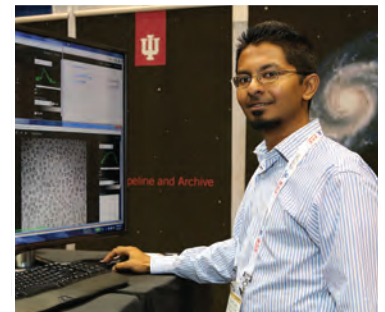
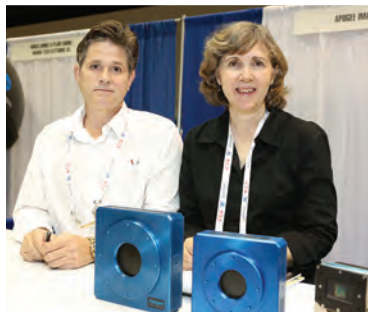




# AMERICAN ASTRONOMICAL SOCIETY 2013 ANNUAL REPORT



## AAS MISSION AND VISION STATEMENT

The mission of the American Astronomical Society is to enhance and share humanity's scientific understanding of the universe.

1. **The Society, through its publications, disseminates and archives the results of astronomical research.** The Society also communicates and explains our understanding of the universe to the public.
2. **The Society facilitates and strengthens the interactions among members through professional meetings and other means.** The Society supports member divisions representing specialized research and astronomical interests.
3. **The Society represents the goals of its community of members to the nation and the world.** The Society also works with other scientific and educational societies to promote the advancement of science.
4. **The Society, through its members, trains, mentors and supports the next generation of astronomers.** The Society supports and promotes increased participation of historically underrepresented groups in astronomy.
5. **The Society assists its members to develop their skills in the fields of education and public outreach at all levels.** The Society promotes broad interest in astronomy, which enhances science literacy and leads many to careers in science and engineering.

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Established in 1899, the American Astronomical Society (AAS) is the major organization of professional astronomers in North America. The membership also includes physicists, mathematicians, geologists, engineers and others whose research interests lie within the broad spectrum of subjects now comprising contemporary astronomy. The mission of the AAS is to enhance and share humanity's scientific understanding of the universe.

# PRESIDENT'S MESSAGE: David J. Helfand



According to Astrology.com, 2013 in China is the year of the water snake, in which “We’re likely to see significant developments in science and technology... research and development are apt to flourish, making 2013 a very special year for scientists and scholars.” It goes on to admonish us to “take advantage of this vibrant influence to improve our lives — and our world!”

That’s pretty typical of astrological statements: consistent with the obvious (what recent year has not seen significant developments in science and technology?) and wrong in the predictions (research and development — in the federal budget, at least — hardly flourished). We did manage to “improve our world” both through our science and at the AAS, although I’m not sure the snake had much to do with it.

Our research continues to inspire and to fascinate the public — and us astronomers. Voyager 1, after 35 years and 19 billion km (that’s 0.002 light-year!) left the solar system and entered interstellar space. Also from beyond the solar system, the Ice Cube experiment in Antarctica detected its first neutrinos arriving from the galaxy — with petavolt energies, no less. After only seven months on Mars, the Curiosity rover found strong evidence that lakes existed on the Red Planet after the period of late bombardment, about the time life blossomed on Earth. Speaking of habitable places, results continued to pour forth from the Kepler mission, including Kepler 78b, very similar in size and density to Earth, and Gliese 667 with three planets in its habitable zone. The number of confirmed planets passed 1,000, and the number of inferred planets in the Milky Way passed 100 billion — not bad, barely two decades after the discovery of the first extrasolar planet.

Precision cosmology got even more precise with the release of the Planck all-sky data: the universe’s age is now known to 0.3% accuracy and the Hubble constant to 1% (I remember when its uncertainty was 100%). There were Fermi bubbles in the galactic center, a supernova at 10 billion light-years, and the first galaxy beyond redshift  $z = 7.5$ . NuSTAR measured a maximally spinning supermassive black hole. We found a meteorite from Mercury, and the residents of Chelyabinsk found a meteorite too close for comfort. The Herschel telescope ran out of cryogen, Kepler had a near-death experience, and Comet ISON had a total death experience, but Gaia was launched, ALMA was dedicated, and the New Horizons probe began closing in on Pluto. The developments in our science were, indeed, “significant.”

The developments at the AAS were significant as well. Our journals continue to thrive financially, and the papers they contain maintain the highest impact: of the astronomical papers published throughout the world in the first half of 2013 (meaning they have been in print for one year as I write), 15 of the top 25 cited works are in AAS journals. In the first year of its existence, the Astronomy Ambassadors program has trained 60 members in public outreach, and they have already logged over 150 events and touched over 20,000 people. With our new John Bahcall Public Policy Fellow Josh Shiode on board, we have increased further the effectiveness of our well-regarded efforts in the public policy sphere.

We undertook a number of new initiatives in 2013 to enhance the services we provide for our members and to further the progress of our field. An AAS Agents program was created to communicate more effectively with our members (and non-members) at their home institutions; over 40 agents are now in place in university departments, observatories, and research institutes. We established the “40+E” group for emeritus and other members who have been in the Society for at least 40 years, and their gatherings at our winter and summer meetings have produced a number of initiatives. We inaugurated an exchange program with the Royal Astronomical Society in which we will trade our Russell Lecturer for their Gold Medalist annually so that both Societies have the privilege of hearing both lecturers. We instituted the FAMOUS program to help more underrepresented members of our community attend our meetings, and we introduced a new member benefit of a 15% discount on publication charges for one paper per year, a benefit we hope to enhance in the future.

All of these new initiatives are possible because the Society’s financial health is stronger than ever. In 2013, for the fifth year in a row, we closed the year with a positive balance in the general fund, and the journals’ budget had a surplus in excess of a half million dollars. The net assets of the Society in the journal and operating budget reserve accounts exceed \$13.5M, by far the highest in the Society’s history. And, yet again, our year-end external audit found no issues with our financial management.

This strong position has allowed us to freeze dues, lower publication costs for our authors three times in four years, and enhance the other services we provide to our members and to the larger community. This is all made possible by the unstinting efforts of the 20-member Executive Office team led by our Executive Officer Kevin Marvel, whose last name aptly describes his performance. With our new venture in conjunction with our meeting-AV service provider and our new e-books publishing initiative with the Institute of Physics, the future of the Society looks bright indeed.

As does the future of our field, despite the dysfunction in Washington. In March, I represented the AAS at the ALMA dedication ceremony. I have seen, and used, a lot of telescopes and appreciate their technological sophistication. But listening in the site control room to how piezoelectric crystals encircled by each incoming optical fiber allow the kilometer-long baselines to be maintained to millimeter accuracy, and standing at 16,600-feet, breathing deliberately

and surrounded by 60-odd precision dishes, was a vivid reminder both of our ingenuity and of the depth of our human drive to understand our place in the universe. Our work is both inspiring and humbling. Since inspiration and humility are two characteristics in short supply today, it is all the more important that we continue to pursue the Society's mission: to enhance and share humanity's scientific understanding of the universe.

## EXECUTIVE OFFICER'S MESSAGE: Kevin B. Marvel



To enhance and share humanity's scientific understanding of the universe: that's quite a challenge and something that the AAS Executive Office works diligently to achieve each year. In 2013, our major activities continue to be the financial and operational management of our journals for the benefit of the whole community, organizing meetings in January and June, and supporting our

Divisions through meeting logistics and in other ways. Additional efforts include publication of the Job Register, press and outreach support, and public policy and advocacy efforts. To help enable all of our programs we maintain financial and IT infrastructure and staff. It takes a combined and dedicated effort to fulfill our big audacious goal, embodied in the Society's mission statement.

In 2013 we held our winter meeting in Long Beach, CA, and our summer meeting in Indianapolis, IN. We also supported meetings of three of our Divisions, the DPS, HEAD, and SPD.

We also held our first topical conferences: two were held in 2013 and two are to be held in 2014. We hope to grow this program over time, while providing a venue for the very best and most exciting focused scientific meetings each year. Look for details on the AAS website.

Our public policy activities have been substantial and are detailed elsewhere in this report. We now have two full-time staff, the Director of Public Policy, Joel Parriott, and the John Bahcall Public Policy Fellow, Josh Shiode. In addition to interfacing with our Divisions and the Committee on Astronomy and Public Policy, Joel and Josh interface with policy makers and agency staff as well as members of our community active in the policy arena. Our goal is to

communicate the importance of astronomy research and to ensure we can achieve the prioritized goals articulated in the decadal surveys. Although times remain tough, progress is being made.

Our journals continue to exceed expectations; we have experienced a substantial increase in published content for the fourth year in a row. We own and carefully oversee two of the most important titles in our discipline, the *Astrophysical Journal* (including *Letters* and *Supplement*) and the *Astronomical Journal*. Our subscriber base continues to grow as well, through both consortia sales and individual institutions. The Council established (in January 2014), a Journals Futures Task Force to study the publishing environment and possibly recommend changes to our journals to best position them for the future. Sections in this report on our financial position and fundraising activities highlight just some of the many projects and programs carried out to support the AAS's mission, including the Astronomy Ambassadors effort detailed in the section on Education and Outreach.

I remain truly energized by the Council's engagement in strategic governance of the AAS. They dedicate two days at each meeting to fulfill their oversight duties, and this model allows one day of open-ended discussion and thinking with a one-day business meeting, structured to encourage active and open dialog, while members of the Executive Committee remain in near-constant email contact and discussion and also hold an in-person meeting each fall. Your elected leaders are the key to a successful organization, and I thank them for their time while thanking you for electing them.

Together the elected leadership and the Executive Office are accomplishing much on behalf of our members and our discipline. I look forward to another year of success and the ongoing passionate pursuit of our shared mission and goals.

# FINANCIAL REPORT

The Annual Audit for 2013 was completed by Tate & Tryon. As with past years, the audit report received an unqualified opinion. Our financial performance in 2013 exceeded expectations. In 2013, there was an overall increase in net assets of \$1.9 million dollars, resulting in total net assets of \$22,715,913 as of 31 December 2013.

## 2013 Operational Highlights

In 2013, the Society created AstronomyCom, Inc. (the Corporation), a schedule C corporation. The Corporation was formed in order to provide a unique networked speaker presentation system and on-site service support to the other non-profit societies at their membership meetings. In 2013, the AAS provided a \$250,000 contribution to AstronomyCom, Inc. A percentage of the profits of AstronomyCom, Inc. will be passed on to the AAS, as a shareholder in the for-profit Corporation. The return on the investment in 2013 amounted to in-kind meeting support of \$60,588 and revenue sharing of \$7,869.

Through financial support from NSF, we funded the following program:

- Funded 46 individuals under the International Travel Grant in the amount of \$56,097.

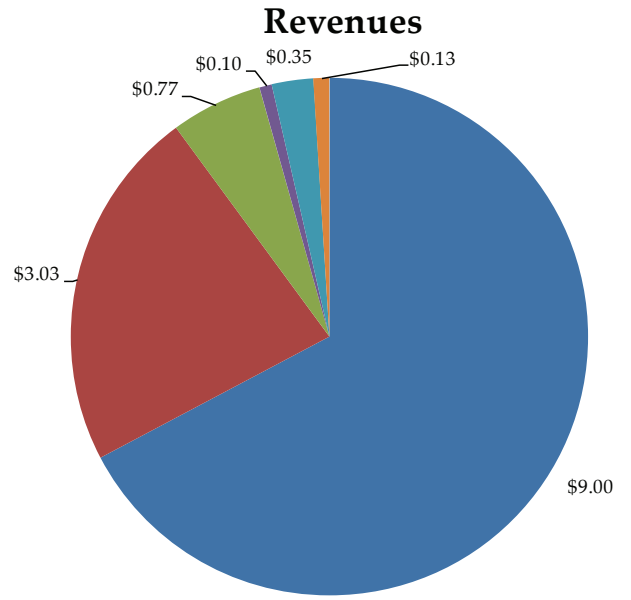
We are pleased to report that the AAS General Fund generated a surplus of \$190,834. On 31 December 2013, the unreserved balance in the General Operating Reserve Fund was \$1,944,426; representing 38.9 percent of the annual operating expenses.

AAS bylaws, Article VIII.3, mandate that each journal maintain a reserve fund equal or above the level of one-half of the annual operating expenses. In addition to the journal reserve funds, we have a segregated journal archive reserve fund to ensure the long-term maintenance of the electronic journals. As of 31 December 2013, the journal reserve fund balances reached \$11,560,025, representing 160.8% of the 2013 expenses.

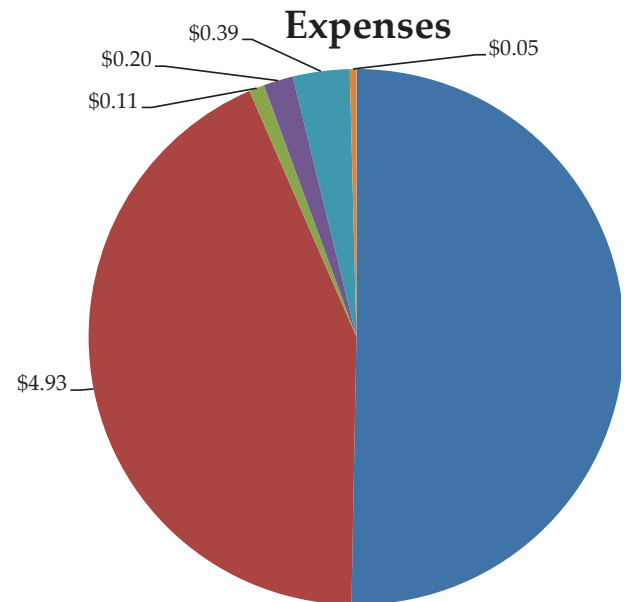
<b>Figure 1. AAS Balance Sheet</b>		
<b>Assets</b>	<b>2013</b>	<b>2012</b>
Cash and Cash Equivalents	1,439,802	1,122,823
Accounts Receivable	636,951	801,722
Prepaid Expenses	297,299	506,700
Investments	19,743,278	17,445,241
Deposits	70,463	65,000
Assets Held for Deferred Compensation	30,130	2,474
Property and Equipment	497,990	236,824
<b>Totals Assets</b>	<b>\$22,715,913</b>	<b>\$20,180,784</b>
<b>Liabilities and Net Assets</b>		
Accounts Payable and Accrued Expenses	505,626	491,439
Deferred Revenue	3,227,741	2,656,962
Deferred Compensation	30,130	2,474
<b>Total Liabilities</b>	<b>\$3,763,497</b>	<b>\$3,150,875</b>
<b>Net Assets</b>		
Unrestricted	16,496,947	14,786,029
Temporarily Restricted	1,890,431	1,678,992
Permanently Restricted	565,038	564,888
<b>Total Net Assets</b>	<b>\$18,952,416</b>	<b>\$17,029,909</b>
<b>Total Liabilities and Net Assets</b>	<b>\$22,715,913</b>	<b>\$20,180,784</b>

Figure 2. AAS Statement of Activities		
Unrestricted Activities	2013	2012
<b>Revenues</b>		
Journals	8,998,165	8,962,059
General Programs	3,029,935	2,972,594
Grants and Contracts	765,783	593,887
Divisions	103,141	439,209
Other	346,247	249,498
Bequests and Memorials	60,472	52,321
AstronomyCom, Inc.	13,773	
Net Assets Released from Restrictions	63,347	72,087
<b>Total Unrestricted Income</b>	<b>\$13,380,863</b>	<b>\$13,341,655</b>
<b>Expenses</b>		
Journals	5,741,929	5,867,882
General Programs	4,926,125	4,217,699
Grants and Contracts	106,478	435,873
Divisions	201,855	92,734
Other	392,284	76,954
Bequests and Memorials	55,516	54,917
AstronomyCom, Inc.	245,758	0
<b>Total Expenses</b>	<b>\$11,669,945</b>	<b>\$10,746,059</b>
Change in Unrestricted Net Assets	\$1,710,918	\$2,595,596
<b>Temporary Restricted Net Assets</b>		
Divisions	125,171	119,766
Bequests and Memorials	84,933	71,160
Contributions and Other	64,682	56,049
Net Assets Released from Restrictions	(63,347)	(72,087)
Change in Temporarily Restricted Net Assets	\$211,439	\$174,888
<b>Permanently Restricted Net Assets</b>		
Contributions and Other	150	360
Change in Permanently Restricted Net Assets	\$150	\$360
Change in Net Assets	\$1,922,507	\$2,770,844
<b>Net Assets Beginning of Year</b>	<b>17,029,909</b>	<b>14,259,065</b>
<b>Net Assets End of Year</b>	<b>\$18,952,416</b>	<b>\$17,029,909</b>

Figure 3. Annual Revenues and Expenses (in millions of dollars)



\*Bequest and Memorials includes Assets Released from Restrictions



- Journals
- General Programs
- Grants and Contracts
- Divisions
- Other
- Bequests and Memorials

# MEMBERSHIP

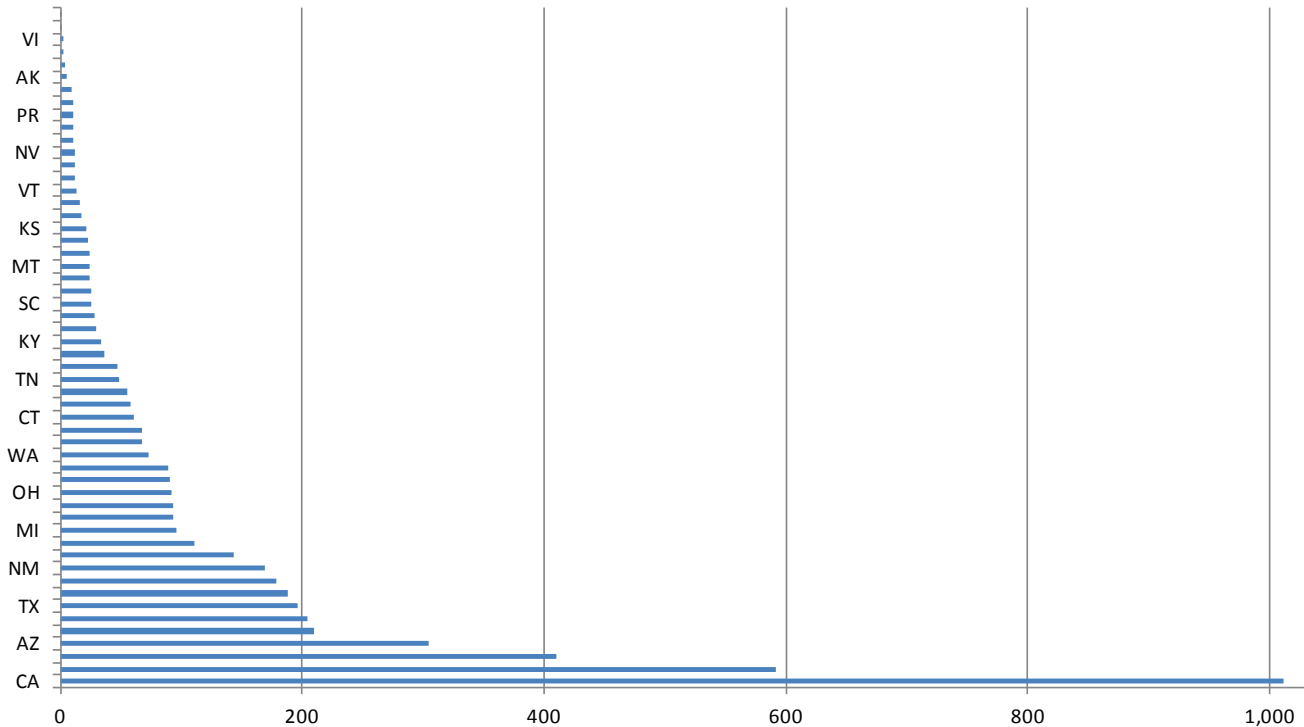
With more than 5,000 members in the US and more than 600 outside, the AAS membership is geographically diverse, with many members from countries beyond North America. The AAS is proud to draw members from countries all around the world as astronomy is clearly a global endeavor that knows no borders...after all, *one sky connects us all*.

Of course, we know that by growing our membership internationally through, for example, our International Affiliate membership class, we can expand the diversity of our membership to better represent the global astronomical enterprise. Already, many of our services know no boundaries, such as the AAS Job Register, AAS Wall Calendar, and AAS Membership Directory, and we work actively to ensure a focus in these publications beyond just North America. The directory, for example, is

recognized as the most comprehensive and accurate listing of international astronomy institutions, and we are working with the International Astronomical Union to ensure that our list and theirs are consistent, accurate, and complete. Our journals draw authors from all around the world, and even our meetings are showing steadily increasing participation from astronomers working outside North America. We need this diversity to achieve our core mission, to enhance and share humanity's scientific understanding of the universe.

The graphs presented here provide a snapshot look at our geographic diversity both within and outside the US, representing the geographic locations of our members in July 2013.

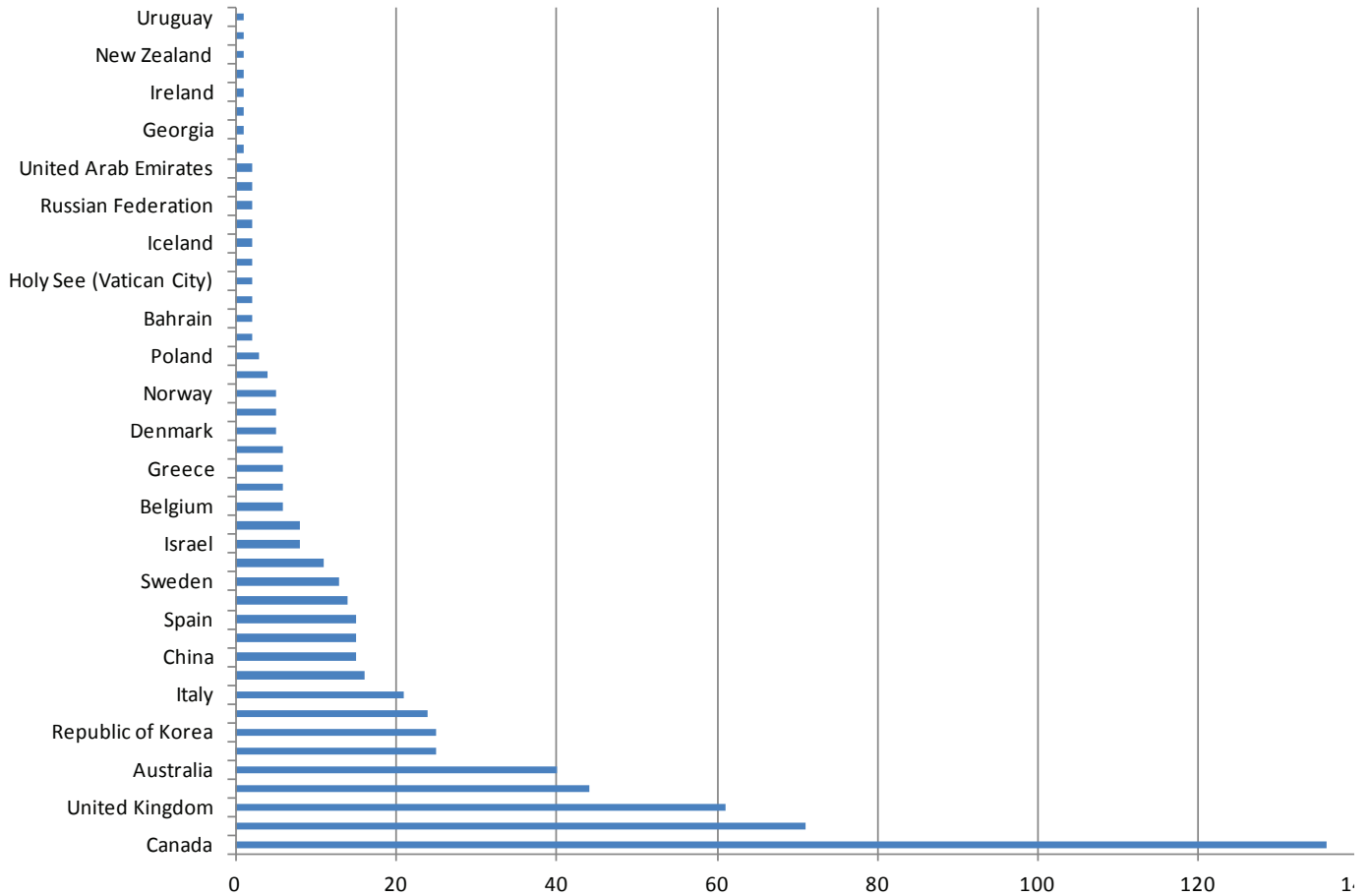
## US Members by State - Total 5,201



CA	1,011	NM	169	WA	73	KY	34	KS	21	PR	11
MD	592	IL	144	GA	67	OR	30	OK	17	RI	11
MA	410	HI	111	IN	67	UT	28	WY	16	DE	9
AZ	304	MI	96	CT	61	SC	26	VT	14	AK	6
NY	210	DC	94	MN	58	WV	25	AR	12	ND	4
VA	204	FL	94	AL	56	IA	24	ME	12	MS	3
TX	196	OH	92	TN	49	MT	24	NV	12	VI	2
CO	188	NJ	91	NC	47	NH	24	ID	11	AE	1
PA	179	WI	89	MO	37	LA	23	NE	11	SD	1



## Non-US Members by Country - Total 636



Canada	136
Germany	71
United Kingdom	61
Japan	44
Australia	40
Netherlands	25
Republic of Korea	25
Chile	24
Italy	21
France	16
China	15
Mexico	15
Spain	15
Taiwan	14
Sweden	13
Switzerland	11

Israel	8
South Africa	8
Belgium	6
Brazil	6
Greece	6
India	6
Denmark	5
Finland	5
Norway	5
Argentina	4
Poland	3
Austria	2
Bahrain	2
Czech Republic	2
Holy See (Vatican City)	2

Hong Kong	2
Iceland	2
Lebanon	2
Russian Federation	2
Turkey	2
United Arab Emirates	2
Estonia	1
Georgia	1
Iran	1
Ireland	1
Latvia	1
New Zealand	1
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Serbia	1
Singapore	1
Uruguay	1
Venezuela	1

In 2013 we upgraded our membership database software, which improved our reporting accuracy. The numbers accurately reflect the geographic distribution of our membership.

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# PUBLISHING

The Society plays an important role in supporting research actively through its publications. In 2013, the AAS published 4,081 peer-reviewed articles in the *Astronomical Journal* (AJ), the *Astrophysical Journal* (ApJ), and *Astronomy Education Review* (AER). The *Astrophysical Journal* is routinely the top-ranked (by citation index) non-review journal in the discipline, as was the case again in 2013. After careful consideration, the Council decided to cease publication of AER at year's end.

During 2013, we worked on a project to bring an exciting new tool to researchers in astronomy: the Astronomy Image Explorer, or AIE (<http://astroexplorer.org>). The AIE builds on new semantic searching capabilities and state-of-the-art user interface techniques to allow researchers to search article content through the images (figures) in the articles. The technology is entirely cloud-based, and can be scaled practically without limit. That will serve in the future since the system's design permits images from any journal (or book, or blog, or any other publication) to be incorporated into the database. The intent behind AIE is to offer researchers a different look at our content, a perspective that might help them discover valuable research papers in publications that they may otherwise overlook. The service is completely free.

In parallel with the Astronomy Image Explorer, we are also collaborating with major physics publishers (AIP and IOP) and the Center for Astrophysics on a new thesaurus for astronomy, the Unified Astronomy Thesaurus (UAT). The UAT evolved from work done for the IAU in the early 1990s, as well as from efforts to integrate the IAU thesaurus into the fabric of the global virtual observatory alliance. Containing about 2,000 terms in a rich inter-relational model, the UAT will enable researchers to refine search results in the AIE, in ADS, and in the journals to an unprecedented degree of accuracy.

The AAS participates in and benefits from a number of "community trust initiatives" that serve the wider scholarly publishing community. These projects are designed to enable researchers to know who (and what) they can "trust," so they can be certain that the scholarly resources they rely on are credible. We have depended on CrossRef and Portico for more than a decade. CrossRef's mission is to enable easy identification and use of trustworthy electronic content. Its core function of article identifier registration and resolution permits publishers like the AAS to create reliable hyperlinks from articles we publish to other primary content that is cited in the article. This in turn allows a reader to move from one article to another at the citation level, regardless of the journals in which either article was published.

The AAS is a publisher member of Portico, a trusted third-party repository for digital scholarly articles. Portico was founded in 2002 to build a sustainable digital archive to serve the academic community, and the Society's partnership with Portico permits us to be confident that we are preserving our portion of the scholarly record robustly. At the end of the production process, the digital assets of each article published in our journals are all delivered to Portico, where they will be curated indefinitely.

We focus a good deal of attention on digital data: the data we publish in the journals (machine-readable tables, FITS files, etc.), data sets held elsewhere, and crucially, the ability to link between the journals and external data repositories. Since 2011, the AAS has been affiliated with a global data identification project called DataCite. DataCite serves the research enterprise by helping people and organizations find, identify, and cite data sets. DataCite's core technology is a registry for persistent identifiers of data sets, and as such DataCite is effectively the "CrossRef for data sets."

We live now in an age of transparency — real or alleged — and several recent initiatives are intended to address various aspects of attribution and accountability in the research infrastructure. The Open Research and Contributor ID (ORCID) is a broad community-driven effort that maintains a registry of unique researcher identifiers as well as methods and a database for linking scholars' research activities and outputs to their identifiers. The AAS became a founding sponsor of ORCID in 2011. FundRef is an effort that provides standardized ways for reporting the funding sources of published scholarly research. FundRef's central database links articles, researchers, and their funding sources, and it enables funders to assess how effectively their resources are being used. The Clearinghouse for Open Research of the US (CHORUS) was created in 2013 to help federal agencies track their funding and to permit them to comply easily with the US government's requirements about public access to research results. CHORUS is based on FundRef and CrossRef. The AAS has made a sponsoring contribution to CHORUS.

These initiatives are all focused on publishing activities at the moment, although in time we expect them to broaden to a wider set of research and community activities. The Society is delighted that these issues are being taken up responsibly by the community as a whole, we are proud to contribute to their establishment, and we look forward to the greater depth of service that the AAS can provide astronomical researchers in the future.

# PUBLIC POLICY

The AAS conducts a wide range of public policy activities on behalf of the membership and US astronomy. The Committee on Astronomy and Public Policy (CAPP), whose members are appointed by the President of the AAS, is charged with guiding the Society's policy activities in close collaboration with the policy staff in the Executive Office. Together, CAPP, the Director of Public Policy, and the John Bahcall Public Policy Fellow closely monitor science policy developments important to the astronomical community and engage with policymakers at federal agencies, the White House, and the Congress through advocacy initiatives.

The Director of Public Policy and John Bahcall Public Policy Fellow monitor policy issues on a day-to-day basis and work closely with the CAPP on communicating issues to both policymakers and the astronomical community. In August, the Executive Office brought on its fifth John Bahcall Public Policy Fellow, Josh Shiode, after the end of Bethany Johns's term as fellow.

In 2013, the AAS Council issued three CAPP-initiated policy resolutions regarding the President's Budget Request for FY 2014, the effects of eliminating education and public outreach activities at NASA's Science Mission Directorate, and the impact of Federal agency travel restrictions on scientific conferences.

The AAS is a member of several multi-society coalitions in Washington that work on science and science-education policy. These include the Coalition for National Science Funding (CNSF), the Task Force on American Innovation, the Energy Sciences Coalition, the Science-Engineering-Technology Working Group (SETWG), the STEM Education Coalition, and the Physical Sciences Education Policy Coalition.

The AAS is also a member of the Intersociety Working Group and authors a chapter every year on the outlook for astronomy funding published in the AAAS Report on Research and Development.

SETWG consists of members from various scientific and technical professional societies as well as universities and industry. The group sponsors an annual Congressional Visits Day each spring. This event brings together research scientists and engineers from all over the country for two days to learn how federal funding for science works and to lobby their elected Representatives and Senators for basic R&D funding. The two-day event was held on 12-13 March 2013 in Washington, DC. This event introduces AAS members to the federal budget process and science policy formulation and shows them the basics of meeting with Congressional offices. Fifteen AAS members, including two council members and one CAPP member, volunteered their time to participate in 2013. Feedback from the participants was very positive.

The Communicating With Washington (CWW) program, initiated in 2012, continued in earnest in 2013, with 26 volunteers visiting their members of Congress and other policymakers in Washington, DC, this year. Volunteers for the program came from 25 states, furthering the goal of visiting a diverse mix of Congressional offices. Volunteers worked with the policy staff to get up to speed on how to have successful meetings with policymakers, with a focus on asking them to support the recommended priorities of the National Research Council's decadal surveys for astronomy and astrophysics, planetary science, and heliophysics.



*Fifteen members of the American Astronomical Society traveled to Washington, DC, to express the need for sustained and predictable federal funding of research and development (R&D) programs — including NASA, NSF, and the Department of Energy — which are critically important to American economic growth.*

*Photo credit: Joel Parriott*

# AAS & DIVISION MEETINGS



The Long Beach Convention and Entertainment Center sports a glass concourse and lobby offering expansive views of the scenic harbor and downtown skyline. A pedestrian promenade links abundant hotels, shops, restaurants, and attractions with more than 5 miles of sandy Pacific Ocean beaches. Throw in Southern California's winter weather, which beats summer weather almost anywhere else, and it should come as no surprise that the AAS chose Long Beach for its 221st meeting in January 2013. As is often the case for our annual winter gathering, this was a joint meeting with HAD and the High Energy Astrophysics Division (HEAD). In all, 2,332 astronomers, educators, journalists, and others showed up — not counting the 200 or so local students who dropped by on Tuesday to enjoy hands-on activities in the Exhibit Hall.

In addition to the usual education workshops on the weekend preceding the science sessions, the Long Beach meeting featured our inaugural AAS Astronomy Ambassadors workshop for early-career AAS members. This two-day workshop for 30 early-career AAS members helped participants gain a better understanding of how people learn and what makes outreach to nonscientists effective. They also got hands-on experience with materials already proven to meaningfully connect audiences with astronomy.

The main science program kicked off on Monday morning with the Kavli Lecture by Tom Soifer (Caltech), who spoke about a decade of discovery with the Spitzer Space Telescope.

There were no fewer than 16 more invited presentations throughout the week. HAD and HEAD joined forces to hold a special session celebrating 50 years of X-ray astronomy, and HEAD sponsored a session on the first scientific results from the latest X-ray mission, NuSTAR, which was launched during the June 2012 AAS meeting in Anchorage. Our popular series of special sessions on professional development continued in Long Beach with dialogues on nonacademic career options, advocating for astronomy, childcare and family-leave policies, and initiatives to broaden the participation of women and minorities in astronomy.

Our 222nd AAS meeting, in June 2013, was a cosmic version of the Indy 500, as 572 astronomers, educators, journalists, and guests gathered at the Indiana Convention Center in downtown Indianapolis. Our meeting hotel, the Westin Indianapolis, provided easy access to the convention center and more than 100 shopping, dining, and entertainment venues. Attendees visited many of the city's most popular attractions, including the NCAA Hall of Champions, the Indianapolis Zoo, and Lucas Oil Stadium (home of the Colts), all just a short walk from the meeting.

The new Laboratory Astrophysics Division (LAD) organized seven "Bridging Laboratory & Astrophysics" sessions spanning the entire four days. There were also two multisession Meetings-in-a-Meeting: "WIYN Observatory: Building on the Past, Looking to the Future" and "Outer Limits of the Milky Way." Also on the program were the usual assortment of

career-enhancing workshops, public-policy town halls, and the increasingly popular (now that it's catered!) annual AAS members-meeting-cum-happy-hour, during which members get to hear about the state of the Society and provide feedback to its leaders.

A new feature of the Indy meeting was the participation of local amateur astronomers, who were invited to attend for one or two days at a special rate. In addition to visiting regular sessions and the exhibit hall, they were treated to four talks designed for general audiences but that proved popular with AAS members too: "Hubble Space Telescope Astrometry: Still Useful, After All These Years" by Fritz Benedict (University of Texas), "Interstellar Destinations" by Ed Guinan (Villanova University), "A Glimpse of Galaxies at the Dawn of the Universe" by Debra Elmegreen (Vassar College), and "Pluto's Demise and Resurrection" by Angela Speck (University of Missouri). On Monday evening scores of attendees headed outside for a star party organized by Jason Kendall (William Patterson University) and assisted by members of the Indiana Astronomical Society, who brought a variety of telescopes through which passersby got to see lunar craters, Saturn's rings, and other celestial treats.

If you ask most people what big event occurs in Washington, DC, every four years, they'll probably say the presidential inaugural. For astronomers, though, the answer is the return of the AAS winter meeting — the "Super Bowl of Astronomy" — to the nation's capital. The quadrennial DC meetings are the biggest astronomy conferences in the world, and during the last one in 2010 it became clear that we'd outgrown the Marriott Wardman Park north of Dupont Circle. The 223rd AAS meeting, held in January 2014, was our first in a new venue: the Gaylord National Resort and Convention Center in National Harbor, Maryland. Set on 350 premium acres along the Potomac River with lovely views of downtown DC and Old Town Alexandria, Virginia, the Gaylord is accompanied by more than 70 shops and restaurants and is just a 15-minute taxi ride from the capital. The final count of attendees was 3,117, not counting some 150 local middle- and high-school students who dropped by one afternoon to tour the exhibit hall and participate in hands-on science-education activities.

This was a joint meeting of the AAS and its High Energy Astrophysics Division (HEAD) and Historical Astronomy Division (HAD). Befitting such a large meeting, the program was jam-packed. The HAD meeting kicked off on Sunday afternoon with two sessions: "Why Is There Something Rather than Nothing in the Universe?" and "From Barnard's Star to the Kepler Mission: Searching for Low Mass Companions to Stars." Regular AAS science sessions got under way on Monday morning with the Kavli Lecture by Robert Williams (former director, Space Telescope Science Institute) on the legacy of the Hubble Deep Field, the iconic "baby picture" of our universe.

That was just the first of a stellar lineup of some 20 plenary talks by AAS prize winners and other distinguished astronomers. Attendees also heard from two astronomers renowned for their success in sharing astronomy, and science more generally, with the public. Ed Krupp (Griffith Observatory) gave his Andrew Gemant Award lecture after being presented with the American Institute of Physics annual prize for contributions to the cultural, artistic, or humanistic dimension of physics. And Neil deGrasse Tyson (American Museum of Natural History), host of the Cosmos reboot on Fox-TV and National Geographic Channel, enthralled his audience with "Tales from the Twitterverse, and Other Media Excursions." The plenaries didn't wind down until late Thursday afternoon, when James Lemen (Lockheed Martin Corp.) accepted the Lancelot Berkeley Prize for meritorious research and shared some of the amazing images and videos coming from NASA's Solar Dynamics Observatory.

As is always the case when the AAS meets in the US political center of gravity, we gave special emphasis to public policy, including a special plenary address from Fleming Crim, assistant director of the National Science Foundation's Directorate for Mathematical & Physical Sciences, which funds most ground-based astronomy in the US. The meeting also featured more than 1,000 research contributed oral and poster presentations, about 150 dissertation talks from new PhD's, a wide assortment of history and education papers, as well as contributed oral and poster papers to accompany the HEAD





and HAD sessions. Another highlight was the first-ever open-mic night for members to entertain friends and colleagues. The spectacle featured musicians, singers, storytellers, comedians, poets, and jugglers — who knew that astronomers could be so talented in such down-to-Earth pursuits?!

As already noted, HEAD, HAD, and LAD met jointly with the Society at its winter and/or summer gatherings. HEAD also convened its own annual meeting in April 2013 in Monterey, California, attracting 347 registrants. Other Divisions met

separately in 2013 as well. The AAS Division on Dynamical Astronomy (DDA) convened its 44th annual meeting in May 2013 in Paraty, Brazil. The Solar Physics Division (SPD) held its annual meeting in Bozeman, Montana, in July; 189 heliophysicists and other scientists with a particular interest in our daytime star attended. Finally, the Division for Planetary Sciences (DPS), our largest, attracted 764 attendees to its 45th annual meeting in Denver, Colorado, in October.

*AAS photos © 2013 Jason Images*

## DIVISIONS, COMMITTEES & WORKING GROUPS

The AAS is a diverse group of members passionate about their discipline. What the AAS can accomplish is greatly enhanced by our Divisions, Committees, and Working Groups. Each has a role to play, but all are enabled by the dedicated enthusiasm of volunteer leaders and participants.

The AAS Divisions cover all major areas of astronomical endeavor. Our six topical Divisions are the Division for Planetary Sciences, High Energy Astrophysics Division, Solar Physics Division, Division on Dynamical Astronomy, Historical Astronomy Division, and Laboratory Astrophysics Division. Each has its own governing committee, whose volunteer leaders guide the strategic direction of each Division and partner with the AAS Council to enhance our field. All AAS members may join any, and as many, Divisions as they choose; each Division has its own membership dues and bylaws. Several Divisions have affiliate memberships, which allow scientists who would not otherwise be, or do not qualify to be, full members of the AAS to participate in Society and Division activities.

The AAS Committees help implement many of the strategic goals of the AAS Council. A full list is available online at the AAS website, but some of the important committees include the

Committee on the Status of Women in Astronomy, Committee on the Status of Minorities in Astronomy, Committee on Public Policy, Publications Board, and Employment Committee. Some committees require election, while most rely simply on interested individuals to volunteer for service. Each prize has its own selection committee, and there are a range of administrative committees that look after the operation of the Society in a variety of ways. Individuals interested in volunteering for committee service should contact the AAS Secretary.

Working Groups are formed by the AAS Council to look after specific issues in our field. Among those formed recently are the Working Group on Astroinformatics and Astrostatistics (WGAA), Working Group on LGBTIQ Equality (WGLE), and Working Group on Time Domain Astronomy (WGTDA), was established in January 2014. Sometimes Working Groups stay active for a long time, like the Working Group on Astronomical Software, while occasionally they “graduate” to a full-fledged Division, as outlined in our bylaws. For example, in 2012 the Working Group on Laboratory Astrophysics became the Laboratory Astrophysics Division, our first new Division in three decades.



## PRESS & MEDIA

The role of the AAS Press Office is to ensure media attention to newsworthy scientific results that are presented at Society meetings, presented by AAS members or other astronomy researchers at scientific conferences worldwide, published in peer-reviewed journals, or announced in press releases from recognized astronomy-related institutions. An ancillary role is to ensure media recognition for recipients of major astronomical prizes and honors, especially those awarded by the Society or its Divisions. These responsibilities fall to the AAS Press Officer, Dr. Richard Tresch Fienberg, who organizes press conferences at AAS meetings, handles media inquiries and requests for expert referrals, and manages the AAS press-release-distribution service, which forwards astronomy-related releases from public-information officers to journalists all over the world and working in all forms of print, broadcast, and electronic media. He also distributes headlines and links to online press releases via the Twitter account @AAS\_Press and manages the Astronomy in the News section of our website. Rick is a member of the AAS Executive Office staff, though he works from home near Boston. Assisting as volunteers are Deputy Press Officers Dr. Larry Marschall (Gettysburg College) and Dr. Inge Heyer (Loyola University Maryland).

In preparation for AAS meetings, the Press Officer solicits press, photo, and video releases; arranges press conferences, photo opportunities, press tours, and seminars for science writers; and prepares media advisories and a press kit. During meetings, press conferences are webcast live for journalists unable to attend in person. Working with the American Association for the Advancement of Science's EurekAlert service, complimentary access to the electronic editions of *The Astrophysical Journal* and *The Astronomical Journal* is provided to accredited reporters who are not employed as astronomers.

Another of the Press Officer's responsibilities is to arrange for photography at AAS meetings. For many years we relied on volunteers, but since 2012 we've used the professional services of Joson Images. The quality of our meeting photography has taken a big leap forward thanks to Imelda Joson and her husband, Edwin Aguirre, both of whom are, like Rick Fienberg, former editors of *Sky & Telescope* magazine. They are both accomplished astrophotographers as well.

We've been forwarding press releases to the news media by email for more than two decades. We maintain two lists: one for reporters eligible to receive embargoed releases, and one for PIOs (who, according to rules established by Science and Nature, are ineligible to receive embargoed releases). The lists include some 2,000 email addresses, with about 1,700 of them on the press list and 300 on the PIO list. On average, we forward about  $100 \pm 20$  press releases each month. We receive dozens more, but we don't forward releases if we don't think they'll be of interest to our list members (as is the case, for example, with NASA releases about contract extensions and university releases about small grants to individual investigators). The @AAS\_Press Twitter account has about 2,500 followers, but not all of those are journalists or PIOs. Many are astronomers (including AAS members) or astronomy enthusiasts among the general public.

The 221st AAS meeting in Long Beach, California, attracted 62 press registrants. Another 11 reporters requested the webcast password. Corresponding numbers for the 222nd meeting in Indianapolis, Indiana, were 16 and 17, respectively. As is typically the case, onsite press registrants were a mix of approximately two-thirds reporters and one-third public-information officers (PIOs). The Press Officer organized 10

press conferences at the Long Beach meeting and 5 at the Indianapolis meeting; there's always more news at our winter meetings than at our summer meetings because the former have many more attendees and papers than the latter.

AAS photos © 2014 Joson Images



L-R: Rick Fienberg, Larry Marschall, Inge Heyer

# EDUCATION & OUTREACH



Through its education and outreach program, the AAS nourishes a scientific outlook in society to help increase public support for scientific research, improve science education at all levels, attract young people to careers in science and technology, and make evident the connections between science, technology, and prosperity. The highest priorities of the AAS in these areas are to promote and support training the next generation of astronomers to become successful scientific researchers and educators and to encourage and support high-quality research on the teaching and learning of astronomy.

Thanks to the Center for Astronomy Education (CAE), the Collaboration of Astronomy Teaching Scholars (CATS), the Association for Astronomy Education (AAE), and other individual members of the AAS, weekend workshops, family science events, and oral and poster sessions on various aspects of astronomy education continue to be regular features of AAS meetings.

The Astronomy Education Board (AEB) provides oversight of AAS educational activities by giving advice to the Council, the Executive Officer, the Education Officer, and, since 2009, the Education & Outreach Coordinator. Gina Brissenden began filling that last role in June 2013 to encourage and support members' efforts in education and outreach and to manage AAS education programs that can't be maintained through volunteer effort alone.

In 2012 the AAS launched a new education-and-public-outreach (EPO) initiative called Astronomy Ambassadors. Conceived by then-president Debra M. Elmegreen, the Ambassadors program comprises a professional-development workshop and a community of practice designed to help improve early-career astronomers' ability to communicate effectively with students and the public. It provides mentoring and training experiences for young astronomers,

from advanced undergraduates to beginning faculty; it also provides access to resources and a network of contacts within the astronomy EPO community.

By learning how to implement effective education and outreach strategies, AAS Astronomy Ambassadors become better teachers, better presenters at meetings, and better representatives of our science to the public and to government. And because young astronomers are a more diverse group than those who currently do the majority of outreach, they help the astronomical community present a more multicultural and gender-balanced face to the public, enabling members of underserved groups to see themselves as scientists.

Ambassadors are provided with a large library of outreach activities and materials that are suitable for a range of venues and audiences and that will grow with time. For much of this library we are using resources developed by organizations such as the Astronomical Society of the Pacific, the Pacific Science Center, and the Center for Astronomy Education for other outreach programs, though some resources have been created specifically for this program.

The first AAS Astronomy Ambassadors workshop was held at the 221st meeting of the AAS in Long Beach, CA, in January 2013 and served 30 young astronomers chosen from more than 75 applicants. Incorporating feedback from workshop participants and lessons learned from the reports they've submitted after conducting their own outreach events, a second annual workshop for a new cohort of 30 Ambassadors was successfully held in January 2014 at the 223rd AAS meeting in Washington, DC. The AAS Council has also approved continuing this program in 2015, with another workshop to be held in Seattle, WA, in conjunction with the 225th AAS meeting.

We now regularly invite local middle- and high-school students and their chaperones (teachers and/or parents) to drop in at AAS meetings on Tuesday morning to hear a special presentation from an astronomer and then to tour the Exhibit Hall, where numerous exhibitors conduct age-appropriate interactive demonstrations and other educational activities. This student EPO event has proven very popular. At the 221st AAS meeting in Long Beach, CA, in January 2013 approximately 300 students from six schools and various homeschool programs heard a talk by Bobak “Mohawk Guy” Ferdowsi and engaged in hands-on science activities led by 23 exhibitors and volunteer outreach groups. At the 222nd AAS meeting in Indianapolis, IN, in June 2013 approximately 200 students from two schools and various homeschool programs heard from Gail Zasowski and participated in hands-on activities led by 14 exhibitors and volunteer outreach groups. Students were primarily from underrepresented and underserved groups. The events were sponsored by Associated Universities, Inc.

We continued to work on strengthening the Harlow Shapley Visiting Lectureship Program, which sends AAS members on short visits to colleges and universities that don’t have robust astronomy programs. The goal is to ensure that the program supports not only the part of our mission statement that commits the Society to training, mentoring, and supporting the next generation of astronomers, but also the part that commits us to promoting increased participation of historically underrepresented groups in astronomy. We wrote a proposal to overhaul the Shapley program, covering everything from the selection of lecturers and host institutions, through outreach and publicity, to follow-up and evaluation. With

the Council’s support and in collaboration with the AEB, and with help from a volunteer AAS member recruited by AAS Executive Officer Dr. Kevin Marvel, we’ve begun implementing the plan. Among other new components, we now arrange a Shapley Lecture at a minority-serving institution located geographically near each upcoming AAS meeting. One faculty member from that institution and five of his or her students then receive free one-day registration to attend the meeting. Morgan State University, a Historically Black College or University (HBCU) in Baltimore, MD, was the first recipient of this new variety of Shapley Lectureship.

Among the Education and Outreach Coordinator’s other responsibilities is arranging judging for the Rodger Doxsey Travel Prize, which provides graduate students or postdocs within one year of receiving or receipt of their PhD a monetary prize to enable the oral presentation of their dissertation research at a winter AAS meeting. Ditto for arranging judging for the Chambliss Student Astronomy Achievement Awards, which recognize exemplary research by undergraduate and graduate students who present posters at AAS meetings. Finally, the Education and Outreach Coordinator serves as AAS liaison to other scientific societies’ education programs. As a result of such collaboration with the American Institute of Physics (AIP), participation by the Society of Physics Students (SPS) is now a regular feature of winter AAS meetings; SPS exhibits at the undergraduate reception and holds a special evening poster session at which a well-known astronomer gives a career-oriented “pep talk” to the attending students.

*AAS photos © 2013 Joson Images*



# 2013 PRIZE WINNERS



**Kenneth C. Freeman**  
*Henry Norris Russell Lectureship*  
“For a lifetime of seminal contributions to the fields of galaxy structure and dynamics and stellar populations.”



**Jason Kalirai**  
*Newton Lacy Pierce Prize*  
“For major contributions to the field of stellar and Galactic astrophysics, including establishing a fundamental relation of stellar astrophysics, the initial-final mass relation, that maps the fraction of mass loss that stars experience over their lives.”



**Rachel Somerville**  
*AAS/AIP Dannie Heineman Prize*  
“For providing fundamental insights into galaxy formation and evolution using semi-analytic modeling, simulations and observations.”



**Mark Krumholz**  
*Helen B. Warner Prize*  
“For his major theoretical contributions in the areas of massive star formation and the interstellar medium, both in the Galaxy and in the early universe.”



**Sarah Dodson-Robinson**  
*Annie Jump Cannon Award*  
“For her outstanding contributions to the study of the formation of planetary systems.”



**John R. Percy**  
*Education Prize*  
“For 40+ years of tireless advocacy for K-12 astronomy education in Canada and around the world.”



**Keith Matthews**  
*Joseph Weber Award for Instrumentation*  
“For his many contributions to infrared astronomical instrumentation at the Palomar and Keck Observatories.”



**Abraham Loeb**  
*Chambliss Astronomical Writing Award*  
“For his lively, but concise account, ‘How Did the First Stars and Galaxies Form?’ (Princeton University Press 2010).”



**Kian Jek**  
*Chambliss Amateur Award*  
“For works in the Kepler Mission’s Planet Hunters program.”

# MEMBER DEATHS

The Society was saddened during 2013 to learn of the passing of the members listed here. The Society, through its Historical Astronomy Division, strives to publish an obituary for each AAS member after we are informed of his or her death. Obituaries are published and available online through the AAS web pages. They are also provided to Astrophysics Data System. A complete index is available at [had.aas.org/obits.html](http://had.aas.org/obits.html).

Carol Ambruster  
Kinsey Anderson  
Halton C. Arp  
Victor M. Blanco  
Wilbur K. Brown  
Lin Chia-Chiao  
Stirling A. Colgate  
George Collins  
Alanna Connors  
Arthur Nelson Cox  
David S. De Young  
Raynor Duncombe

Li-Zhi Fang  
Walter Fitch  
Kenneth J. Frost  
Yoshio Fujita  
John A. Galt  
Abolghassem Ghaffari  
Michael G. Gibbs  
Paul H. Guttman  
Douglas Hall  
Gary B. Hansen  
George H. Herbig  
Robert Hobbs

Richard A. Jarrell  
Bishun N. Khare  
Gerald E. Kron  
David Lamenti  
John C. McConnell  
William C. Martin  
Dimitri M. Mihalas  
Bruce C. Murray  
Osamu Namba  
Claire Nevels  
Hasso B. Niemann  
Arthur A. Page

Sun Hong Rhie  
Robert Rubin  
Paul M. Ruffle  
Zdenek Svestka  
Robert F. Tooper  
Jack Tueller  
Edward Key Lloyd Upton  
James Walter Warwick  
Donat Wentzel  
Richard Young

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**Vice-President** Paula Szkody, Univ. of Washington  
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**Treasurer** Hervey (Peter) Stockman, STScI  
**Education Officer** Edward Prather, Univ. of Arizona  
**Publications Board Chair** Anne P. Cowley, Arizona State Univ.  
**Executive Officer** Kevin B. Marvel

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Eileen Friel, Indiana Univ.  
Angela Speck, Univ. of Missouri

### 2012-2015

Nancy S. Brickhouse, Harvard-Smithsonian CfA  
Todd J. Henry, RECONS/Georgia State University  
Steven D. Kawaler, Iowa State Univ.

### 2013-2016

Geoffrey Clayton, Louisiana State Univ.  
Dara J. Norman, NOAO  
Dawn M. Gelino, Caltech

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Tracy Beale, Registrar & Meetings Coordinator  
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Sherrie Brown, Membership Services Administrator  
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Kathy Cox, Meetings Abstract Administrator  
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Lisa Idem, Meetings Manager  
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Asfaw Kifle, Staff Accountant  
Debbie Kovalsky, Exhibits & Sponsorship Coordinator  
Jerry Lin, IT Specialist  
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Joel Parriott, Director of Public Policy  
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Tracy Rowe, Executive Office Assistant  
Joshua Shiode, John Bahcall Public Policy Fellow  
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Crystal M. Tinch, Communications Manager

## AMERICAN ASTRONOMICAL SOCIETY

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