implication thatLBVs are Supernova Progenitors**
Nathan Smith[1]
[1]University of California, Berkeley.

150.13 **Light Curves of Supernova/Gamma-Ray Bursts**
Dean L. Richardson[1]
[1]Denison Univ..

150.14 **Subluminous Type Ia Supernovae in the Supernova Legacy Survey**
Santiago Gonzalez[1], A. Howell[1], M. Sullivan[1], A. Conley[1], R. Carlberg[1], Supernova Legacy Survey
[1]University of Toronto, Canada.

150.15 **Optical Observations of SN 1999aa**
Thea N. Steele[1], R. J. Foley[1], A. V. Filippenko[1], W. Li[1]
[1]University of California, Berkeley.

150.16 **The Nearby Supernova Factory**
Benjamin A. Weaver[1], G. Aldering[1], C. Aragon[1], S. Bailey[1], S. Bongard[1], M. J. Childress[1], S. Loken[1], P. Nugent[1], S. Perlmutter[1], R. Romano[1], K. Runge[1], R. Scalzo[1], R. C. Thomas[1], C. Baltay[2], A. Bauer[2], D. Herrera[2], D. Rabinowitz[2], E. Pécontal[3], G. Rigaudier[3], P. Antilogus[4], S. Gilles[4], R. Pain[4], R. Pereira[4], C. Buton[5], Y. Copin[5]
[1]LBNL., [2]Dept. of Physics, Yale, [3]Centre de Recherche Astronomique de Lyon, France, [4]Lab. de Physique Nucléaire et des Hautes Energies, France, [5]Inst. de Physique Nucléaire de Lyon, France.

150.17 **Verification Tests for Numerical 2-D Radiation-Hydrodynamics as Applied toa Core-Collapse Supernova Code**
Eric S. Myra[1], F. D. Swesty[1]
[1]SUNY-Stony Brook.

150.18 **Propagation of the First Flames in Type Ia Supernovae**
L. J. Dursi[1], M. Zingale[2]
[1]Univ. Of Toronto, Canada, [2]SUNY Stony Brook.

150.19 **The Spatial Correlation of Type Ia Supernovae with Local StarFormation as Measured with GALEX**
James D. Neill[1], GALEX Science Team
[1]California Institute of Technology.

150.20 **Detailed Spectral Analysis of the Type Ib Supernova 1999dn**
Wesley R. Ketchum[1], E. Baron[1]
[1]University of Oklahoma.

150.21 **The Laminar Flame Speedup by Neon-22 Enrichment in White Dwarf Supernovae**
David A. Chamulak[1], E. F. Brown[1], F. X. Timmes[2]
[1]Department of Physics and Astronomy and the Joint Institute for Nuclear Astrophysics, Michigan State University, [2]Thermonuclear Applications, X-2, Los Alamos National Laboratory.

150.22 **Steady-State Modeling and Possible Detection of HCl in Eta Carinae's -513 km/s Ejecta**
Alissa S. Bans[1]
[1]Maria Mitchell Observatory.

150.23 **A Hubble Space Telescope WFPC-2 Optical Survey of Dust in the Crab Nebula**
Allison M. Loll[1], J. Hester[1], R. Sankrit[2], W. Blair[3]
[1]Arizona State Univ., [2]U.C. Berkeley, [3]Johns Hopkins University.

150.24 **Optical Photometry of Supernovae Using the KAIT Pipeline**
Mohan Ganeshalingam[1]
[1]UC Berkeley Astonomy Dept.

150.25 **Multidimensional Simulations of Mixing in Zero-Metallicity Supernovae**
Candace M. Church[1], A. Heger[2], S. Woosley[1]
[1]UC, Santa Cruz, [2]Los Alamos National Laboratory.

Session 151 Binary Stars

AAS Poster, Tuesday, 9:20am-6:30pm, Exhibit Hall 4

151.01 **A Radial Velocity Study of Hot Subdwarf Stars with Composite Spectra**
Richard A. Wade[1], M. A. Stark[2]
[1]Penn State Univ., [2]Univ. Wyoming.

151.02 **The Eclipsing Binary MY Cygni**
Rebecca Tucker[1], J. R. Sowell[1], R. M. Williamon[2]
[1]Georgia Tech, [2]Emory.

151.03 **Analysis of the Spitzer/MIPS24 Light Curve of the M-Dwarf Eclipsing Binary GU Boo**
Kaspar von Braun[1], G. T. van Belle[1], D. R. Ciardi[1], S. Wachter[1], D. W. Hoard[1]
[1]Caltech.

151.04 **Measurements of Position Angle and Separation of Selected Binary Stars**
Rafael J. Muller[1], J. C. Cersosimo[1], V. J. Miranda[1], C. Martinez[1], D. Centeno[1], L. Rivera[1]
[1]Univ. of Puerto Rico, Humacao.

151.05 **A Light Curve Study and Analysis of the Short-Period Contact Binary XZ Leonis**
Jeffrey J. Massura[1], B. J. Hrivnak[1], W. Lu[1]
[1]Valparaiso University.

151.06 **Photometric Investigation of the Eclipsing Binary Star BX Dra**
Shaukat N. Goderya[1], T. Sykes[1]
[1]Tarleton State Univ..

151.07 **FUSE Observations of the Be/X-ray Binary 4U 1145-617(V801 Cen, HD1022567)**
Rosina Iping[1], G. Sonneborn[1]
[1]NASA's GSFC.

151.08 **Massive Star Multiplicity: The Cepheids U Aql and W Sgr**
Nancy R. Evans[1], D. Massa[2]
[1]SAO, [2](NASA's GSFC, SGT, Inc.

151.09 **Photometric Studies of Two Active Contact Binaries: GSC 2766-0775 and GSC 0619-0232**
Ronald G. Samec[1], H. A. Chamberlain[1], C. M. Labadorf[1], R. McKenzie[1], W. Van Hamme[2], D. R. Faulkner[3]
[1]Bob Jones Univ., [2]Florida International Univ., [3]Univ. of S. Carolina.

151.11 **HST Observations of Astrophysically Important Visual Binaries**
Gail Schaefer[1], H. E. Bond[1], M. Barstow[2], M. Burleigh[2], R. L. Gilliland[1], T. M. Girard[3], D. H. Gudehus[4], J. B. Holberg[5], E. Nelan[1]
[1]Space Telescope Science Institute, [2]University of Leicester, United Kingdom, [3]Yale University, [4]Georgia State University Research Foundation, [5]University of Arizona.

151.12 **The Light Curve and Parameters of Eclipsing Binary System FL Orionis**
Daniel B. Caton[1], A. B. Smith[1]
[1]Appalachian State Univ..

151.13 **Five New Low-Mass Eclipsing Binary Systems**
Jeffrey L. Coughlin[1], M. López-Morales[2], J. S. Shaw[3]
[1]Emory University, [2]Carnegie Institution of Washington, [3]University of Georgia.

151.14 **Light Curve Analysis for W UMa-Type Eclipsing Binary Star Systems**
Scott Henderson[1], N. Peach[1], T. Olsen[1]
[1]Lewis & Clark College.

151.15 **Orbital Parameters of R Aquarii**
Gustav Rustan[1], G. McIntosh[1]
[1]University of Minnesota, Morris.

Session 152 Extrasolar Planets V: Host Stars

AAS Poster, Tuesday, 9:20am-6:30pm, Exhibit Hall 4

152.01 **Investigating the Rotation Periods of Exoplanet Host Stars**
Elaine K. Simpson[1], S. Baliunas[1], G. Henry[2]
[1]Harvard-Smithsonian, CfA, [2]Tennessee State University.

152.02 **Atmospheric Properties of Brown Dwarfs**
Lauren J. McCarthy[1], K. L. Cruz[2]
[1]Barnard College/AMNH, [2]AMNH.

152.03 **Determining Stellar Parameters With a Fixed Delay Interferometer**
Roger Cohen[1], S. Mahadevan[1], J. Ge[1]
[1]University of Florida.

152.04 **Characterization of Gravitational Microlensing Planetary Host Stars**
David P. Bennett[1], J. Anderson[2], B. S. Gaudi[3]
[1]Univ. of Notre Dame, [2]Rice University, [3]The Ohio State University.

Session 153 GLAST

AAS Poster, Tuesday, 9:20am-6:30pm, Exhibit Hall 4

153.01 **The Gamma-ray Large Area Space Telescope (GLAST) Mission**
Steven M. Ritz[1], P. F. Michelson[2], C. Meegan[3], J. E. Grindlay[4], GLAST Mission Team
[1]GSFC & U. of MD, [2]Stanford U., [3]MSFC and NSSTC, [4]Harvard U..

153.02 **The Large Area Telescope (LAT) on the Gamma-ray Large Area Space Telescope (GLAST)**
Toby H. Burnett[1], GLAST LAT Team
[1]University of Washington.

153.03 **GLAST Large Area Telescope Multiwavelength Studies: An Invitation to Coordinated Observations**
Kent S. Wood[1], D. J. Thompson[2], R. A. Cameron[3], GLAST Team
[1]NRL, [2]NASA-GSFC, [3]SLAC.

153.04 **Gamma-Ray Pulsar Candidates for GLAST**
David J. Thompson[1], D. A. Smith[2], D. Dumora[2], L. Guillemot[2], D. Parent[2], T. Reposeur[2], J. E. Grove[3], R. W. Romani[4], S. E. Thorsett[5], GLAST LAT Collaboration
[1]NASA's GSFC, [2]CEN Bordeaux-Gradignan, France, [3]NRL, [4]Stanford, [5]UCSC.

153.05 **Studying Gamma-ray Blazars with the GLAST-LAT**
Benoit Lott[1], LAT Blazar Science Working Group
[1]SLAC/CENBG.

153.06 **Prospects for Observations of Microquasars with GLAST**
Richard Dubois[1]
[1]Stanford Linear Accelerator Center.

153.07 **Observing GRBs with the GLAST LAT Telescope**
Julie E. McEnery[1], GLAST LAT GRB science working group
[1]NASA's GSFC.

153.08 **Future GLAST Observations of Supernova Remnants and Pulsar Wind Nebulae**
Stefan Funk[1], GLAST LAT Collab. Pulsars, SNR and Plerions group
[1]SLAC.

153.09 **GLAST Large Area Telescope Performance Monitoring & Calibrations**
Anders W. Borgland[1]
[1]SLAC.

153.10 **The GLAST LAT Instrument Science Operations Center**
Robert A. Cameron[1], GLAST LAT ISOC
[1]Stanford Univ..

153.11 **GLAST User Support**
David L. Band[1], GLAST Science Support Center
[1]University of Maryland, Baltimore County.

153.12 **The GLAST Science Support Center**
Thomas E. Stephens[1], GLAST Science Support Center
[1]NASA's GSFC/RSIS.

153.13 **GLAST Data Access and Analysis Software**
Donald J. Horner[1], GLAST Science Support Center
[1]NASA's GSFC.

153.14 **Beyond the Event Horizon: Education with Black Holes**
Sarah Silva[1], P. Plait[1], L. Cominsky[1]
[1]Sonoma State Univ. NASA GLAST E/PO.

153.15 **On the Problem of Detecting Quantum-Gravity Based Photon Dispersion in Gamma-ray Bursts**
Jeffrey D. Scargle[1], J. P. Norris[2], J. T. Bonnell[3]
[1]NASA/Ames Research Center, [2]University of Denver, [3]NASA/GSFC/USRA.

Session 154 Ground-Based Instrumentation III

AAS Poster, Tuesday, 9:20am-6:30pm, Exhibit Hall 4

154.01 **Pisgah Astronomical Research Institute**
J. D. Cline[1], M. Castelaz[1], D. Clavier[1]
[1]Pisgah Astronomical Research Inst..

154.02 **The Apache Point Observatory Lunar Laser-ranging Operation: Testing General Relativity with Millimeter-precision Measurements of the Earth-Moon Separation.**
James B. Battat[1], T. W. Murphy[2], E. G. Adelberger[3], C. D. Hoyle[3], R. J. McMillan[4], E. Michelsen[2], K. Nordtvedt[5], A. Orin[2], C. W. Stubbs[1], H. E. Swanson[3]
[1]Harvard Univ., [2]University of California San Diego, [3]University of Washington, [4]Apache Point Observatory, [5]Northwest Analysis.

154.03 **The McDonald Observatory Skycam Project**
Michael A. Gully-Santiago[1]
[1]Boston University.

154.04 **ALE: Astronomical LIDAR for Extinction**
Peter C. Zimmer[1], J. T. McGraw[1], G. Gimmestad[2], D. Roberts[2], J. Stewart[2], M. Dawsey[3], J. Fitch[1], J. Smith[1], A. Townsend[1], B. Black[1]
[1]Univ. of New Mexico, [2]Georgia Tech Research Institute, [3]Univ. of Arizona.

154.05 **A GRB Optical Afterglow Automatic Response Telescope on Skynet**
Adam B. Smith[1], D. B. Caton[1], L. Hawkins[1]
[1]Appalachian State Univ..

154.06 **A New Sky Brightness Monitor**
David L. Crawford[1], D. McKenna[2]
[1]IDA, [2]Vatican Observatory.

154.07 **Brightness of Clouds at Night over a City**
R. H. Garstang[1]
[1]Univ. of Colorado.

154.08 **Performance of the Visiting Instrument TEXES on Gemini North**
Andrew J. Kruger[1], J. H. Lacy[2], D. T. Jaffe[2], M. J. Richter[1], T. K. Greathouse[3], M. Bitner[2], P. Segura[4], W. Moller[4], T. R. Geballe[5], K. Volk[5]
[1]Dept. of Physics, University of California, [2]Dept.of Astronomy, U. Texas, [3]LPI, [4]McDonald Obs., U. Texas, [5]Gemini Obs..

154.09 **bHROS: Year One**
Steven J. Margheim[1]
[1]Gemini Observatory, Chile.

154.10 **The Gemini Planet Imager Apodized Pupil Lyot Coronagraph**
Remi Soummer[1], A. Sivaramakrishnan[1], B. R. Oppenheimer[1], B. A. Macintosh[2], GPI team
[1]American Museum of Nautral History, [2]LLNL.

154.11 **A Proposed GLAO System for Gemini**
David R. Andersen[1], Gemini GLAO Feasibility Study Team
[1]Herzberg Institute of Astrophysics, Canada.

154.12 **Preliminary Optical and Mechanical Designs for a 2.2 Degree Diameter PrimeFocus Corrector for the Blanco 4 Meter Telescope**
Stephen M. Kent[1], R. Bernstein[2], B. Bigelow[2], F. Leger[1], A. Stefanik[1], T. Abbott[3], D. Brooks[4], P. Doel[4], B. Flaugher[1], M. Gladders[5], A. Walker[3], S. Worswick[4]
[1]Fermi Nat'l. Accelerator Lab., [2]U. of Michigan, [3]CTIO/AURA, Chile, [4]University College London, United Kingdom, [5]U. of Chicago.

154.13 **Observating Techniques with the IRMOS MEMS Spectrometer**
John W. MacKenty[1], M. A. Greenhouse[2], R. G. Ohl[2], M. Robberto[1]
[1]STScI, [2]NASA/GSFC.

154.14 **Astrometric Calibration of Digitized Wide-Field Photographic Plates**
Peter B. Boyce[1], P. N. Truong[1]
[1]Maria Mitchell Association.

154.15 **2.1 meter (82 inch) Slip Ring By-Pass Project**
Corby B. Bryan[1]
[1]Texas Tech University.

Session 155 Observations & Models of Extragalactic LMXBs

AAS Poster, Tuesday, 9:20am-6:30pm, Exhibit Hall 4

155.01 **Low-Mass X-ray Binary Models for NGC3379 and NGC4278**
Tassos Fragos[1], V. Kalogera[1], K. Belczynski[2], D. Kim[3], G. Fabbiano[4], L. Angelini[5], R. L. Davies[6], J. S. Gallagher[7], A. R. King[8], S. Pellegrini[9], G. Trinchieri[10], S. F. Zepf[11], A. Zezas[4]
[1]Northwestern U., [2]NMSU, [3]Harvard-Smothsonian CfA, [4]Harvard-Smithsonian CfA, [5]Lab. for High Energy Astrophysics, NASA GSFC, [6]U. Oxford, UK, [7]U. Wisconsin, [8]U. Leicester, UK, [9]U. Bologna, Italy, [10]INAF-Obs. Astronomico di Brera, Italy, [11]Michigan State U..

155.02 **X-ray Binaries in the Fornax Local Group Dwarf**
Roy E. Kilgard[1], R. Soria[1], A. H. Prestwich[1], V. Kalogera[2]
[1]SAO, [2]Northwestern University.

155.03 **X-ray Binary Populations in Normal elliptical Galaxies**
Nicola J. Brassington[1], G. Fabbiano[1], D. Kim[1], L. Angelini[2], R. Davies[3], J. Gallagher[4], V. Kalogera[5], A. King[6], S. Pellegrini[7], G. Trinchieri[8], S. Zepf[9], A. Zezas[1]
[1]CfA, [2]GSFC, [3]University of Oxford, United Kingdom, [4]University of Wisconsin, [5]Northwestern University, [6]University of Leicester, United Kingdom, [7]Bologna University, Italy, [8]INAF-OABr, Italy, [9]Michigan State University.

155.04 **Low-Luminosity XLF in Normal Elliptical Galaxies**
Dong-Woo Kim[1], G. Fabbiano[1], N. J. Brassington[1], V. Kalogera[2], A. R. King[3], S. Pellegrini[4], G. Trinchieri[5], S. E. Zepf[6], A. Zezas[1], L. Angelini[7], R. L. Davies[8], J. S. Gallagher[9]
[1]Harvard-Smithsonian, CfA, [2]Northwestern University, [3]University of Leicester, United Kingdom, [4]Universita di Bologna, Italy, [5]INAF Osservatorio, Italy, [6]Michigan State University, [7]NASA Goddard Space Flight Center, [8]University of Oxford, United Kingdom, [9]University of Wisconsin.

Session 156 Planetary Nebulae & Supernova Remnants

AAS Poster, Tuesday, 9:20am-6:30pm, Exhibit Hall 4

156.01 **Discovery of Multiple Coaxial Rings in the Bipolar Nebula Hb12**
Sun Kwok[1], C. Hsia[2]
[1]University of Hong Kong, China, [2]National Central University, Taiwan.

156.02 **Planetary Nebulae and Stellar Kinematics in Interacting Spiral Galaxy M82**
Lent C. Johnson[1], R. H. Mendez[2], A. M. Teodorescu[2]
[1]Colby College & Institute for Astronomy, University of Hawaii, [2]Institute for Astronomy, University of Hawaii.

156.03 **Balmer Ratios and Molecular Hydrogen in M27**
Roxana E. Lupu[1], S. R. McCandliss[1], K. France[2]
[1]Johns Hopkins University, [2]CITA/ University of Toronto, Canada.

156.04 **Planetary Nebulae in the Large Magellanic Cloud: Results from MCELS**
Alfredo Zenteno[1], R. C. Smith[2], A. Rest[1], S. Points[1], R. Leiton[1], C. Aguilera[1], D. Shaw[2], P. F. Winkler[3]
[1]CTIO/NOAO, Chile, [2]NOAO, [3]Middlebury University.

156.05 **A More Complete Sample of Planetary Nebulae in the Small Magellanic Cloud: Results from MCELS**
Joseph W. Coish[1], E. C. Galle[2], P. F. Winkler[3], R. C. Smith[4], MCELS Team
[1]Haverford College, [2]Center for Astrophysics and Middlebury College, [3]Middlebury College, [4]NOAO.

156.06 **High-resolution X-ray Imaging and Spectroscopy of the Planetary Nebula BD +30 3639**
Young Sam Yu[1], J. Kastner[1], J. Houck[2], E. Behar[3], R. Nordan[3], N. Soker[3]
[1]Center for imaging science, Rochester Inst. Of Technology, [2]Kavli Institute, Massachusetts Institute of Technology, [3]Department of physics, Technion-Israel Institute of Technology, Israel.

156.07 **K-Band Spectroscopy of the Extragalactic Planetary Nebula Hen 2-436**
Jessica L. Wood[1], H. L. Dinerstein[1], T. R. Geballe[2], N. C. Sterling[3]
[1]Univ. of Texas at Austin, [2]Gemini Observatory, [3]NPP Fellow, NASA Goddard Space Flight Center.

156.08 **Properties of Planetary Nebulae: NGC2022**
Renee C. Mateluna Perez[1], H. Monteiro[2], J. Richards[3], H. E. Schwarz[4]
[1]U. de Concepcion, Chile, [2]GSU, [3]Carnegy Mellon U., [4]CTIO, Chile.

156.09 **A Search for Gas-Phase Zirconium in s-process Enriched Planetary Nebulae**
Harriet L. Dinerstein[1], J. H. Lacy[1], K. Sellgren[2], N. C. Sterling[3]
[1]Univ. of Texas, Austin, [2]Ohio State Univ., [3]NPP Fellow, NASA Goddard Space Flight Center.

156.10 **Searching for the Missing Galactic Planetary Nebulae: A Pilot [S III] Imaging Survey**
Joshua H. Shiode[1], D. P. Clemens[1], K. A. Janes[1], A. Pinnick[1], B. Taylor[1]
[1]Boston University.

156.11 **A Multi-Wavelength Investigation of Newly Discovered Supernova Remnants in the Large Magellanic Cloud**
Matthew Klimek[1], S. D. Points[2], C. Smith[2]
[1]Rutgers University, [2]CTIO, Chile.

156.12 **Modeling the Crab Synchrotron Nebula by Including Radiative Losses in Flow Dynamics**
Joseph P. Foy[1], J. Hester[1]
[1]Arizona State Univ..

156.13 **Spitzer Observations of Supernova Remnant N49 in the LMC**
Tea Temim[1], C. E. Woodward[1], E. F. Polomski[1], R. D. Gehrz[1]
[1]Univ. of Minnesota.

156.14 **The N19 HII Complex in the SMC: Multiple Supernova Remnants Forming a Proto-Superbubble?**
Rosa N. Williams[1], Y. H. Chu[1], C. H. Chen[1], R. A. Gruendl[1], S. D. Points[2], R. C. Smith[2]
[1]Univ. of Illinois at Urbana-Champaign, [2]CTIO, Chile.

156.15 **Balmer-Dominated Supernova Remnants Revisited**
Richard McCray[1], K. Heng[1]
[1]JILA, University of Colorado.

156.16 **Expanding Ejecta in the Core-Collapse Supernova Remnant G292.0+1.8, Cas A's Older Cousin**
Karl Twelker[1], C. N. Reith[1], P. F. Winkler[1], K. S. Long[2]
[1]Middlebury College, [2]STScI.

156.17 **A Deep Chandra Observation of Kepler's Supernova Remnant: A Type Ia Supernova with Circumstellar Interaction**
Stephen P. Reynolds[1], K. J. Borkowski[1], C. Badenes[2], J. P. Hughes[2], U. Hwang[3], J. M. Laming[4], J. M. Blondin[1]
[1]North Carolina State Univ., [2]Rutgers U., [3]NASA/GSFC, [4]NRL.

156.18 **A Deep Chandra Observation of the O-Rich SNR 0540-69.3 in the LMC**
Sangwook Park[1], J. Hughes[2], P. Slane[3], D. Burrows[1], K. Mori[4]
[1]Pennsylvania State U., [2]Rutgers Univ, [3]CfA, [4]Univ of Miyazaki, Japan.

156.19 **X-Ray Imaging and Spectroscopy of Oxygen-Rich Ejecta in N132D**
Kazimierz J. Borkowski[1], S. P. Hendrick[2], S. P. Reynolds[1]
[1]North Carolina State Univ., [2]Millersville Univ..

156.20 **Investigation of the Vela X Emission**
Stephanie M. LaMassa[1], P. Slane[1], O. de Jager[2]
[1]Center for Astrophysics, [2]Potchefstroom University, South Africa.

156.21 **Optical Imaging and Spectroscopy of the Galactic Supernova Remnant 3C58**
Robert A. Fesen[1], G. Rudie[1], A. Hurford[1], A. Soto[1]
[1]Dartmouth College.

Session 157 Professional Development for Scientists and Educators

AAS Poster, Tuesday, 9:20am-6:30pm, Exhibit Hall 4

157.01 **The ASP: Programs to Inspire Educators**
Anna Hurst[1], S. Gurton[1], M. Bennett[1], M. Berendson[1], M. Gibbs[1]
[1]Astronomical Society of the Pacific.

157.02 **An Online Hands-On Program for Middle-School Science Teachers**
Stephen Schneider[1], K. Davis[1]
[1]UMass.

157.03 **Strategies for Professional Development for Educators**
Matthew Bobrowsky[1], D. A. Smith[1], B. Eisenhamer[1], NASA Origins E/PO Leads
[1]STScI.

157.04 **Teaching Astronomy Graduate Students About Teaching at the 101 Level**
Erika Grundstrom[1], D. R. Gies[1], J. W. Wilson[1]
[1]Georgia State Univ..

157.05 **The NASA Center for Astronomy Education (CAE): 2007 College Astronomy Teaching Excellence Workshops**
Gina Brissenden[1], E. E. Prather[1], T. F. Slater[1], W. M. Greene[2], M. Thaller[3]
[1]Univ. of Arizona, [2]Navigator, JPL, [3]Spitzer, Cal Tech.

157.06 **Impact of the CAE Astronomy Teaching Excellence Workshop Program**
Erin F. Dokter[1], E. E. Prather[1], G. Brissenden[1], T. F. Slater[1], W. M. Greene[2], M. Thaller[3]
[1]Univ. of Arizona, [2]JPL Navigator, [3]Caltech, Spitzer.

157.07 **Deciphering Stars: A Professional Development Workshop for Teachers**
Mary Kay Hemenway[1], S. Redfield[1]
[1]U. Texas-Austin.

Session 158 Properties of Hot Stars

AAS Poster, Tuesday, 9:20am-6:30pm, Exhibit Hall 4

158.01 **Xatlas: An Online Archive of Chandra Hot Star Gratings Observations**
Owen Westbrook[1], N. R. Evans[1], S. J. Wolk[1], J. Nichols[1], V. L. Kashyap[1], P. J. Mendygral[2], W. L. Waldron[3]
[1]Harvard-Smithsonian, CfA, [2]U. Minnesota, [3]Eureka Scientific, Inc.

158.02 **Searching for Hidden Wolf-Rayet Stars in the Galaxy - 15 New Wolf-Rayet Stars**
Lucy J. Hadfield[1], S. D. van Dyk[2], P. W. Morris[3], J. D. Smith[4], A. P. Marston[5]
[1]The Univerity Of Sheffield, United Kingdom, [2]Spitzer Science Center, IPAC, CALTECH, [3]NASA Herschel Science Center, IPAC, CALTECH, [4]Steward Observatory, [5]ESA/ESAC, Spain.

158.03 **Chandra Spectroscopy of the Hot Star Beta Cru and the Discovery of a Pre-Main Sequence Companion**
Michael A. Kuhn[1], D. H. Cohen[1], E. L. Jensen[1], M. Gagne[2]
[1]Swarthmore College, [2]West Chester University.

Session 159 Pulsars

AAS Poster, Tuesday, 9:20am-6:30pm, Exhibit Hall 4

159.01 **The Torque-luminosity Relation and Possible Glitches in Three X-ray Binary Systems**
Michael J. Stark[1], D. Meral[1], A. Baykal[2], J. H. Swank[3]
[1]Lafayette College, [2]Middle East Technical University, Turkey, [3]NASA's Goddard Space Flight Center.

159.02 **New Pulsars in the Globular Cluster M28**
Ingrid H. Stairs[1], S. Begin[1], S. Ransom[2], P. Freire[3], J. Hessels[4], J. Katz[5], V. Kaspi[6], F. Camilo[7]
[1]Univ. of BC, Canada, [2]NRAO, [3]NAIC, [4]University of Amsterdam, The Netherlands, [5]University of Virginia, [6]McGill University, Canada, [7]Columbia University.

159.03 **Discovery and Timing of Eight New Millisecond Pulsars in NGC 6440 and NGC 6441**
Paulo Freire[1], S. M. Ransom[2], S. Begin[3], I. H. Stairs[3], J. W. Hessels[4]
[1]Arecibo Observatory, [2]NRAO, [3]University of British Columbia, Canada, [4]McGill University, Canada.

159.04 **A New Technique for the Characterization of Radio Pulsar Polarization Profiles**
Samuel Rodarte, Jr.[1], W. van Straten[1]
[1]Center for Gravitational Wave Astronomy; U. Texas at Brownsville.

159.05 **Discovery of an Energetic Young Pulsar Candidate Coincident with a TeV Gamma-ray Source.**
David J. Helfand[1], E. V. Gotthelf[1], D. Semler[1], F. Camilo[1], R. H. Becker[2], R. L. White[3]
[1]Columbia Astrophysics Lab., [2]UC, Davis, [3]STScI.

159.06 **Timing Pulsars in Globular Cluster NGC6441**
Lucille H. Frey[1], S. Ransom[2]
[1]Case Western Reserve University, [2]NRAO.

159.07 **Population Synthesis of Radio and Gamma-ray Millisecond Pulsars from the Galactic Plane**
Sarah A. Story[1], P. L. Gonthier[1], B. D. Clow[1], A. K. Harding[2]
[1]Hope College, [2]NASA Goddard Space Flight Center.

159.08 **First Results from a Galactic Center Search for Pulsars and Transients:A Rotating Radio Transient Candidate**
Julia S. Deneva[1], J. M. Cordes[1], T. J. Lazio[2], R. Bhat[3], S. Chatterjee[4], S. M. Ransom[5], G. Bower[6], W. Vlemmings[7], P. Demorest[6], D. C. Backer[6]
[1]Cornell Univ., [2]NRL, [3]Swinburne Univ., Australia, [4]Univ. of Sydney, Australia, [5]NRAO, [6]UC, Berkeley, [7]Jodrell Bank Obs., United Kingdom.

159.09 **Updated Timing Parameters of two Massive Binary Pulsars: J0621+1002 and J0751+1807**
Laura Kasian[1], I. H. Stairs[1], D. J. Nice[2]
[1]Univ. Of British Columbia, Canada, [2]Bryn Mawr College.

159.10 **Circumpulsar Asteroids: Inferences from Nulling Statistics and High Energy Correlations**
Ryan Shannon[1], J. M. Cordes[1]
[1]Cornell University.

159.11 **Application of Typological Sequencing for the Classification of Radio Pulsar Profiles**
Rossina B. Miller[1], F. Jenet[1]
[1]Center for Gravitational Wave Astronomy/ University of Texas at Brownsville.

159.12 **Population Statistics of Normal Isolated, Radio and Gamma-ray Pulsars from the Galactic Plane**
Peter L. Gonthier[1], S. A. Story[1], B. D. Clow[1], A. K. Harding[2], I. A. Grenier[3]
[1]Hope College, [2]NASA Goddard Space Flight Center, [3]CEA/Saclay & University of Paris VII, France.

159.13 **Numerical Simulations of Bulk and Thermal Comptonization in X-Ray Pulsar Accretion Columns**
Kenneth D. Wolfram[1], P. A. Becker[2], M. T. Wolff[1]
[1]Naval Research Laboratory, [2]George Mason Uninversity.

159.14 **The Radio Properties and Magnetic Field Configuration in Pulsar Wind Nebula G54.1+0.3**
Cornelia C. Lang[1], F. Lu[2], Q. D. Wang[3], K. I. Clubb[1]
[1]Univ. of Iowa, [2]IHEP, China, [3]Univ. of Mass.

Session 160 SAGE

AAS Poster, Tuesday, 9:20am-6:30pm, Exhibit Hall 4

160.01 **Dust Processing Near Sites of High-Mass Star Formation in the Large Magellanic Cloud**
Sacha Hony[1], S. Madden[1], D. Rubin[1], M. S. Oey[2], F. Galliano[3], B. Whitney[4], M. Meade[5], B. Babler[5], R. Indebetouw[6], J. Hora[7], K. Gordon[8], C. Engelbracht[8], B. For[9], M. Block[8], K. Misselt[8], M. Meixner[10], U. Vijh[10], C. Leitherer[10]
[1]Service d'Astrophysique, CEA, France, [2]U. Michigan, [3]NASA GSFC, [4]Space Science Inst., [5]U. Wisconsin, [6]U. Virginia, [7]Harvard-Smithsonian/ CfA, [8]U. Arizona, [9]U. Texas, [10]STScI.

160.02 **SST/SAGE and HST Study of Stellar Populations and Star Formation around NGC 1850 in the LMC**
Nino Panagia[1], M. Romaniello[2], R. Gilmozzi[2], G. De Marchi[3], M. Meixner[1], U. Vijh[1], C. Leitherer[1], B. Whitney[4], M. Meade[5], B. Babler[5], R. Indebetouw[6], J. Hora[7], K. Gordon[8], C. Engelbracht[8], B. For[9], M. Block[8], K. Misselt[8], SAGE Group
[1]STScI, [2]ESO, Germany, [3]ESA/ESTEC, The Netherlands, [4]Space Science Institute, [5]U. Wisconsin, [6]U.Virginia, [7]CfA, [8]U. Arizona, [9]U. Texas.

160.03 **Mass Loss from Evolved Stars in LMC Clusters**
Sean Points[1], K. Olsen[1], R. Blum[2], B. Whitney[3], M. Meade[4], B. Babler[4], R. Indebetouw[5], J. Hora[6], K. Gordon[7], C. Engelbracht[7], B. For[8], M. Block[7], K. Misselt[7], M. Meixner[9], U. Vijh[9], C. Leitherer[9], S. Srinivasan[9]
[1]CTIO/NOAO, Chile, [2]NOAO, [3]Space Science Institute, [4]U. Wisconsin, [5]U Virginia, [6]Harvard-Smithsonian/CfA, [7]U Arizona, [8]Univ Texas, [9]STScI.

160.04 **Crystalline Silicates around Asymptotic Giant Branch Stars in the Large Magellanic Cloud**
Francisca Markwick-Kemper[1], C. Dijkstra[2]
[1]Univ. of Manchester, United Kingdom, [2]Univ. of Missouri.

160.05 **The Mass Loss Return From Evolved Stars to the LMC: Empirical Relations For Excess Emission at 8 and 24 μm**
Sundar Srinivasan[1], M. Meixner[2], U. Vijh[2], C. Leitherer[2], K. Volk[3], F. Markwick-Kemper[4], R. D. Blum[5], J. R. Mould[5], K. A. Olsen[6], S. Points[6], B. A. Whitney[7], M. Meade[8], B. Babler[8], R. Indebetouw[4], J. L. Hora[9], K. Gordon[10], C. Engelbracht[10], B. For[11], M. Block[10], K. Misselt[10]
[1]JHU, [2]STScI, [3]Gemini Obs., [4]U. Virginia, [5]NOAO, [6]CTIO, Chile, [7]Space Science Institute, [8]U. Wisconsin, [9]CfA, [10]U. Arizona, [11]U. Texas.

160.06 **Variable Sources in Large Magellanic Cloud using the SAGE Survey**
Uma P. Vijh[1], M. Meixner[1], S. Srinivasan[2], B. Babler[3], M. Block[4], C. Engelbracht[4], B. -. For[4], K. Gordon[4], J. Hora[5], R. Indebetouw[6], C. Leitherer[1], M. Meade[3], K. Misselt[4], B. Whitney[7]
[1]STScI, [2]JHU, [3]U. Wisconsin, [4]U. Arizona, [5]Harvard/CfA, [6]U. Virginia, [7]SSI.

160.07 **Modelling Evolved Stars Detected by the Spitzer LMC Survey (SAGE)**
Kevin Volk[1], M. Meixner[2], S. Srinivasan[2], F. Markwick-Kemper[3], B. Whitney[2], R. D. Blum[4], M. Meade[5], B. Babler[5], R. Indebetouw[6], J. Hora[7], K. Gordon[8], C. Engelbracht[8], B. For[9], M. Block[8], K. Misselt[8], U. Vijh[2], C. Leitherer[2], SAGE Team
[1]Gemini Observatory, [2]Space Telescope Science Institute, [3]University of Manchester, United Kingdom, [4]National Optical Astronomical Observatory, [5]Univeristy of Wisconsin, [6]Univeristy of Virginia, [7]Harvard-Smithsonian Center for Astrophysics, [8]Steward Observatory, [9]University of Texas.

160.08 **Spitzer/SAGE Observations of Planetary Nebulae in the Large Magellanic Cloud**
Joseph L. Hora[1], M. Cohen[2], M. Meixner[3], R. D. Blum[4], B. Whitney[5], R. G. Ellis[6], M. Meade[7], B. Babler[7], R. Indebetouw[8], K. Gordon[9], C. Engelbracht[9], B. For[10], M. Block[9], K. Misselt[9], U. Vijh[3], C. Leitherer[3]
[1]CfA, [2]UC. Berkeley, [3]STScI, [4]NOAO, [5]Space Science Inst., [6]Brown Univ., [7]U Wisconsin, [8]U Virginia, [9]U Arizona, [10]U. Texas.

160.09 **Star Formation Tracers and Dust Emission in the Large Magellanic Cloud**
Karl D. Gordon[1], C. Engelbracht[1], M. Meixner[2], B. Whitney[3], M. Block[1], M. Meade[4], B. Babler[4], B. For[5], R. Indebetouw[6], U. Vijh[2], J. Hora[7], K. Misselt[1], C. Leitherer[2], SAGE Legacy Team
[1]Univ. of Arizona, [2]Space Telescope Science Institute, [3]Space Science Institute, [4]Univ. of Wisconsin, [5]Univ. of Texas, [6]Univ. of Virginia, [7]Harvard-Smithsonian/CfA.

160.10 **Spitzer SAGE Observations of Young Stellar Objects in the Large Magellanic Cloud**
Barbara Whitney[1], M. Sewilo[2], R. Indebetouw[3], T. Robitaille[4], M. Meixner[5], U. Vijh[5], S. Srinivasan[6], M. Meade[2], B. Babler[2], E. Churchwell[2], J. Hora[7], K. Gordon[8], C. Engelbracht[8], B. For[9], M. Block[8], K. Misselt[8], C. Leitherer[5], A. Kawamura[10], T. Onishi[10], A. Mizuno[10], Y. Fukui[10]
[1]Space Science Institute, [2]University of Wisconsin, [3]University of Virginia, [4]Univ. of St. Andrews, United Kingdom, [5]Space Telescope Science Institute, [6]JHU, [7]Harvard-Smithsonian/CfA, [8]Univ. of Arizona, [9]Univ. of Texas, [10]Nagoya University, Japan.

160.11 **Star Formation Activity in Giant Molecular Clouds in the LMC**
Toshikazu Onishi[1], A. Kawamura[1], Y. Fukui[1], T. Minamidani[1], Y. Mizuno[1], N. Mizuno[1], A. Mizuno[1], M. Meixner[2], U. Vijh[2], C. Leitherer[2], B. Whitney[3], M. Meade[4], B. Babler[4], R. Indebetouw[5], J. Hora[6], K. Gordon[7], C. Engelbracht[7], B. For[8], M. Block[7], K. Misselt[7], S. Madden[9], J. Bernard[10], R. Paladini[11], SAGE team
[1]Nagoya University, Japan, [2]STScI, [3]Space Science Institute, [4]University of Wisconsin, [5]University of Virginia, [6]Harvard-Smithsonian/CfA, [7]University of Arizona, [8]University of Texas, [9]CEA, France, [10]CNRS, France, [11]IPAC/Caltech.

160.12 **Spitzer Spectroscopy of Stellar Feedback on Circumstellar Gas and Dust in 30 Doradus, the Nearest Super-Star Cluster**
Genevieve E. de Messieres[1], R. Indebetouw[1], B. Babler[2], F. Boulanger[3], C. Engelbracht[4], F. Galliano[5], K. Gordon[4], J. Hora[6], S. Madden[7], M. Meade[2], M. Meixner[8], J. D. Smith[4], L. Smith[9], X. Tielens[10], U. Vijh[8], M. Werner[11], M. Wolfire[12]
[1]U. Virginia, [2]U. Wisconsin, [3]Institut d'Astrophysique Spatiale, France, [4]U. Arizona, [5]NASA GSFC, [6]CfA, [7]CEA, France, [8]STScI, [9]University College London, UK, [10]NASA Ames Research Center, [11]JPL, [12]U. Maryland.

160.13 **Viewing SAGE selected LMC Star Formation with Hubble Vision**
Lynn R. Carlson[1], M. Meixner[2], C. A. Gill[3], J. Harris[4], U. Vijh[2], M. Sewilo[5], B. Whitney [6], B. Babler[5], M. Block[4], C. Engelbracht[4], B. For[7], K. Gordon[4], J. L. Hora[8], R. Indebetouw[9], C. Leitherer[2], M. Meade[5], K. Misselt[4], SAGE team
[1]JHU, [2]STScI, [3]Loyola College, [4]U. Arizona, [5]U. Wisconsin, [6]SSI, [7]U. Texas, [8]Harvard/CfA, [9]U. Virginia.

160.14 **The Spitzer SAGE Survey of the Large Magellanic Cloud: Characteristics of the Epoch 1 IRAC and MIPS-24 Source Lists**
Margaret Meixner[1], B. Whitney[2], K. Gordon[3], B. Babler[4], M. Block[3], M. Cohen[5], C. Engelbracht[3], B. For[6], J. Hora[7], R. Indebetouw[8], C. Leitherer[1], M. Meade[4], K. Misselt[3]
[1]STScI, [2]Space Sciences Institute, [3]University of Arizona, [4]University of Wisconsin, [5]University of California, [6]University of Texas, [7]Harvard/CfA, [8]University of Virginia.

160.15 **Molecular Clouds and Star Formation in the Magellanic System by NANTEN**
Akiko Kawamura[1], T. Onishi[1], T. Minamidani[1], Y. Mizuno[1], N. Mizuno[1], A. Mizuno[1], Y. Fukui[1], M. Meixner[2], U. Vijh[2], C. Leitherer[2], B. Whitney[3], M. Meade[4], B. Babler[4], R. Indebetouw[5], J. Hora[6], K. Gordon[7], C. Engelbracht[7], B. For[8], M. Block[7], K. Misselt[7], S. Madden[9], J. Bernard[10], R. Paladini[11], W. Reach[11], SAGE team
[1]Nagoya University, Japan, [2]STScI, [3]Space Science Institute, [4]U. Wisconsin, [5]U. Virginia, [6]Harvard-Smithsonian/CfA, [7]U. Arizona, [8]U. Texas, [9]CEA, France, [10]CNRS, France, [11]IPAC.

Session 161 Science from the NDWFS Bootes Field

AAS Poster, Tuesday, 9:20am-6:30pm, Exhibit Hall 4

161.01 **Mid-Infrared Properties of X-ray Sources**
Varoujan Gorjian[1], M. Brodwin[1], C. S. Kochanek[2], S. Murray[3], D. Stern[1], K. Brand[4], P. Eisenhardt[1], M. Ashby[3], P. Barmby[3], M. J. Brown[4], A. Dey[4], W. R. Forman[3], B. T. Jannuzi[4], C. Jones[3], A. Kenter[3], M. A. Pahre[3], J. C. Shields[5], M. W. Werner[1]
[1]JPL, [2]Ohios State University, [3]CfA, [4]NOAO, [5]Ohio University.

161.02 **Optical and IR Diagnostics of Radio Sources in the Bootes Field**
Steve Croft[1], W. van Breugel[1], W. de Vries[2], IRAC Shallow Survey Team, NDWFS Team
[1]UC Merced / LLNL, [2]UC Davis / LLNL.

161.03 **A Large Population of Infrared-Selected, Obscured AGN in the Bootes Field**
Christine Jones[1], R. Hickox[1], S. Murray[1], W. Forman[1], M. Brodwin[2], XBootes, IRAC Shallow Survey, NDWFS, AGES Teams
[1]Harvard-Smithsonian, CfA, [2]NASA/JPL.

161.04 **IRS Spectroscopy of z=2 Star-forming ULIRGs in the NDWFS Bootes Field**
Baruch T. Soifer[1], V. Desai[1], A. Dey[2], B. Jannuzi[2], L. Armus[3], H. Teplitz[3], K. Brand[4], E. Le Floc'h[5], D. Weedman[6], J. Houck[6]
[1]Caltech, [2]NOAO, [3]SSC/Caltech, [4]STScI, [5]IFA/U. Hawaii, [6]Cornell U..

161.05 **Clusters of Galaxies in the First Half of the Universe from the IRAC Shallow Survey**
Peter R. Eisenhardt[1], M. Brodwin[1], A. Gonzalez[2], S. A. Stanford[3], D. Stern[1], P. Barmby[4], A. Dey[5], M. J. Brown[6], J. Huang[4], B. T. Jannuzi[5], M. A. Pahre[4]
[1]JPL/Caltech, [2]U. Florida, [3]IGPP/UC-Davis, [4]Harvard, [5]NOAO, [6]Princeton University.

161.06 **Mid-Infrared Selection of Brown Dwarfs and High-Redshift Quasars**
Daniel Stern[1], J. D. Kirkpatrick[2], IRAC Shallow Survey Team
[1]JPL/ Caltech, [2]IPAC/ Caltech.

161.07 **Searching for Brown Dwarfs in the Spitzer/IRAC Shallow Survey**
Massimo Marengo[1], L. E. Allen[1], M. L. Ashby[1], B. M. Patten[2], M. C. Sanchez[3], IRAC Shallow Survey Collaboration
[1]Harvard-Smithsonian CfA, [2]Harvard-Smithsonian CfA / NSF, [3]Harvard University.

161.08 **X-ray Bright Optically Normal Galaxies (XBONGs) in the XBootes Field**
Michael Anderson[1], S. Murray[2], C. Jones[2], A. Kenter[2], B. Forman[2], R. Hickox[2]
[1]University of Michigan, [2]Harvard-Smithsonian Center for Astrophysics.

161.09 **Low Resolution Spectral Templates for Galaxies from 0.2--10 microns**
Roberto Assef[1]
[1]The Ohio State University.

161.10 **An Hα Objective Prism Survey in the NDWFS Boötes Field**
Caryl Gronwall[1], J. E. Young[1], J. J. Salzer[2], J. L. Rosenberg[3]
[1]Penn State Univ., [2]Wesleyan University, [3]Harvard-Smithsonian Center for Astrophysics.

Session 162 Search for Variables Through Surveys, Databases and Archives

AAS Poster, Tuesday, 9:20am-6:30pm, Exhibit Hall 4

162.01 **Combined NSVS/2MASS Database Search For Cool Algols and Eclipsing Subdwarf B Stars**
Nicole Kelley[1], J. S. Shaw[2]
[1]University of California, Berkeley, [2]University of Georgia.

162.02 **LGSAO Imaging of STEPS Astrometric Candidates**
Sloane Wiktorowicz[1], S. R. Kulkarni[1], S. H. Pravdo[2], S. B. Shaklan[2]
[1]Caltech, [2]Jet Propulsion Laboratory.

162.03 **Recovering Long-Term Lightcurves from the Harvard Plates: A Search for Eclipsing Binaries in M44**
Michael S. Shaw[1], J. E. Grindlay[2], S. Laycock[2]
[1]Massachusetts Institute of Technology, [2]Harvard-Smithsonian, CfA.

162.04 **The American Association of Variable Star Observers (AAVSO)**
Travis Searle[1], M. Templeton[1], A. Price[1], A. Henden[1]
[1]AAVSO.

162.05 **The AAVSO International Database**
Rebecca Turner[1], A. Price[1], M. Templeton[1], E. O. Waagen[1], A. Henden[1]
[1]AAVSO.

162.06 **The Precision of Visual Estimates of Variable Stars**
Aaron Price[1], G. Foster[2], B. Skiff[3], A. Henden[2]
[1]AAVSO/Tufts University, [2]AAVSO, [3]Lowell Observatory.

162.07 **A Bright Stellar Variability Survey in the NGC 6811 Region**
Arne A. Henden[1], A. Price[1], S. Howell[2]
[1]AAVSO, [2]WIYN/NOAO.

162.08 **RR Lyrae Stars in the SDSS-II Supernova Survey**
Nathan M. De Lee[1], H. A. Smith[1], T. C. Beers[2], D. M. Bramich[3], S. Vidrih[3], D. B. Zucker[3], Z. Ivezic[4]
[1]Michigan State Univ., [2]Michigan State Univ. & JINA, [3]Institute of Astronomy, Cambridge, United Kingdom, [4]Univ. of Washington.

162.09 **GNAT Student Follow-Up Pilot Project**
Noll S. Roberts[1], N. Jaggi[1], C. Milne[1]
[1]Cuesta College.

162.10 **Revisited - The Draco Dwarf Spheroidal Galaxy Variable Star Population**
Karen Kinemuchi[1], H. C. Harris[2], H. A. Smith[3], N. Silbermann[4], L. Snyder[3], A. P. LaCluyze[5], C. L. Clark[3]
[1]Univ. of Wyoming, [2]US Naval Observatory - Flagstaff, [3]Michigan State University, [4]SSC/Caltech, [5]University of North Carolina.

162.11 **Light Curves of Newly Discovered Variable Stars from ROTSE-I Observations**
Douglas I. Hoffman[1], T. E. Harrison[1], B. J. McNamara[1], T. W. Vestrand[2]
[1]New Mexico State Univ., [2]Los Alamos National Laboratory.

162.12 **The FUSE Survey of Algol-Type Interacting Binary Systems**
Geraldine J. Peters[1], B. Andersson[2], T. B. Ake[2], R. Sankrit[2]
[1]Univ. of Southern California, [2]Johns Hopkins University.

162.13 **An Update on the Radial Velocity Survey in Cygnus OB2**
Daniel C. Kiminki[1], H. A. Kobulnicky[1], K. Kinemuchi[1], J. S. Irwin[2], C. L. Fryer[3], R. C. Berrington[1], B. Uzpen[1], A. J. Monson[1], M. A. Pierce[1], S. E. Woosley[4]
[1]Univ. of Wyoming, [2]Univ. of Texas, [3]Los Alamos National Laboratories, [4]University of California Santa Cruz.

162.14 **Variable Stars in the Lepine List of Nearby Stars**
Melvin Blake[1], J. McNutt[2]
[1]Pisgah Astronomical Research Institute, [2]University of North Carolina Asheville.

162.15 **Burrell-Optical-Kepler Survey (BOKS) I: Survey Description**
John J. Feldmeier[1], S. Howell[2], P. Harding[3], C. Mihos[3], C. Rudick[3], W. Sherry[4], T. Lee[5], C. Knox[3], D. Ciardi[6], K. von Braun[6], M. Everett[7], M. Proctor[8], G. van Belle[6]
[1]Youngstown State Univ., [2]NOAO/WIYN, [3]CWRU, [4]NSO, [5]NOAO, [6]MSC, [7]PSI, [8]LPL.

162.16 **Burrell-Optical-Kepler Survey (BOKS) II: Early Variability Results**
Steve B. Howell[1], J. Feldmeier[2], K. van Braun[3], M. Everett[4], C. Mihos[5], P. Harding[5], C. Knox[5], W. Sherry[6], T. Lee[7], D. Ciardi[3], C. Rudick[5], M. Proctor[8], G. van Belle[3]
[1]WIYN/NOAO, [2]YSU, [3]MSC, [4]PSI, [5]CWRU, [6]NSO, [7]NOAO, [8]LPL.

162.17 **WIYN Open Cluster Study Long-term Monitoring: NGC 2141**
Allison M. Widhalm[1], S. Kafka[2]
[1]USC, CTIO, New Mexico State University, [2]CTIO, Chile.

162.18 **New Close Binary Systems from the SDSS-I (Data Release Five) and the Orbital Periods for a Subset of Close White Dwarf + M Dwarf Systems**
Nicole M. Silvestri[1], S. L. Hawley[1], L. C. Dang[2], D. A. Krogsrud[1], K. Smoke[1], M. A. Wolfe[1], L. Mannikko[1]
[1]Univ. of Washington, [2]NASA GSFC.

162.19 **Discovery of WD+M Binaries in the Sloan Digital Sky Survey**
Robert L. da Silva[1]
[1]LBNL.

162.20 **Optically Variable RASS X-ray Sources in the Northern Sky Variability Survey**
Sara Gettel[1], E. Rykoff[2], T. McKay[2]
[1]Pennsylvania State University, [2]University of Michigan.

162.21 **Eclipsing Binaries in the Galactic Bulge from SWEEPS Data**
Kailash C. Sahu[1], T. E. Smith[1], W. Clarkson[1]
[1]STScI.

162.22 **Multicolor Oservations of the Type II Cepheid Prototype W Virginis**
Matthew R. Templeton[1], A. A. Henden[1], T. Crawford[1], R. James[1], M. Bonnardeau[1], D. Wells[1]
[1]AAVSO.

Session 163 Extrasolar Planets VI: Observed Systems

AAS Poster, Tuesday, 9:20am-6:30pm, Exhibit Hall 4

163.01 **Interferometric Observations of the Transiting Planet HD 189733 with the CHARA Array**
Ellyn K. Baines[1], G. T. van Belle[2], H. A. McAlister[1], T. A. ten Brummelaar[1], D. H. Berger[3], N. H. Turner[1], P. J. Goldfinger[1]
[1]Georgia State Univ., [2]Michelson Science Center, [3]Univ. of Michigan.

163.02 **Infrared Phase Variations of Hot Jupiters**
Nicolas B. Cowan[1], E. Agol[1], D. Charbonneau[2]
[1]Univ. of Washington, [2]Center for Astrophysics.

163.03 **Eccentricities of Extrasolar Planets and Implications for Planet Formation Theory**
Eric B. Ford[1]
[1]Harvard-Smithsonian Center for Astrophysics.

163.04 **A Possible Planet Around a White Dwarf**
Fergal Mullally[1], D. Winget[1]
[1]Univ. of Texas, Austin.

163.05 **MOST Spacebased Photometry of Transiting Exoplanet Systems**
Jason Rowe[1], J. M. Matthews[1], E. Miller-Ricci[2], S. Seager[3], D. Sasselov[2], R. Kuschnig[1], D. B. Guenther[4], A. F. Moffat[5], M. Rucinski[6], G. A. Walker[1], W. Weiss[7]
[1]UBC, Canada, [2]Harvard-Smithsonian CfA, [3]Carnegie DTM, [4]St. Mary's Univ., Canada, [5]Univ. de Montréal, Canada, [6]U. Toronto, Canada, [7]Institut für Astronomie, Universität Wien Türkenschanzstrasse, Austria.

Session 164 Space-Based Instrumentation I

AAS Poster, Tuesday, 9:20am-6:30pm, Exhibit Hall 4

164.01 **Steps Toward a UV/Optical Interferometer in Space: FIT & SIFFT**
Kenneth G. Carpenter[1], R. G. Lyon[1], A. Liu[1], P. Dogoda[2], P. Petrone[2], D. Mozurkewich[3], D. Miller[4], S. Mohan[4], P. Stahl[5]
[1]NASA's GSFC, [2]Sigma Space, [3]Seabrook Eng., [4]MIT, [5]NASA's MSFC.

164.02 **CALISTO: A Far-Infrared Observatory for the Next Decade**
Harold W. Yorke[1], P. F. Goldsmith[1], C. M. Bradford[1], J. Zmuidzinas[1], C. Paine[1], M. Dragovan[1], C. M. Satter[1], A. E. Nash III[1], R. A. Lee[1], B. Khayatian[1], A. R. Girerd[1], S. J. MacLellan[1]
[1]Jet Propulsion Laboratory, California Institute of Technology.

164.03 **Cryogenic Telescope, Scanner, and Imaging Optics for the Wide-field Imaging Survey Explorer (WISE)**
Mark Schwalm[1], A. Akerstrom[1], M. Barry[1], J. Guregian[1], F. LaMalva[1], P. Laquidara[1], G. Perron[1], D. Sampath[1], V. Ugolini[1]
[1]L-3 Communications SSG-Tinsley.

164.04 **Scientific Promise and Instrument Concepts for a Background-Limited Infrared-Submillimeter Spectrograph (BLISS) for SPICA**
Charles Bradford[1], BLISS and SPICA teams
[1]Caltech/ JPL.

164.05 **CASTER - A Concept for a Black Hole Finder Probe based on the Use of New Scintillator Technologies**
Mark L. McConnell[1], P. Bloser[1], J. Macri[1], J. Ryan[1], G. Case[2], M. Cherry[3], T. Guzik[3], B. Schaefer[3], J. G. Stacy[2], J. P. Wefel[3], R. M. Kippen[4], W. T. Vestrand[4], R. S. Miller[5], W. Paciesas[5], K. Hurley[6], J. Cravens[7]
[1]U. New Hampshire, [2]LSU / Southern Univ., [3]LSU, [4]LANL, [5]U Alabama - Huntsville, [6]UC - Berkeley, [7]Southwest Research Institute.

164.06 **New Worlds Observer: Mission Overview**
Charles F. Lillie[1], J. W. Arenberg[1], W. C. Cash[2], R. P. Samuele[1], A. S. Lo[1]
[1]Northrop Grumman Space Technology, [2]University of Colorado.

164.07 **Absolute Time Calibration for the Chandra X-ray Observatory**
Arnold H. Rots[1]
[1]Harvard-Smithsonian CfA.

164.08 **Design and Lab Demonstration of the PIAA/Binary-Mask Hybrid Coronagraph**
Shinichiro Tanaka[1], O. Guyon[1], E. Pluzhnik[1]
[1]Subaru Telescope.

164.09 **Experimental Demonstration of Wavefront Estimation in a Shaped-Pupil Coronagraph**
Ruslan Belikov[1], A. Give'on[2], E. Cady[1], J. Kay[1], L. Pueyo[1], N. J. Kasdin[1]
[1]Princeton Univ., [2]Caltech University.

164.10 **Wavefront Compensation for High Contrast Imaging in the Presence of Fresnel Effects**
Laurent A. Pueyo[1], J. Kasdin[1]
[1]Princeton University.

164.11 **STARCaL: A Tunable Laser in Space for Telescope Calibration and Atmospheric Studies**
Justin Albert[1], W. Burgett[2], S. Deustua[3]
[1]Univ. of Victoria, Canada, [2]Institute for Astronomy, [3]AAS.

164.12 **Selective Deposition of Thin Films for Future X-ray Optics**
Amy M. Colon[1], R. Bruni[2], S. Sheldon[2], S. Romaine[2]
[1]Hunter College CUNY, [2]Harvard Smithsonian Center for Astrophysics.

164.13 **Dynamics of an Occulter Based Planet Finding Telescope**
Egemen Kolemen[1], J. Kasdin[1]
[1]Princeton University.

164.14 **The Lost Flux Method: A New Algorithm for Improving the Precision of Space-Based Near-Infrared Stellar Photometry with Lossy Detectors**
Kenneth J. Mighell[1]
[1]NOAO.

164.15 **Closed-loop Wavefront Correction for High-contrast Imaging: The "Peak-A-Boo" Algorithm.**
Amir Give'on[1], J. Kasdin[2], S. Shaklan[3], R. Vanderbei[2]
[1]Caltech Univ., [2]Princeton University, [3]JPL.

Session 165 Star Clusters III

AAS Poster, Tuesday, 9:20am-6:30pm, Exhibit Hall 4

165.01 **Using Open Clusters to Trace the Local Milky Way Rotation Curve and Velocity Field**
Peter M. Frinchaboy[1], S. R. Majewski[2]
[1]Univ. of Wisconsin-Madison, [2]Univ. of Virginia.

165.02 **WIYN Tip-Tilt Module Observations of the Old Open Cluster NGC 1193**
Myra J. Stone[1], C. F. Claver[2], K. J. Mighell[2]
[1]University of Georgia, [2]National Optical Astronomy Observatory.

165.03 **WIYN Open Cluster Study: Precision UBVRI CCD Photometry of the Open Cluster NGC 2420**
Aaron J. Steinhauer[1], N. Lauffenburger[1], J. Hughto[1], C. P. Deliyannis[2], K. Croxall[2], A. Sarajedini[3]
[1]SUNY - Geneseo, [2]Indiana University, [3]University of Florida.

165.04 **WIYN Open Cluster Study: Precision UBVRI CCD Photometry of the Open Cluster NGC 2506**
Joseph Hughto[1], N. Lauffenburger[1], A. Steinhauer[1], C. P. Deliyannis[2], K. Croxall[2], A. Sarajedini[3]
[1]SUNY Geneseo, [2]Indiana University, [3]University of Florida.

165.05 **The Red Buttes Observatory's Wide-Field Telescope's ZAMS Project**
Ronald W. Canterna[1], M. MacDonald[1], D. Allen[1], E. Hausel[1], M. Pierce[1], C. T. Rodgers[1]
[1]Univ. of Wyoming.

165.06 **The Dolidze 27 and Alessi 10 Open Star Clusters**
Rosalie C. McGurk[1], M. W. Castelaz[2]
[1]University of Washington, [2]Pisgah Astronomical Research Institute.

165.07 **WIYN Open Cluster Study: Binary Orbits and Tidal Circularization in NGC 6819**
Meagan B. Morscher[1], R. D. Mathieu[2], S. Kaeppler[2], K. T. Hole[2], S. Meibom[3]
[1]U. Wisconsin-Milwaukee, [2]U. Wisconsin-Madison, [3]CfA.

165.08 **WIYN Open Cluster Study: Signature(s) of Main Sequence Lithium Depletion Mechanism(s) from Subgiants of the Old (6-7Gyr) Open Cluster NGC 188**
Walter Trentadue[1], K. V. Croxall[1], A. Gill[2], C. P. Deliyannis[1], J. R. King[3], L. J. Hainline[4]
[1]Indiana University, [2]Indiana University and Brown University, [3]Clemson University, [4]Caltech.

165.09 **WIYN Open Cluster Study: Lithium Abundances in Dwarf Stars of the Old (6-7Gyr) Open Cluster NGC 188**
Amandeep Gill[1], K. V. Croxall[2], W. Trentadue[2], C. P. Deliyannis[2], J. R. King[3]
[1]Indiana University and Brown University, [2]Indiana University, [3]Clemson University.

165.10 **WIYN Open Cluster Study: Lithium in the Young and Metal-Poor Cluster M36**
Kevin V. Croxall[1], J. Cummings[1], C. P. Deliyannis[1], A. Steinhauer[2]
[1]Indiana Univ., [2]SUNY - Geneseo.

165.11 **The Composition of the Old, Metal-Rich Open Cluster, NGC 6791**
Elizabeth Jensen[1], A. M. Boesgaard[2], C. P. Deliyannis[3]
[1]Smith College, [2]University of Hawaii, [3]Indiana University.

165.12 **The Search for Low Amplitude Pulsational Variable Stars in Six Open Clusters**
Eric G. Hintz[1], M. B. Rose[2]
[1]Brigham Young Univ., [2]Utah State University.

165.13 **Variable Star Search in the Open Cluster NGC 6659**
William Gray[1], E. G. Hintz[2]
[1]Utah Valley State College, [2]Brigham Young Univ..

165.14 **A Search for Variable Stars in the Field of NGC 7092 (M39)**
Sarah Schuff[1], E. G. Hintz[1], M. D. Joner[1]
[1]Brigham Young University.

Session 166 Tests of Gravity & Alternative Theories of Gravity

AAS Poster, Tuesday, 9:20am-6:30pm, Exhibit Hall 4

166.01 **The Implication of MOND for Dark Haloes**
Yi-Cheng Huang[1], A. Kosowsky[1]
[1]Univ. Of Pittsburgh.

166.02 **Solar System tests DO rule out 1/R gravity**
Tristan L. Smith[1], A. L. Erickcek[1], M. Kamionkowski[1]
[1]Caltech.

166.03 **Testing Alternative Theories of Gravity with Long Term Pulsar Timing**
K.J. Lee[1], F. Jenet[1]
[1]Center for Gravitational Wave Astronomy / U. Texas at Brownsville.

166.04 **21st Century Gravity**
Tom Van Flandern[1]

[1]*Meta Research.*

Session 167 Stars, Gas and their Motions in Dwarfs and Irregulars

AAS Poster, Tuesday, 9:20am-6:30pm, Exhibit Hall 4

167.01 **Magnetic Fields in Irregular Galaxies: NGC 4214**
Amanda A. Kepley[1], E. M. Wilcots[1], T. Robishaw[2], C. Heiles[2], E. Zweibel[1]
[1]Univ. of Wisconsin-Madison, [2]University of California-Berkeley.

167.02 **Evidence for Tidal Heating in the Dynamics of LMC Carbon Stars and Red Supergiants**
Knut A. Olsen[1], P. Massey[2]
[1]NOAO, [2]Lowell Observatory.

167.03 **Kinematics of the dE Galaxy IC 225**
Gwen C. Rudie[1], B. W. Miller[2]
[1]Dartmouth College, [2]Gemini Observatory, Chile.

167.04 **An Examination of Kinematic Properties of Dwarf Irregular Galaxies**
Elizabeth A. Adams[1], L. van Zee[1]
[1]Indiana University.

167.05 **Outer Disks of Dwarf Irregular Galaxies: Stars and Gas**
Deidre A. Hunter[1], B. G. Elmegreen[2], E. Anderson[3]
[1]Lowell Obs., [2]IBM T. J. Watson Research Ctr., [3]Northern Arizona U..

167.06 **An Interaction Induced Transformation of I Zw 18? New Results from A-Array VLA Observations**
Liese van Zee[1], J. M. Cannon[2], E. D. Skillman[3]
[1]Indiana Univ., [2]Wesleyan Univ., [3]Univ. of Minnesota.

167.07 **Investigation of Star Formation in Dwarf Iffedular Galaxies Using Ultra-violet Photometry**
Bonnie C. Ludka[1], D. Hunter[2]
[1]James Madison University, [2]Lowell Observatory.

167.08 **Oxygen Abundances in Starbursting Transition Dwarfs**
Kate Dellenbusch[1], J. S. Gallagher[1], P. M. Knezek[2]
[1]University of Wisconsin, [2]WIYN Consortium, Inc..

167.09 **A Spitzer/IRAC Census of the Asymptotic Giant Branch Populations in Local Group Dwarfs**
Dale C. Jackson[1], E. D. Skillman[1], R. D. Gehrz[1], E. Polomski[1], C. E. Woodward[1]
[1]Univ. of Minnesota.

167.10 **Diffraction Limited Imaging of the Stellar Population of IC 10 with Laser Guide Star Adaptive Optics and the Hubble Space Telescope**
Christopher Sheehy[1], W. D. Vacca[1], J. R. Graham[1]
[1]University of California, Berkeley.

167.11 **High Resolution Mapping of Expanding Shells in IC10**
Joyce E. Coppock[1], E. M. Wilcots[2]
[1]Duke University, [2]University of Wisconsin-Madison.

Session 168 Stellar Populations II

AAS Poster, Tuesday, 9:20am-6:30pm, Exhibit Hall 4

168.01 **Hafnium and the R-Process in the Sun and Metal-Poor Stars**
Christopher Sneden[1], J. E. Lawler[2], E. A. Den Hartog[2], Z. E. Labby[2], J. J. Cowan[3], I. Ivans[4]
[1]U. Texas, [2]U. Wisconsin, [3]U. Oklahoma, [4]Carnegie Obs. & Princeton U..

168.02 **Isotopic Abundances of Eu, Ba, and Sm in Metal-Poor Stars**
Ian U. Roederer[1], C. Sneden[1], J. E. Lawler[2], J. S. Sobeck[1], C. A. Pilachowski[3], J. J. Cowan[4]
[1]U. Texas at Austin, [2]U. Wisconsin, [3]Indiana U., [4]U. Oklahoma.

168.03 **Revisiting Zirconium: New Abundance Determinations with Improved Oscillator Strengths**
Debra L. Burris[1], M. Jones[1], R. Nichols[1]
[1]Univ. of Central Arkansas.

168.04 **Lanthanum and Europium Abundances in a Large Sample of Galactic Disk Dwarf Stars**
Jennifer A. Simmerer[1], C. B. Stringer[1], B. W. Carney[1]
[1]Univ. North Carolina, Chapel Hill.

168.05 **Lithium Production in Asymptotic Giant Branch Stars**
Julie Krugler[1], M. Shetrone[2], C. Charbonnel[3]
[1]Michigan State U., [2]McDonald Obs., [3]Obs. Midi-Pyrenees, France.

168.06 **Beryllium in Extremely Metal Deficient Stars**
Jeffrey Rich[1], A. Boesgaard[1]
[1]University of Hawaii Institute for Astronomy.

168.07 **Metallicity in the Solar Neighborhood Out to 60pc**
Roggie H. Boone, III[1], J. R. King[1], D. R. Soderblom[2]
[1]Clemson Univ., [2]Space Telescope Science Institute.

168.08 **The Most Metal-Poor Candidates in SDSS-I DR-5**
Timothy C. Beers[1], Y. Lee[1], T. Sivarani[1], B. Marsteller[1], J. Krugler[1], R. Wilhelm[2], C. Allende Prieto[3], J. Norris[4], J. Johnson[5], I. Ivans[6], B. Yanny[7], C. Rockosi[8], H. Morrison[9], H. J. Newberg[10], J. Knapp[11]
[1]Michigan State Univ./JINA, [2]Texas Tech, [3]U. Texas, [4]Australian National Univ., Australia, [5]Ohio State U., [6]OCIW/Princeton U., [7]FermiLab, [8]Lick Obs., UCSC, [9]Case Western, [10]RPI, [11]Princeton U..

168.09 **A Search for Evidence of an Abundance Gradient in the Galactic Halo Based on Stars from SDSS-I DR-5**
Daniela Carollo[1], T. C. Beers[2], Y. S. Lee[2], T. Sivarani[2], C. Allende Prieto[3], J. Norris[4], J. A. Munn[5], M. Chiba[6]
[1]INAF-OATO & JINA (MSU), Italy, [2]Michigan State U./JINA, [3]U. Texas, [4]Australian National U., Australia, [5]USNO, [6]Tohoku Univ., Japan.

168.10 **High-Resolution Calibration of the SDSS/SEGUE Spectroscopic Analysis Pipeline**
T. Sivarani[1], T. C. Beers[2], Y. Lee[2], J. Krugler[2], R. Wilhelm[3], C. Allende Prieto[4], C. Sneden[4], D. L. Lambert[4], M. Shetrone[4], J. Johnson[5], I. Ivans[6], C. Rockosi[7], D. Lai[7], H. Morrison[8], W. Aoki[9]
[1]Mich. State Univ. & Joint Inst. for Nuclear Astrophysics (JINA), [2]MSU & JINA, [3]Texas Tech, [4]U. Texas, [5]Ohio State Univ., [6]Carnegie Obs. & Princeton U., [7]UCSC, [8]Case Western, [9]NAOJ, Japan.

168.11 **A New Calibration of [Fe/H] and [C/Fe] Estimates for Medium-Resolution Spectra of Carbon-Enhanced Metal-Poor Stars**
Catherine R. Kennedy[1], T. C. Beers[1], B. Marsteller[1], T. Sivarani[1], S. Rossi[2], B. Plez[3], T. Masseron[4], S. Lucatello[5]
[1]Michigan State Univ. / JINA, [2]IAG, Univ. of Sao Paolo, Brazil, [3]Univ. of Montpellier, France, [4]Ohio State Univ., [5]INAF-OAPD, Italy.

168.12 **Evidence that R Coronae Borealis Stars Evolve from a White Dwarf Merger rather than a Final Helium Shell Flash**
Geoffrey C. Clayton[1], T. R. Geballe[2], F. Herwig[3], C. Fryer[4], E. Tenenbaum[5], M. Asplund[6]
[1]Louisiana State Univ., [2]Gemini Observatory, [3]Keele University, United Kingdom, [4]Los Alamos National Laboratory, [5]University of Arizona, [6]Mount Stromlo Obs., Australia.

168.13 **Dust at Low Metallicity: Spitzer Observations of AGB Stars in NGC 6822**
Schuyler D. Van Dyk[1], F. Kemper[2], A. Speck[3], R. Szczerba[4], M. Meixner[5], E. Peeters[6], T. Ueta[7]
[1]SSC/Caltech, [2]U. Manchester, United Kingdom, [3]U. Missouri, [4]NCAC, Poland, [5]STScI, [6]SETI Institute, [7]NASA Ames/SOFIA.

168.14 **Infrared Identification of Herbig AeBe stars in the Small Magellanic Cloud**
Sweta Shah[1], L. D. Keller[1], N. Chitrakar[1]
[1]Ithaca College.

168.15 **The SDSS-II/SEGUE Spectroscopic Parameter Pipeline**
Young S. Lee[1], T. C. Beers[1], S. Thirupathi[1], R. Wilhelm[2], C. Allende Prieto[3], J. E. Norris[4], P. R. Fiorentin[5], C. A. Bailer-Jones[5], SEGUE Calibration Team
[1]Michigan State Univ., [2]Texas Tech Univ., [3]Univ. of Texas, [4]Austrailian National Univ., Australia, [5]Max Planck Institute for Astronomy, Germany.

Session 169 Extrasolar Planets VII: Surveys

AAS Poster, Tuesday, 9:20am-6:30pm, Exhibit Hall 4

169.01 **Observation of Transiting Extrasolar Planets and Gamma-ray Bursts with Robotic Telescopes**
Jay Fisher[1], T. R. Young[1]
[1]Univ. Of North Dakota.

169.02 **An Extrasolar Planet Transit Search in NGC 188**
Laura Portscheller[1], B. Kelly[1], K. Kinemuchi[1], C. Kobulnicky[1]
[1]University of Wyoming.

169.03 **Planet Detection and Simulations from Multi-Object Spectrograph Surveys**
Stephen R. Kane[1], D. P. Schneider[2], J. Ge[1]
[1]University of Florida, [2]Pennsylvania State University.

169.04 **Exoplanet Tracker Observations with a Monolithic Fixed-Delay Interferometer: First Steps Towards Long-term Stability**
Scott W. Fleming[1], S. Mahadevan[1], X. Wan[1], C. Dewitt[1], A. Hariharan[1], D. McDavitt[1], J. van Eyken[1], J. Ge[1]
[1]University of Florida.

169.05 **Monitoring the Long-term Radial Velocity Stability of the New Generation Multi-object Keck Exoplanet Tracker at the Sloan Telescope**
Kaike Pan[1], S. Snedden[1], J. Ge[2], J. van Eyken[2], S. W. Fleming[2], S. Kane[2], C. Warner[2]
[1]APO-NMSU, [2]UF.

169.06 **Latest Results from the Multi-Object Keck Exoplanet Tracker**
Julian C. Van Eyken[1], J. Ge[1], X. Wan[1], B. Zhao[1], A. Hariharan[1], S. Mahadevan[1], C. DeWitt[1], P. Guo[1], R. Cohen[1], S. W. Fleming[1], J. Crepp[1], C. Warner[1], S. Kane[1], F. Leger[2], K. Pan[3]
[1]Univ. of Florida, [2]Fermilab, [3]Apache Point Observatory.

169.07 **Measuring Precise Stellar Barycentric Radial Velocities with a Dispersed Fixed-Delay Interferometer: Implications for a Multi-Object Survey**
Suvrath Mahadevan[1], J. van Eyken[1], J. Ge[1], C. Dewitt[1], S. Fleming[1], R. Cohen[1], J. Crepp[1], A. vanden Heuvel[1]
[1]University of Florida.

169.08 **Eclipse Mapping of Hot Jupiters**
Emily Rauscher[1], K. Menou[1], S. Seager[2], D. Deming[3]
[1]Columbia University, [2]Carnegie Institution of Washington, [3]NASA Goddard Space Flight Center.

169.09 **Simulations of Exoplanet Spectroscopy with JWST**
Matthew Johnson[1], J. Valenti[2]
[1]Wesleyan Univ., [2]STScI.

169.10 **New Worlds Observer: Optical Simulation**
Tiffany M. Glassman[1], A. Lo[1], W. Cash[2]
[1]Northrop Grumman Space Technology, [2]University of Colorado.

169.11 **New Worlds Observer: Orbit and Sky Coverage**
Amy Lo[1], R. Malmstrom[1], T. Guilmette[1]
[1]Northrop Grumman Corporation.

169.12 **On the Feasibility of Detecting UV Auroral Emission from Extrasolar Giant Planets (EGPs)**
Michele Cash[1], E. Agol[1]
[1]University of Washington.

169.13 **Spectral Bandwidth: A Key TPF Challenge for Achieving Adequate SNR**
Martin C. Noecker[1], S. Kilston[1]
[1]Ball Aerospace & Tech. Corp..

169.14 **Characterization of Exoplanet Orbits Using a Monte Carlo Bayesian Analysis**
Jonathan Arenberg[1], T. Schuman[1], A. Lo[1]
[1]Northrop Grumman.

169.15 **The PIAA Coronagraph Prototype: First Laboratory Results.**
Eugene Pluzhnik[1], O. Guyon[1], S. Colley[1], B. Gallet[1], S. Ridgway[2], R. Woodruff[3], S. Tanaka[1], M. Warren[4]
[1]Subaru Telescope, NAOJ, [2]NOAO, [3]Lockheed Martin Space Corporation, [4]Axsys Technologies, Inc.

Session 170 The Undergraduate Astronomy Course for Non-Majors

AAS Poster, Tuesday, 9:20am-6:30pm, Exhibit Hall 4

170.01 **How Are Students' Interests in Astronomy Affected by Doing Projects in ASTR 101 at a Two Year College?**
Noella L. D'Cruz[1]
[1]Joliet Junior College.

170.02 **For a Better Grade in Astronomy, Write About It**
Ana M. Larson[1], N. Kool[1], C. Beyer[1]
[1]Univ. Of Washington.

170.03 **Is the Promise of Space Worth the Price? College Students Weigh In**
Jo Eliza Pitesky[1], J. Turner[2]
[1]JPL, [2]UCLA Department of Physics and Astronomy.

170.04 **Use of Clickers in Introductory Astronomy Courses at California State University Sacramento**
Christopher L. Taylor[1]
[1]California State University, Sacramento.

170.05 **The Story of Astronomy: An Activities-Based, Historical Approach to Classroom Instruction**
Alan W. Hirshfeld[1]
[1]Univ. of Mass., Dartmouth.

170.06 **A Spectrum is Worth a Thousand Pictures**
Richard F. Gelderman[1]
[1]Western Kentucky Univ..

170.07 **The Astronomy Workshop: Computer Assisted Learning Tools with Instructor Support Materials and Student Activities**
Grace Deming[1], D. Hamilton[1], M. Hayes-Gehrke[1]
[1]Univ. of Maryland.

170.08 **Calibrated Peer Review Essays Increase Confidence in Self-assessment**
Lauren Likkel[1]
[1]Univ. of Wisconsin -- Eau Claire.

170.09 **Astro 001 through an Interactive, Multimedia Science Fiction Story**
Christopher Palma[1], J. C. Charlton[1], N. Tr'Ehnl[1], K. A. Herrmann[1], A. Narayanan[1]
[1]Penn State Univ..

170.10 **Course Components for Large Astronomy Lectures**
Michael Stage[1], S. Schneider[1]
[1]Univ. of Massachusetts.

170.11 **CAPER Team Innovations in Teaching and Learning in ASTRO 101**
Timothy F. Slater[1], E. E. Prather[1], J. M. Bailey[2], E. Bardar[3], G. Brissenden[1], E. F. Dokter[1], D. Hudgins[4], J. Keller[5]
[1]U. Arizona, [2]UNLV, [3]Boston U., [4]Rockhurst U., [5]Cal Poly.

Session 171 UDF and DEEP2

AAS Poster, Tuesday, 9:20am-6:30pm, Exhibit Hall 4

171.01 **Lyman-alpha Emitters in the HUDF: A Population of Low Mass, Star Forming Galaxies**
Norbert Pirzkal[1], S. Malhotra[2], J. E. Rhoads[2], C. Xu[1]
[1]STScI, [2]Arizona State University.

171.02 **Surface Brightness Properties of z~4-6 Galaxies in the HUDF**
Nimish P. Hathi[1], R. A. Jansen[1], S. H. Cohen[1], R. A. Windhorst[1], S. Malhotra[1], J. Rhoads[1]
[1]Arizona State Univ..

171.03 **The Unresolved Stellar Populations of Galaxies in the HUDF**
Russell E. Ryan, Jr.[1], R. A. Jansen[1], S. H. Cohen[1], R. A. Windhorst[1]
[1]Arizona State Univ..

171.04 **Emission Line Galaxies in PEARS: A 2-D Detection Method**
Amber Straughn[1], G. Meurer[2], J. Gardner[3], S. Malhotra[1], N. Pirzkal[4], N. Hathi[1], S. Cohen[1], R. A. Windhorst[1], J. Rhoads[1], C. Xu[4], C. Gronwall[5], PEARS Team
[1]Arizona State University, [2]Johns Hopkins University, [3]Goddard Space Flight Center, [4]Space Telescope Science Institute, [5]Pennsylvania State University.

171.05 **The Luminosity Function of Lyα Emitters at z=3.1**
Robin Ciardullo[1], C. Gronwall[1], T. Hickey[1], E. Gawiser[2], J. J. Feldmeier[3], MUSYC Collaboration
[1]Penn State Univ., [2]Yale Univ., [3]Youngstown State Univ..

171.06 **Evolutionary Behaviour in the HOD from the VVDS Data**
Ummi Abbas[1], O. Le Fevre[1], S. deLaTorre[1], C. Marinoni[1], VVDS collaboration
[1]Laboratoire D'Astrophysique Marseille, France.

171.07 **A GALEX Imaging Search for Lyman Continuum Emission at z~1 in the EGS**
Peter G. Friedman[1], T. A. Small[1], J. M. Deharveng[2], B. Milliard[2], GALEX Science Team
[1]Caltech, [2]Laboratoire d'Astrophysique de Marseille, France.

171.08 **Measuring the Star Formation Rate of the Universe at z~1 from H-alpha with Multi-Object Near-Infrared Spectroscopy**
Andrew J. Bunker[1], M. Doherty[2], R. Sharp[3], I. Parry[4], G. Dalton[5], I. Lewis[6]
[1]Univ. of Exeter, UK, [2]European Southern Observatory, Germany, [3]Anglo-Australian Observatory, Australia, [4]Institute of Astronomy, Univ. of Cambridge, United Kingdom, [5]Rutherford-Appleton Laboratory & Astrophysics, Univ. of Oxford, UK, [6]Astrophysics, Univ. of Oxford, UK.

171.09 **Constraining the Interaction History of Galaxies Over 4 Gyr**
Kyle Penner[1], S. Jogee[1], GEMS collaboration
[1]University of Texas at Austin.

171.10 **Conditional Density Analysis of The Hubble Deep Field**
Brittany L. Dames[1], P. H. Coleman[1]
[1]University of Hawai`i, Institute for Astronomy.

Session 172 The Milky Way

AAS Poster, Tuesday, 9:20am-6:30pm, Exhibit Hall 4

172.01 **A Wide Area Map of The Galactic Center at 1.1 mm**
Elisabeth A. Mills[1], J. E. Aguirre[2], J. Bally[3], J. Glenn[3], M. L. Enoch[4], N. J. Evans, II[5], J. Walawender[6]
[1]Indiana Univ., [2]NRAO Jansky Fellow, CASA-University of Colorado, [3]CASA-University of Colorado, [4]Caltech, [5]University of Texas, [6]IfA-University of Hawaii.

172.02 **Modeling the Galactic Center Magnetic Field Using Synchrotron Flux Density Maps**
Benjamin J. Cowin[1], M. Morris[2]
[1]University of Washington, [2]UC, Los Angeles.

172.03 **New Hot Stars in the Galactic Center**
Jon Mauerhan[1], M. Muno[2], M. Morris[1]
[1]UCLA, [2]Space Radiation Lab, Caltech.

172.04 **Is the Vertical Velocity Distruibution of the Milky Way's Thick Disk Isothermal?**
Constance M. Rockosi[1]
[1]UCO/Lick Observatory.

172.05 **Studying the Intergalactic Medium via OVI absorption in the spectra of SDSS Quasars**
Stephan Frank[1], S. Mathur[1]
[1]The Ohio State University, Department of Astronomy.

172.06 **A High Precision Radial Velocity Survey of the Galactic Bulge**
Christian D. Howard[1], D. B. Reitzel[1], R. M. Rich[1]
[1]UC, Los Angeles.

172.07 **43 GHz SiO Masers for Phase Calibration with VERA in the Galactic Center**
Robert M. Edmonds[1], L. Sjouwerman[2], Y. Pihlstrom[1]
[1]University of New Mexico, [2]NRAO.

172.08 **Sagittarius Debris, the Virgo Stellar Stream, and the new stream near the Galactic Plane**
Heidi J. Newberg[1], B. Yanny[2], N. Cole[1], T. Beers[3]
[1]Rensselaer Polytechnic Inst., [2]Fermilab, [3]Michigan State University.

172.10 **Contour Map for the Gravitational Potential of the Milky Way**
David F. Bartlett[1]
[1]Univ. of Colorado.

172.11 **Abundacne Patterns in High-Velocity RAVE Stars**
Jon P. Fulbright[1], G. Ruchti[1], R. Wyse[1], RAVE Collaboration
[1]Johns Hopkins Univ..

172.12 **Gravitational Lensing and the Distance to the Galactic Center**
Erin L. Gutbrod[1], S. Levine[2]
[1]University of Notre Dame, [2]US Naval Observatory.

172.13 **Smith's Cloud (HVC) in 21 cm HI emission**
A. J. Heroux[1]
[1]University of Wisconsin - Whitewater.

172.14 **Exploring the Local Milky Way: M Dwarfs as Tracers of Galactic Populations**
John J. Bochanski[1], S. L. Hawley[1], J. A. Munn[2], K. R. Covey[3], A. A. West[4], L. M. Walkowicz[1]
[1]Univ. of Washington, [2]US Naval Observatory, [3]CfA, [4]Univ. of California.

172.15 **Galactic Structure Across the Sky with AAOmega**
Rosemary F. Wyse[1], G. Gilmore[2], J. E. Norris[3]
[1]Johns Hopkins Univ., [2]Institute of Astronomy, Univ. of Cambridge, United Kingdom, [3]RSAA, ANU, Australia.

172.16 **A High-resolution Polarimetric Survey of the Central 200 pc of the Galaxy**
Thomas M. Freismuth[1], C. C. Lang[1], T. J. Lazio[2], K. Golap[3]
[1]Univ. of Iowa, [2]NRL, [3]NRAO.

172.17 **The Line of Sight Velocity Distribution of the Galactic Bulge**
David B. Reitzel[1], C. Howard[1], R. M. Rich[1], H. Zhao[2], Y. Wang[3]
[1]UCLA, [2]University of St. Andrews, United Kingdom, [3]National Astronomical Observatory, China.

172.18 **Deep Astrometry of the Galactic Bulge with the HST ACS-WFC**
Will Clarkson[1], K. Sahu[1], E. Smith[1], S. Casertano[1]
[1]STSCI.

172.19 **An Arecibo HI 21-cm Absorption Survey of X-ray Rich Clusters**
Hector Hernandez[1], T. Ghosh[1], C. J. Salter[1], E. Momjian[1]
[1]Arecibo Observatory.

172.20 **A New Distance Calibration for Blue Stars in the Direction of Galactic High-Velocity Clouds**
Ronald J. Wilhelm[1], J. Barentine[2], T. C. Beers[3], B. P. Wakker[4], D. G. York[5]
[1]Texas Tech Univ., [2]University of Texas, [3]Michigan State University, [4]University of Wisconsin, [5]University of Chicago.

172.21 **Elemental Abundances of Metal-Poor Thick Disk Stars from the RAVE Survey**
Gregory R. Ruchti[1], J. Fulbright[1], R. F. Wyse[1], RAVE Collaboration
[1]Johns Hopkins Univ..

172.22 **The Identification of the Microlens in Event MACHO-LMC-20**
Michael W. Werner[1], N. Kallivayalil[2], B. M. Patten[2], M. Marengo[2], C. Alcock[2], G. Fazio[2]
[1]JPL/Caltech, [2]CfA.

172.23 **GPIPS: Season One**
Dan P. Clemens[1], A. Pinnick[1], M. Pavel[1], B. Taylor[1], K. Jameson[1]
[1]Institute for Astrophysical Research, Boston Univ..

172.24 **An HI Absorption Survey of the Central 250 pc of the Galactic Center: Distance Constraints & Understanding the Complex ISM**
Kelsey I. Clubb[1], C. C. Lang[1], W. M. Goss[2]
[1]University of Iowa, [2]National Radio Astronomy Observatory.

172.25 **Spectroscopic Observations of the Galactic Center with OSIRIS**
Tuan Do[1], A. Ghez[1], J. Lu[1], K. Matthews[2], M. Morris[1], A. Stolte[1], E. Becklin[1], J. Larkin[1], S. Wright[1]
[1]UC, Los Angeles, [2]Caltech.

172.26 **A Comparison of Spitzer, WIYN 0.9m, and Chandra Point Source Populations in the Inner Galaxy**
Luis C. Vargas[1], R. A. Benjamin[2]
[1]University of Kansas, [2]University of Wisconsin-Whitewater.

172.28 **Probing the Interstellar Medium using the Vela Pulsar**
Shauna Sallmen[1], D. C. Backer[2], L. Marschke[3]
[1]Univ. of Wisconsin, La Crosse, [2]Univ. of California at Berkeley, [3]Univ. of Northern Colorado.

172.29 **VERITAS Observations of LSI +61 303**
Andrew W. Smith[1]
[1]Harvard-Smithsonian CfA.

Session 173 Instrumentation and Community Analysis

AAS Poster, Tuesday, 9:20am-4:00pm, Exhibit Hall 4

173.01 **Evaluation of a Novel Design for an Electrostatic Quadrupole Triplet Ion Beam Lens**
L. R. Burns[1], J. D. Bouas[1], S. Matteson[1], D. L. Weathers[1]
[1]Ion Beam Modification and Analysis Laboratory (IBMAL) — University of North Texas.

173.02 **Finding Astronomical Communities Through Co-readership Analysis**
Edwin A. Henneken[1], M. J. Kurtz[1], G. Eichhorn[1], A. Accomazzi[1], C. Grant[1], D. Thompson[1], E. Bohlen[1], S. S. Murray[1]
[1]Smithsonian Astrophysical Obs..

173.03 **Single Baseline Phases in Optical Interferometry**
Anders M. Jorgensen[1], D. Mozurkewich[2], H. Schmitt[3], C. Tycner[4], R. Hindsley[3], T. A. Pauls[3], J. T. Armstrong[3], D. Peterson[5]
[1]NMT and LANL, [2]Seabrook Engineering, [3]Naval Research Laboratory, [4]US Naval Observatory, [5]Stony Brook University.

Job Center
Attendee Services, Tuesday, 9:20am-5:00pm, Exhibit Hall 4

Gadgets and Gizmos
Attendee Services, Tuesday, 9:20am-5:00pm, South Lobby
See Sunday's listing for details.

Experience Digital Physics Curriculum II
Commercial Workshop, Tuesday, 9:30-11:00am, 302
View and experiment with a new digital physics textbook and virtual physics labs. Learn how a fully integrated digital physics curriculum can aid your instruction. Application of multi-learning styles and inquiry-based learning in a self-paced package provide students with the opportunity to experiment and explore.

Chair, Mark Bretl[1]
[1]Kinetic Books.

And You Thought It Was About Homework (The way you imagined teaching could be)
Commercial Workshop, Tuesday, 9:30-11:00am, 305
Find out how to deliver with WebAssign. WebAssign, the premier online homework, quizzing, and testing system, continues to have all of the features you want. We listen!
Access Questions from all major physics and astronomy textbooks, or write your own. Check out our latest offerings with assignable simulations, assignable examples with basic and specific feedback. Give partial credit with conditional weighting. Assign practice questions or pick questions from a pool. Give group assignments. Streamline your work flow with WebAssign. It is easy to use, reliable, and helps you stay connected, your way. Quickly access student responses, communicate with class forums, Ask Your Teacher, and announcements, give students access to all of their course grades with complete class statistics, propagate common assignments to many sections, give secure quizzes and tests. Find out how to integrate WebAssign with Blackboard and WebCT.
Over 190, 000 students are using WebAssign. Find out why. Visit us at http://webassign.net.

Chair, John S. Risley[1]
[1]WebAssign.

Session 174 Impact of Intelligent Design and Responses to It

AAS Special, Tuesday, 10:00-11:30am, 204

174.01 **Overview of the Nature of Intelligent Design as a Pseudoscience**
Matthew Bobrowsky[1]
[1]STScI.

174.02 **The AAS Resolution on Teaching Evolution**
George D. Nelson[1]
[1]Western Washington University.

174.03
Francis Slakey[1]
[1]American Physical Society.

174.04 **Science and Faith: Discussing Astronomy Research with Religious Audiences**
Anton M. Koekemoer[1]
[1]STScI.

Session 175 Observations & Models of Extragalactic LMXBs

AAS Special, Tuesday, 10:00-11:30am, 201

Chair, Stephen E. Zepf[1]
[1]Michigan State Univ..

175.01 **Deep Chandra Studies of LMXB Populations in Elliptical Galaxies**
Giuseppina Fabbiano[1]
[1]Harvard-Smithsonian Center for Astrophysics.

175.02 **The Low Mass X-Ray Binary - Globular Cluster Connection and its Implications**
Arunav Kundu[1]
[1]Michigan State University.

175.03 **Theoretical Models of LMXBs in Elliptical Galaxies**
Vicky Kalogera[1]
[1]Northwestern University.

Session 176 GLAST Science and Opportunities at All Wavelengths

HEAD Special, Tuesday, 10:00-11:30am, 611-12

176.01 **GLAST Science Across Wavelengths**
R. D. Blandford[1]
[1]SLAC.

176.02 **Enhancing GLAST Science Through Complementary Radio Observations**
James S. Ulvestad[1]
[1]NRAO.

176.03 **Galaxy Formation, Cold Dark Matter Substructure, and GLAST**
Piero Madau[1]
[1]UC, Santa Cruz.

176.04 **GLAST Mission Overview and Science Opportunities**
Julie E. McEnery[1]
[1]NASA's GSFC.

Session 177 Andromeda All the Time

AAS Oral, Tuesday, 10:00-11:30am, 6B

177.01 **The Surface Brightness Profile of the Bulge and Halo of the Andromeda Spiral Galaxy (M31) from R = 10 to 165 kiloparsecs**
Puragra Guhathakurta[1], K. Gilbert[1], J. Kalirai[1], J. Ostheimer[2], S. Majewski[2], R. Patterson[2], M. Geha[3], M. Cooper[4], D. Reitzel[5], R. Rich[5]
[1]UC, Santa Cruz, [2]U Virginia, [3]DAO/HIA, NRC, Canada, [4]UC, Berkeley, [5]UCLA.

177.02 **New Substructure in the Spheroid of the Andromeda Spiral Galaxy**
Karoline Gilbert[1], J. Isler[2], J. Kalirai[1], M. Fardal[3], P. Guhathakurta[1], R. M. Rich[4], D. Reitzel[4], S. Majewski[5], M. Cooper[6], M. Geha[7], J. Ostheimer[5], R. Patterson[5]
[1]UCO/Lick Obs, [2]Vanderbilt/UCSC, [3]UMass, [4]UCLA, [5]U Virginia, [6]UC, Berkeley, [7]DAO/HIA/NRC, Canada.

177.03 **Unraveling NGC 205's Interaction with Andromeda (M31)**
Kirsten Howley[1], M. Geha[2], P. Guhathakurta[1], R. Montgomery[1], G. Laughlin[1]
[1]UCO/Lick Observatory, University of California Santa Cruz, [2]The Observatories of the Carnegie Institution of Washington.

177.04 **Reconstructing a Recent Collision in Andromeda**
Mark Fardal[1], P. Guhathakurta[2], A. Babul[3], A. McConnachie[3], C. Dodge[4]
[1]UMass, [2]UCO/Lick, [3]UVic, Canada, [4]Smith.

177.05 **Constraints on the Chemical Evolution of the M31 Spheroid**
Henry C. Ferguson[1], O. Certik[1], T. Brown[1], E. Smith[1], M. Rich[2], R. Guhathakurta[3], J. Kalirai[3], A. Renzini[4], A. Sweigart[5]
[1]STScI, [2]UCLA, [3]UC Santa Cruz, [4]Univ. Padova, Italy, [5]GSFC.

177.07 **Characterizing the Metallicity Distribution of the Extended Bulge of the Andromeda Spiral Galaxy (M31).**
Jedidah C. Isler[1], J. Kalirai[2], K. Gilbert[2], P. Guhathakurta[2], M. Geha[3], S. Majewski[4], J. Ostheimer[4], R. Patterson[4], D. Reitzel[5], R. Rich[5]
[1]Fisk U, Vanderbilt U, UC, Santa Cruz (Visiting Student), [2]UCO/Lick Obs., [3]DAO/HIA/NRC, Canada, [4]U Virginia, [5]UCLA.

177.08 **Keck/Deimos Spectroscopy of Distant M31 fields with Deep HST Imaging**
Robert M. Rich[1], T. M. Brown[2], D. B. Reitzel[1], H. Ferguson[2], A. Koch[1], E. Smith[2], P. Guhathakurta[3], J. Kalirai[4], A. Renzini[5], R. Kimble[6], A. Sweigart[6], K. Gilbert[4], M. Chiba[7], M. Iye[7], Y. Komiyama[7], M. Tanaka[7]
[1]UCLA, [2]STScI, [3]Lick Observatory/UCSC, [4]UCSC, [5]INAF-Padova, Italy, [6]GSFC, [7]NAOJ, Japan.

Session 178 Dwarf Galaxies: Don't Let Their Size Fool You

AAS Oral, Tuesday, 10:00-11:30am, 3B

178.01 **Environment and the Gas Content of Dwarf Galaxies**
Marla C. Geha[1], M. Blanton[2], A. A. West[3]
[1]Herzberg Institute of Astrophysics, Canada, [2]New York University, [3]UC Berkeley.

178.02 **Spitzer Mid-Infrared Observations of Blue Compact Dwarf Galaxies**
Yanling Wu[1], V. Charmandaris[2], L. Hao[1], J. Bernard-Salas[1], L. Hunt[3], J. R. Houck[1]
[1]Cornell Univ., [2]University of Crete, Greece, [3]INAF-IRA, Italy.

178.03D **Mass and Substructure in Dwarf Spheroidal Galaxies**
Matthew G. Walker[1]
[1]Univ. of Michigan.

178.04 **Compact Elliptical Galaxies and Ultracompact Dwarfs in the Sloan Digital Sky Survey**
Ronald O. Marzke[1], P. Pellegrini[2], L. da Costa[2], M. Maia[2], D. Burstein[3]
[1]San Francisco State University, [2]ON/CNPq, Brazil, [3]Arizona State University.

178.05 **A New Population of Ultra-faint Local Group Galaxies**
Daniel B. Zucker[1], V. Belokurov[1], N. W. Evans[1], G. Gilmore[1], M. I. Wilkinson[1]
[1]University Of Cambridge, United Kingdom.

178.06 **The Dwarf Galaxy Leo A: A Survivor From the Epoch of Reionization**
Andrew A. Cole[1], E. D. Skillman[1], A. E. Dolphin[2], J. S. Gallagher, III[3], E. Tolstoy[4], C. Gallart[5], D. Weisz[1], S. L. Hidalgo[1], A. Saha[6], P. B. Stetson[7], A. Aparicio[5]
[1]U. Minnesota, [2]U. Arizona, [3]U. Wisconsin, [4]Kapteyn Inst., The Netherlands, [5]IAC, Spain, [6]NOAO, [7]DAO, Canada.

178.07 **Spitzer Observations of the Far-Infrared Radio Continuum Correlation in the Small Magellanic Cloud**
Karin M. Sandstrom[1], A. Bolatto[1], A. Leroy[2], S. Stanimirovic[3], J. D. Simon[4], L. Staveley-Smith[5], J. R. Dickel[6], R. Shah[7], P. F. Winkler[8], R. C. Smith[9], N. Mizuno[10]
[1]University of California, Berkeley, [2]Max Planck Institute for Astronomy, Germany, [3]University of Wisconsin, Madison, [4]California Institute of Technology, [5]Australia Telescope National Facility, CSIRO, Australia, [6]University of New Mexico, [7]Institute for Astrophysical Research, Boston University, [8]Middlebury College, [9]NOAO, [10]Department of Astrophysics, Nagoya University, Japan.

Session 179 Extrasolar Planets I

AAS Oral, Tuesday, 10:00-11:30am, 605-07

179.01 **The Migration of Giant Planets**
Richard G. Edgar[1]
[1]University of Rochester.

179.02 **Behavior of Apsidal Orientations in Planetary Systems**
Rory Barnes[1], R. Greenberg[1]
[1]Univ. Of Arizona.

179.03D **Turbulent Torques on Protoplanets in a Dead Zone**
Jeffrey S. Oishi[1], M. Mac Low[2], K. Menou[3]
[1]AMNH/UVa, [2]AMNH, [3]Columbia University.

179.04D **Stellar Magnetic Activity and the Detection of Exoplanets**
Jason Wright[1]
[1]UC, Berkeley.

179.05D **A Survey of Close, Young Stars with SDI at the VLT and MMT**
Beth A. Biller[1], L. Close[1], E. Masciadri[2], R. Lenzen[3], W. Brandner[3], D. McCarthy[1], T. Henning[3], E. Nielsen[1], M. Hartung[4]
[1]Univ. Of Arizona, [2]Observatorio Astrofisico di Arcetri, Italy, [3]MPIA-Heidelberg, Germany, [4]European Southern Observatory, Chile.

179.06 **Planets Formed in Habitable Zones of M Dwarf Stars Probably Lack Volatiles**
Jack J. Lissauer[1], E. V. Quintana[1]
[1]NASA/Ames Research Center.

Session 180 Galaxy Clusters III

AAS Oral, Tuesday, 10:00-11:30am, 613-14

180.01 **Projected 3pt Correlation Function in the Sloan Digital Sky Survey**
Cameron McBride[1], R. Scranton[1], A. Connolly[1], J. Gardner[2]
[1]University of Pittsburgh, [2]Pittsburgh Supercomputing Center.

180.02D **High-Redshift Clusters in the SpARCS Survey**
Adam Muzzin[1], H. Yee[1], G. Wilson[2], SpARCS Collaboration
[1]Univ. of Toronto, Canada, [2]Spitzer Science Center.

180.03D **AGN Heating and the Growth of Black Holes and Bulges in Cluster Cores**
David A. Rafferty[1], B. R. McNamara[2], P. E. Nulsen[3], M. W. Wise[4]
[1]Ohio University, [2]University of Waterloo, Canada, [3]CfA, [4]University of Amsterdam, The Netherlands.

180.04 **Simulating the Universe: Large Area Synthetic Galaxy Cluster Surveys**
Eric J. Hallman[1], B. O'Shea[2], M. Norman[3], R. Wagner[3], J. Burns[1]
[1]University of Colorado, [2]Los Alamos National Laboratory, [3]University of California-San Diego.

180.05D **Galaxy Populations in Clusters and the Estimation of Cluster Optical Richness in Wide-Field Surveys**
Ben Koester[1]
[1]University of Michigan.

180.06 **Probing Structure Formation Physics with the Evolution of Galaxy Cluster Properties**
Douglas J. Burke[1], M. Arnaud[2], H. Boehringer[3], S. Borgani[4], C. Collins[5], C. Mullis[6], R. Nichol[7], E. Pointecouteau[8], G. Pratt[3], K. Romer[9], S. Sabirli[10], P. Viana[11], A. Vikhlihnin[1], M. Voit[12]
[1]SAO, [2]CEA - Service d'Astrophysique, France, [3]MPE, Germany, [4]Osservatorio Astronomico di Trieste, Italy, [5]Liverpool John Moores University, United Kingdom, [6]University of Michigan, [7]University of Portsmouth, United Kingdom, [8]Centre d'Etude Spatiale des Rayonnements, France, [9]University of Sussex, United Kingdom, [10]Carnegie Mellon University, [11]Universidade do Porto, Portugal, [12]MSU.

Session 181 Galaxy Evolution with DEEP2

AAS Oral, Tuesday, 10:00-11:30am, 608-10

181.01D **The DEEP2 Galaxy Redshift Survey: the Formation of the Red Sequence**
Michael C. Cooper[1]
[1]University of California at Berkeley.

181.02 **Are Massive Galaxies Formed by z~1?**
Christopher Conselice[1], AEGIS Team
[1]Univ. of Nottingham, United Kingdom.

181.03D **The Evolution of the Blue Galaxy Fraction in DEEP2 Groups and Isolated Galaxies**
Brian Gerke[1]
[1]UC-Berkeley.

181.04 **Redshift Identification of Single-Line Emission Galaxies in the DEEP2 Survey**
Evan Kirby[1], P. Guhathakurta[1], S. M. Faber[1], B. J. Weiner[2]
[1]UC Santa Cruz, [2]University of Maryland.

181.05D **Galaxies in Transition: AGN Activity and Environments of Post-starburst Galaxies**
Renbin Yan[1], DEEP2 Team
[1]UC, Berkeley.

181.06 **The Stellar Mass Tully-Fisher Relation to z=1.2**
Susan A. Kassin[1], B. Weiner[2], S. Faber[1], D. Koo[1], J. Lotz[2], DEEP2 Team
[1]UC Santa Cruz, [2]Steward Observatory.

Session 182 Novae/Cataclysmic Variables

AAS Oral, Tuesday, 10:00-11:30am, 6A

182.01 **Radio Imaging of the Recurrent Nova RS Ophiuchus**
Michael P. Rupen[1], A. J. Mioduszewski[1], J. L. Sokoloski[2], C. R. Kaiser[3], C. Brocksopp[4]
[1]NRAO, [2]Columbia University, [3]University of Southampton, United Kingdom, [4]Mullard Space Science Laboratory, Univ. College London, United Kingdom.

182.02 **Hubble Space Telescope Observations of the 2006 Outburst of RS Ophiuchi**
Michael F. Bode[1], D. Harman[1], T. J. O'Brien[2], H. E. Bond[3], S. Starrfield[4], M. Shara[5], S. Eyres[6], A. Evans[7]
[1]Liverpool John Moores University, United Kingdom, [2]Jodrell Bank Observatory, United Kingdom, [3]STScI, [4]Arizona State University, [5]American Museum of Natural History, [6]University of Central Lancashire, United Kingdom, [7]Keele University, United Kingdom.

182.03 **The Metallicity and Lithium Abundances in the Repeating Novae, RS Oph and T CrB**
George Wallerstein[1], T. Harrison[1], U. Munari[2]
[1]Univ. of Washington, [2]Osservatorio Asiago, Italy.

182.04D **Mass Transfer and Evolution of Compact Binaries**
Vayujeet Gokhale[1]
[1]Louisiana State Univ..

182.05 **Hubble Space Telescope Observations of Thirteen Novae Candidates in the Core of M87**
Juan P. Madrid[1], W. B. Sparks[1], H. Ferguson[1], M. Livio[1], D. Macchetto[2]
[1]STScI, [2]STScI/ESA.

182.06 **X-ray Ne/O Ratio in Cataclysmic Variables**
Eric M. Schlegel[1], V. Rana[2], K. Singh[2], V. Girish[2], P. Barrett[3]
[1]Univ. of Texas, San Antonio, [2]Tata Inst. of Fundamental Research, India, [3]US Naval Observatory.

182.07 **Accreting Pulsating White Dwarfs: Hotter than Single DAVs**
Paula Szkody[1], A. Mukadam[1], B. T. Gaensicke[2], P. A. Woudt[3], J. Solheim[4], E. M. Sion[5], A. Nitta[6], B. Warner[3], D. K. Sahu[7], T. Prabhu[7], A. Henden[8]
[1]U. Washington, [2]U. Warwick, UK, [3]U. Cape Town, South Africa, [4]Inst. of Theoretical Astrophysics, Norway, [5]Villanova U., [6]Gemini Obs., [7]Indian Inst. of Theoretical Astrophysics, India, [8]AAVSO.

Session 183 SDSS and GALEX

AAS Oral, Tuesday, 10:00-11:30am, 3A

183.01 **The Intrinsic Properties of SDSS Galaxies: Taking off the Rose Tinted Glasses**
Ariyed Maller[1], A. Berlind[2], M. Blanton[2], D. Hogg[2]
[1]New York City College of Technology, [2]CCPP, NYU.

183.02D **Dependence of Merger Rates and Ram Pressure Stripping on Environment and Galaxy Mass**
Janice Hester[1]
[1]Princeton Univ..

183.03D **Reflections of Cluster Assembly in the Stellar Populations and Dynamics of Member Galaxies**
Sean Moran[1], R. S. Ellis[1], T. Treu[2], G. P. Smith[3], N. Miller[4]
[1]Caltech, [2]University of California, [3]University of Birmingham, United Kingdom, [4]Caltech/UC Santa Cruz.

183.04 **The Star Formation and Extinction Evolution of UV-Selected Galaxies over 0<z<1.25**
Christopher D. Martin[1], GALEX Science Team, Spitzer-MIPS Science Team
[1]Caltech.

183.05D **How Special are Brightest Cluster Galaxies?**
Anja Von Der Linden[1], P. N. Best[2], G. Kauffmann[1], S. D. White[1]
[1]Max-Planck-Institut fuer Astrophysik, Germany, [2]Institute for Astronomy, Royal Observatory Edinburgh, United Kingdom.

183.06 **Star Formation and Attenuation in SDSS Galaxies from GALEX and Spitzer: Exploring the Links**
Benjamin D. Johnson[1], D. Schiminovich[1], GALEX Science Team
[1]Columbia University.

Session 184 Helping Faculty/Teachers Become More Adept at Working with Under-represented Groups

AAPT Panel, Tuesday, 10:00-11:30am, 615

Chair, Juan R. Burciaga[1]
[1]Whitman College.

184.01 **Stalking the Anti-Racist Atom: Engaging Educational Equity and Diversity in Physics Teaching**
Apriel K. Hodari[1]
[1]The CNA Corporation.

184.02 **Practical Ways to Improve Physics Education**
Daryao S. Khatri[1]
[1]University of the District of Columbia.

184.03 **Labels Matter: Changing the Conversation From "-isms" to Privilege**
Melissa H. Dancy[1]
[1]UNC-Charlotte.

184.04 **Designing a Workshop for Change in the Community of Physics**
Juan R. Burciaga[1]
[1]Whitman College.

Session 185 NAEP Science 2009: Why Should Physics Teachers Care?

AAPT Panel, Tuesday, 10:00-11:30am, 310

Panelists: Arthur Eisenkraft, Univ. of Massachusetts-Boston; Jack Hehn, American Institute of Physics; Jim Minstrell, FACET Innovatioins National Assessment of Educational Progress (NAEP) is commonly called "The Nation's Report Card." Beginning in 2009 there will be a new science test that is based on a framework developed over the last two years. The panelists, who were members of the steering and planning committees, will describe the need for this new instrument, outline the development process, compare the old and new frameworks and explain why this new exam is important and will represent a new trend-line to measure student achievement in science.

Chair, Paul Hickman[1]
[1]Science Education Consultant.

Session 186 1957: the Legacy of Sputnik

AAPT Special, Tuesday, 10:00-11:30am, 303

Chair, Richard Jacob[1]
[1]Arizona State U..

186.01 **Eisenhower, Scientists, and Sputnik**
John S. Rigden[1]
[1]Washington University.

186.02 **The Influence of Sputnik on U.S. Science Education and Research**
Leon M. Lederman[1]
[1]Illinois Institute of Technology and Illinois Mathematics and Science Academy.

Session 187 Virtual Observatories

AAPT Special, Tuesday, 10:00-11:30am, 618

Chair, Jordan Raddick[1]
[1]Johns Hopkins University.

187.01 **The Science and Technology of the National Virtual Observatory**
Alex Szalay[1]
[1]Johns Hopkins University.

187.02 **Education Potential of the National Virtual Observatory**
Carol Christian[1]
[1]STScI.

187.03 **The Challenges of Using Virtual Observatories in the Classroom**
Robert T. Sparks[1]
[1]National Optical Astronomy Observatory.

187.04 **Discover an Asteroid Using SDSS**
Elizabeth A. Ramseyer[1]
[1]Niles West High School.

Session 188 PER: Student Understanding & Student Reasoning

AAPT Oral, Tuesday, 10:00-11:30am, 307-08

Chair, Marina M. Milner-Bolotin[1]
[1]University of British Columbia, Canada.

188.01 **Techniques and Tools for Teaching the Photoelectric Effect**
S. B. McKagan[1], W. Handley[1], K. K. Perkins[1], C. E. Wieman[1]
[1]University of Colorado.

188.02 **Examining Student Understanding of Quantum Wavefunctions**
Homeyra R. Sadaghiani[1], P. S. Shaffer[1], L. C. McDermott[1]
[1]University of Washington.

188.03 **Pedagogical Landscape in Upper-Level Thermal Physics ***
David E. Meltzer[1], W. M. Christensen[2]
[1]University of Washington, [2]Iowa State University.

188.04 **"Is Entropy Conserved?" Student Understanding of Entropy in Introductory Physics**
Warren M. Christensen[1], D. E. Meltzer[2]
[1]Iowa State University, [2]University of Washington.

188.05 **Longitudinal Standing Waves in a Tutorial Environment**
Jack Dostal[1]
[1]Montana State University.

188.06 **Investigating Student Understanding of Wave Behavior at Boundaries***
Mila Kryjevskaia[1], M. R. Stetzer[1], P. R. Heron[1], L. C. McDermott[1]
[1]University of Washington.

188.07 **Investigating Student Understanding of Control of Variables**
Andrew Boudreaux[1], P. R. Heron[2], P. S. Shaffer[2]
[1]Western Washington University, [2]University of Washington.

188.08 **Modeling Student Thinking about Motion in Tutorial**
Brian W. Frank[1], R. E. Scherr[1]
[1]University of Maryland.

188.09 **Sensemaking: Conceptualizing and Coding for "Good" Student Reasoning**
Andrew Elby[1], R. Scherr[1], T. Bing[1]
[1]University of Maryland.

Session 189 Techniques in Introductory Physics Teaching

AAPT Oral, Tuesday, 10:00-11:30am, 616

Chair, Frieda Stahl[1]
[1]California State Univ., Los Angeles.

189.01 **Aesthetic Physics Education: A Symmetry Based, Physics and Fine Arts Curriculum**
Jatila van der Veen[1], P. M. Lubin[2], J. Cook-Gumperz[3], J. D. Raley[3], E. Mazur[4]
[1]Gevirtz Graduate School of Education and Physics Dept., University of California, Santa Barbara, [2]Physics Dept. UCSB, [3]Gevirtz Graduate School of Education, UCSB, [4]Physics Dept, Harvard University.

189.02 **Science One: An Interdisciplinary First-year Science Program**
Domingo J. Louis-Martinez[1], N. Dryden[1], M. Maclean[1]
[1]University of British Columbia, Canada.

189.03 **Curbing "Math Anxiety" with Galileo - While Teaching Physicists, too**
Brian P. Schwartz[1]
[1]*Carthage College.*

189.04 **Using Whole Vector Force Representations for "Friction Problems"**
Daniel H. Phelps[1]
[1]*Columbia College (Retired), Canada.*

189.05 **Teaching Physics for Conceptual Understanding - Exemplified for Einstein's Special Relativity**
Lucian M. Undreiu[1]
[1]*UVA's College at Wise.*

189.06 **Student Reported Learning Gains From Pre-Class Questions**
David T. Kagan[1]
[1]*California State University, Chico.*

189.07 **High School Physics Experience and Learning Outcomes in Introductory Physics Courses**
Tetyana Antimirova[1]
[1]*Ryerson University, Canada.*

189.08 **The Impact of Teaching Technologies in the Introductory Physics Classroom**
William W. McNairy[1]
[1]*Duke University.*

189.09 **Examples from Research on the Learning and Teaching of Quantum Mechanics**
Andrew D. Crouse[1], **P. S. Shaffer**[1], **L. C. McDermott**[1]
[1]*Univ. of Washington.*

Session 190 Heineman Prize Lecture

Plenary, Tuesday, 11:40am-12:30pm, Ballroom 6

190.01 **The DEEP2 Redshift Survey: From Galaxies to Large-Scale Structure**
Marc Davis[1]
[1]*UC, Berkeley.*

Begin With Special Relativity

Commercial Workshop, Tuesday, 12:30-2:00pm, 302

For nearly a century we have lived with an introductory physics curriculum that divides physics into classical and modern parts, and teachers only the classical part to the majority of students. The Physics2000 workshop demonstrates how to easily overcome this divide by starting with special relativity in the first week, and fitting in 20th century topics as you go along.
As examples we will discuss introducing magnetism from Coulomb's Law and the Lorentz contradiction teach the time-energy form of the uncertainty principle and introduce Fourier Optics using the pulse Fourier Transformation capability of MacScopeII.

Chair, Elisha Huggins[1]
[1]*Physics2000.com.*

Decadal Survey Town Hall

AAS Town Hall Meeting, Tuesday, 12:45-1:45pm, 613

In our field, the National Academy of Sciences - National Research Council (NRC) is best known as the organization that convenes the Astronomy and Astrophysics Decadal Surveys (AADSs). The series of AADS reports has provided priorities for the federal investment that has, in turn, enabled the remarkable success of the field. The January 2007 AAS meeting will provide a good opportunity to take stock of the progress that has been made since the 2001 AADS and to begin to turn our attention forward to planning the next one. The AADS process is organized by the NRC's Board on Physics and Astronomy, in cooperation with the Space Studies Board and with the active involvement of their joint subcommittee, the Committee on Astronomy and Astrophysics. With this session, the BPA/SSB/CAA will begin a dialogue with the community about the next AADS. The Boards are considering whether, in light of the current circumstances in the field, to recommend some adjustments in the decadal survey process. AAS members are encouraged to take the opportunity presented by this Town Hall to comment on this issue.

Chair, Anneila I. Sargent[1]
[1]*(Caltech), Chair, Board on Physics and Astronomy NRC.*
Chair, Lennard A. Fisk[1]
[1]*(U. Michigan), Chair, Space Studies Board.*
Chair, C. M. Urry[1]
[1]*(Yale Univ.), Cochair, Committee on Astronomy and Astrophysics.*

HEAD Business Meeting

AAS Splinter Meeting, Tuesday, 12:45-1:45pm, 609

Chair, Mitchell C. Begelman[1]
[1]*Univ. of Colorado.*

Astronomy Education Research Town Hall

AAPT Crackerbarrel, Tuesday, 1:00-2:00pm, 617

Chair, Edward Prather[1]
[1]*Univ. of Arizona.*

Physics and Society Education

AAPT Crackerbarrel, Tuesday, 1:00-2:00pm, 619

Are you looking for ways to incorporate societal issues into a physics course? Join your colleagues to share questions and ideas in an informal discussion about how to accomplish this. A small number of people will make brief presentations on their successful activities, then the session will open for all to share and discuss. Information about presenters will be posted through the PHYSOC listserv prior to the meeting.

Chair, Jane Flood[1]
[1]*Muhlenberg College.*

High Performance Computing for Undergraduate Physics and Astronomy Education - Let's talk about it

AAPT Crackerbarrel, Tuesday, 1:00-2:00pm, 618

For year supercomputers have been the domain of the relatively few researchers whose extreme computational performance demands could justify the costs - both time and equipment - of this extreme technology. Now anyone can afford mega-mega flops, even on their laptops, and software with which they can create numerical simulations without expensive support staff. So why are we inviting you to talk about high performance computing? Come; find out why; and join in this discussion. Discussion Leader: Scott Lathrop (lathrop@mcs.anl.gov), TeraGrid Director of Education, Outreach and Training, SC07 Education Program Chair. Session sponsor: "Computing in Science and Engineer", the AIP/IEEE-CS technical magazine for computational science.

Chair, Norman Chonacky[1]
[1]*Yale U.*

Session 191 Next Generation Radial Velocity Planet Surveys

AAS Special, Tuesday, 2:00-3:30pm, 3B

191.01 **N2K and Beyond**
Greg Laughlin[1]
[1]*UC Santa Cruz.*

191.02 **Status of the All Sky Extrasolar Planet Survey and Early Results**
Jian Ge[1]
[1]*University of Florida.*

191.03 **Spectroscopic Follow-Up Observations of Transiting Planet Candidates Identified by the Kepler Mission**
David Latham[1], D. D. Sasselov[1], A. H. Szentgyorgyi[1]
[1]Harvard-Smithsonian Center for Astrophysics.

191.04 **An Infrared Precision Radial Velocity Spectrograph for Gemini**
John Rayner[1]
[1]University of Hawaii Institute for Astronomy.

191.05 **Big Questions About Planet Formation That Can Be Addressed By Next-Generation Radial Velocity Planet Searches**
Eric B. Ford[1], E. Agol[2]
[1]Harvard-Smithsonian Center for Astrophysics, [2]U. Washington.

Session 192 SAGE: Surveying the Agents of a Galaxy's Evolution

AAS Special, Tuesday, 2:00-3:30pm, 201

Chair, Alexander G. Tielens[1]
[1]NASA Ames Research Center.

192.01 **The Large Magellanic Cloud as a Galaxy**
John (Jay) Gallagher[1], M. Meixner[2], J. Bernard[3], R. Blum[4], K. Gordon[5], R. Indebetouw[6], W. Reach[7], B. Whitney[8], B. Babler[1], M. Block[5], E. Churchwell[1], C. Engelbracht[5], B. For[9], J. Hora[10], C. Leitherer[2], M. Meade[1], K. Misselt[5], A. Tielens[11], U. Vijh[2], SAGE Team
[1]University of Wisconsin-Madison, [2]Space Telescope Science Institute, [3]CESR, France, [4]NOAO, [5]University of Arizona, [6]University of Virginia, [7]Caltech, [8]Space Science Institute, [9]University of Texas, [10]Harvard/CfA, [11]NASA/Ames.

192.02 **Spitzer SAGE Survey of the Large Magellanic Cloud: Project Overview**
Margaret Meixner[1], B. Babler[2], J. Bernard[3], M. Block[4], R. Blum[5], C. Engelbracht[4], B. For[6], K. Gordon[4], J. Hora[7], R. Indebetouw[8], C. Leitherer[1], M. Meade[2], K. Misselt[4], W. Reach[9], A. G. Tielens[10], U. Vijh[1], B. Whitney[11], S. Team[1]
[1]STScI, [2]University of Wisconsin, [3]CESR, France, [4]University of Arizona, [5]NOAO, [6]University of Texas, [7]Harvard/CfA, [8]University of Virginia, [9]SSC/Caltech, [10]NASA/Ames, [11]Space Science Institute.

192.03 **The Spitzer/SAGE View of Star Formation in the LMC**
Remy Indebetouw[1], B. Whitney[2], M. Sewilo[3], T. Robitaille[4], M. Meade[3], B. Babler[3], J. Hora[5], K. Gordon[6], C. Engelbracht[6], B. For[7], M. Block[6], K. Misselt[6], M. Meixner[8], U. Vijh[8], K. Leitherer[8], SAGE Team
[1]Univ. of Virginia, [2]Space Science Institute, [3]Univ. of Wisconsin, [4]Univ. of St-Andrews, United Kingdom, [5]Harvard-Smithsonian/CfA, [6]Univ. of Arizona, [7]Univ. of Texas, [8]STScI.

192.04 **Dust and gas in the Interstellar Medium of the LMC**
William T. Reach[1], J. Bernard[2], D. Paradis[2], M. Meixner[3], A. Kawamura[4], Y. Fukui[5], SAGE Legacy Team
[1]Caltech, [2]CESR, France, [3]STScI, [4]Nagoya Univ., Japan, [5]Nagoya U., Japan.

192.05 **Mass Loss from Evolved Stars in the LMC: A Spitzer SAGE View**
Robert D. Blum[1], K. Volk[2], S. Srinivasan[3], F. Markwick-Kemper[4], M. Meixner[5], S. Points[6], K. Olsen[6], K. Gordon[7], C. Engelbracht[7], B. For[8], M. Block[7], K. Misselt[7], B. Whitney[9], M. Meade[10], B. Babler[10], R. Indebetouw[11], J. Hora[12], U. Vijh[5], C. Leitherer[5], J. Mould[1], SAGE Team
[1]NOAO, [2]Gemini Observatory, [3]Johns Hopkins University, [4]University of Manchester, United Kingdom, [5]STScI, [6]CTIO, Chile, [7]Steward Observatory, [8]University of Texas, [9]Space Science Institute, [10]University of Wisconsin, [11]University of Virginia, [12]Harvard-Smithsonian/CfA.

192.06 **Spitzer Spectroscopy of Evolved Stars in the LMC**
Joel H. Kastner[1]
[1]RIT Center for Imaging Science.

Session 193 Science from the NDWFS Bootes Field

AAS Special, Tuesday, 2:00-3:30pm, 3A

Chair, Daniel Stern[1]
[1]JPL/ Caltech.

193.01 **The NOAO Deep Wide-Field Survey - An Introduction**
Buell Jannuzi[1]
[1]NOAO.

193.02 **The Flamingos Extragalactic Survey**
S A. Stanford[1], A. Gonzalez[2], P. Eisenhardt[3], M. Brodwin[3], D. Stern[3], E. McKenzie[2], R. Elston[2]
[1]UC, Davis, [2]UF, [3]JPL.

193.03 **The IRAC Shallow Survey**
Peter R. Eisenhardt[1]
[1]JPL/Caltech.

193.04 **A Spitzer Far-infrared Look at the NOAO-Deep Wide Field Survey**
Emeric LeFloc'h[1]
[1]Institute for Astronomy, University of Hawaii.

193.05 **XBootes - Chandra Shallow Survey of the Bootes Region**
Stephen S. Murray[1], XBootes Team
[1]SAO.

193.06 **AGES: The AGN and Galaxy Evolution Survey**
Richard J. Cool[1]
[1]Univ. of Arizona.

Session 194 Short Gamma-Ray Bursts

HEAD Special, Tuesday, 2:00-3:30pm, 205

Chair, Neil Gehrels[1]
[1]NASA's GSFC.

194.01 **On the Prompt Gamma-ray Emission Properties of Short GRBs**
Chryssa Kouveliotou[1]
[1]MSFC.

194.02 **X-ray Afterglows of Short Gamma-Ray Bursts**
David N. Burrows[1]
[1]Penn State Univ..

194.03 **The Host Galaxies and Host Clusters of Short Gamma Ray Bursts: Constraints on the Progenitor Age Distribution**
Edo Berger[1]
[1]Carnegie Observatories.

194.04 **Theoretical Interpretation of Short GRB Observations**
Ehud Nakar[1]
[1]Caltech.

Session 195 AGN, Starbursts and Sub-mm Galaxies

AAS Oral, Tuesday, 2:00-3:30pm, 6C

195.01 **Millimeter Detection of Spitzer-selected High Redshift Hyperluminus Starburst Galaxies**
Carol J. Lonsdale[1], A. Omont[2], M. del Carmen Polletta[3], R. Zylka[4], D. Shupe[1], H. E. Smith, Jr[3], S. Berta[5], N. Bavouzet[6], G. Lagache[6], D. Farrah[7], F. Bertoldi[8], P. Cox[4], C. de Breuck[9], H. Dole[6], D. Lutz[10], L. Tacconi[10], I. Perez-Fournon[11], H. Aussel[12], H. McCracken[13], D. Clements[14], M. Rowan-Robinson[14], A. Franceschini[5], D. Frayer[1], J. Surace[1], B. Siana[1]
[1]IPAC, Caltech, [2]Institut d'Astrophysique de Paris, France, [3]UCSD, [4]IRAM, France, [5]University of Padova, Italy, [6]IAS, France, [7]Cornell, [8]University of Bonn, Germany, [9]ESO, France, [10]MPIE, Germany, [11]Instituto Astrofisica, Spain, [12]Service d'Astrpphysique, CEA, France, [13]Service d'Astrophysique, CEA, France, [14]Imperial College, United Kingdom.

195.02D **The Masses and Luminosities of Submillimeter-Selected Galaxies**
Laura J. Hainline[1]
[1]Caltech.

195.03 **Mid-Infrared Spectral Diagnostics of Submillimetre Galaxies**
Alexandra Pope[1], R. Chary[2], M. Dickinson[3], D. Scott[1]
[1]Univ. of Bristish Columbia, Canada, [2]Spitzer Science Center, [3]National Optical Astronomy Observatory.

195.04 **The Redshift Distribution of 24 micron sources in the NDWFS Bootes Field**
Vandana Desai[1]
[1]Caltech.

195.05 **History and Modes of Star Formation since z~1 in Field Galaxies: A New Picture from the AEGIS Collaboration**
Kai Noeske[1], AEGIS collaboration
[1]UC, Santa Cruz.

195.06D **The Molecular ISM of Quasar Host Galaxies in the Early Universe**
Dominik A. Riechers[1]
[1]Max-Planck Institut fuer Astronomie, Germany.

195.07 **The Hard X-ray 20-40 keV AGN Luminosity Function**
Volker Beckmann[1], S. Soldi[2], C. R. Shrader[1], N. Gehrels[1], N. Produit[2]
[1]NASA's GSFC, [2]INTEGRAL Science Data Centre, Switzerland.

Session 196 Extrasolar Planets III

AAS Oral, Tuesday, 2:00-3:30pm, 605-07

196.01 **MIPS Lightcurves for Extrasolar Planets**
Bradley M. Hansen[1], J. Harrington[2], S. Luszcz[3], D. Deming[4], S. Seager[5], K. Menou[6], J. Cho[7], J. Richardson[4]
[1]UC, Los Angeles, [2]U. Central Florida, [3]UC, Berkeley, [4]GSFC, [5]OCIW, [6]Columbia, [7]QMUL, United Kingdom.

196.02 **Infrared Spectrocopy of the Transiting Extrasolar Planet HD209458b**
Lee J. Richardson[1], D. Deming[1], K. Horning[2], S. Seager[3], J. Harrington[4]
[1]NASA's GSFC, [2]Florida Institute of Technology, [3]Carnegie Institution of Washington, [4]University of Central Florida.

196.03 **The Thermal Flux of the Extrasolar Planet HD 209458b at 7-14 Microns**
Drake Deming[1], S. Seager[2], L. J. Richardson[1], K. Horning[3], J. Harrington[4]
[1]NASA's GSFC, [2]CIW/MIT, [3]FIT, [4]UCF.

196.04 **High Precision Differential Photometry of the Transit and Secondary Eclipse of HD209458b**
Daniel E. Potter[1]
[1]Univ. of Arizona.

196.05 **First High-Contrast Science with an IFU: The Sub-Stellar Companion to GQ Lup**
Stanimir A. Metchev[1], M. McElwain[1], J. Larkin[1]
[1]UCLA.

196.06 **Search for Planetary Transits of the Debris Disk Star AU Mic**
Larry D. Petro[1], L. Hebb[2], H. Ford[3], D. Golimowski[3], J. Rogers[3], P. Sackett[4], K. Lewis[4], M. Clampin[5], J. Wisniewski[5], D. Minniti[6], I. Toledo[6], P. Espinoza[6], D. Ardila[7]
[1]STScI, [2]University of St. Andrews, United Kingdom, [3]Johns Hopkins University, [4]Australian National University, Australia, [5]NASA's Goddard Space Flight Center, [6]Pontificia Universidad Catolica de Chile, Chile, [7]CalTech/Spitzer Science Center.

196.07D **Forming Earth-like Planets With Migrating Giants: Modeling and Observations**
Avi Mandell[1], S. Sigurdsson[2], S. Raymond[3], M. Mumma[4], G. Blake[5]
[1]Penn State University / NASA GSFC, [2]Penn State University, [3]Univ. of Colorado / VPL, [4]NASA GSFC, [5]Cal Tech.

196.08 **Correlations Between Stellar Metallicity and the Frequency of Planetary and Stellar Companions**
Charles Lineweaver[1], D. Grether[2]
[1]Australian National University, Australia, [2]University of New South Wales, Australia.

Session 197 Galaxy Clusters IV

AAS Oral, Tuesday, 2:00-3:30pm, 608-10

197.01D **Radio and X-ray Properties of Cavities in the Hot Atmospheres of Ellipticals, Groups, and Clusters**
Laura Birzan[1], B. R. McNamara[2], C. L. Carilli[3], P. E. Nulsen[4], M. Wise[5]
[1]Ohio University, [2]University of Waterloo, Canada, [3]NRAO, [4]CfA, [5]University of Amsterdam, The Netherlands.

197.02D **The X-Ray Luminosity-Mass Relation for Local Clusters of Galaxies**
Rebecca Stanek[1], A. Evrard[1], H. Boehringer[2], P. Schuecker[2], B. Nord[1]
[1]Univ. of Michigan, [2]Max-Planck-Institut fur extraterrestrische Physik, Germany.

197.03D **Cosmological Constraints from the maxBCG Cluster Sample**
Eduardo Rozo[1]
[1]Ohio State Univeristy.

197.04 **The Age Dependence of Galaxy Clustering**
Darren S. Reed[1], F. Governato[2], T. Quinn[2], J. Stadel[3], G. Lake[3]
[1]Los Alamos National Laboratory, Theoretical Astrophysics (T-6), [2]Univ. of Washington, [3]Univ. of Zurich, Switzerland.

197.05 **Tracing Galaxy Evolution in Clusters and Groups at z>1**
Simona Mei[1], A. Stanford[2], J. Blakeslee[3], R. Demarco[4], P. Eisenhardt[5], H. Ford[4], B. Holden[6], N. Homeier[4], M. J. Jee[4], T. Kodama[7], F. Nakata[8], M. Postman[9], P. Rosati[10], R. White[9]
[1]Johns Hopkins Univ., UC Berkeley, Obervatoire de Paris, [2]IGPP/LLNL, [3]Washington State University, [4]Johns Hopkins Univ., [5]JPL, [6]University of California - Santa Cruz, [7]National Astronomical Observatory of Japan (NAOJ), Japan, [8]University of Tokyo, Institute of Astronomy, Japan, [9]Space Telescope Science Institute, [10]European Southern Observatory, Germany.

197.06 **Evidence of Hierarchical Galaxy Formation from Strong MgII Absorbers**
Andrew Mshar[1], J. C. Charlton[1], C. W. Churchill[2], T. Kim[3]
[1]Penn State, [2]NMSU, [3]Institute of Astronomy, United Kingdom.

Session 198 ISM/Star Formation

AAS Oral, Tuesday, 2:00-3:30pm, 611-12

198.01 **Using Cloudshine to Constrain Turbulent Star Formation**
Jonathan B. Foster[1], A. A. Goodman[1], J. Pineda[1], P. Caselli[2]
[1]Harvard Univ., [2]Osservatorio Astrofisico di Arcetri, Italy.

198.02 **The Scale of Turbulence in Molecular Clouds**
Naomi A. Ridge[1], A. A. Goodman[1], N. Whitehorn[1]
[1]Harvard-Smithsonian, CfA.

198.03 **What is the True Core Mass Function?**
Di Li[1], X. Guan[2], Y. Dai[2]
[1]Jet Propulsion Laboratory / Caltech, [2]Peking University, China.

198.04D **Updated Interstellar Abundance Studies with FUSE and STIS**
Adam G. Jensen[1]
[1]Univ. Of Colorado.

198.05 **Study of Diffuse Interstellar Bands in 7 Intermediate Redshift Galaxies**
Brandon L. Lawton[1], C. W. Churchill[1], B. A. York[2], S. L. Ellison[2], T. P. Snow[3], R. A. Johnson[4], S. G. Ryan[5]
[1]New Mexico State Univ., [2]U. Victoria, Canada, [3]U. Colorado, [4]Oxford U., United Kingdom, [5]U. Hertfordshire, United Kingdom.

198.06 **The Discovery of Extragalactic Magnetic Fields in OH Megamasers**
Timothy Robishaw[1]
[1]UC Berkeley.

198.07 **The Effect of Star Formation Activity on the Far-Infrared--Radio Correlation within Spiral Galaxies**
Eric J. Murphy[1], G. Helou[2], R. Braun[3], J. D. Kenney[1], L. Armus[2], the SINGS team
[1]Yale Univ., [2]Caltech, [3]ASTRON, The Netherlands.

198.08 **Disentangling Density and Heating Effects in the Infrared Emission of SINGS Galaxies**
Caroline Bot[1], SINGS team
[1]Caltech.

Session 199 Kinematics of Galaxies - Internal and External

AAS Oral, Tuesday, 2:00-3:30pm, 204

199.01 **The Kinematics of the Disk-Halo Interaction in Spiral Galaxies**
George H. Heald[1], R. J. Rand[2], R. A. Benjamin[3]
[1]ASTRON, The Netherlands, [2]U. New Mexico, [3]U. Wisconsin.

199.02D **Thick Disks in External Galaxies: Structure, Kinematics, and Abundances**
Peter Yoachim[1]
[1]Univ. of Washington.

199.03 **Dwarf Satellites of Distant Galaxies**
Michael R. Blanton[1]
[1]New York Univ..

199.04D **The Motions of the Magellanic Clouds About the Milky Way**
Nitya Kallivayalil[1], R. van der Marel[2], C. Alcock[1]
[1]Harvard-Smithsonian Center for Astrophysics, [2]STScI.

199.05 **Spectral Indices of Early Type Galaxies in Rich Clusters of Galaxies**
Robert C. Berrington[1], M. Pierce[1], A. Monson[1]
[1]Univ. of Wyoming.

199.06 **Gas Dynamics and Star Formation in the Barred Galaxy NGC 4303**
Jin Koda[1]
[1]Caltech.

Session 200 Supernovae Ia, Ib, Ic & II

AAS Oral, Tuesday, 2:00-3:30pm, 613-14

200.01 **Type Ia Supernova Spectral Line Ratios as Luminosity Indicators: "From Phenomenology to Radiative Transfer and Back Again"**
Sebastien Bongard[1], E. Baron[2], G. Smadja[3], D. Branch[2], P. Hauschildt[4]
[1]Lawrence Berkeley Lab., [2]University of Oklahoma City, [3]Institut de Physique Nucleaire de Lyon, France, [4]Hamburger Sternwarte, Germany.

200.02 **Type Ia Supernova Model Light Curves And The Width-Luminosity Relation**
Daniel Kasen[1]
[1]Johns Hopkins Univ..

200.03 **Numerical Simulations of Carbon Ignition in Type Ia Supernovae**
Haitao Ma[1], S. Woosley[1], M. Kuhlen[2], M. Evonuk[1], G. Glatzmaier[1]
[1]UC, Santa Cruz, [2]Institute for Advanced Study.

200.04D **Varied Deaths of Massive Stars: Optical and NIR Properties of Type Ib/c Supernovae**
Maryam Modjaz[1]
[1]Harvard Univ..

200.05 **VLT-FORS1 Spectropolarimetry of Core-Collapse Supernovae**
Justyn R. Maund[1], L. Wang[2], F. Patat[3], P. Hoeflich[4], D. Baade[3], C. Wheeler[1]
[1]U. Texas, Austin, [2]Texas A&M, [3]ESO, Germany, [4]Physics, Florida State.

200.06 **Lost and Found: Another Missed Type IIn SN, CG X-2**
Franz E. Bauer[1], S. Smartt[2], W. N. Brandt[3], S. Immler[4]
[1]Columbia Univ., [2]Queen's U. Belfast, Ireland, [3]Penn State, [4]GSFC.

Session 201 Effective Mentoring of Women and Minority Students in Physics and Astronomy

AAPT Invited, Tuesday, 2:00-3:30pm, 615

Chair, Timothy F. Slater[1]
[1]Univ. of Arizona.

201.01 **Building Bridges to Diversity in Graduate Physics & Astronomy: The Fisk-Vanderbilt Masters-to-PhD Bridge Program**
Keivan G. Stassun[1]
[1]Vanderbilt University and Fisk University.

201.02 **A Novel Approach to Improving Diversity in Science: A Post-Baccalurate Research Year**
Kartik Sheth[1]
[1]Caltech / Spitzer Science Center / IPAC.

201.03 **Increasing Underrepresented Student Participation in Science Majors: The Pre-Major in Astronomy Program**
Daryl Haggard[1]
[1]University of Washington.

Session 202 Visualizing and Simulating the Cosmos with Computers

AAPT Invited, Tuesday, 2:00-3:30pm, 616

Chair, Wolfgang Christian[1]
[1]Davidson College.

202.01 **Discovering the Complexity of Supernovae through Three-Dimensional Simulations**
John M. Blondin[1]
[1]North Carolina State University.

202.02 **Scientific Computation and Astrophysical Gas Dynamics**
James M. Stone[1]
[1]Princeton University.

202.03 **Computational Astrophysics reaches its Third Age: From Star Formation to the Death of the Sun.**
Adam Frank[1]
[1]*University of Rochester.*

Session 203 Panel on Choosing a Keypad System

AAPT Panel, Tuesday, 2:00-3:30pm, 303

The panelists will present different perspectives concerning the choice and effective use of wireless keypads. These viewpoints describe the wide range of applications for keypads, from their use in small high school classes to large university lectures. Panelists: C. Fred Moore, Univ. of Texas, Austin, TX; Tim Stelzer, Univ. of Illinoois, Urbana, IL; and Paul Williams, Austin Comm. College, Austin, TX

Chair, Ray Burnstein[1]
[1]*Illinois Institute of Technology.*

Chair, Leon M. Lederman[1]
[1]*Illinois Institute of Technology.*

Session 204 University Supervisors and Cooperating Teachers: Their Critical Roles for Student Teaching

AAPT Special, Tuesday, 2:00-3:40pm, 310

Chair, Stamatis Vokos[1]
[1]*Seattle Pacific University.*

204.01 **Field Experiences for Prospective Physics Teachers***
Ingrid Novodvorsky[1]
[1]*University of Arizona.*

204.02 **Essential Support Systems for Emerging Physics Teachers**
Sally Luttrell-Montes[1]
[1]*University of Washington.*

204.03 **Teachers in Residence: University Supervisors, Cooperating Teachers, and In-Service Mentors**
Michael D. Wolter, Mr.[1]
[1]*Muncie Central HS.*

204.04 **A Student Teacher Effectiveness Review System**
Carl J. Wenning[1]
[1]*Illinois State University.*

Session 205 Implementing Reform Instruction

AAPT Oral, Tuesday, 2:00-3:30pm, 307-08

Chair, Ann Brandon[1]
[1]*Joliet West HS.*

205.01 **Promoting Instructional Change: Beyond an Emphasis Curriculum**
Charles Henderson[1], **M. H. Dancy**[2], **A. Beach**[1]
[1]*Western Michigan University,* [2]*University of North Carolina at Charlotte.*

205.02 **Replicating Reforms in a Large-scale Lecture Environment**
Noah Finkelstein[1], **S. Pollock**[1]
[1]*University of Colorado at Boulder.*

205.03 **Implementation and Results of a Learning Assistant Program**
Thomas B. Bogue[1], **L. Seeley**[1], **S. Vokos**[1]
[1]*Seattle Pacific University.*

205.04 **Understanding Graduate Teaching Assistants as Tutorial Instructors**
Rachel E. Scherr[1], **A. Elby**[1]
[1]*University of Maryland.*

205.05 **Graduate TAs as Tutorial Instructors: A Case Study**
Renee Michelle Goertzen[1], **R. E. Scherr**[1], **A. Elby**[1]
[1]*University of Maryland.*

205.06 **Teaching AP Physics with the Activity Based Physics CD**
Maxine C. Willis[1]
[1]*Dickinson College.*

205.07 **Adventures in Studio Physics**
Sarah D. Johnson[1], **N. Alberding**[1]
[1]*Simon Fraser University, Canada.*

205.08 **Tracking and Analyzing Student Writing in Physics by Inquiry**
Dedra Demaree[1], G. Aubrecht[2], L. Bao[2], W. Zhao[2]
[1]College of the Holy Cross, [2]The Ohio State University.

205.09 **Student Evaluation Differences between Diffrent Physics by Inquiry Courses**
Gordon J. Aubrecht, II[1]
[1]Ohio State University at Marion.

Session 206 Stardust Mission

Plenary, Tuesday, 3:40-4:30pm, Ballroom 6

206.01 **The Return of Stardust**
Andrew J. Westphal[1]
[1]UC, Berkeley.

Session 207 Richtmyer Memorial Lecture

Plenary, Tuesday, 4:40-5:30pm, Ballroom 6

Chair, Richard Peterson[1]
[1]Bethel Univ..

207.01 **Evidence from Type Ia Supernovae for an Accelerating Universe and Dark Energy**
Alexei V. Filippenko[1]
[1]University of California, Berkeley.

Banquet

Joint Event, Tuesday, 7:15 pm - 9:30 pm, Sheraton
Food choices are beef, chicken, or vegetarian. More details on this event to come.
Tickets: $55

WEDNESDAY

Speaker Ready Room

Attendee Services, Wednesday, 7:30am-4:00pm, 603-04
See Saturday's listing for AV instructions.

Registration

Attendee Services, Wednesday, 8:00am-2:00pm, South Lobby

Cyber Café

Attendee Services, Wednesday, 8:00am-3:30pm, South Lobby
See Sunday's listing for details.

Session 208 Rossi Prize Lecture

Plenary, Wednesday, 8:30-9:20am, Ballroom 6

208.01 **Spin and Magnetic Evolution of Millisecond Pulsars in X-Ray Binaries**
Deepto Chakrabarty[1]
[1]MIT.

208.02 **Burst Oscillations: A New Spin on Neutron Stars**
Tod E. Strohmayer[1]
[1]NASA's GSFC.

208.03 **Accreting Millisecond Pulsars - An Overview of Recent Developments**
Rudy Wijnands[1]
[1]University of Amsterdam, The Netherlands.

Gadgets and Gizmos

Attendee Services, Wednesday, 9:20am-1:00pm, South Lobby
See Sunday's listing for details.

Job Center

Attendee Services, Wednesday, 9:20am-12:00pm, Exhibit Hall 4

Session 209 Poster Session IV

AAPT Poster, Wednesday, 9:20am-4:00pm, Exhibit Hall 4

209.01 **Reasoning Ability and Epistemological Attitudes as Predictors of Success**
Elizabeth B. Etters[1], O. Tfeily[1], M. Dancy[1]
[1]UNC-Charlotte.

209.02 **Optical Limiting in Solid-Core Holey Fibers**
Stacey R. Sueoka, Ms.[1], J. Butler[1], S. Montgomery[2], J. Shirk[3], S. Flom[3], R. Pong[3], B. Wright[3], T. Tauney[3], A. Rosenberg[3], C. Menyuk[4], J. Hu[4]
[1]Pacific University, [2]United States Naval Academy, [3]NRL, [4]U. Maryland.

209.03 **Is Fresnel Diffraction a Unified Diffraction Model ?**
Mark P. Neyer[1], H. Schmitzer[1]
[1]Xavier University.

209.04 **Repeatability and Precision of Laser Diffraction Measurements of Small Objects**
Scott C. Dudley[1], R. Mudry[1]
[1]USAF Academy.

209.05 **Applying Archimedes' Law to Ice Melting in Sea Water**
Peter D. Noerdlinger[1], K. R. Brower[2]
[1]St Mary's University, Halifax, NS Canada, [2]New Mexico Institute of Technology.

209.06 **Spherical Rare Earth Magnets And The Dipole-Dipole Interaction**
Al J. Adams[1]
[1]University Arkansas Little Rock.

209.07 **The Effects of Magnetic Fields on Cooling Fans**
Raphael G. Cherney[1]
[1]Brownell-Talbot School.

209.08 **Using SAT scores to identify students at risk in introductory physics**
Vincent P. Coletta[1], J. Phillips[1]
[1]Loyola Marymount University.

209.09 **A Methodology for Developing Diagnostic Concept Inventories**
Rebecca Lindell[1]
[1]Southern Illinois University Edwardsville.

209.10 **A Classification Scheme for Categorizing Different Concept Inventories**
Rebecca Lindell[1], T. Foster[1]
[1]Southern Illinois University Edwardsville.

209.11 **Student Perceptions of Science Ability, Experiences, Expectations, and Career Choices**
Michael Cherney[1], I. Cherney[1]
[1]Creighton University.

209.12 **"Is Entropy conserved?" Student Understanding of Entropy in Introductory Physics**
Warren M. Christensen[1], D. E. Meltzer[2]
[1]Iowa State University, [2]University of Washington.

209.13 **Sensemaking: Conceptualizing and Coding for "Good" Student Reasoning**
Andrew Elby[1], R. Scherr[1], T. Bing[1]
[1]University of Maryland.

209.14 **Modeling Student Thinking about Motion in Tutorial**
Brian W. Frank[1], R. E. Scherr[1]
[1]University of Maryland.

209.15 **Keeping a Good Things Going: What does sustaining reforms in physics mean?**
Noah D. Finkelstein[1], S. Pollock[1]
[1]University of Colorado at Boulder.

209.16 **Graduate TAs as Tutorial Instructors: A Case Study**
Renee Michelle Goertzen[1], R. E. Scherr[1], A. Elby[1]
[1]University of Maryland.

209.17 **The Epistemological Development of Physics Majors**
Elizabeth Gire[1], E. Price[2], B. Jones[1]
[1]UC, San Diego, [2]California State University, San Marcos.

209.18 **Concepts Retention and Its Dependence on the Type of Instruction**
Hugo Alarcon[1], J. J. Velarde-Magana[2], G. Zavala[1]
[1]TecnolÃ³gico de Monterrey, Mexico, [2]Tecnologico de Monterrey, Mexico.

209.19 **Group Problem Solving as a Zone of Proximal Development activity**
Eric Brewe[1]
[1]Hawaii Pacific University.

209.20 **Student Estimates of Probability and Uncertainty in Statistical Physics**
Donald B. Mountcastle[1], B. R. Bucy[1], J. R. Thompson[1]
[1]University of Maine.

209.21 **Swoosing: Why and When does it Occur in a Physics Class?**
Valerie K. Otero[1], S. Jalovec[1], I. Her Many Horses[1], D. Harlow[1]
[1]University of Colorado, Boulder.

209.22 **Proportional Reasoning: A Valid Instrument to Survey Understanding**
Cheryl P. Schaefer[1]
[1]Missouri State University.

209.23 **Stabilization: A Descriptive Framework for Problem Solving**
Sherry L. Savrda[1]
[1]Seminole Community College.

209.24 **The Background of PER People: A Survey**
Laura McCullough[1]
[1]University of Wisconsin-Stout.

209.25 **What Gets Swept Under the Rug in Teaching Quantum Tunneling**
S. B. McKagan[1], K. K. Perkins[1], C. E. Wieman[1]
[1]University of Colorado.

Session 210 Space-Based Instrumentation II

AAS Poster, Wednesday, 9:20am-4:00pm, Exhibit Hall 4

210.01 **Status of the James Webb Space Telescope (JWST)**
Mark Clampin[1], C. Bowers[1], L. Feinberg[1], JWST Project
[1]NASA's GSFC.

210.02 **JWST Mirror Building Paradigms at Tinsley, Part 3**
Anthony B. Hull[1], J. Kincade[1], G. Cole[1], R. Garfield[1], R. Bernier[1], C. Kiikka[1], J. Daniel[1], R. Brown[2], B. Gallagher[2], D. Chaney[2], A. McKay[3], D. Neal[4], L. Cohen[5]
[1]L-3 Communications, Tinsley, [2]BATC, [3]NGST, [4]WFSI, [5]SAO.

210.03 **Status of Wavefront Sensing and Control of the James Webb Space Telescope**
Charles W. Bowers[1], S. Acton[2], A. Contos[2], B. Dean[1], L. Feinberg[1], B. Hayden[1], D. Shields[2]
[1]NASA's GSFC, [2]BATC.

210.04 **Progress on NIRCam, the Near-Infrared Camera for JWST**
Marcia J. Rieke[1], S. Horner[2], D. Kelly[1], J. Stansberry[1], E. Young[1], D. Eisenstein[1], D. McCarthy[1], M. Meyer[1], G. Rieke[1], S. Baum[3], C. Beichman[4], R. Doyon[5], A. Dressler[6], L. Ferrarese[7], T. Greene[8], D. Hall[9], K. Hodapp[9], D. Johnstone[7], S. Lilly[10], P. Martin[11], T. Roellig[8], J. Stauffer[12], J. Trauger[4]
[1]U. Arizona, [2]Lockheed Martin Advanced Tech. Ctr., [3]RIT, [4]JPL, [5]U. Montreal, Canada, [6]Carnegie Obs., [7]HIA/DAO, Canada, [8]NASA/ARC, [9]U. Hawaii, [10]ETH, Switzerland, [11]U. Toronto, Canada, [12]Spitzer Science Center.

210.05 **Detectors for the James Webb Space Telescope Near Infrared Spectrograph: Test Performance and Calibration Studies**
Bernard J. Rauscher[1]
[1]NASA Goddard Space Flight Center.

210.06 **Building the Mid-Infrared Instrument for JWST**
George Rieke[1], G. S. Wright[2], MIRI Science Team
[1]Univ. of Arizona, [2]Royal Observatory, United Kingdom.

210.07 **How can the James Webb Space Telescope measure First Light, Reionization, and Galaxy Assembly?**
Rogier A. Windhorst[1], R. A. Jansen[1], S. H. Cohen[1], M. Mechtley[1], H. Yan[2], C. Conselice[3]
[1]Arizona State Univ., [2]Carnegie Obs., [3]U. Nottingham, United Kingdom.

210.08 **Optimization of the Kepler Field of View**
Natalie M. Batalha[1], W. Borucki[2], D. A. Caldwell[3], H. Chandrasekaran[3], T. N. Gautier[4], J. Jenkins[3], D. G. Koch[2]
[1]San Jose State University, [2]NASA Ames, [3]SETI Inst., [4]JPL.

210.09 **Photometric Analysis for the Kepler Mission: Optimal Aperture Photometry and Difference Image Analysis**
Jon M. Jenkins[1], R. L. Gilliland[2], H. Chandrasekaran[1], S. T. Bryson[3], D. A. Caldwell[1], W. J. Borucki[3]
[1]SETI Institute, [2]STScI, [3]NASA Ames Research Center.

210.10 **Simulating Kepler Data: the End-To-End Model of the Kepler Photometer**
Stephen T. Bryson[1], J. M. Jenkins[2], D. J. Peters[3], W. J. Borucki[1]
[1]NASA Ames Research Center, [2]SETI Institute, [3]Ball Aerospace.

210.11 **First Photometric Performance Results of the Kepler Single String Focal Plane**
David G. Koch[1], W. Borucki[1], E. Dunham[2], J. Geary[3], J. Jenkins[4], V. Argabright[5], R. Bauer[5], C. Dumont[5], S. McArthur[5], D. Peters[5], R. Philbrick[5], A. Rudeen[5], J. VanCleve[5], F. Witteborn[6]
[1]NASA/Ames Research Center, [2]Lowell Observatory, [3]SAO, [4]SETI Institute, [5]Ball Aerospace, [6]Orbital Sciences Corp.

210.12 **Quick Look Software for the Kepler Photometer**
Kenneth Topka[1], J. Jenkins[1], D. Caldwell[1], W. J. Borucki[2]
[1]SETI Institute, [2]NASA Ames Research Center.

210.13 **Validation of Kepler Planet Candidates**
Douglas A. Caldwell[1], N. M. Batalha[2], W. J. Borucki[3], D. G. Koch[3], H. Chandrasekaran[1], J. M. Jenkins[1], K. P. Topka[1], T. N. Gautier[4], R. L. Gilliland[5]
[1]SETI Institute, [2]San Jose State University, [3]NASA Ames, [4]JPL, [5]STScI.

210.15 **Carbon Star Science with SIM**
Guy Worthey[1]
[1]Washington State University.

Session 211 Studying Galaxy Evolution with Nearby Galaxies

AAS Poster, Wednesday, 9:20am-4:00pm, Exhibit Hall 4

211.01 **Numerical Simulations of Major Barred Galaxies**
Chien-Chang Yen[1], L. Lin[2], C. Yuan[1]
[1]Inst. of Astronomy & Astrophysics, Taiwan, [2]Dept. of Physics, National Taiwan University, Taiwan.

211.02 **The Carnegie-Irvine Nearby Galaxies Survey (CINGS): Surface Brightness Profiles, Color Profiles and 1-D Decompositions**
Marc Seigar[1], L. C. Ho[2], A. J. Barth[1], C. Y. Peng[3]
[1]UC, Irvine, [2]OCIW, [3]STScI.

211.03 **The Angular Momentum of Disk Galaxies: A Multi-Wavelength Study Using the Virtual Observatory**
Luca Cortese[1], B. Catinella[2], C. M. Springob[3]
[1]Cardiff Univ., United Kingdom, [2]NAIC-Arecibo Observatory, [3]US Naval Research Laboratory.

211.04 **Tests of the Modified Tremaine-Weinberg Method**
Sharon Meidt[1], R. J. Rand[1], M. R. Merrifield[2], V. P. Debattista[3], J. Shen[4]
[1]Univ. of New Mexico, [2]U. Nottingham, UK, [3]U. Washington, [4]U. Texas.

211.05 **A New Method for Detecting Stellar Streams in the Halos of Galaxies**
Jonathan Sick[1], R. S. de Jong[2]
[1]Rice University, [2]Space Telescope Science Institute.

211.06 **Characterizing Disk Truncations with N-Body Simulations**
Rok Roskar[1], V. P. Debattista[1], G. S. Stinson[1], T. R. Quinn[1], T. Kaufmann[2], J. Wadsley[3]
[1]Univ. of Washington, [2]University of California, Irvine, [3]McMaster University, Canada.

211.07 **A Detailed Look at 13 of the Nearest E+A Galaxies**
James E. Turner[1], M. P. Bergmann[1], W. J. Couch[2], C. Blake[2], K. Gebhardt[3], K. Bekki[4], B. W. Miller[1]
[1]Gemini Observatory, Chile, [2]Swinburne University of Technology, Australia, [3]U. Texas at Austin, [4]University of New South Wales, Australia.

211.08 **Modes of Star Formation in an Early Universe Laboratory: HST/ACS Imaging of Hickson Compact Group 31**
Joshua Tobolewski[1], S. C. Gallagher[2], R. Chandar[3], C. Gronwall[1], J. English[4], K. E. Johnson[5], P. R. Durrell[6], J. E. Hibbard[7], C. Mendes de Oliveira[8], B. C. Whitmore[9], J. C. Charlton[1]
[1]Penn State Univ., [2]UCLA, [3]OCIW, [4]U. Manitoba, Canada, [5]U. Virginia, [6]Youngstown State Univ., [7]NRAO, [8]Univ. of Sao Paulo, Brazil, [9]STScI.

211.09 **Analysis of Star Formation in Closely Interacting Galaxy Pairs**
Jacob Arnold[1], E. J. Barton[1]
[1]University of California, Irvine.

211.10 **Modes of Star Formation in an Early Universe Laboratory: HST/ACS Imaging of Hickson Compact Group 7**
Patrick Durrell[1], S. C. Gallagher[2], C. Gronwall[3], J. English[4], R. Chandar[5], K. E. Johnson[6], J. E. Hibbard[7], A. L. Heiderman[8], B. C. Whitmore[9], J. C. Charlton[3]
[1]Youngstown State Univ., [2]UCLA, [3]Penn State Univ., [4]Univ. of Manitoba, Canada, [5]OCIW, [6]Univ. of Virginia, [7]NRAO, [8]Univ. of Texas, [9]STScI.

211.11 **Where in the Virgo Cluster are Galaxies Stripped?**
Hugh H. Crowl[1], J. D. Kenney[1], J. H. vanGorkom[2], A. Chung[3], J. A. Rose[4]
[1]Yale University, [2]Columbia University, [3]University of Massachusetts, [4]University of North Carolina.

211.12 **Deep X-ray (and Multiwavelength) Survey of the Coma Cluster of Galaxies**
Ann E. Hornschemeier[1], B. Mobasher[2], L. P. Jenkins[1], N. A. Miller[3], C. A. Kilbourne[1], M. W. Bautz[4], D. M. Hammer[3]
[1]NASA GSFC, [2]STScI, [3]Johns Hopkins University, [4]MIT.

211.13 **Grism Selected Emission Line Galaxies in the Field Of Abell 1689**
Gerhardt R. Meurer[1], N. Benítez[2], D. Coe[1], J. M. Vilchez[2], B. L. Frye[3], H. C. Ford[1], G. D. Illingworth[4], C. Gronwall[5], ACS Science-Team
[1]Johns Hopkins Univ., [2]Instituto de Astrofísica de Andalucía, Spain, [3]Dublin City University, Ireland, [4]University of California Santa Cruz, [5]Pennsylvania State University.

211.14 **A UV-NIR Photometric Comparison of Simulated and Observed Cluster Galaxies**
Cameron B. Hummels[1], D. Schiminovich[1], G. Bryan[1], GALEX Science Team
[1]Columbia Univ.

Session 212 Gamma-Ray Bursts

AAS Poster, Wednesday, 9:20am-4:00pm, Exhibit Hall 4

212.01 **Multi-wavelength Study of Prompt Optical Counterparts of Swift GRBs Detected by ROTSE-III**
Eli S. Rykoff[1], F. Aharonian[2], C. Akerlof[1], M. C. Ashley[3], S. Barthelmy[4], N. Gehrels[4], E. Gogus[5], T. Guver[6], D. Horns[2], U. Kiziloglu[7], H. Krimm[4], T. A. McKay[1], M. Ozel[8], A. Phillips[3], R. Quimby[9], G. Rowell[10], W. Rujokaparn[11], B. Schaefer[12], D. A. Smith[13], H. Swan[1], W. T. Vestrand[14], J. C. Wheeler[9], J. Wren[14], S. A. Yost[1], F. Yuan[1]
[1]Univ. of Michigan, [2]MPIK, Germany, [3]UNSW, Australia, [4]GSFC, [5]Sabanci U., Turkey, [6]Univ. of Istanbul, Turkey, [7]METU, Turkey, [8]COMU, Turkey, [9]Univ. of Texas, [10]Univ. of Adelaide, Australia, [11]Univ. of Arizona, [12]LSU, [13]Guilford College, [14]LANL.

212.02 **The Diverse eV Emission from Gamma-ray Bursts**
Sarah Yost[1], F. Aharonian[2], C. Akerlof[1], M. Ashley[3], S. Barthelmy[4], N. Gehrels[4], E. Gogus[5], T. Guver[6], D. Horns[2], U. Kiziloglu[7], H. Krimm[4], T. McKay[1], M. Ozel[8], A. Phillips[3], R. Quimby[9], G. Rowell[2], W. Rujopakarn[1], E. Rykoff[1], B. Schaefer[10], D. Smith[11], H. Swan[1], W. Vestrand[12], C. Wheeler[9], J. Wren[12], F. Yuan[1]
[1]Univ. of Michigan, [2]MPI fur Kernphysik, Germany, [3]Univ. of New South Wales, Australia, [4]Goddard, [5]Sabanci University, Turkey, [6]Univ. of Istanbul, Turkey, [7]METU, Turkey, [8]Canakkale University, Turkey, [9]Univ. of Texas, [10]Louisiana State University, [11]Guilford College, [12]LANL.

212.03 **Temporal and Angular Properties of GRB Jets Emerging from Massive Stars**
Brian J. Morsony[1], D. Lazzati[1], M. C. Begelman[1]
[1]University of Colorado, Boulder.

212.04 **An Estimation Of The Gamma-Ray Burst Afterglow Apparent Optical Luminosity Distribution Function**
Carl W. Akerlof[1], H. F. Swan[1]
[1]Univ. of Michigan.

212.05 **A Search for Short Timescale Structure in GRB041223**
Stephanie L. Fiorenza[1], E. E. Fenimore[2], M. Galassi[2], B. Norman[2]
[1]Pennsylvania State University, [2]Los Alamos National Lab.

212.06 **Probing the Early Universe with GRBs**
Adria C. Updike[1], D. H. Hartmann[1], J. R. King[1], S. D. Brittain[1]
[1]Clemson University.

212.07 **GRB Photometric Redshifts and Spectral Slopes From the Swift UVOT**
Daniel Vanden Berk[1], Swift UVOT Team
[1]Pennsylvania State Univ..

212.08 **New Catalog of Astrometry Corrected Swift XRT GRB X-ray Afterglow Positions**
Judith L. Racusin[1], D. N. Burrows[1], Swift XRT team
[1]Penn State University.

212.09 **Using Interplanetary Network Data to Search for Hypernova/GRB Coincidences**
Kevin C. Hurley[1], E. Pian[2]
[1]UC, Berkeley, [2]INAF, Italy.

Session 213 How To ... Resources for Scientist Educators

AAS Poster, Wednesday, 9:20am-4:00pm, Exhibit Hall 4

213.02 **SABER: The Searchable Annotated Bibliography of Education Research in Astronomy**
David H. Bruning[1], J. M. Bailey[2], G. Brissenden[3]
[1]Univ. of Wisconsin-Parkside, [2]UNLV, [3]Univ. of Arizona.

213.03 **Edplum: A Wikipedia-Style Resource for Educators**
David M. Rothstein[1]
[1]Cornell Univ..

213.04 **Best Practices for Modifying Astronomy Curriculum for Special Needs Students**
Julia K. Olsen[1], T. F. Slater[1]
[1]University of Arizona.

213.05 **Resources and Issues to Consider for Astronomers Who Wish to Work with Out-of-School Time Organizations and Programs**
Julie H. Lutz[1], D. Powell[2], J. Frieling[3]
[1]Univ. of Washington, [2]Univ. of Washington, [3]School's Out Washington.

213.06 **Adapting Formal Education Materials for Out-of-School Settings**
Denise A. Smith[1], H. Gibbons[2]
[1]STScI, [2]Pacific Science Center.

Session 214 It's All About Clear Skies

AAS Poster, Wednesday, 9:20am-4:00pm, Exhibit Hall 4

214.01 **Controlling Light Pollution in Chile - A Status Report.**
Malcolm G. Smith[1], P. Sanhueza[2], H. E. Schwarz[1], A. R. Walker[1]
[1]Cerro Tololo Inter-Amer. Obs., Chile, [2]OPCC, Chile.

214.02 **Willingness to Pay for a Clear Night Sky: Use of the Contingent Valuation Method**
Stephanie Simpson[1], J. Winebrake[1], J. Noel-Storr[1]
[1]Rochester Inst. of Technology.

Session 215 Optical Cluster Finding

AAS Poster, Wednesday, 9:20am-4:00pm, Exhibit Hall 4

215.01 **Scatter in the Richness-Velocity Dispersion Relation for SDSS Galaxy Clusters**
Matthew R. Becker[1]
[1]University of Michigan.

215.02 **Optical Galaxy Cluster Detection in SDSS DR5**
Wayne Barkhouse[1], T. Hacker[2], J. Song[1], J. J. Mohr[1]
[1]Univ. of Illinois, [2]USAF Academy.

215.03 **Improving Galaxy Cluster Photometric Redshifts**
Huan Lin[1], M. Lima[2], H. Oyaizu[2], C. Cunha[2], J. Frieman[3], J. Annis[1], B. Koester[4], J. Hao[4], T. McKay[4], E. Sheldon[5]
[1]Fermilab, [2]University of Chicago, [3]Fermilab/U. Chicago, [4]University of Michigan, [5]NYU.

215.04 **Selection Effects in Galaxy Cluster Surveys: What Do We Learn from Observed Scaling Relations?**
Brian D. Nord[1], A. E. Evrard[1]
[1]University of Michigan.

215.05 **Luminosity and Color Distributions of Galaxies in Clusters and Groups in the SDSS**
Sarah M. Hansen[1], E. S. Sheldon[2], R. H. Wechsler[3], M. Masjedi[2]
[1]Univ. of Chicago, [2]New York University, [3]Stanford.

215.06 **Galaxy Cluster Correlation Function in the Dark Energy Survey**
Juan Estrada[1], A. Plazas[2], Fermilab Galaxy Cluster Group
[1]Fermilab, [2]Universidad de Los Andes, Colombia.

215.07 **A Systematic Search for High Surface Brightness Giant Arcs in a Sloan Digital Sky Survey Cluster Sample**
Victor Scarpine[1], S. Allam[1], J. Annis[1], T. Diehl[1], J. Estrada[1], P. Hall[2], T. Las[1], H. Lin[1], M. Makler[3], W. Merritt[1], D. Tucker[1], D. McGinnis[1], J. Kubo[1], D. Kubik[4]
[1]Fermi National Accelerator Laboratory, [2]York University, Canada, [3]Centro Brasileiro de Pesquisas Fisicas, Brazil, [4]Northern Illinois University.

215.08 **Red Sequence Cluster Finding in the Millennium Simulation**
August E. Evrard[1], D. Croton[2], M. White[2], J. Cohn[2], E. Ellingson[3]
[1]Univ. of Michigan, [2]Univ. of California, Berkeley, [3]Univ. of Colorado.

215.09 **The SDSS Southern Survey Coadd Data**
James T. Annis[1], H. Lin[1], G. Miknaitis[1], R. Lupton[2], M. Strauss[2], J. Gunn[2], L. Jiang[3], X. Fan[3], A. Becker[4]
[1]Fermi National Accelerator Lab., [2]Princeton University, [3]University of Arizona, [4]University of Washington.

Session 216 Modelling Variable and Binary Stars

AAS Poster, Wednesday, 9:20am-4:00pm, Exhibit Hall 4

216.01 **Light Curves and Spot Modelling for V471 Tauri**
Valmin J. Miranda[1], T. Vaccaro[1]
[1]Florida Institute of Technology.

216.02 **Polaris' Pulsational Mass**
Siobahn Morgan[1]
[1]Univ. of Northern Iowa.

216.03 **Modeling the Stellar Evolution of V725 Sgr**
Holly M. Kagy[1], S. M. Morgan[1]
[1]University of Northern Iowa.

216.04 **Angular Momentum Transport in Double White Dwarf Binaries**
Patrick M. Motl[1], J. E. Tohline[1], J. Frank[1]
[1]Louisiana State University.

216.05 **A Pulsational Study of V823 Cas**
Jennifer N. Wahl[1], S. M. Morgan[1]
[1]University of Northern Iowa.

216.06 **How Do Starspots Affect Light Curves of Contact Binary Stars?**
Robert L. Hill[1]
[1]Ball State University.

216.07 **Extending the Model of KH 15D**
Devin W. Silvia[1], E. Agol[1]
[1]University of Washington.

Session 217 Starbursts & Interacting Galaxies

AAS Poster, Wednesday, 9:20am-4:00pm, Exhibit Hall 4

217.01 **The Extended Environments of ULIRGS and LIRGS: Clusters in Formation**
Edward A. Laag[1]
[1]UC, Riverside.

217.02 **The Nature of the Densest Gas in Nearby Starbursts**
David S. Meier[1], J. L. Turner[2]
[1]Jansky Fellow; NRAO, [2]UCLA.

217.03 **The Radio Continuum, Far-infrared Emission, and Dense Molecular Gas in Star-forming Galaxies**
Fan Liu[1], Y. Gao[1]
[1]Purple Mountain Observatory, China.

217.04 **IRS Spectroscopy of Collisional Ring Galaxies**
Philip N. Appleton[1], P. Beirao[2], L. Armus[3], B. Brandl[2], V. Charmandaris[4], T. Jarrett[3], S. Lord[1], B. Madore[5], J. Mazzarella[6], W. T. Reach[6], M. Seibert[5], B. J. Smith[7], C. Struck[8]
[1]NHSC-Caltech, [2]Leiden University, Netherlands Antilles, [3]SSC-Caltech, [4]Crete University, Greece, [5]OCIW, [6]IPAC-Caltech, [7]ETSU, [8]ISU.

217.05 **A Radio Spectral Line Study of the 2-Jy IRAS-NVSS Sample**
Maria Ximena Fernandez[1], E. Momjian[2], T. Ghosh[2], C. J. Salter[2]
[1]Vassar College, [2]NAIC.

217.06 **An Optical Datacube of Seyfert/Starburst Composite Galaxy NGC1365**
Katie M. Chynoweth[1], R. A. Knop, Jr.[1], R. A. Gibbons[1]
[1]Vanderbilt Univ..

Session 218 The 3Ts: Telescopes, Technologies and Techniques for Astronomy Education

AAS Poster, Wednesday, 9:20am-4:00pm, Exhibit Hall 4

218.01 **A Labview-controlled Small Radio Telescope**
Robert L. Mutel[1], T. Jaeger[1], V. Poole[2]
[1]Univ. of Iowa, [2]Truman State University.

218.02 **GNAT Educational Opportunities**
Roger B. Culver[1], E. R. Craine[2]
[1]Colorado State Univ./GNAT, [2]Western Research Company/GNAT.

218.03 **Las Cumbres Observatory Global Telescope Network: Keeping Education in the Dark**
Rachel J. Ross[1], W. Geibink[1], W. E. Rosing[1], T. M. Brown[1]
[1]Las Cumbres Observatory.

218.04 **The Little Thompson Observatory Receives the Retired Mt. Wilson 24-inch Telescope**
Andrea E. Schweitzer[1]
[1]Little Thompson Obs..

218.05 **NIRo Telescope: Research and Education**
Adam W. Rengstorf[1], S. Slavin[1]
[1]Purdue University Calumet.

218.06 **Improved Undergraduate Astronomy Laboratories with A Modern Telescope Control System**
Anthony J. Milano[1], D. Broder[2], R. Finn[2], H. Newberg[1], A. Weatherwax[2], D. Whittet[1]
[1]Rensselaer Polytechnic Institute, [2]Siena College.

218.07 **The MTSU Uranidrome: A Naked-Eye Observatory for Teaching Astronomy and Geometry**
Eric W. Klumpe[1]
[1]Middle Tennessee State University.

218.08 **New Searching Capability and OpenURL Linking in the ADS**
Guenther Eichhorn[1], A. Accomazzi[1], C. S. Grant[1], E. Henneken[1], M. J. Kurtz[1], D. M. Thompson[1], S. S. Murray[1]
[1]SAO.

218.09 **The New Physics and Astronomy Education Portal of the Smithsonian/NASA Astrophysics Data System**
Michael J. Kurtz[1], G. Eichhorn[1], A. Accomazzi[1], C. Grant[1], E. Henneken[1], D. Thompson[1], E. Bohlen[1], S. S. Murray[1]
[1]Harvard-Smithsonian, CfA.

218.10 **Sharing Images Intelligently: The Astronomical Visualization Metadata Standard**
Robert L. Hurt[1], L. Christensen[2], A. Gauthier[3]
[1]Spitzer Science Center/Caltech, [2]ESA/Hubble, Germany, [3]University of Arizona.

218.11 **Ensuring Quality of Digital Library Learning Objects for Computational Physics and Astronomy Education**
David A. Joiner[1]
[1]Kean Univ..

218.12 **Appreciating Hubble at Hyper-speed: A Web-tool for Students and Teachers**
Lisa M. Will[1], M. Mechtley[2], S. Cohen[2], R. A. Windhorst[2], S. Malhotra[2], J. Rhoads[2], N. Pirzkal[3], F. Summers[3]
[1]Mesa Community College, [2]Arizona State University, [3]Space Telecope Science Institute.

218.13 **Use Authentic Digital Sky Data to Investigate Earth's Motions**
Rick Kang[1]
[1]Friends of Pine Mountain Obs..

218.14 **Hera: Using NASA Astronomy Data in the Classroom**
James C. Lochner[1], S. Mitchell[2], W. D. Pence[3]
[1]USRA & NASA/GSFC, [2]SP Systems & NASA/GSFC, [3]NASA/GSFC.

218.15 **Spitzer Space Telescope Research Program for Teachers and Students: Using Spitzer data in *your* classroom with (relatively) simple software**
Theresa E. Roelofsen Moody[1], J. J. Feldmeier[2], V. Gorjian[3], B. Sepulveda[4], E. Sharma[4], T. Spuck[5], C. Weehler[6]
[1]New Jersey Astronomy Center for Education, [2]YSU, [3]JPL/Spitzer Science Center, [4]Lincoln High School, [5]Oil City Area Senior High School, [6]Luther Burbank High School.

218.16 **MPS Internships in Public Science Education: Sensing the Radio Sky**
Melvin Blake[1], M. W. Castelaz[1], D. Moffett[2], L. Walsh[3], M. LaFratta[3]
[1]Pisgah Astronomical Research Institute., [2]Furman University, [3]University of North Carolina-Asheville.

Session 219 YSO / Star Formation III

AAS Poster, Wednesday, 9:20am-4:00pm, Exhibit Hall 4

219.01 **Young Spectroscopic Binary M Stars in Ophiuchus**
Lisa A. Prato[1]
[1]Lowell Observatory.

219.02 **Keck HiRES Spectroscopy of Candidate Post T Tauri Stars**
Eric J. Bubar[1], J. King[1], D. Soderblom[2], C. Deliyannis[3], R. Boone[1]
[1]Clemson Univ., [2]Space Telescope Science Institute, [3]Indiana University.

219.03 **Spitzer IR Sudy of Sar Formation in an Embedded Young Cluster NGC2316**
William Langer[1], T. Velusamy[1], T. Thompson[1]
[1]JPL/Caltech.

219.04 **SiO Masers in the Orion BN-KL Outflow**
Christopher Beaumont[1], S. S. Doeleman[2]
[1]Calvin College, [2]MIT Haystack Observatory.

219.05 **Infrared and Optical Spectroscopy of Protostars in the Elephant Trunk Nebula**
Dohy Faied[1], W. T. Reach[1], A. Tappe[1], J. Rho[1]
[1]Caltech.

219.06 **Statistical Analysis of the Relationship Between Rotation, Disks, and X-rays Among Low-Mass Pre-Main-Sequence Stars**
Keivan Stassun[1], D. Ardila[2], S. Matt[3], E. Feigelson[4]
[1]Vanderbilt Univ., [2]Spitzer Science Center, [3]University of Virginia, [4]Penn State Univ..

219.07 **Pure Rotational H2 Emission from GSS 30 IRS 1**
Matthew Richter[1], M. A. Bitner[2], J. H. Lacy[2], D. T. Jaffe[2], T. K. Greathouse[3], G. A. Blake[4], A. C. Boogert[5], J. S. Carr[6], T. Currie[7], U. Gorti[8], G. J. Herczeg[4], D. Hollenbach[9], S. J. Kenyon[7], C. Knez[10], F. Lahuis[11], J. Najita[12], S. Redfield[2]
[1]UC, Davis, [2]Univ of Texas, [3]Lunar and Planetary Institute, [4]California Institute of Technology, [5]NOAO Gemini Science Center, Chile, [6]Naval Research Lab, [7]Harvard-Smithsonian Center for Astrophysics, [8]Univ of California, [9]NASA-Ames, [10]Univ of Maryland, [11]SRON-Groningen, The Netherlands, [12]NOAO.

219.08 **Young Vega and Altair Analogs: Rotationally-Enhanced Activity in HD 169142 and HD 135344**
C. A. Grady[1], G. Schneider[2], K. Hamaguchi[3], M. Sitko[4], W. Carpenter[5], K. Collins[6], G. Williger[6], B. Woodgate[7], R. Petre[7], J. Nuth, III[7], D. Hines[8], T. Henning[9], A. Quirrenbach[9], F. Menard[10], D. Wilner[11]
[1]Eureka Scientific and GSFC, [2]U. of Arizona, [3]USRA and GSFC, [4]Space Sciences Institute and U. Cincinnati, [5]U. Cincinnati, [6]U. Louisville, [7]NASA's GSFC, [8]Space Sciences Institute, [9]MPIA, Germany, [10]Laboratoire d'Astrophysique de Grenoble, France, [11]CfA.

219.09 **The Spin of Accreting Stars and Accretion-Powered Stellar Winds**
Sean Matt[1], R. E. Pudritz[2]
[1]University of Virginia, [2]McMaster University, Canada.

219.10 **The Gould's Belt Spitzer Legacy Project**
Lori Allen[1], Gould's Belt Team
[1]Harvard-Smithsonian Center for Astrophysics.

219.11 **The Cores to Disks (c2d) Spitzer Legacy Program: Summary of Resultson Evolution in Five Large Clouds**
Neal J. Evans, II[1], c2d Team
[1]Univ. of Texas.

219.12 **Near-Infrared Spectroscopy of Young Binaries**
Mary A. Barsony[1], T. P. Greene[2], K. E. Haisch, Jr.[3]
[1]San Francisco State Univ. & Space Science Institute, [2]NASA's Ames Research Center, [3]Utah Valley State College.

219.13 **A Non-Magnetocentrifugal Jet Model for Young Stellar Objects**
Peter T. Williams[1]
[1]M.O.I.O..

219.14 **An Archive of Chandra Observations of Regions of Star Formation (ANCHORS)**
Bradley D. Spitzbart[1], S. J. Wolk[1]
[1]Smithsonian Astrophysical Obs..

219.15 **Star Formation in the Gum Nebula: Cometary Globules CG4/6/SA101**
Jinyoung S. Kim[1], F. M. Walter[2], S. J. Wolk[3], W. H. Sherry[4], M. Foster[1]
[1]Univ. of Arizona, [2]Stony Brook University, [3]CfA, [4]NSO/NOAO.

219.16 **Clustering around Herbig Ae/Be Stars**
Nicole S. Van Der Bliek[1], B. Rodgers[2], S. Thomas[3], G. Doppmann[2]
[1]CTIO, Chile, [2]Gemini Observatory, Chile, [3]Lick Observatory.

219.17 **MOMIE: MIKE Observations of Mid-Infrared Excesses**
Brian R. Uzpen[1], H. A. Kobulnicky[1], C. Thom[2], M. E. Putman[3]
[1]Univ. of Wyoming, [2]University of Chicago, [3]Univ. Of Michigan.

219.18 **Visible Spectra of the Central Stars of Proplyds in Orion**
Michael W. Castelaz[1], B. McCollum[2], F. W. Bruhweiler[3], M. W. Niedner[4], A. B. Schultz[4], C. Mickey[4], D. J. MacConnell[5]
[1]Pisgah Astronomical Research Inst., [2]Spitzer Science Center / IPAC / Caltech, [3]Catholic University of America, [4]NASA/GSFC, [5]CSC/STScI.

219.19 **An X-ray Survey of FU Orionis Stars andUnusual X-ray Emission from Embedded YoungStars in NGC 2071**
Steve L. Skinner[1], A. E. Simmons[1], M. Audard[2], K. R. Briggs[3], M. Guedel[3], M. R. Meyer[4]
[1]U. Colorado, [2]U. Geneva, Switzerland, [3]Paul Scherrer Inst., Switzerland, [4]U. Arizona.

219.20 **The Eagle Nebula: Pillars of Creation, EGGs, and PMS Stars in NGC 6611**
Jeffrey Linsky[1], M. Gagne[2], A. Mytyk[2], M. McCaughrean[3], M. Andersen[4]
[1]JILA/U. Colorado & NIST, [2]West Chester U., [3]U. Exeter, UK, [4]U. Arizona.

219.21 **Outflows in the Galactic Legacy Infrared Mid-Plane Survey Extraordinaire (GLIMPSE)**
Douglas F. Watson[1], B. A. Whitney[2], M. Gomez[3], P. M. Denzmore[4], R. Indebetouw[5], M. Meade[1], B. Babler[1], E. Churchwell[1], GLIMPSE Team
[1]U. Wisconsin-Madison, [2]Space Science Inst., [3]Obs. Astronomico, Univ. Nacional de Cordoba, Observatorio, Argentina, [4]Rice University, [5]University of Viriginia.

Session 220 Fortune and Fame: Fellowships, Textbooks, Cartoons

AAS Poster, Wednesday, 9:20am-4:00pm, Exhibit Hall 4

220.01 **The Lowell Observatory Predoctoral Program**
Lisa A. Prato[1], W. M. Grundy[1]
[1]Lowell Observatory.

220.02 **The Textbook of the Future: What Will It Look Like?**
Harry L. Shipman[1], N. Finkelstein[2], D. McCray[3], M. Mac Low[4], D. Zollman[5]
[1]Univ. of Delaware, [2]University of Colorado, [3]Univ. of Colorado, [4]American Museum of Natural History, [5]Kansas State University.

220.03 **Eustace Tilley Views our Profession: The Astronomer as Portrayed in the Cartoons of The New Yorker Magazine**
Kenneth S. Rumstay[1]
[1]Valdosta State Univ..

Session 221 Biology of Astrobiology I Extremes of Earth Life

AAS Special, Wednesday, 10:00-11:30am, 611-12

Chair, Sanjoy Som[1]
[1]University of Washington.

Chair, Woodruff T. Sullivan[1]
[1]*Univ. of Washington.*

221.01 **The Dark, Hot Biosphere on Earth and Elsewhere**
John Baross[1]
[1]*UW School of Oceanography.*

221.02 **Of Ice and Microbes**
Jody Deming[1]
[1]*School of Oceanography.*

Session 222 Optical Cluster Finding: SDSS, RCS, DEEP

AAS Special, Wednesday, 10:00-11:30am, 613-14

Chair, Timothy A. McKay[1]
[1]*University of Michigan.*

222.01 **Photometrically Identified Clusters from the RCS**
Michael Gladders[1], **RCS Collaboration**
[1]*University of Chicago.*

222.02 **Optical Clusters from SDSS Imaging: The MaxBCG Cluster Catalog**
Ben Koester[1]
[1]*University of Michigan.*

222.03 **Groups and Clusters in DEEP2: The Evolution of Massive Halos and their Contents over 10 Gyr**
Brian Gerke[1]
[1]*UC-Berkeley.*

222.04 **Cluster Mass Profiles and Mass-to-light Ratios from Weak Lensing in the SDSS**
Erin Sheldon[1]
[1]*New York University.*

222.05 **Simulating Galaxy Populations in Clusters**
Risa H. Wechsler[1]
[1]*Stanford University.*

Session 223 AGN General Properties & Relativistic Jet Acceleration

AAS Oral, Wednesday, 10:00-11:30am, 6A

223.01 **Probing the Black Hole-Galaxy Connection with AGN Host Galaxy Morphologies**
Brooke Simmons[1], **C. M. Urry**[1], **COSMOS Team**
[1]*Yale Univ..*

223.02D **Refining the Radius-Luminosity Relationship for AGNs**
Misty C. Bentz[1], **B. M. Peterson**[1], **R. W. Pogge**[1]
[1]*Ohio State Univ..*

223.03D **Models of the Molecular Interstellar Medium in Starbursts and AGN from z=0-6**
Desika T. Narayanan[1], **T. Cox**[2], **S. Chakrabarti**[2], **R. Dave**[1], **T. Di Matteo**[3], **B. Kelly**[1], **L. Hernquist**[2], **P. Hopkins**[2], **C. Kulesa**[1], **Y. Li**[2], **B. Robertson**[4], **C. Walker**[1]
[1]*Univ. of Arizona,* [2]*CfA,* [3]*CMU,* [4]*KICP, University of Chicago.*

223.04 **The Black Hole Mass and Eddington Ratio Distributions of the 2QZ**
Christopher A. Onken[1], **J. A. Kollmeier**[2]
[1]*Herzberg Inst. of Astrophys., Canada,* [2]*OCIW & Princeton.*

223.05 **Radiation from Relativistic Poynting Jets and Collisionless Shocks**
Edison P. Liang[1], **K. Noguchi**[1], **S. Sugiyama**[2]
[1]*Rice Univ.,* [2]*Osaka University, Japan.*

223.06 **Local Electron Acceleration in GRB Shocks**
Mikhail Medvedev[1]
[1]*Univ. of Kansas.*

Session 224 CMB Theory and 21 cm Cosmology

AAS Oral, Wednesday, 10:00-11:30am, 6B

224.01D **Probing the First Sources with the Redshifted 21 cm Line**
Jonathan R. Pritchard[1], **S. R. Furlanetto**[2], **M. Kamionkowski**[1]
[1]*Caltech,* [2]*Yale.*

224.02D **Revealing the Epoch of Reionization with Redshifted 21 cm Measurements**
Judd D. Bowman[1]
[1]*MIT.*

224.03 **Integrated Sachs-Wolfe Effect Tomography**
Shirley Ho[1], C. Hirata[2], N. Padmanabhan[3], U. Seljak[4]
[1]Princeton Univ., [2]Institute of Advanced Studies, [3]Lawrence Berkeley Lab/ UC Berkeley, [4]International Center for Theoretical Physics, Italy.

224.04 **Measurement of Gigaparsec-Scale Perturbation Modes with Remote Quadrupole Observations**
Emory F. Bunn[1]
[1]Univ. of Richmond.

224.05 **Sunyaev-Zeldovich effect from Active Galactic Nuclei**
Suchetana Chatterjee[1], A. Kosowsky[1]
[1]Univ. Of Pittsburgh.

224.06 **Improving the Cosmological Recombination Calculation**
Wan Yan Wong[1], D. Scott[1]
[1]Univ. Of British Columbia, Canada.

Session 225 COSMOS and Other Surveys

AAS Oral, Wednesday, 10:00-11:30am, 605-07

225.01 **First Results from S-COSMOS: the Spitzer Legacy Survey of the HST-ACS 2sq.deg. Field**
David B. Sanders[1], M. Salvato[2], O. Ilbert[1], H. Aussel[3], J. Kartaltepe[1], J. Surace[4], D. Frayer[4], K. Sheth[4], N. Scoville[2], B. Bhattacharya[4], T. Brooke[2], G. Helou[2], L. Yan[4]
[1]Univ. of Hawaii, [2]Caltech, [3]CEA/Saclay, France, [4]SSC/Caltech.

225.02 **Large Structures and Galaxy Evolution in the COSMOS Survey**
Nicholas Scoville[1]
[1]Caltech.

225.03 **The Evolution of Bulges in COSMOS Spirals**
Kartik Sheth[1], L. Spalsbury[1], N. Scoville[1], COSMOS Collaboration
[1]Caltech.

225.04 **Morphology of z~0.7 Star-forming Galaxies from Deep GALEX Imaging of the COSMOS Field**
Michel A. Zamojski[1], D. Schiminovich[1], M. Rich[2], B. Mobasher[3], A. M. Koekemoer[3], P. Capak[4], GALEX Team, COSMOS Team
[1]Columbia Univ., [2]UCLA, [3]Space Telescope Science Institute, [4]Caltech.

225.05D **The X-ray Evolution of Early-Type Galaxies in the Extended Chandra Deep Field-South**
Bret Lehmer[1]
[1]Pennsylvania State University.

225.06 **Revealing the Star-formation History of the Universe up to z=2.5 from Deep Radio Surveys**
Nick Seymour[1], I. McHardy[2], M. Page[3], D. Moss[2], T. Dwelly[2]
[1]SSC/Caltech, [2]U. Southampton, UK, [3]UCL/MSSL, UK.

225.07 **The Nature of Lyman Alpha Emitters at z=3.1 in the MUSYC Survey**
Eric J. Gawiser[1], C. Gronwall[2], R. Ciardullo[2], H. Francke[3], P. G. van Dokkum[1], J. Feldmeier[4], C. M. Urry[1], MUSYC Collaboration
[1]Yale Univ., [2]Penn State, [3]U. de Chile, Chile, [4]Youngstown St..

225.08 **Cosmic Shear and its Redshift Evolution from the Deep Lens Survey**
Vera E. Margoniner[1], D. M. Wittman[1], D. Rusin[1], T. Tyson[1], I. P. Dell'Antonio[2]
[1]UC, Davis, [2]Brown University.

Session 226 Extrasolar Planets II

AAS Oral, Wednesday, 10:00-11:30am, 608-10

226.01D **Results From the KELT Transit Survey**
Joshua Pepper[1]
[1]The Ohio State University.

226.02D **Detection and Exploration of Planets from the Trans-atlantic Exoplanet Survey**
Francis T. O'Donovan[1], D. Charbonneau[2], L. Hillenbrand[1]
[1]Caltech, [2]Harvard-Smithsonian CfA.

226.03D **An L' and M-band AO Imaging Survey for Extrasolar Giant Planets: Progress and Preliminary Results**
Aren Heinze[1], P. Hinz[1], S. Sivanandam[1], M. Meyer[1]
[1]Univ. of Arizona.

226.04 **Astrometric Discovery of M-Dwarf Planets**
Steven H. Pravdo[1], S. B. Shaklan[1], M. J. Ireland[2], P. G. Tuthill[3]
[1]JPL, Caltech, [2]Caltech, [3]U. of Syndney, Australia.

226.05 **A KECK HIRES Doppler Search for Planets Orbiting Metal-Poor Dwarfs. II. On the Frequency of Short-Period Giant Planets in the Low-Metallicity Regime**
Alessandro Sozzetti[1], D. W. Latham[1], G. Torres[1], B. W. Carney[2], A. P. Boss[3], J. B. Laird[4], R. P. Stefanik[1]
[1]Harvard-Smithsonian, CfA, [2]University of North Carolina, [3]Carnegie Institution of Washington, [4]Bowling Green State University.

226.06 **The All Sky Extrasolar Planet Survey Using New Generation Multi-object Keck Exoplanet Tracker Instruments at the SDSS 2.5m telescope**
Jian Ge[1], J. C. van Eyken, M[1], S. Mahadevan[1], X. Wan[1], B. Zhao[1], A. Hariharan[1], C. DeWitt[1], P. Guo[1], R. Cohen[1], S. W. Fleming[1], J. Crepp[1], C. Warner[1], S. Kane[1], F. Leger[2], K. Pan[3], S. Snedden[3], S. Shaklan[4], E. Ford[5], D. P. Schneider[6], S. Seager[7], E. Agol[8], H. Ford[9]
[1]Univ. of Florida, [2]Fermilab, [3]Apache Point Obs., [4]JPL, [5]CFA, Harvard U., [6]Penn State, [7]Carnegie Instit. of Washington, [8]U. Washington, [9]JHU.

Session 227 Gamma-Ray Bursts

AAS Oral, Wednesday, 10:00-11:30am, 3B

227.01 **GRB 060607A: A Bright Early Optical Afterglow with Minimal Prompt Emission**
Stephen Holland[1], Swift Science Team
[1]NASA's GSFC & USRA.

227.02D **A Multi-wavelength Perspective on the GRB-SN Connection**
Alicia M. Soderberg[1]
[1]Caltech.

227.03 **Pulse-Width Evolution of Late Time X-ray flares in GRBs**
Daniel Kocevski[1], N. Butler[1], J. Bloom[1]
[1]UC Berkeley.

227.04 **X-ray Flares in GRB Afterglows: Spectral and Temporal Characteristics**
David Morris[1]
[1]PSU.

227.05 **Observations of Unusual Gamma-ray Burst Afterglows with the Robotic Palomar 60-inch Telescope**
Stephen B. Cenko[1]
[1]Caltech.

227.06D **Afterglow and Environment of the High-redshift GRB 050904**
Lijun Gou[1], D. Fox[1], P. Meszaros[1]
[1]Penn State Univ..

227.07 **GRB 060614 Opens a New Window on Short and Long Burst Categorization**
Neil Gehrels[1], Swift Team
[1]NASA's GSFC.

Session 228 Star Clusters I

AAS Oral, Wednesday, 10:00-11:30am, 204

228.01 **The Convergence Age of the Globular Cluster NGC 6397**
Harvey B. Richer[1], B. M. Hansen[2], S. Davis[1], J. Anderson[3], G. G. Fahlman[4], J. S. Kalirai[5], I. R. King[6], M. Rich[2], M. M. Shara[7], P. B. Stetson[4]
[1]Univ. of British Columbia, Canada, [2]UCLA, [3]Rice Univ., [4]Herzberg Institute of Astrophysics, Canada, [5]UCSC, [6]Univ. of Washington, [7]AMNH.

228.02 **Globular Clusters in a Globular Cluster**
Jason S. Kalirai[1], H. Richer[2], J. Anderson[3], J. Strader[1], K. Forde[1]
[1]UC, Santa Cruz, [2]U. British Columbia, Canada, [3]Rice University.

228.03 **Are white dwarfs born with a `KICK'?**
Saul Davis[1], H. B. Richer[1], J. Coffey[1], J. Anderson[2], J. Brewer[1], G. G. Fahlman[3], B. M. Hansen[4], J. Hurley[5], J. S. Kalirai[6], I. R. King[7], D. Reitzel[4], R. M. Rich[1], M. R. Rich[4], M. M. Shara[8]
[1]UBC, Canada, [2]Rice Univ., [3]HIA, Canada, [4]UCLA, [5]Monash Univ., Australia, [6]UCSC, [7]U. Washington, [8]American Museum of Natural History.

228.04 **Chemical Composition of Globulars of the Sagittarius System**
Marta Mottini[1], G. Wallerstein[1], A. McWilliam[2]
[1]Univ. of Washington, [2]Obs. of the Carnegie Inst. of Washington.

228.05 **NGC 346: Mass Function at Low Metallicity**
Elena Sabbi[1], M. Sabbi[2], A. Nota[2], M. Tosi[3], J. Gallagher, III[4], M. Meixner[1], S. Oey[5]
[1]STScI, [2]STScI/ESA, Space Telescope Operation Division, [3]INAF-Osservatorio Astronomico di Bologna, Italy, [4]University of Wisconsin, [5]UNIVERSITY of Michigan.

228.06 **The B and Be Star Population of NGC 3766**
M. V. McSwain[1]
[1]Yale Univ..

Session 229 The Supernova Legacy Survey and other SN Ia Surveys

AAS Oral, Wednesday, 10:00-11:30am, 3A

229.01 **Galaxy Clustering in Environments of Type Ia Supernovae from the CFHT Supernova Legacy Survey (SNLS).**
Melissa L. Graham[1], C. J. Pritchet[1], Supernova Legacy Survey
[1]University of Victoria, Canada.

229.02 **Dark Energy Constraints from the Supernova Legacy Survey**
Mark Sullivan[1], Supernova Legacy Survey
[1]University of Toronto, Canada.

229.03 **Analysis Techniques and Systematics in the Supernova Legacy Survey**
Alexander J. Conley[1], Supernova Legacy Survey
[1]Univ. of Toronto, Canada.

229.04 **Predicted Evolution in the Mean Properties of SNe Ia from SNLS Data**
Dale A. Howell[1], Supernova Legacy Survey
[1]Univ. of Toronto, Canada.

229.05D **The Texas Supernova Search**
Robert Quimby[1]
[1]Univ. of Texas.

229.06D **Spectropolarimetry of Type Ia Supernovae**
Ryan Chornock[1]
[1]UC Berkeley.

229.07 **Nearby Supernova Factory Spectroscopy of the Type Ia Supernova 2006D**
Rollin Thomas[1], G. Aldering[1], S. Bailey[1], S. Bongard[1], S. Loken[1], P. Nugent[1], S. Perlmutter[1], R. Scalzo[1], L. Wang[1], B. Weaver[1], P. Antilogus[2], S. Gilles[2], R. Pain[2], R. Pereira[2], C. Buton[3], Y. Copin[3], E. Gangler[3], G. Smadja[3], E. Pecontal[4], G. Rigaudier[4], R. Kessler[5], E. Baron[6], J. Parrent[6], C. Baltay[7], D. Rabinowitz[7]
[1]LBNL, [2]LPNHE, France, [3]IPNL, France, [4]CRAL, France, [5]KICP, [6]University of Oklahoma, [7]Yale University.

Session 230 Variable and Binary Stars

AAS Oral, Wednesday, 10:00-11:30am, 201

230.01 **Interacting Binaries with Eccentric Orbits**
Jeremy F. Sepinsky[1], B. Willems[1], V. Kalogera[1]
[1]Northwestern Univ..

230.02 **StarSpotz: A Sensitive Probe of the Differential Rotation Profile of Stars using MOST Photometry**
Bryce Croll[1], G. A. Walker[2], R. Kuschnig[2], J. M. Matthews[2], J. F. Rowe[2], A. Walker[3], S. M. Rucinski[1], A. P. Hatzes[4], W. D. Cochran[5], R. M. Robb[6], D. B. Guenther[7], A. F. Moffat[8], D. Sasselov[9], W. W. Weiss[10]
[1]University of Toronto, Canada, [2]University of British Columbia, Canada, [3]Sumus Technology Limited, Canada, [4]Thuringer Landessternwarte Tautenburg, Germany, [5]McDonald Observatory, [6]University of Victoria, Canada, [7]St. Mary's University, Canada, [8]Universite de Montreal, Canada, [9]Harvard-Smithsonian Center for Astrophysics, [10]Universitat Wien Turkenschanzstrasse, Austria.

230.03 **Mean Pulsation Period of Cool White Dwarf Variables Gauges Stellar Temperature**
Anjum S. Mukadam[1], M. H. Montgomery[2], A. Kim[2], D. E. Winget[2], S. O. Kepler[3], J. C. Clemens[4]
[1]Univ. of Washington, [2]Univ. of Texas at Austin, [3]Universidade Federal do Rio Grande do Sul, Brazil, [4]Univ. of North Carolina.

230.04 **Measurement of the Surface Gravity of η Boo**
Gerard van Belle[1], D. R. Ciardi[1], A. F. Boden[1]
[1]Michelson Science Center.

230.05 **An X-ray View of the Interacting Binary Beta Lyrae with Suzaku**
Richard Ignace[1], L. Oskinova[2], W. Waldron[3], J. Hoffman[3], W. Hamann[2]
[1]East Tennessee State Univ., [2]U. Potsdam, Germany, [3]Eureka Scientific.

230.06 **Late-Type Near-Contact Binary [HH97] FS Aur-79**
Scott J. Austin[1]
[1]Univ. Of Central Arkansas.

230.07 **A Search for Variable Stars in Selected Fields of the Open Cluster NGC 752**
Eugene F. Milone[1], M. D. Williams[1], L. Kim[1], T. Lenhardt[1], S. J. Schiller[1]
[1]University of Calgary, Canada.

230.08 **Mid-IR Keck Segment-Tilting Observations of the Disk Around Mira B**
Michael J. Ireland[1], J. D. Monnier[2], P. G. Tuthill[3], R. Cohen[4]
[1]Caltech, [2]University of Michigan, [3]University of Sydney, Australia, [4]W.M. Keck Observatory.

Session 231 Physics in Art and Art in Physics

AAPT Invited, Wednesday, 10:00-11:30am, 211

Chair, Stanley Micklavzina[1]
[1]University of Oregon.

231.01 **Did the great masters "cheat" using optics? Image analysis of Renaissance masterpieces sheds light on a bold theory**
David Stork[1]
[1]Ricoh Innovations.

231.02 **Science Circus**
Rhys D. Thomas[1]
[1]Up For Grabs, Inc..

Session 232 Demonstrations for Teaching Astronomy

AAPT Special, Wednesday, 10:00-11:30am, 617

Chair, Stephen M. Pompea[1]
[1]NOAO.

232.01 **Astronomy LITE Demonstrations**
Kenneth Brecher[1]
[1]Boston University.

232.02 **A Status Report on the ALIVE Project**
James B. Dove[1]
[1]Metropolitan State College of Denver.

232.03 **Using Planetarium Software as a Virtual Observatory**
Richard Ditteon[1]
[1]Rose-Hulman Institute.

232.04 **Affordable Laser Communication in the Classroom**
Constance E. Walker[1], R. Sparks[1], S. Pompea[1]
[1]National Optical Astronomy Observatory.

Session 233 Bringing Physics by Inquiry to K-12 Classrooms, Part II

AAPT Oral, Wednesday, 10:00-11:30am, 303

Chair, Paula Heron[1]
[1]Univ. of Washington.

233.01 **Teaching Physical Science by Inqiry in the K-12 Classroom**
Brian E. Meza[1], D. L. Messina[2], L. C. McDermott[2]
[1]Seattle Preparatory School, [2]Univ. of Washington.

233.02 **Effects of a Research-based Curriculum on the Learning of Physics by K-12 Teachers and Students***
Donna L. Messina[1], M. R. Stetzer[1], L. C. McDermott[1]
[1]Univ. of Washington.

Session 234 Introductory Physics Curriculum and Delivery

AAPT Oral, Wednesday, 10:00-11:30am, 616

Chair, Charles F. Niederriter[1]
[1]Gustavus Adolphus College.

234.01 **A Mechanics Curriculum as a Prelude to Electricity and Magnetism**
Poovan Murugesan[1]
[1]San Diego City College.

234.02 **Scientific Reasoning Outcomes and the General Education Physics Course**
Stephen P. Phipps[1], D. B. Morris[1], M. E. Dearborn[1], G. M. Novak[1]
[1]United States Air Force Academy.

234.03 **Teaching to Promote Deep Understanding and Instigate Conceptual Change**
Esther Zirbel[1]
[1]Tufts University.

234.04 **Implementing Interactive Lecture Experiments in Large Introductory Physics Courses (Part I)**
Rachel Moll[1], M. M. Milner-Bolotin[1], K. McPhee[1], S. Zhdanovich[1], A. Kotlicki[1], G. Rieger[1], F. Bates[1]
[1]University of British Columbia, Canada.

234.05 **The Impact of Interactive Lecture Experiments on Student Academic Achievement, Motivation and Attitudes towards Science (Part II)**
Marina M. Milner-Bolotin[1], R. Moll[1], A. Kotlicki[1], F. Bates[1], G. Rieger[1], S. Nashon[1]
[1]University of British Columbia, Canada.

234.06 **GRIPs (Group Investigation Problems) for Introductory Physics**
Thomas A. Moore[1]
[1]Pomona College.

234.07 **New Insights into Student Understanding of Complete Circuits***
MacKenzie R. Stetzer[1], P. van Kampen[2], P. S. Shaffer[1], L. C. McDermott[1]
[1]Univ. of Washington, [2]Dublin City University, Ireland.

234.08 **Andes: An Intelligent Homework System for Introductory Physics**
Brett van de Sande[1], K. VanLehn[1], R. Hausmann[1], D. Treacy[2], R. Shelby[2]
[1]University of Pittsburgh, [2]US Naval Academy.

234.09 **Helping Student Relate Work and Changes in Energy***
Beth A. Lindsey[1], P. R. Heron[1], P. S. Shaffer[1], L. C. McDermott[1]
[1]Univ. of Washington.

Session 235 Teacher Learning

AAPT Oral, Wednesday, 10:00-11:30am, 310

Chair, Harold Stokes[1]
[1]Brigham Young Univ..

235.01 **What Did We Learn from the Teachers' Journals?**
Kastro M. Hamed[1]
[1]University of Texas at El Paso.

235.02 **Support for New Physics Teachers**
Brian W. Adrian[1], D. Zollman[1], S. Stevens[2]
[1]Kansas State Univ, [2]Carnegie Mellon University.

235.03 **Using Facet Clusters to Map Learner Modes of Reasoning**
Stamatis Vokos[1], L. S. DeWater[1], L. Seeley[1], P. Kraus[2]
[1]Seattle Pacific University, [2]Facet Innovations, LLC.

235.04 **Using Facet Clusters to Guide Teacher Professional Development**
Lane Seeley[1], L. S. DeWater[1], S. Vokos[1], P. Kraus[2]
[1]Seattle Pacific University, [2]Facet Innovations, LLC.

235.05 **Teaching about 21st Century Energy Sources to Pre-college Students and Teachers**
Andrew P. Zwicker[1], J. Morgan[1], C. Ritter[1], J. DeLooper[1], N. Guilbert[2]
[1]Princeton Plasma Physics Laboratory, [2]The Peddie School.

235.06 **Conceptual Dynamics: Comparing Inquiry and Direct Instructional Designs**
Adriana Undreiu[1], B. Adams[1], D. Schuster[1]
[1]Western Michigan University.

235.07 **Pre-Service Elementary Teachers' Ideas about the Nature of Science**
Rhett Allain[1]
[1]Southeastern Louisiana University.

235.08 **Integrals for Pre-service Elementary Teachers: Approximating Seasonal Solar Radiation Differences**
Paul G. Ashcraft[1]
[1]*Penn State Erie, The Behrend College.*

Session 236 Cannon Award in Astronomy

Plenary, Wednesday, 11:40am-12:30pm, Ballroom 6

236.01 **The Star Formation and Metallicity History of Star Forming Galaxies**
Lisa J. Kewley[1]
[1]*University of Hawaii.*

Revealing the Hidden Nature of Space and Time (EPP2010)

AAS Town Hall Meeting, Wednesday, 12:45-1:45pm, 609

The United States has been at the forefront of elementary particle physics for more than half a century. Physicists working in the United States developed many of the theoretical ideas that describe and explain how elementary particles interact and why they have the properties that they do. And the federal government has supported the experimental facilities -- including large particle accelerators -- that have produced profound scientific discoveries and a steady stream of new technologies. Yet as elementary particle physics is poised to address some of the most basic questions in science, our leadership position is now in jeopardy. Many of the major particle physics facilities in the United States are being closed or converted to other uses. Funding for particle physics in the United States has stagnated for more than a decade. Within a few years, the majority of U.S. experimental particle physicists will be working on experiments that are being conducted in other countries The National Academies convened a committee with membership drawn both from inside and outside the field of elementary-particle physics that was charged to construct a plan for U.S. participation in this effort through an in-depth assessment to identify, articulate and prioritize the scientific questions and opportunities that define elementary-particle physics and provide a 15-year plan for the future of the field.

D.B. Lang, National Research Council, will introduce members of the National Academies committee that prepared the "Revealing the Hidden Nature of Space and Time" report. The speakers, Edward Witten (Institute for Advanced Study), Helen Quinn (Stanford Linear Accelerator Center), and Neal Lane (Rice University) will present prepared remarks for 30-40 minutes and then open the floor for discussion and questions.

Chair, David Lang[1]
[1]*The National Academies.*

Session 237 Biology of Astrobiology II History of Earth's Life

AAS Special, Wednesday, 2:00-3:30pm, 611-12

Chair, Mark Claire[1]
[1]*Univ. of Washington.*

Chair, Woodruff T. Sullivan[1]
[1]*Univ. of Washington.*

237.01 **From the Earliest Evidence of Life to Complex Single-cell Organisms: The First 3 Gyr on Earth**
Roger Buick[1]
[1]*UW Dept. of Earth & Space Sciences.*

237.02 **A New History of Animal Life on Earth**
Peter Ward[1]
[1]*UW Dept. of Biology.*

Session 238 Ground-Based Mid-IR Astronomy in the Spitzer Era

AAS Special, Wednesday, 2:00-3:30pm, 613-14

Chair, Jay A. Frogel[1]
[1]*AURA, Inc.*

238.01 **Synergy between Mid-IR Astronomy from 8-meter Class Ground Based Telescopes and Spitzer**
Tom Soifer[1]
[1]*Caltech.*

238.02 **Mid-IR Capabilities of the Gemini Telescopes**
Scott Fisher[1]
[1]*Gemini Observatory.*

238.03 **Mid-IR Observations of the Outer Planets**
Heidi B. Hammel[1]
[1]*Space Science Institute.*

238.04 **Evaporating Disks, Outflows, and their Embedded Sources in Orion**
Nathan Smith[1]
[1]University of California.

238.05 **Protostars and Disks**
Doug Johnstone[1]
[1]NRC Canada:HIA (and UVic), Canada.

238.06 **High Resolution Mid-infrared Spectroscopy of Star Formation Regions**
John Lacy[1]
[1]University of Texas.

238.07 **Mid-IR Observations of Herbig Ae and Be Stars**
Marshall D. Perrin[1], J. R. Graham[1]
[1]UC Berkeley.

238.08 **MIR-Imaging brown dwarfs in binary systems with ESO/VLT and Gemini**
Michael Sterzic[1]
[1]ESO/VLT, Chile.

238.09 **High Spatial Resolution Observations of AGN at Mid-IR Wavelengths**
Chris Packham[1], A. Alonso-Herrero[2], L. Colina[2], T. Diaz-Santos[2], J. Radomski[3], R. Mason[4], P. Roche[5], E. Perlman[6], N. Levenson[7], M. Elitzur[7], S. Young[8], C. Telesco[1]
[1]U. Florida, [2]CSIC, Spain, [3]Gemini Obs., Chile, [4]Gemini Obs., [5]U. Oxford, UK, [6]FIT, [7]U. Kentucky, [8]U. Hertfordshire, United Kingdom.

Session 239 AGN Jets

AAS Oral, Wednesday, 2:00-3:30pm, 3B

239.01D **New Multiwavelength Variability and Optical Microvariability Investigations of X-ray and Radio Selected Blazars**
Margaret A. Osterman[1]
[1]Georgia State Univ..

239.02 **Beaming and the Intrinsic Properties of Extragalactic Radio Jets**
Marshall H. Cohen[1]
[1]CalTech.

239.03 **Constraining Electron Spectra in the Hotspots of Cygnus A with Spitzer**
D. E. Harris[1], L. Stawarz[2], C. C. Cheung[3], M. Ostrowski[4]
[1]HEA- Center for Astrophysics, [2]Kipac, Stanford U., [3]NRAO and Kipac, Stanford U., [4]Astronomical Observatory UJ, Poland.

239.04 **The Kiloparsec Scale Jet of the Quasar 1317+520**
Svetlana G. Jorstad[1], A. P. Marscher[1], J. M. Gelbord[2], H. L. Marshall[2], D. A. Schwartz[3], D. M. Worrall[4], M. Birkinshaw[4], E. S. Perlman[5]
[1]IAR BU, [2]MIT, [3]CfA, [4]Univ. of Bristol, United Kingdom, [5]UMBC.

239.05 **Limit to the Positron Content of the Jet in 3C 120 from INTEGRAL and mm-Wave VLBI Observations**
Alan P. Marscher[1], S. G. Jorstad[1], J. L. Gomez[2], I. M. McHardy[3], T. P. Krichbaum[4], I. Agudo[4]
[1]Boston Univ., [2]IAA, Spain, [3]Univ. Southampton, United Kingdom, [4]MPIfR, Germany.

239.06 **Multiple Circular Polarization Outbursts in the QSO 3C 279 at Centimeter Wavelengths**
Hugh D. Aller[1], M. F. Aller[1], P. A. Hughes[1]
[1]Univ. of Michigan.

239.07 **Relativistic Ejections Associated with High-energy Outbursts in the M87 Jet**
Chi C. Cheung[1], D. E. Harris[2], L. Stawarz[3]
[1]NRAO & Stanford, [2]Harvard-Smithsonian Center for Astrophysics, [3]KIPAC/Stanford.

239.08 **Synthetic Maps of Relativistic Jets - The Origin of Bright Features**
Carrie Swift[1], P. Hughes[2]
[1]Univ. of Michigan - Dearborn, [2]Univ. of Michigan.

Session 240 CMB-Experiments

AAS Oral, Wednesday, 2:00-3:30pm, 6A

240.01D **Prospects for the ACBAR Experiment**
Christian L. Reichardt[1]
[1]Caltech.

240.02 **Preliminary Results from ARCADE II**
Dale J. Fixsen[1], A. Kogut[1], M. Limon[1], E. Wollack[1], P. Mirel[1], J. Singal[2], P. Lubin[2], S. Levin[3], M. Seiffert[3]
[1]NASA's GSFC, [2]UCSB, [3]JPL.

240.03 **The Atacama Cosmology Telescope**
Joseph W. Fowler[1], ACT Collaboration
[1]Princeton University.

240.04 **Status of EBEX, a Balloon Borne CMB Polarization Experiment**
Johannes Hubmayr[1], EBEX collaboration
[1]University of Minnesota.

240.05 **The Millimeter-Wave Bolometric Interferometer**
Andrei Korotkov[1], P. A. Ade[2], S. Ali[3], E. Bierman[4], E. F. Bunn[5], C. Calderon[2], A. C. Gault[6], P. O. Hyland[6], B. G. Keating[4], J. Kim[1], S. S. Malu[6], P. D. Mauskopf[2], J. A. Murphy[7], C. O'Sullivan[7], L. Piccirillo[8], P. T. Timbie[6], G. S. Tucker[1], B. D. Wandelt[9]
[1]Brown University, [2]Cardiff University, UK, [3]LLNL, [4]University of California - San Diego, [5]University of Richmond, [6]University of Wisconsin - Madison, [7]National University of Ireland, Ireland, [8]University of Manchester, UK, [9]University of Illinois - Urbana-Champaign.

240.06 **Point Source Power in 3-year Wilkinson Microwave Anisotropy Probe Data**
Kevin M. Huffenberger[1], H. K. Eriksen[2], F. K. Hansen[2]
[1]Caltech/Jet Propulsion Lab, [2]University of Oslo, Norway.

Session 241 Extrasolar Planets IV

AAS Oral, Wednesday, 2:00-3:30pm, 605-07

241.01 **Detecting Neptune-mass Planets Around 2,000 Nearby Stars with SIM**
Nicholas M. Law[1], A. Tanner[2], S. Kulkarni[1], M. Shao[3], C. Gelino[4]
[1]Caltech, [2]JPL/IPAC, [3]JPL, [4]IPAC.

241.02 **Finding Terrestrial Planets in the HZ of Nearby Stars with SIM PlanetQuest**
Angelle M. Tanner[1], J. Catanzarite[2], M. Shao[2], S. Unwin[2]
[1]JPL/IPAC, [2]JPL.

241.03 **Spectral Evolution of an Earth-like Planet**
Lisa Kaltenegger[1], W. A. Traub[2], K. W. Jucks[1]
[1]Harvard-Smithsonian, CfA, [2]Harvard-Smithsonian CfA & JPL.

241.04 **PHASES: A Search for Planets in Binary Systems**
Benjamin Lane[1], M. Muterpspaugh[2], M. Konacki[3], S. Kulkarni[4], M. Shao[5], M. Colavita[5], B. Burke[1]
[1]MIT, [2]Berkeley Space Science Lab, [3]Nicolaus Copernicus Astronomical Center, Poland, [4]Caltech, [5]JPL.

241.05D **M Dwarf Planetary Systems**
Peter Plavchan[1], M. Jura[2], R. Cutri[1], J. D. Kirkpatrick[1], S. C. Gallagher[2], S. J. Lipscy[3]
[1]IPAC/Caltech, [2]UCLA, [3]Ball Aerospace.

241.06 **Evidence From Spitzer for a Low-Mass Companion and a Circumbinary Disk Around a Pre-Cataclysmic Variable**
Carolyn Brinkworth[1], D. W. Hoard[1], T. R. Marsh[2]
[1]Spitzer Science Center, [2]University of Warwick, United Kingdom.

241.07 **New Very Low Mass Binaries in the Taurus Star-Forming Region**
Quinn M. Konopacky[1], A. M. Ghez[1], E. L. Rice[1]
[1]UCLA.

Session 242 Milky Way Topics

AAS Oral, Wednesday, 2:00-3:30pm, 3A

242.01D **Probing the Milky Way at Mid-Infrared Wavelengths using GLIMPSE**
Emily P. Mercer[1]
[1]Boston Univ..

242.02D **The Frequency of Warm Carbon-Enhanced Metal-Poor Stars in SDSS-I DR-5**
Brian E. Marsteller[1], T. C. Beers[1], T. Sivarani[1], S. Rossi[2], J. Knapp[3], B. Plez[4], J. Johnson[5], T. Masseron[5]
[1]Michigan State Univ. & JINA, [2]IAG, Univ. of Sao Paulo, Brazil, [3]Princeton Univ., [4]Univ. of Montpellier, France, [5]Ohio State Univ..

242.03 **A Search for Obscured Dwarf Novae in the Galactic Bulge**
Silas Laycock[1], J. E. Grindlay[1], M. van den Berg[1], J. Hong[1], P. Zhao[1]
[1]Harvard-Smithsonian, CfA.

242.04 **Observations of the Unidentified TeV Gamma-ray Source in the Cygnus Region with the Whipple Observatory 10 m Telescope**
Alexander Konopelko[1], VERITAS collaboration
[1]Purdue University.

242.05 **The Sagittarius Spiral Arm of the Galaxy: Now You See It, Now You Don't**
Robert A. Benjamin[1], E. Churchwell[2], M. Haffner[2], GLIMPSE team
[1]Univ. of Wisconsin,Whitewater, [2]Univ. of Wisconsin-Madison.

Session 243 SNR, Cosmic Rays and Neutron Stars

AAS Oral, Wednesday, 2:00-3:30pm, 201

243.01 **A Plausible X-ray Counterpart of the Unidentified TeV Gamma-ray Source HESS J1804-216**
Wei Cui[1], A. Konopelko[1]
[1]Purdue Univ..

243.02 **Thermal and Non-thermal Emission from Cosmic Ray Modified Shocks**
Daniel Patnaude[1], D. Ellison[2], P. Slane[1]
[1]Harvard-Smithsonian, CfA, [2]North Carolina State Univ..

243.03 **SUBARU HDS Observation of Balmer-Dominated Shock in Tycho**
Jae-Joon Lee[1], B. Koo[1], J. Raymond[2], P. Ghavamian[3], T. Pyo[4], A. Tajitsu[4], M. Hayashi[4]
[1]Seoul National Univ., Republic of Korea, [2]Harvard-Smithsonian Center for Astrophysics, [3]Johns Hopkins University, [4]Subaru Telescope, NAOJ.

243.05 **Suzaku Observations of Supernova Remnant G93.3+6.9 (DA 530)**
Michael Stage[1], D. Q. Wang[1]
[1]Univ. of Massachusetts.

243.06 **Probing Ejecta Properties in Supernova and GRB Remnants: The example of W49B**
Laura A. Lopez[1], E. Ramirez-Ruiz[1], D. Pooley[2], S. K. Patel[3], D. Chelouche[4]
[1]UC, Santa Cruz, [2]UC, Berkeley, [3]NASA MSFC, [4]Inst. for Advanced Study.

243.07 **Initial Results From CHAZSS: the Chandra HETGS Atoll/Z Spectroscopic Survey**
Edward Cackett[1], J. Miller[1], CHAZSS team
[1]Univ. Of Michigan.

243.08 **X-ray Binaries in Nearby Galaxies: Identifying Black Hole and Neutron Star Candidates**
Sergey P. Trudolyubov[1], W. C. Priedhorsky[2], F. A. Cordova[3]
[1]IGPP/UCR, [2]LANL, [3]UCR.

243.09 **Evidence that (some) Ultra High Energy Cosmic Rays Come From a Bursting Source**
Glennys R. Farrar[1]
[1]New York Univ..

Session 244 Star Clusters II

AAS Oral, Wednesday, 2:00-3:30pm, 204

244.01D **High Resolution Analysis of Globular Clusters in M87**
Christopher Z. Waters[1]
[1]Michigan State Univ..

244.02 **Probing the M87 Globular Cluster System with Deep NICMOS Imaging**
Arunav Kundu[1], S. E. Zepf[1], M. Hempel[2]
[1]Michigan State Univ., [2]Univ. of Florida.

244.03 **Extragalactic Star Clusters: the Resolved Star Approach**
Anne Pellerin[1], M. J. Meyer[1], H. Jason[2], D. Calzetti[1]
[1]STScI, [2]Steward Observatory.

244.04D **Tidal Tales of Minor Mergers II: Star Formation in the Tidal Debris of Minor Mergers**
Karen A. Knierman[1], P. Knezek[2], E. Wehner[3]
[1]Univ. of Arizona, [2]WIYN, [3]McMaster University, Canada.

244.05 **Restarting Galaxy Formation in Arp 82: An UV, Optical and Mid-IR Study of Star Formation in NGC 2535/6**
Mark Hancock[1], B. J. Smith[1], C. Struck[2], M. L. Giroux[1], P. N. Appleton[3], V. Charmandaris[4], W. T. Reach[3]
[1]East Tennessee State University, [2]Iowa State University, [3]Spitzer Science Center, [4]University of Crete, Greece.

Session 245 Instructional Technology in Physics and Astronomy Courses

AAPT Oral, Wednesday, 2:00-3:30pm, 303

Chair, Jeffrey Williams[1]
[1]Bridgewater State College.

245.02 **Web-based Classroom Interaction System and Impact on Student Learning**
Joseph Beuckman[1], N. Rebello[2]
[1]Southern Illinois University-Edwardsville, [2]Kansas State University.

245.03 **Grid-based e-Labs for Pre-College Research in Physics and Astronomy**
Thomas J. Loughran[1]
[1]Univ. of Notre Dame Dept. of Physics/Fermi National Accelerator Lab.

245.04 **Preparation Strategies for Video-based Introductory Physics**
David M. DeMuth, Jr.[1], M. Schwalm[2]
[1]Un. of Minnesota, Crookston, [2]Un. of North Dakota.

245.05 **PowerPoint Nuggets for Pre-lab Content Review**
Michael R. Meyer[1]
[1]Michigan Tech University.

245.06 **Optical Analogies for Teaching Physics of X-rays and CAT Scans***
Spartak Kalita[1], D. A. Zollman[1]
[1]Kansas State University.

245.07 **How Converging Lens Simulation Designs Affect Understanding of Image Formation**
Joel A. Bryan[1]
[1]Texas A&M University.

Session 246 Physics and Society Education

AAPT Oral, Wednesday, 2:00-3:30pm, 617

Chair, Gordon McIntosh[1]
[1]University of Minnesota, Morris.

246.01 **The Fusion Energy Problem Has Been Solved**
John W. White[1]
[1]LLNL & Modesto J C.

246.02 **Energy Storage Systems as a Compliment to Wind Power**
Jared D. Sieling[1], C. F. Niederriter[1], D. A. Berg[1]
[1]Gustavus Adolphus College.

246.03 **Quantoons: Physics, Art, and Literature**
Larry D. Kirkpatrick[1], A. Eisenkraft[2]
[1]Montana State University, [2]University of Massachusetts Boston.

246.05 **Michael Faraday vs. the Spiritualists**
Alan Hirshfeld[1]
[1]UMass Dartmouth.

246.06 **Maupertuis, Leibniz, Least Action and Design**
James K. Simmons[1]
[1]Waynesburg College.

246.07 **Spotting Junk Science - A Classroom Exercise**
Brian Houser[1]
[1]Eastern Washington University.

246.08 **Service Learning in Physics Courses in the United States**
Lynn Aldrich[1]
[1]College Misericordia.

246.09 **Never Before Seen Mnemonic Technique**
Shannon Schunicht[1]
[1]Texas A&M University.

Session 247 Teacher Professional Development Programs and Assessments

AAPT Oral, Wednesday, 2:00-3:30pm, 310

Chair, Todd Leif[1]

[1]*Cloud County Comm. College.*

247.02 **Expanding Science Teacher Preparation: the Role of External Funding**
John M. Lindberg[1], **S. Vokos**[1], **L. Seeley**[1], **E. Close**[1]
[1]*Seattle Pacific University.*

247.03 **Courses and Programs to Motivate and Train Future Science Teachers**
Suzanne Amador Kane[1], **A. Lesnick**[2], **J. Cantley**[3]
[1]*Haverford College,* [2]*Haverford College & Bryn Mawr College,* [3]*Ohio State University.*

247.04 **Instruments for Assessment of Instructional Practices in Standards-Based Teaching**
Camille L. Wainwright[1]
[1]*Pacific University.*

247.05 **Future Elementary Teachers' Epistemological Beliefs & Views of Science**
N. Sanjay Rebello[1]
[1]*Kansas State University.*

247.06 **Exploring Relationships: Teacher Characteristics and Student Learning in Physical Science**
Eleanor Close[1], **S. Vokos**[1], **L. Seeley**[1]
[1]*Seattle Pacific University.*

Session 248 Theoretical and Diagnostic Issues

AAPT Oral, Wednesday, 2:00-3:30pm, 307-08

Chair, Mary Mogge[1]

[1]*California State Polytechnic Univ..*

248.01 **Diagnostic Tests for Entering and Departing Undergraduate Students**
Chris Waltham[1], **A. Kotlicki**[1]
[1]*Department of Physics & Astronomy, University of BC, Canada.*

248.02 **Student Preparation, Aptitude, and Performance in a First-Semester Algebra-Based Physics Course**
Robert L. Hill[1], **D. Grosnick**[1], **D. Ober**[1]
[1]*Ball State University.*

248.03 **Comparing Item Responses on the FMCE and FCI**
Karen Cummings[1], **J. Marx**[2], **R. Thornton**[3], **D. Kuhl**[4]
[1]*Southern Connecticut State Univ,* [2]*McDaniel College,* [3]*Tufts Univ,* [4]*Marietta College.*

248.04 **Exploration of Epistemological Beliefs in a Summer Science Program for High Achieving Students(1)**
Sebastien Cormier[1], **F. Raia**[1], **R. Steinberg**[1]
[1]*City College New York.*

248.05 **Rate of Learning Models, Mental Models, and Item Response Theory**
David E. Pritchard[1], **Y. Lee**[1], **L. Bao**[2]
[1]*Massachusetts Institute of Technology,* [2]*Ohio State University.*

248.06 **Transfer of Learning: From Physical Models to Understanding Complex Phenomena***
Bijaya Aryal[1], **D. A. Zollman**[1]
[1]*Kansas State University.*

248.07 **A Transformed Introductory Mechanics Lab Focused on Developing Reasoning**
Vincent P. Coletta[1], **J. Evans**[1], **J. Phillips**[1]
[1]*Loyola Marymount University.*

248.08 **Content-Independent Problem Categorization to Cultivate Real Problem Solving Skills**
Kathleen A. Harper[1], **R. J. Freuler**[1], **J. T. Demel**[1]
[1]*The Ohio State University.*

248.09 **Discussion of the Correlation Coefficient and R2-Value Survey**
Jeffrey Marx[1]
[1]*McDaniel College.*

Session 249 Oersted Medal Lecture

Plenary, Wednesday, 3:40-4:30pm, Ballroom 6

Chair, Richard Peterson[1]
[1]*Bethel Univ..*

249.01 **Interactive Simulations for Teaching Physics; What Works, What Doesn't, and Why**
Carl E. Wieman[1]
[1]*Univ. of British Columbia and Univ. of Colorado, Canada.*

Session 250 New Planets

Plenary, Wednesday, 4:40-5:30pm, Ballroom 6

250.01 **The Dwarf Planets of the Outer Solar System**
Michael E. Brown[1]
[1]*Caltech.*

WEDNESDAY Events, Sessions and Paper Titles

AUTHOR INDEX

Author Index

Author Index

Author Index

Author Index

Author Index

Author Index

Author Index

Author Index

Author Index

Author Index

Author Index