AMERICAN ASTRONOMICAL SOCIETY

2018 Annual Report

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MISSION & VISION STATEMENT

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

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.

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.

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.

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.

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.

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. Photo credits: Phil McCarten and Todd Buchanan/Corporate Event Images

Photo: Harley Seeley Photography/MSU College of Natural Sciences

PRESIDENT'S MESSAGE: MEGAN DONAHUE

Keep calm and carry on.

This year has been a roller coaster of events, progress, peaks, and valleys.

One of the most exciting recent developments is that the AAS is now, as of June 2019, the proud owner of *Sky & Telescope* magazine and its astronomy-related merchandise, tours, and other businesses. No less exciting, in conjunction with our Division for Planetary Sciences we are also launching a brand-new scientific journal, the *Planetary Science Journal*, to join our *Astrophysical Journal, ApJ Letters*, and *ApJ Supplement Series* and our *Astronomical Journal.* Our Memorandum of Understanding with the DPS was signed just as this report was going to press, in August 2019.

During the last year, we have heard about the launch and spectacular success of the TESS mission. InSight landed on Mars, ESA's BepiColombo is on its long-way voyage to Mercury (launched by an Ariane 5, the same type of rocket that will launch JWST), and the Parker Solar Probe is circling ever closer to the Sun. The gravitational wave detectors LIGO and VIRGO are now regularly detecting black hole–black hole mergers, and they seem to have found a neutron star–black hole merger. The construction of the Large Synoptic Survey Telescope in Chile appears to be on schedule, with many of the parts, including the primary mirror, now on site at Cerro Pachón. In April 2019 the world saw the first direct image of the event horizon of the supermassive black hole in M87. In July 2019 the umbra of a total solar eclipse passed over Chilean observatories, thankfully clear, on a late afternoon. And hey, as an X-ray astronomer I was delighted to hear, in July 2019, of the launch of the long-awaited successor to the all-sky X-ray survey by ROSAT (1990-1999), the eROSITA instrument aboard the Russian-German SRG mission.

Some of the highlights from AAS governance, in roughly chronological order:

- In June 2018 our Strategic Assembly meeting in Denver focused almost entirely on our ethics processes across publishing, real-time/meeting responses to reports of harassment, and the Code of Ethics. Several initiatives emerged from that discussion, including an ongoing task force reviewing and updating ethical processes in the operations of the AAS. That task force is led by Kelsey Johnson, AAS Trustee from the University of Virginia. Starting with the 2020 prizes, the AAS will require nominees for AAS office and recipients of AAS prizes to go through a self-disclosure of professional ethics. This step is in addition to asking letter-writers to address the professional ethics of candidates for AAS prizes. It is a natural extension of having a Code of Ethics.
- We have been working out the implications of the relatively new governance structure, approved by the membership

in the summer of 2017. That effort included leaders from our AAS Divisions reviewing and updating their bylaws, including synching up member definitions and terminology. In October 2018 the Board decided that all members should have voting privileges. If you are an undergraduate member who voted in our elections, thank some active AAS undergraduate members who cared to voice their concerns, including Ashley Lindalia (who also highlighted Black junior astronomers in honor of Black history month on Twitter) and Elizabeth Gutierrez.

- And speaking of those elections, in June 2019 we welcomed President-Elect Paula Szkody; Vice-President Geoffrey Clayton; a new Secretary, Alice Monet; and new At-Large Trustee, Hannah Jang-Condell. We marked the passing of an era when our long-time AAS Secretary Fritz Benedict handed the quill to Alice. As per the new governance, the number of At-Large Trustees (formerly known as AAS Councilors) on the Board is getting smaller each year. We originally had nine. From June 2018 to June 2019 we had seven. For the period June 2019 to June 2020 we have five, and after next year's election we will reach the targeted number of three.
- To make up for fewer members on the Board, the governance structure formalized the role of the Strategic Assembly. The Strategic Assembly includes the full AAS Board, the chairs of the AAS Divisions (HAD, HEAD, DPS, DDA, LAD, and SPD), plus the chairs of the Publication Committee, Education Committee, the CSMA, CSWA, SGMA, and WGAD. Our Strategic Assembly increased this year, as the Board added the chair of the Sustainability Committee to this list. We started the process of updating our Strategic Plan (last produced in 2016) at our St. Louis meeting in June 2019. The issues of climate change and diversity, equity, and inclusion are important themes for us as we consider our goals and objectives for the next 5-10 years.
- Our Executive Officer now has a multiyear contract. Up until this year, Kevin Marvel was employed on a one-year rolling contract.
- The AAS Task Force on Diversity and Inclusion in Graduate Education, led by Alexander Rudolph and Gibor Basri, published its report in the Bulletin of the American Astronomical Society. That report was summarized and framed a white paper submission to the Astro2020 Decadal Survey. The report includes actionable recommendations to graduate education programs regarding the recruitment and retention of students. All of these recommendations were grounded in evidence-based practices. The report has an appendix of examples of holistic rubrics for admissions. The inclusion of social scientists on the task force was extremely valuable, and I'd recommend doing that again for future work of this kind.
- The Astro2020 decadal process has begun, and the AAS has embraced its role in this very important process for providing our community's scientific priorities in astrophysics to the NSF, NASA, and the DOE. The AAS is providing venues for the town hall meetings and a proper publication home for the white papers. We have published 545 of 573 science white papers (28 authors opted out). The State of the Profession and Call for Activities and Projects white papers were submitted in July 2019, 311 based on the count. Based on the primary classifications by the authors, these included 97 ground-based, 77 space-based, 21 infrastructure, 21 tech dev, and 89 State of the Profession papers. The white papers represent a serious effort on behalf of our community. All of these papers, with permission of the lead authors, will also be published in the BAAS (B double-A S is the preferred pronunciation of the acronym — sounds much better than Bauce or Bawz).
- Our Demographics Committee completed the 2018 demographics survey, and the report is available on the AAS members website.

The government shutdown of winter 2019 affected and worried many of us at the Seattle AAS meeting and afterwards. How were postdocs and students going to be supported? What was going to happen if people could not pay their bills? We were especially worried about postdocs losing their permission to remain in the US. The AAS Board even set up and self-funded an open crowd-funding account for a short time during the shutdown. It was quite the learning experience because we had never done anything like it before. One of the things I learned were some of the fine points of what it means to be a civil servant even if the government is refusing to pay you. (It means you can't accept gifts of any kind, even if they are short-term loans that you would repay as soon as your paychecks started coming again.) We are hoping we don't have to go through that again. Our hearts go out to those employees — contract laborers, the kitchen and janitorial staff, for example — who did not get paid during the shutdown and lost income as a result. I don't know the financial situation of everyone who endured that crisis, but I can guess those who paid the most could afford it the least.

We are in a time of turmoil. These days the science budget process makes even less sense than usual. The federal budget means one thing during one part of the year, and another thing during another part. WFIRST is a budgetary Schrödinger's cat. The AAS holds to the priorities of the most recent decadal, and so far, WFIRST has survived annual cancellation. But we encourage our members to not take the continuation of a high-priority science mission for granted. The AAS public policy efforts allow us to join our voices with other scientific societies to support congressional bills favorable to science and to provide timely input to congressional staffers. Our most recent John Bahcall Public Policy Fellow, the amazing Dr. Ashlee Wilkins, moved on to a prestigious staff position on the House Science, Space, and Technology Committee this spring. In July 2019 our new Public Policy Fellow, Dr. Kelsie Krafton, arrived as a freshly minted PhD from Louisiana State University. She has already begun posting news from the Hill. Welcome to DC, Kelsie!

Other major astronomical projects are experiencing turmoil, change, and uncertainty. In the summer of 2018 JWST had an external review, and the launch date was delayed to 30 March 2021. The TMT project received the go-ahead from the governor of Hawai'i to begin construction, but protests on the road to the observatory prevented that from happening. As we go to press, as part of a negotiated agreement, the workers from the other Maunakea observatories are restoring instruments to operational levels after four weeks of dormancy.

Looking ahead, we are facing some tough questions as astronomers. What does it mean to be a scientist and to do astronomy, if the cost is to bury the planet in carbon and to build observatories in the presence of local dissent? What does it mean if our field is still largely white and male, especially in leadership and in positions of influence, after many years of attention? I encourage us all to engage in these serious questions that go beyond astronomy. I have witnessed that natural inclination of scientists to propose (and uncritically embrace) our own on-the-spot solutions before we fully understand the questions and the context. My advice to myself, and maybe to most of us reading this far into my letter, is simple: Talk less. Listen more. The planet needs all of us, as human beings, to resolve differences peacefully and ethically. I hope these tough questions may give us all an opportunity to grow, to learn important lessons about how to respect and honor indigenous culture, and how astronomy and indigenous culture together can show the world a path to a sustainable, survivable, beautiful future.

I desperately hope for a future where we can study the stars and live sustainably together. I have one more year to do my best as President for the AAS, and I promise I will keep calm and carry on as best I can.

EXECUTIVE OFFICER'S MESSAGE: KEVIN B. MARVEL

2018 marks my 20th year of service to the American Astronomical Society. When I think back to my first weeks on the job in DC, getting my first tour of Capitol Hill from Peter Boyce, being introduced to the ins and outs of non-profit management by Bob Milkey, and the support of all the staff of the AAS Executive Office, it is hard for me to fully remember just how excited I was. Landing in DC fresh off a great postdoctoral experience at Caltech's millimeter array in California, I could not have envisioned a more rewarding career than I have followed so far. For everyone who has helped me along the way, from advisors, to fellow AAS staff members, to the dynamic and dedicated volunteer leaders I've been privileged to work with and of course all AAS members, I want to thank each and every person for what they have done to help me learn, grow, and achieve.

The AAS is a strong, enduring organization because of the dedicated and passionate commitment of its membership and volunteer leaders. Without members, a member organization is nothing; with members, we are a significant resource for progress in the astronomical sciences. The content of our Society and Division meetings; the ever-increasing research results appearing in our journals; the broadening of our membership class structure; and even the content of this annual report point to a dynamic, responsive, and engaged organization that takes its mission to enhance and share society's scientific understanding of the universe seriously.

Our journals remain the foremost publication channels for peer-reviewed research in the astronomical sciences and related disciplines. Enhancements to how we operate have made us more efficient and those efficiencies have allowed us the opportunity to innovate in important ways; creating exciting new tools and resources for authors and readers that will become available in 2019 and beyond, which were begun in 2018 or before, while making the route to publication and the peer-review process easier. We have more to do, but it is easier now than ever before to submit a manuscript for review, to interact with the peer review process and see your work published quickly. Our goal is high-quality peer-review and presentation with every editorial or production step taking less time than the parts of the peer-review process that the author is responsible for. We must facilitate a fast route to publication for our authors, not present a hurdle to them.

Our conferences remain vital and engaging environments for scientific discourse. The content of the meetings is selected and arranged by the AAS Vice-Presidents, who have done an amazing job creating programs that are dynamic, interesting and appreciated by attendees. Plenary lectures are available online shortly after our meetings, bringing at least some of the great presentations at the meeting to those who could not attend. We are experimenting with new formats of presentation like iPosters and iPoster plus sessions, with a goal of packing more opportunity for presentation into our conferences without taking away any of the impact. Our meetings are supported by our exhibitors and sponsors, who are vital parts of our overall conference content and financial model. We thank them for their continued engagement with our community and our conferences.

We have accomplished a great deal in the past few years, especially in 2018, but we have much more to do. A comprehensive list is not possible in this annual report, but we have made significant headway implementing and supporting our Anti-Harassment Policy and our Code of Ethics. We are making progress in the areas of diversity, equity, and inclusion, which has been an area of concern for our Board of Trustees for a number of years (e.g., the Diversity & Inclusion in Graduate Astronomy Education Task Force report was released in 2018 and efforts are underway across multiple organizations to implement its recommendations). We have opened our arms to the amateur astronomy community, who now have their own membership class, along with engagement opportunities for those who have shifted career tracks away from academic research. We have created innovative new publications like AAS Nova, begun the reinvigoration of the BAAS as a venue for publication of content about our profession, explored enhancements to our outreach efforts, paid more attention to professional development through our employment committee and on, and on, and on. It is thrilling to work for such a great organization where the members, leaders, and staff are all committed to our clearly stated mission. We accomplished a great deal in 2018 and know that 2019 and future years will be just as full of achievement knowing we are a unified team, focused on a long-term goal that we all share.

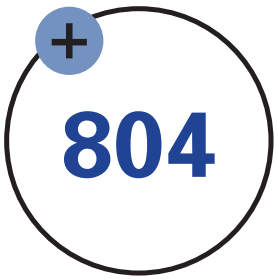
MEMBERSHIP

With more than 5,700 members in the US and more than 800 based elsewhere, the AAS membership is geographically diverse, with many members. 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 across the globe, and 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.

US MEMBERS



NON-US

CA	1051	OH	97	LA	20
MD	700	WI	79	KS	18
MA	450	IN	78	ME	18
AZ	354	CT	69	NV	16
NY	295	TN	63	AR	15
TX	244	NC	62	ID	15
CO	239	MN	60	VT	15
VA	238	UT	46	WY	15
PA	215	AL	44	PR	13
NM	160	MO	43	DE	12
IL	148	OR	41	NE	11
MI	138	KY	36	RI	10
FL	126	SC	35	ND	6
DC	123	WV	35	AK	5
GA	112	NH	31	MS	2
NJ	109	IA	29	VI	2
HI	108	OK	22		
WA	98	MT	21		

Canada	160	Switzerland	23	Finland	5	Iceland	2	Luxembourg	1
United Kingdom	75	Mexico	19	Norway	5	Lebanon	2	Macao	1
Japan	70	Spain	18	Austria	4	New Zealand	2	Portugal	1
Germany	68	Taiwan	14	Denmark	4	Bangladesh	1	Romania	1
Republic of Korea	57	Israel	9	Greece	4	Costa Rica	1	Russian Federation	1
Australia	47	Brazil	8	Ireland	4	Cyprus	1	Serbia	1
Netherlands	32	South Africa	8	Poland	4	Egypt	1	Sri Lanka	1
Chile	30	Sweden	8	Bahrain	2	Estonia	1	Turkey	1
France	27	Czech Republic	7	Colombia	2	Hong Kong	1	United Arab Emirates	1
China	26	Belgium	6	Georgia	2	Hungary	1	Uruguay	1
Italy	24	India	6	Holy See (Vatican City)	2	Latvia	1		

AAS & DIVISION MEETINGS

AAS 231

As it does every four years, the AAS winter meeting — the Super Bowl of Astronomy — returned to the nation's capital, or at least the general vicinity, in January 2018. The 231st AAS meeting convened at the Gaylord National Resort & Convention Center in National Harbor, Maryland. The quadrennial DC meeting is always the Society's largest, and this one attracted more than 3,000 scientists, educators, journalists, and others from all over the world.

Science sessions got under way with the Kavli Foundation lecture by Scott Bolton (Southwest Research Institute) on findings from the Juno mission to Jupiter. He was followed by a stellar lineup of 16 plenary talks by AAS prize winners and other distinguished astronomers, including Nobel Prizewinner Adam Riess (Johns Hopkins Univ.), who provided a status report on the quest to pin down the Hubble constant and understand the nature of dark energy.

The Henry Norris Russell Lecture, recognizing a lifetime of preeminence in astronomical research, was presented by Eric Becklin (Univ. of California, Los Angeles), who played a leading role over the last half century in turning infrared astronomy into a fundamental tool for understanding the universe. The recipient of the HAD Leroy Doggett Prize, Sara Schechner (Harvard Univ.), described heroic efforts to preserve historical astronomical instruments, and the recipient of the HEAD Bruno Rossi Prize, Gabriela González (Louisiana State Univ.) on behalf of the LIGO Scientific Collaboration, celebrated the birth of multimessenger astrophysics involving observations of gravitational waves and electromagnetic radiation from exotic sources. This emerging discipline is so important and dynamic that it was the subject of two additional invited presentations, including one by Mansi Kasliwal (Caltech) as well as the meeting's final plenary, the Berkeley Prize lecture by Peter Fritschel (MIT) on behalf of himself and co-recipients Dennis Coyne (Caltech) and David Shoemaker (MIT).

HAD convened two special sessions: "The Future of Astronomy's Archived Observations — An Open Discussion" and "From the Earliest Astronomy to Space Missions: Explorations in the History of Astronomy." HEAD did the same, with "First Results from the Neutron star Interior Composition Explorer (NICER)" and "GW170817/ GRB170817A: Multimessenger Astrophysics from a Neutron Star Merger." LAD held one special session entitled "Water, Water Everywhere," exploring studies of this life-sustaining molecule in the solar system and interstellar space.

AAS 232

Astronomers got closer to the stars in more ways than one at the 232nd AAS meeting in the Mile High City, Denver, Colorado, in June 2018. The Laboratory Astrophysics Division (LAD) met with us, featuring daily oral and poster sessions on the theme "Bridging Laboratory and Astrophysics." David Neufeld (Johns Hopkins Univ.) gave a LAD plenary lecture reviewing results from the European Space Agency's Herschel Space Observatory and emphasizing the importance of laboratory astrophysics to our evolving understanding of the interstellar medium. The recipients of LAD's

2018 Laboratory Astrophysics Prize and Dissertation Prize spoke in Denver too: Michael Wiescher (Univ. of Notre Dame) and Clayton Myers (Sandia National Laboratories), respectively.

A unique feature of AAS summer meetings is the degree to which members help shape the program by organizing one-off Special Sessions and multisession Meeting-in-a-Meeting (MiM) gatherings. Special Sessions in Denver included "Astrophysics Archives in the 2020s," "Decadal Survey Preparations: State of the Profession," and "Indigenous Knowledge in 21st Century Science." MiMs included "Infrared Astrophysics in the SOFIA Era" (three sessions), "Low Radio Frequency Observations from Space" (three sessions), and "Preparing for JWST Science with the Early Release Science Programs" (four sessions). Evan Kirby (Caltech), recipient of the Society's 2017 Newton Lacy Pierce Prize for his work on the chemical abundances of stars in dwarf galaxies, organized a seven-session MiM entitled "Stellar Abundances in Dwarf Galaxies."

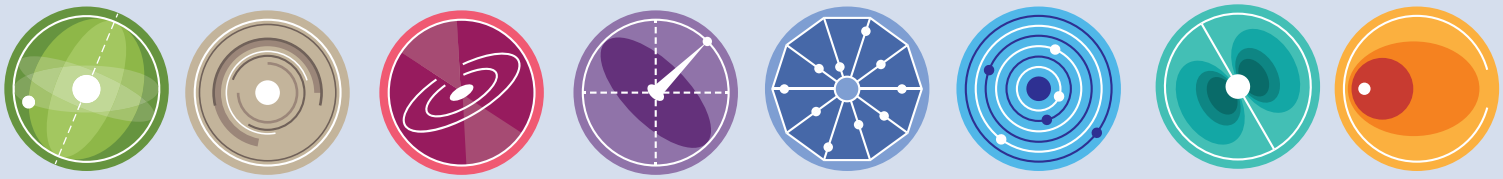
Like Neufeld, Kirby is one of nearly a dozen distinguished scientists who presented invited or prize lectures in Denver. Among the others were Debra Fischer (Yale Univ.), who kicked off the meeting with the Kavli Foundation Plenary Lecture on the state of the art in exoplanet research, and Sarbani Basu (also Yale), who had her day in the sun as recipient of the AAS Solar Physics Division's George Ellery Hale Prize for her seminal contributions to our understanding of solar and stellar structure and dynamics.

AAS 233

The Seattle Seahawks don't make it to the Super Bowl with any regularity, but the Super Bowl of Astronomy makes it to Seattle every four years. The 233rd AAS meeting took place at our usual venue, the Washington State Convention Center. Gathered with the AAS were our Historical Astronomy Division (HAD) and High Energy Astrophysics Division (HEAD). The HAD meeting got under way with a special session on NASA's Spitzer observatory. More HAD sessions on a variety of topics followed over the next few days, including a Monday plenary address prepared by astro-historian David DeVorkin (National Air and Space Museum) commemorating the 150th birthday of George Ellery Hale, who discovered magnetic fields in sunspots, built several of the world's largest telescopes, cofounded the *Astrophysical Journal*, and helped establish the AAS. Because of an ongoing government shutdown at the time, DeVorkin's talk was actually presented by Marc Rothenberg.

Two HEAD sessions focused on anniversaries as well: the Chandra X-ray Observatory at 20 years and the Fermi Gamma-ray Space Telescope at 10. Colleen Wilson-Hodge (NASA Marshall Space Flight Center) gave the HEAD Bruno Rossi Prize lecture. She and her colleagues on the Fermi Gamma-ray Burst Monitor (GBM) team received the prize for their discovery of gamma rays coincident with the 17 August 2017 neutron-star merger that also emitted gravitational waves and launched a new era of multimessenger astronomy.

AAS PUBLISHING



4,416 research papers published in 2018

PUBLISHING

The AAS publishes a portfolio of the most-read and most-cited research journals in the field, including *The Astronomical Journal, The Astrophysical Journal, The Astrophysical Journal Letters*, and *The Astrophysical Journal Supplements*. As publishers of the field's journals of record, the AAS employs a team of 30 active topic experts as Lead and Science Editors, and helps authors get to the best possible publishable paper with the additional assistance of two dedicated Data Editors and a Statistics Editor. The AAS Publishing team takes pride in its tradition of community-oriented innovation — AAS journals were some of the first astronomy research journals to go online — and worked hard to sustain this tradition in 2018.

In November 2018 AAS hired Peter K. G. Williams as its first Innovation Scientist. The practice of science, just like virtually every other facet of society, is being transformed by digital technology, and Dr. Williams' main charge is to inform and support the Society and its membership in the face of this tsunami of change. Dr. Williams is also the new Director of the AAS WorldWide Telescope project (WWT; http://worldwidetelescope.org/), which this year has substantially improved its support for embedding the WWT rendering technology inside Jupyter notebooks and interactive figures in the AAS journals.

Earlier in 2018, AAS Publishing developed and launched two new WordPress websites: a new AAS Nova site at https://aasnova.org and a new general information portal for AAS Publishing at https://journals.aas.org. These sites represented a significant improvement to their previous incarnations with accessibility upgrades and better web statistics, and most importantly, were easier for AAS Publishing staff to edit and maintain.

Under AAS Lead Editor Dr. Frank Timmes, *The Astrophysical Journal Supplements* published a fully commissioned special issue in May 2018, Data: Insights and Challenges in a Time of Abundance (http://iopscience.iop.org/issue/0067-0049/236/1), including articles about the discipline as well as articles about some of the community leadership efforts of AAS Publishing. Dr. Melissa McGrath stepped down from her Lead Editor position for the AAS Journals corridor, The Solar System, Exoplanets, and Astrobiology, and was replaced by Science Editor Dr. Michael Endl.

The first comprehensive author survey since 2013 was undertaken by AAS Publishing with the assistance of the AIP Statistical Resource Center. From authors in our own peer review database, from our AAS members, and from authors who are in neither of the prior two groups, we received an astonishing 6,444 survey responses. Data from this survey informed a closer examination of our business model and led to many improvements in our policies and procedures. Just under 50% of corresponding authors publishing in AAS Journals are now based in the United States.

The AAS Publishing team included six staff members in 2018: Alexandra Aguilar, Senior Publications Editor (Arizona); Dr. Susanna Kohler, AAS Nova Editor (California); Dr. August (Gus) Muench, Data Editor (Massachusetts); Dr. Greg Schwarz, Data Editor (Pennsylvania); Janice Sexton, Editorial Operations Manager (Colorado); and Julie Steffen, Director (Arizona).

Our AAS/IOP eBooks Series entered its second year in 2018 with six new titles published and 40 more under contract. *The Astronomical Journal* published 549 research articles in 2018; *The Astrophysical Journal* published 3,035; *The Astrophysical Journal Letters* published 578, and *The Astrophysical Journal Supplement Series* published 254, for a grand total of 4,416 research papers in 2018. There were 234 *Research Notes of the AAS* published in 2018.

PUBLIC POLICY

The AAS conducts a wide range of public policy activities on behalf of the membership and US astronomical science. 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 (JBPPF) closely monitor science and space policy developments important to the astronomical science community and engage with policymakers at federal agencies, in the White House, and in Congress through advocacy initiatives.

CAPP and the Executive Office policy staff communicate most directly to the membership through three primary avenues:

- Plenary and concurrent policy sessions at the AAS and Division meetings. At the 2018 winter AAS meeting in Washington DC, CAPP and the AAS policy staff organized a special session with a panel on "Future Flagship Missions and WFIRST".
- AAS Policy Blog and Twitter feed. The AAS Policy Blog, authored by the JBPPF, communicates important developments in astronomical science policy to the membership, and is distributed as part of the biweekly AAS News Digest e-mail in addition to appearing on the AAS website. The JBPPF (and some guest member writers) published 30 posts on the AAS Policy Blog in 2018. Additionally, the JBPPF operates the @AAS_Policy twitter account, tweeting updates, announcements, news, and analysis of astronomical science policy developments. The account's audience includes not only AAS members, but also members of the general public, science/higher education federal relations community, and Congressional and agency staff.
- Invited talks at academic and research institutions. The AAS shares travel costs when sending the Director of Public Policy or the JBPPF to institutions. In 2018, the JBPPF gave five invited talks about science policy and AAS advocacy.

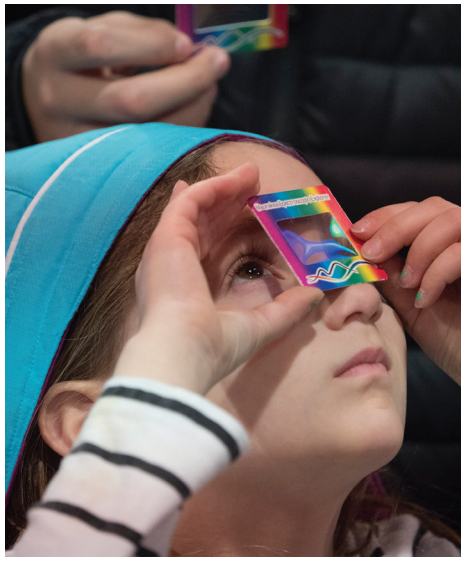
AAS members can have a significant impact on federal science policy by visiting Congress. The AAS facilitates such visits with training, materials, and guidance. In 2018, the AAS provided several opportunities for Society members to learn how federal policymaking for science works and to lobby their elected Representatives and Senators in Washington, DC. AAS leads a Congressional Visits Day (CVD) every March; in 2018, 21 AAS members participated in CVD, visiting 41 offices representing 15 states. AAS also brought members to the Science, Engineering, and Technology Working Group (SETWG) — a working group that consists of members from various scientific and technical professional societies as well as universities and industry — visit day in May 2018. AAS and Division leadership regularly visit Capitol Hill, and the AAS policy office supported DC visits by the DPS Committee and the SPD Public Policy Subcommittee.

AAS works to engage a large number of members for collective impact on policy via Action Alerts. Action Alerts go out via e-mail to identify key issues in federal astronomical science policy. Each Action Alert has a specific topic or "ask," and members are given information on how to contact their Senators and/ or Representatives and guidelines on what to say. In 2018, the AAS issued two Action Alerts: one to stop the graduate tuition tax, and another to support NASA astrophysics and WFIRST. Action Alerts received an upgrade in 2018 — in addition to a new look, the AAS policy team can now send messages to the full membership or to target members who live in certain districts or are represented by members of key congressional committees, track participation by AAS members and congressional recipients, and provide a "Take Action" link to an action page that guides you through the process and provides the phone numbers or addresses of your representatives.

Many stakeholders share interest in various elements of federally-supported science, and working together can help amplify our messages and increase impact. Coalitions build stakeholder consensus on issues of shared concern, and jointly determine effective advocacy strategies. The AAS is a member of several multi-society coalitions in Washington, DC, that work on science, space, and science-education policy and are typically comprised of professional societies, colleges and universities, and industry partners. These include the Coalition for National Science Funding (CNSF), the Task Force on American Innovation (TFAI), the Energy Sciences Coalition (ESC), the Coalition for Aerospace and Science (CAS), the Physical Sciences Education Policy Coalition (PSEPC), the Science and Security Working Group, and a coalition of scholarly publishers (GATF). The AAS is also an affiliate member of the STEM Education Coalition and participates in ad hoc coalitions or joint efforts of scientific societies led by organizations like the American Association for the Advancement of Science (AAAS) or the National Academies of Sciences. In 2018, the AAS was a signatory on over a dozen letters to Congress or the administration via these coalitions.

The AAS co-sponsors, with the Smithsonian Astrophysical Observatory (SAO), the briefing series "Space on the Hill." These briefings are hosted by the chair of the House Science, Space, and Technology Committee. In 2018, there were three briefings: "Tools for Hunting Exoplanets" (25 April 2018) about the many tools we use to find planets and determine if they could support life, "From The Earth to the Sun: New Advancements in the Science of Space Weather" (16 May 2018) about the latest developments in heliophysics, and "Going out with a Bang: How to Make Gold and Gravitational Waves from Exploding Stars" (13 June 2018) about the various ways exploding stars can cause gravitational waves.





EDUCATION & OUTREACH

Through its education and outreach programs, 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.

Except as noted below, AAS education programs are administered by the AAS Executive Office, primarily by Gina Brissenden, Education & Outreach Coordinator (+1 202-328-2010 x122, gina.brissenden@aas.org). General questions should be addressed to education@aas.org. See aas.org/education for more information about the items listed below as well as other AAS education programs.

The Education Committee (EC): The Education Committee, led by a Board of Trustees-Appointed Chair, is charged with oversight of the education activities of the AAS by providing advice to the Board of Trustees, the Executive Officer, and the Education & Outreach Coordinator.

The AAS Education & Professional Development (AAS-EPD) Mini-Grant Program: In January of 2017, the AAS Board of Trustees (then, Council) approved the recommendation from the AAS Education Task Force to create a grants program. In 2018, 22 proposal were received with a total funding request exceeding the available funds by a factor of six. Seven proposals were funded, in all, including five workshops that were held at the 233rd AAS meeting in Seattle, WA, January 2019.

Education Sessions at AAS meetings: Oral and poster sessions on various aspects of astronomy education are regular features of AAS

meetings. Special sessions and workshops are often organized by AAS members involved in astronomy-related education research, curriculum/professional development, and outreach.

The AAS Harlow Shapley Visiting Lectureship Series: Launched in 1958, the AAS coordinates a program of two-day visits to colleges and universities by professional astronomers who wish to share the excitement of modern astrophysics with students, faculty, and the public. The AAS makes concerted efforts to reach out to minority serving institutions and community colleges. In 2018, efforts continued to increase the diversity (across people, topics, and locations/types of institutions of speaks) within the pool of Shapley Visiting Lecturers

The AAS Astronomy Ambassadors Program: Launched in January 2013, at the 221st meeting of the AAS, in Long Beach, CA, the AAS Astronomy 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. In 2018, at the 231st meeting of the AAS, in Washington, DC, approximately 30 new AAS Astronomy Ambassadors received training to enter these ranks.

The AAS Student Education Outreach Program: Launched in June 2012, at the 220th meeting of the AAS, in Anchorage, Alaska, the AAS Student Education Outreach Program invites students and their chaperones (teachers and/or parents) to drop in at AAS meetings, on a prearranged morning, to hear a special presentation from an astronomer and to then tour the Exhibit Hall, where numerous exhibitors conduct age-appropriate interactive demonstrations and other educational activities. This program has proven to be very popular, typically including 150-250 local middle-school through community college students from underserved minority populations, STEM programs, and homeschool groups. Through a generous contribution from long-standing sponsor Associated Universities, Inc., the AAS is able to supply transportation and additional resources to provide this program free of charge. In 2018, AAS members Amy Steele (Univ. of Maryland) and Keivan Stassun (Vanderbilt Univ.) inspired, educated, and awed the outreach attendees with their presentations at the 231st (Washington, DC) and 232nd (Denver, CO) meetings, respectively.

Other education programs within the AAS include coordinating the Rodger Doxsey Travel Prize, which provides graduate students or postdocs within one year of receiving or receipt of their PhD with a monetary prize to enable the oral presentation of their dissertation research at a winter AAS meeting. The AAS also coordinates 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 also serves as the 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.

MEDIA RELATIONS

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 (including our own *Astrophysical Journal* and *Astronomical Journal*), 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 the AAS website.

Rick is a member of the AAS Executive Office staff, though he works from home in central New Hampshire. He previously spent 22 years at *Sky & Telescope* magazine, including eight as Editor in Chief. Throughout 2018 Rick was assisted by AAS Media Fellow Kerrin Grace Hensley, a graduate student at Boston University who worked part time for the Society, shared between Rick and the Editor of AAS Nova (see below).

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. Since 2016 we have been using the services of Corporate Event Images, run by Todd Buchanan and usually assisted by Phil McCarten. Todd and Phil have enhanced the quality of our meeting photography considerably and have sped up the process of posting the photos online. Furthermore, they can shoot videos as well as still photos; we occasionally ask them to make a short video to recap the last meeting and promote the next one.

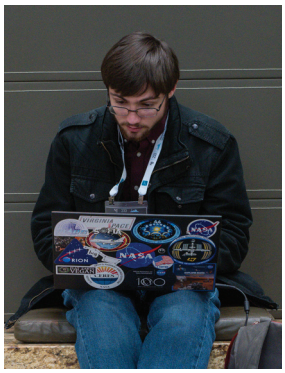
We've been forwarding press releases to the news media by email for more than four decades. The AAS press list is actually two lists: one for reporters eligible to receive embargoed releases, and one for public-information officers (PIOs) who, according to rules established by *Science* and *Nature*, are ineligible to receive embargoed releases. Releases go to about 2,500 email addresses, with about 85% of them on the press list and 15% on the PIO list. On average, we forward about 100 ± 25 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 nearly 5,300 followers. Not all of them are journalists or PIOs; many are astronomers (including AAS members) or astronomy enthusiasts among the general public.

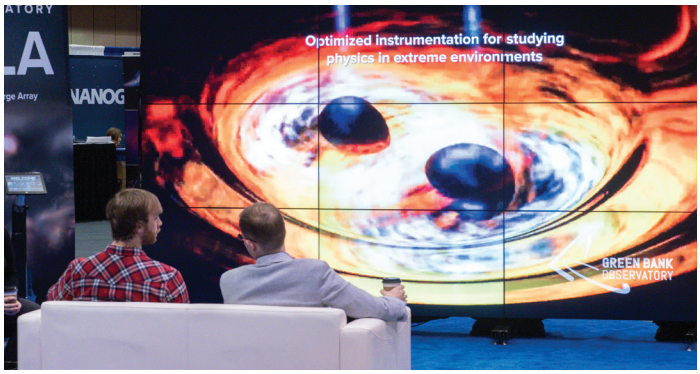
The AAS Press Office has been working more closely with AAS Publishing since 2015 in connection with AAS Nova. Launched that year in collaboration with our journal-publishing partner, IOP Publishing, the AAS Nova website provides a curation service to the astronomical community, highlighting breakthroughs and discoveries that busy researchers might otherwise overlook, especially outside their immediate area of expertise. The site's editor, Dr. Susanna Kohler, writes a biweekly "tip sheet" alerting journalists to potentially newsworthy papers featured on AAS Nova; it is distributed via the AAS press list, and links to new articles on AAS Nova are posted daily to the Astronomy in the News section of the AAS home page.

In 2018 the AAS continued to develop its partnership with Astrobites, a blog operated by graduate students to share news about interesting astro-ph preprints with a wider audience.

Between one and six Astrobites authors are granted press registration at each AAS meeting to spend time in the press office learning about media relations and to cover the meeting for the blog, vastly increasing the amount of coverage we get. In addition, we cross-post content between Astrobites and AAS Nova, which leads to at least one Astrobites item appearing on the AAS home page each week throughout the year.

The 231st AAS meeting in National Harbor, Maryland, in January 2018 attracted 120 press registrants. Another 27 reporters requested the press-conference-webcast password. On-site press registrants were a mix of approximately 60% reporters and 40% PIOs. The AAS Press Officer organized six press conferences and one seminar for science writers (on NASA's TESS mission, then just a few months from launch) at the winter meeting. Some two-dozen press registrants also went on a tour to the Space Telescope Science Institute, where we learned all about the forthcoming James Webb Space Telescope. We had 33 on-site press registrants at the 232nd AAS meeting in Denver, Colorado, in June 2018, plus 10 requests for the website password to enable remote participation in our five press conferences. A small group of reporters also went on a press tour to Lockheed Martin's Littleton facility, where NASA's Mars InSight lander was built and where flight operations for the mission are being controlled.





DIVISIONS, COMMITTEES, WORKING GROUPS & TASK FORCES

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

AAS Divisions

The AAS Divisions cover major areas of astronomical endeavor. Our six topical Divisions are the Division on Dynamical Astronomy, Division for Planetary Sciences, Historical Astronomy Division, High Energy Astrophysics Division, Laboratory Astrophysics Division, and Solar Physics Division. Each has its own governing committee, whose volunteer leaders guide the strategic direction of the Division and enhance our field via service on the AAS Strategic Assembly. 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.

AAS Committees

The AAS Committees help implement many of the strategic goals of the Board of Trustees, and key Committee chairs serve on the Strategic Assembly as well. A full list of Committees is available on the AAS website, but some of the most important include our diversity committees — Committee on the Status of Women in Astronomy, Committee on the Status of Minorities in Astronomy, and Committee for Sexual- Orientation & Gender Minorities in Astronomy — as well as the Committee on Public Policy, the Publications Committee, and the Employment Committee. Some committees require election, while most rely simply on interested individuals to volunteer for service. Each AAS prize and award 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 & Task Forces

Working Groups and shorter-term Task Forces are formed by the Board of Trustees to look after specific issues in our field. These currently include the Working Group on Astroinformatics and Astrostatistics, Working Group on Time Domain Astronomy, Working Group on Accessibility and Disability, and Working Group on the Preservation of Astronomical Heritage. 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. The Task Force on Diversity and Inclusion in Graduate Astronomy Education was active throughout 2018 and submitted its final report for consideration at the 233rd AAS meeting in January 2019. The Solar Eclipse Task Force, active from 2014 through 2017, was quiet in 2018 but is expected to ramp up its efforts to prepare the nation for the October 2023 annular and April 2024 total solar eclipses across North America.

2018 FINANCIAL REPORT

In 2018, there was an overall decrease in net assets of $2,563,291 dollars; resulting in a total of $13,117,999 as of 31 December 2017. In 2007, our net assets were $14,102,834.

The largest losses occurred in the journals program that experienced a deficit of $926,177, which is down from $1,096,551 in 2017. The journal development expenses reached $387,677. The market value of our portfolio decreased by $429,457. In 2018, we spent $378,198 towards strategic initiatives. The AAS executive IT provision restructure resulted in a one-time cost of $202,555. Additionally, we incurred $87,385 in legal and consulting fees associated with the harassment and ethics issues in 2018. We expensed $26,918 in hotel attrition and booked a loss of $81,238 for the 2018 LISA meeting. These deficits resulted in a $2,300,000 draw from the investment portfolio in 2018.

The 2017 initiatives for the AAS Journals produced good results that we anticipate will increase revenue over time. In 2017, we collected $175,509 in Gold Open Access (GOA) fees. In 2018, we collected $448,499 in GOA fees. The GOA fee is set higher than the base quanta fee at a level that would cover lost subscription revenue if all authors selected (or were required to select) GOA. In 2018, the GOA text fee was 78.6% higher that the base quanta fee.

Additionally, our partnership with IOP and inclusion into the larger subscription bundle (IOPsx) netted an additional $38,293 in royalty revenue for our journals. In 2018, our royalty revenue reached $138,555. In 2018, 64.3% of our *The Astronomical Journal* (*AJ)* institutional subscribers purchased our content through the IOPsx package as opposed to 57.1 percent of our *The Astrophysical Journal* (*ApJ)* institutional subscribers. Participating in the IOPsx package is one way to insulate the AAS journals from single subscription cancellations. Across all AAS titles, the subscription revenue was $2,129,760 or $57 below the revised budget.

In 2018, the AAS financially supported members through many different programs to facilitate attendance at our scientific meetings.

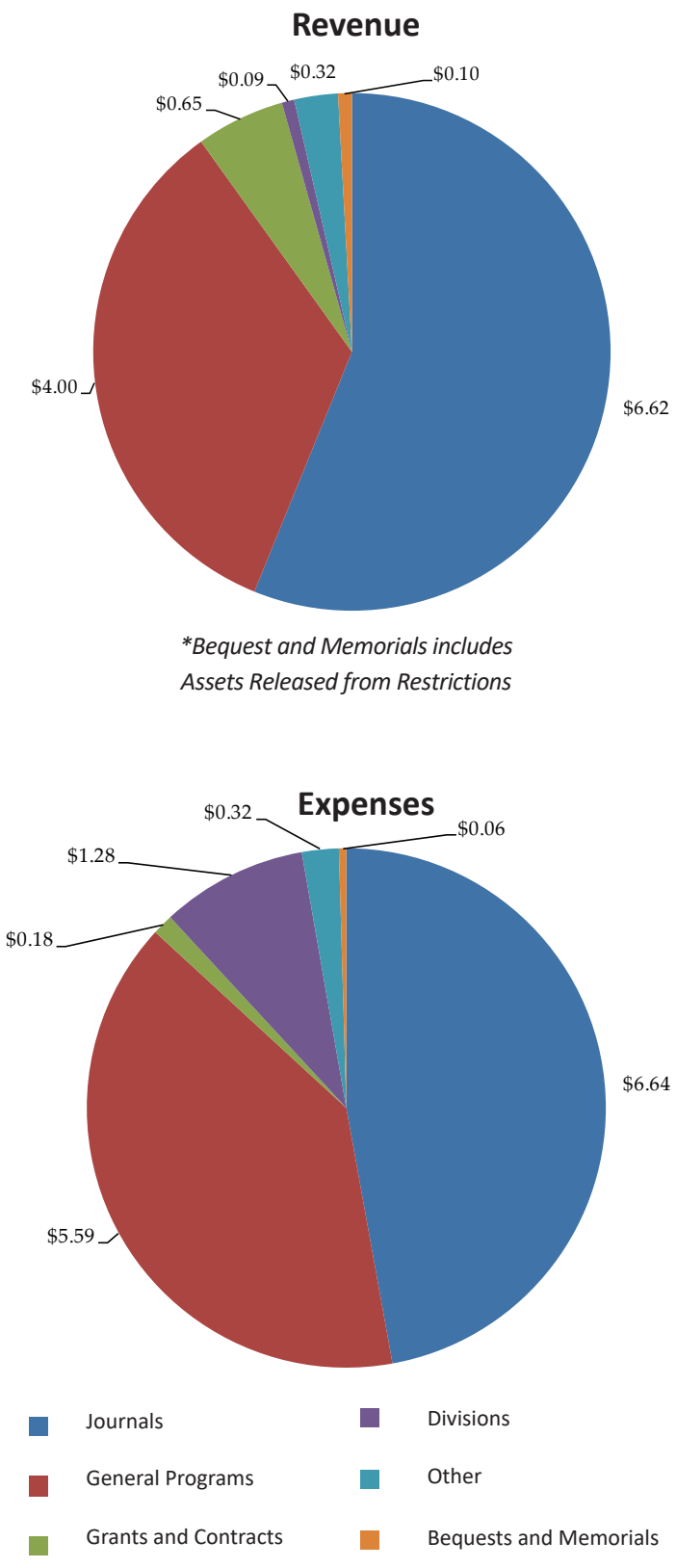
- Through the AAS FAMOUS (Funds for Astronomical Meetings: Outreach to Underrepresented Scientists) Grant Program, we provided travel grants totaling $19,000 to 24 individuals. Priority was given to members of historically underrepresented groups, such as scientists at small colleges, minorities, non-traditional students, and veterans, among others.
- In 2018, the AAS awarded 16 childcare/dependent care grants in the amount of $3,994. Additionally, we subsidized the on-site childcare program in the amount of $9,380.
- A research grant in the amount of $20,000 was awarded through the Chretien Grant Program. Forty student travel grants were awarded in the amount of $28,162 to attend AAS and Division meetings in 2018.
- The AAS and Divisions issued 36 Prize Awards in the amount of $40,500 in 2018.
- Through an NSF grant, we funded 51 individuals under the International Travel Grant in the amount of $72,739.

Figure 1. AAS Balance Sheet

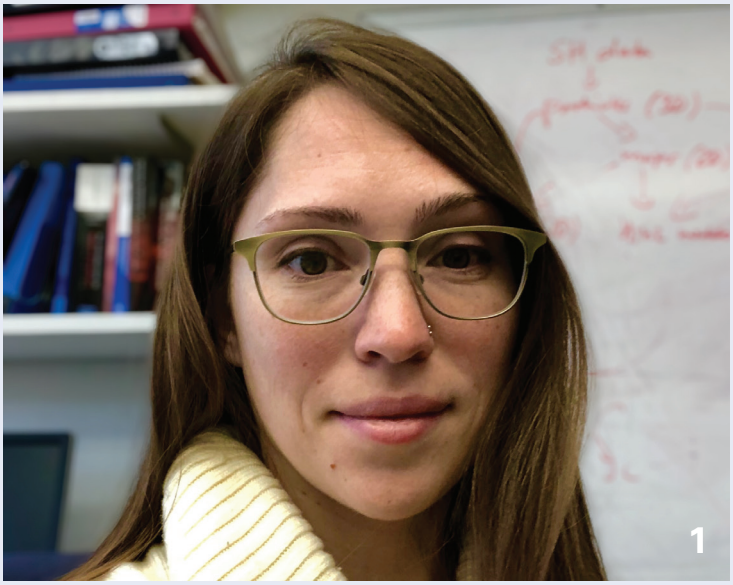
Assets	**2018**	**2017**
Cash and Cash Equivalents	1,124,553	561,316
Accounts Receivable	476,432	521,545
Prepaid Expenses	476,362	702,458
Investments	15,353,078	18,537,626
Deposits	92,386	92,386
Assets Held for Deferred Compensation	172,780	153,923
Property and Equipment	342,308	350,147
Tenant Improvement Assets	453,042	496,188
Totals Assets	$18,490,941	$21,415,589
Liabilities and Net Assets		
Accounts Payable and Accrued Expenses	1,347,173	1,627,928
Deferred Revenue	3,170,467	3,279,985
Deferred Rent	682,522	672,463
Deferred Compensation	172,780	153,923
Total Liabilities	$5,372,942	$5,734,299
Net Assets		
Without Donor Restrictions	10,300,622	12,759,773
With Donor Restrictions	2,817,377	2,921,517
Total Net Assets	$13,117,999	$15,681,290
Total Liabilities and Net Assets	$18,490,941	$21,415,589

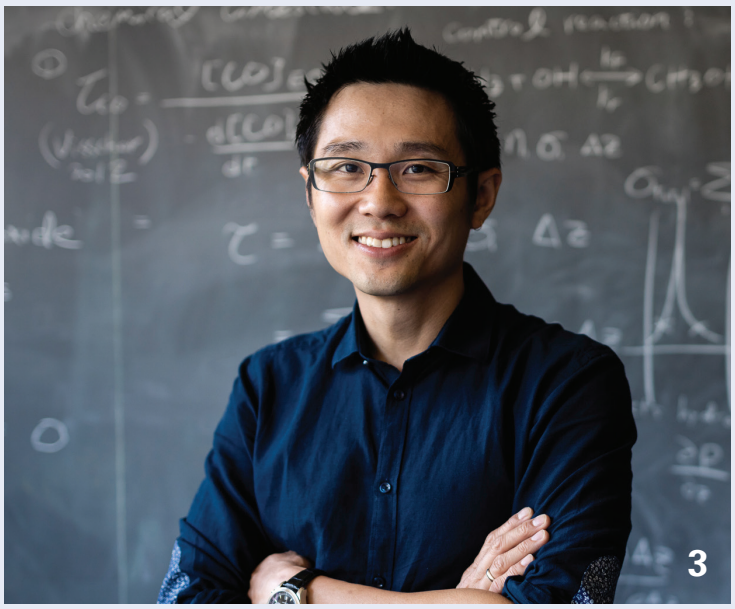
Figure 2. AAS Statement of Activities		
Unrestricted Activities	**2018**	**2017**
Revenues		
Journals	6,556,738	7,329,843
General Programs	3,937,957	3,442,215
Divisions	653,259	362,773
Other	92,148	1,189,512
Grants and Contracts	321,357	498,363
Bequests and Memorials	33,414	79,487
AstronomyCom, Inc	125,873	51,697
Net Assets Released from Restrictions	67,810	98,737
Total Unrestricted Income	$11,788,556	$13,052,627
Expenses		
General Programs	6,642,489	6,072,458
Journals	5,590,292	5,367,962
Divisions	182,071	364,744
Other	1,284,995	395,267
Grants and Contracts	323,082	1,200,486
Bequests and Memorials	64,650	54,033
AstronomyCom, Inc	160,128	172,658
Total Expenses	$14,247,707	$13,627,608
Change in Unrestricted Net Assets	($2,459,151)	($574,981)
Temporary Restricted Net Assets		
Other	(6,828)	87,926
Bequests and Memorials	(19,665)	171,808
Contributions and Other	(9,837)	157,408
Net Assets Released from Restrictions	(67,810)	(98,737)
Change in Temporarily Restricted Net Assets	($104,140)	$318,405
Change in Net Assets	($2,563,291)	($256,576)
Net Assets Beginning of Year	15,681,290	15,937,866
Net Assets End of Year	$13,117,999	$15,681,290

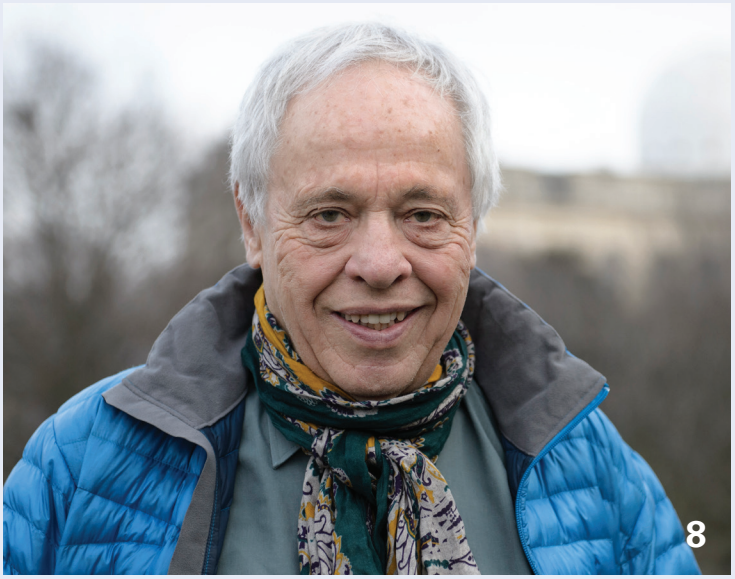
Figure 3. Annual Revenues and Expenses (in millions of dollars)

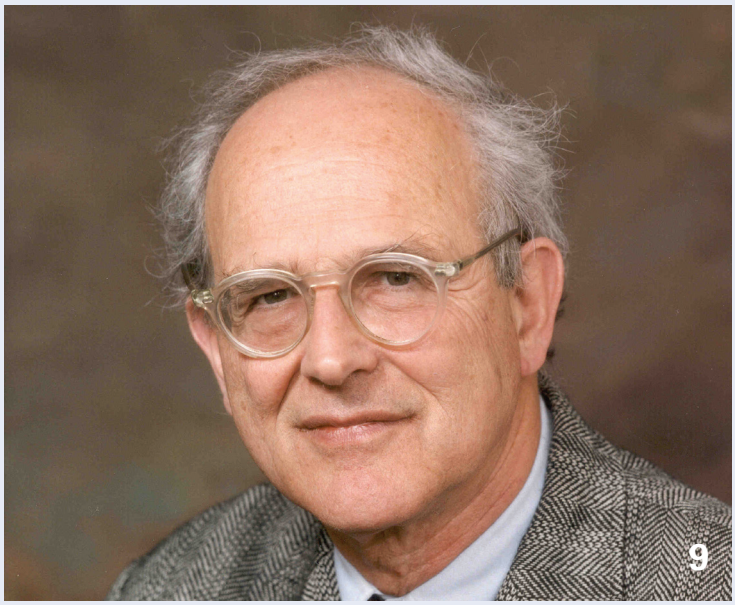


2018 PRIZEWINNERS









1. Lauren Ilsedore Cleeves - Annie Jump Cannon Award: For her groundbreaking work on planet formation and protoplanetary disks. She has established herself as an expert in astrochemical signatures in circumstellar disks. **2. Julianne Dalcanton - Beatrice M. Tinsley Prize**: For her pioneering use of large surveys to study low-surface-brightness galaxies and her leadership in developing Hubble Space Telescope surveys to create a legacy of data on resolved stellar populations of nearby galaxies. **3. Kevin Heng - Chambliss Astronomical Writing Award**: For his pioneering graduate textbook *Exoplanetary Atmospheres: Theoretical Concepts and Foundations* (Princeton University Press, 2017) — a clearly written, well-motivated introduction to the theory of exoplanetary atmospheres, a field of great current and future interest. **4. Donald G. Bruns - Chambliss Amateur Achievement Award:** For his successful recreation of, and improvement upon, Eddington's iconic deflection-of-light experiment during the 2017 total solar eclipse, which represents a tour de force in careful observing and calibration. **5. Vicky Kalogera** - Dannie Heineman Prize: For her fundamental contributions to advancing our understanding of the evolution and fate of compact objects in binary systems, with particular regard to their electromagnetic and gravitational wave signals. **6. Debra Meloy Elmegreen - George Van Biesbroeck Prize**: For her unselfish service to astronomy on regional, national, and international scales, including strengthening public appreciation and support for astronomy, making our community more diverse and inclusive, and acting as a role model and mentor to generations of young astronomers. **7. Yacine Ali-Haïmoud - Helen B. Warner Prize**: For his extraordinary work on a broad array of cosmological problems. His insights into how to vastly speed up calculations of the effects of hydrogen recombination have proven critical to the interpretation of Planck data. **8. Joseph Silk Henry Norris Russell Lectureship:** For his lifetime contributions to our understanding of the early universe and galaxy formation. Underpinning his scholarly impact is an extraordinary publication record that includes more that 800 refereed articles and eight books. **9. Rainer Weiss - Joseph Weber Award for Astronomical Instrumentation**: For his invention of the interferometric gravitational-wave detector, which led to the first detection of long-predicted gravitational waves from astronomical sources by the Laser Interferometer Gravitational-wave Observatory (LIGO). **10. Caitlin Casey - Newton Lacy Pierce Prize in Astronomy:** For her work on high-redshift star-forming galaxies and for pioneering new quantitative techniques for determining the importance of submillimeter galaxies in galaxy evolution.

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