

2022

Annual Report





Cover image: This illustration shows the debris from a supernova as it collides with the exploding star's binary companion. Incredible though it may seem, research suggests that companion stars to supernovae likely emerge from the explosion unscathed. Finding these survivor stars is the key to testing whether certain types of supernovae tend to happen in binary systems. [NASA, ESA, Leah Hustak (STScI)]

The mission of the American Astronomical Society is to enhance and share humanity's scientific understanding of the universe as a diverse and inclusive astronomical community.

The Vision of the AAS

To create a world where all people value and benefit from a scientific understanding of our universe.

Our Values

Curiosity: We conduct research driven by our curiosity about the universe.

Integrity: We act with integrity, ethical behavior, and transparency as we perform our investigations and share our results.

Inclusivity: We use fair and accessible practices to create a diverse and welcoming scientific community.

Empowerment: We mentor and support our early career members, using our resources to create a positive environment for them and for our astronomical community.

Sustainability: We accomplish our work using environmentally sensitive actions rooted in scientific understanding.

PRESIDENT'S MESSAGE: KELSEY JOHNSON

When my term as president began a year ago, we were wrapping up our first in-person meeting since we gathered in Hawaii in January of 2020. Being back in person has been a celebration of the perseverance of science and our community — in the intervening time between the meetings in Hawai'i and Pasadena, we published the Decadal Report, launched JWST, imaged the black hole at the center of the Milky Way, and touched the Sun's atmosphere (just to name but a few accomplishments). Nevertheless, we have had to collectively grapple with the role and value of our vocation in uncertain times and how we can sharpen and advance our goals amid a global catastrophe. There is nothing quite like a crisis to distill one's core values. For the AAS Board of Trustees, this meant leaning into our mission statement: to enhance and share humanity's scientific understanding of the universe as a diverse and inclusive astronomical community. With every decision the Board makes, we must ask whether the decision serves to advance this mission.

Given that the AAS was established in 1899, our Society has weathered world wars, depressions, and now two pandemics. COVID wasn't the first crisis we've faced, and it surely won't be the last. Board members have fiduciary responsibility, which means we must work to protect the long-term health of the AAS; this requires gaming out potential threats and working to put policies and practices in place that will safeguard the Society. Simply put, although it is tempting to relax our vigilance when a particular bout of chaos subsides, the world keeps generating situations that range from affecting the ability of our members to do science, to impacting our ability to do astronomy at all.

To this end, over the last year the AAS has implemented changes to help us accomplish our mission. For example, we have initiated task forces to think deeply about the future of meetings and how the AAS can best serve early career astronomers, and we established a new Corporate Engagement Advisory Committee. Notably, we also moved all the AAS journals to open access, which not only responds to imminent policy requirements, but also democratizes science — making our research available to everyone around the world.

The AAS has dozens of committees working on topics ranging from protecting access to the sky to enhancing opportunities for members outside academia. If you already volunteer on one of these committees — thank you. In my time on the board, I have become acutely aware of the extent to which advancing the AAS mission depends on volunteer efforts above and beyond our day-to-day jobs. If there is an area you care about where you want us to collectively do more, or do things differently, you can work with others who care about similar issues to implement changes. If you have supported work you care about through monetary donations, I want to thank you on behalf of all of the committees doing this work for our community.

Finally, our work simply could not be done without the extraordinary and dedicated staff at the AAS. It is a great privilege to work with this talented group of people who also manage to take the idiosyncrasies and habits of astronomers in stride.



Middle photo: Erin Kara, Newton Lacy Pierce prizewinner with AAS President Kelsey Johnson. Photos by © CorporateEventImages/Phil McCarten 2023.



AAS 241 Board of Trustees Meeting. Front row left to right: Steve Unwin, Paula Szkody, Jane Rigby, Alice Monet, Adam Burgasser, B. Ashley Zauderer-VanderLey. Back row left to right: Kevin Marvel, Grant Tremblay, Edmund Bertschinger, Kelsey Johnson. Photo by © CorporateEventImages/Todd Buchanan 2023.

EXECUTIVE OFFICER'S MESSAGE: KEVIN MARVEL

Let me lead off by recognizing the hundreds of volunteers who give freely of their time and energy to help the AAS achieve the goals set by our Board of Trustees. It is nothing short of amazing to see our elected leadership, both for the Society and for our Divisions and the many people who serve on our committees, task forces, and working groups. Progress is made every day on our goals primarily due to the engaged participation of our members who give so generously. Thank you for your service on behalf of your fellow members, the AAS staff, and the discipline as a whole.

Our journals transitioned to a fully open access business model in January 2022, and I am happy to say that they continue to operate well to date. In addition, the *Planetary Science Journal*, started in partnership with the Division for Planetary Sciences (DPS), recently received an impressive impact factor of 3.4. This is important as, for better or worse, impact factor is still used as a gauge of scholarly journal relevance and impact. Higher impact factors have been shown to drive additional author submission and retention. This success of the *PSJ* is due in no small part to the editorial team for the journal, led by Dr. Faith Vilas and the DPS leadership, whose advocacy for the journal are key.

Sky & Telescope and the AAS Solar Eclipse Working Group are gearing up for 2024 when the Eclipse of the Century will pass over the United States from the southwest to the northeast, treating everyone in the continental US with either a partial or, for a lucky or diligent few, a total eclipse. *Sky & Telescope* will issue a special edition, bundled with eclipse glasses, which we will make available online and through a variety of retail outlets. The Solar Eclipse Working Group has enhanced their website with additional information and details, including tips on eclipse viewing safety, which we view as paramount. Keep this link [<https://eclipse.aas.org>] handy and pass it out to your

friends, family, colleagues, and anyone who might ask you about the eclipse as we approach the special date of 8 April 2024.

Tom Rice, our Education and Mentoring Specialist, has been making substantial progress on a variety of projects, including supporting AAS involvement in the American Institute of Physics-led Team Up Together effort, working directly with the Education Committee to move forward on their goals, and reviewing all of our education activities and how they connect to our Strategic Plan and Goals and finding ways to make progress on those goals.

We are thrilled to have our tenth John N. Bahcall Public Policy Fellow on board, Yaswant Devarakonda. Working with Bethany Johns, our interim Director of Public Policy, he is making headway on a variety of challenging public policy matters — including the damage low-Earth-orbit satellite constellations are having on ground-based astronomical observations — and making and making progress on the multitude of Decadal Survey recommendations and funding requirements, all with the background of a very challenging political environment. Joel Parriott, our Deputy Executive Officer and Public Policy Director, continues serving our nation as a rotator with the Office of Science and Technology Policy at the White House. We will welcome him back to AAS HQ in summer 2024.

Let me close by thanking everyone in the astronomical community for your efforts to advance human knowledge. The AAS exists to enhance and share humanity's scientific understanding of the universe as a diverse and inclusive astronomical community, but we cannot make progress without your engagement and the engagement of your colleagues. Thank you and don't hesitate to let us know how we can help you achieve more as we work in service of our shared scientific discipline.

MEMBERSHIP

It wouldn't be a stretch to say that the return to in-person meetings in 2022 was a highlight for many AAS members. According to an anonymous respondent from the post-AAS 240 (Pasadena) attendee survey, "The meeting was awesome because I was able to see my friends and colleagues and engage with astronomy in a way that I was not able to for over two years. It was deeply fulfilling to be with my people and share ideas and discoveries." We understand the importance of belonging and connecting with like-minded individuals in a safe place. Society members foster community by presenting at meetings, chairing committees, publishing in our open access journals, and advocating on behalf of our science. As author and motivational speaker Simon Sinek says, "a community is a group of people who agree to grow together." We pride ourselves in creating and nurturing our broad astronomical sciences community and invite you to grow with us.

6,925 Total (count as of 8 July 2022)

35

Alumni

326

Amateur

753

Emeritus

137

Educator

4,087

Full

12

Honorary

2

Patron

1,107

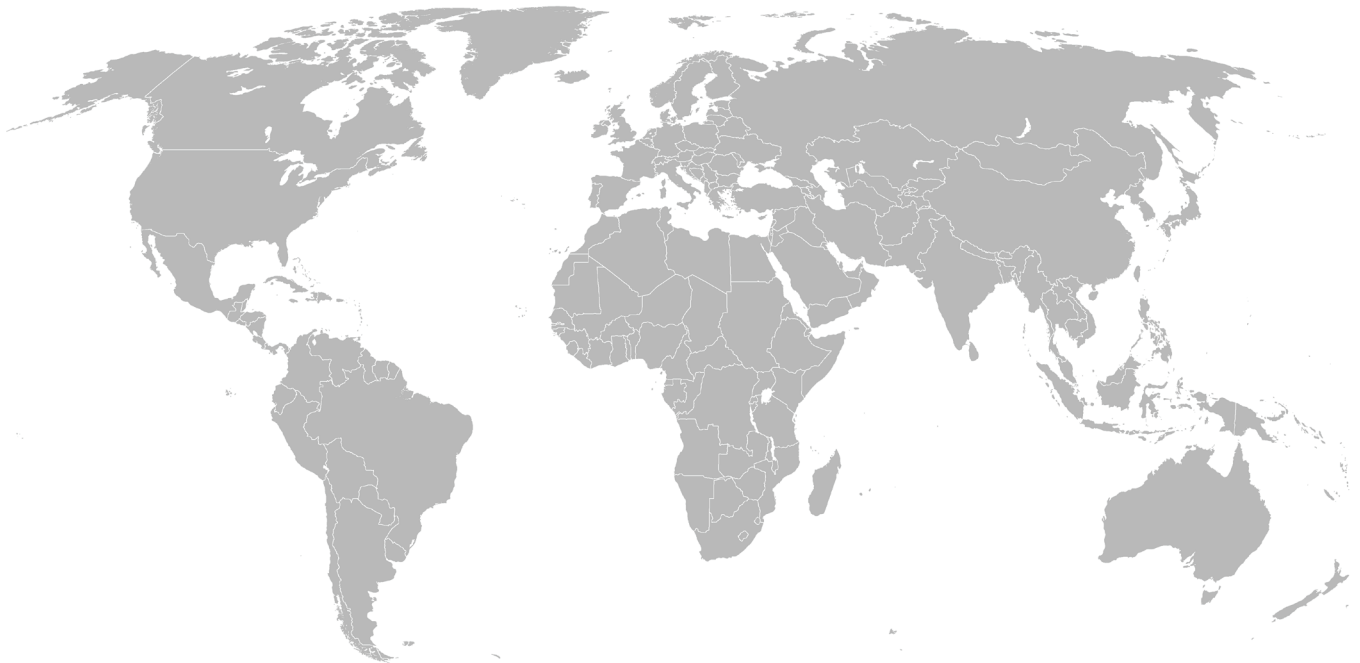
Graduate
Student

132

International
Affiliate

334

Undergraduate



6,238 Total in USA

687 Total outside USA

53 Countries including USA

AAS & DIVISION MEETINGS



Due to the ongoing COVID-19 pandemic, the Board of Trustees made the difficult decision to cancel AAS 239, the 2022 winter meeting originally planned for Salt Lake City, Utah.

To make up for it, AAS 240 — which took place 12–16 June in Pasadena, California — set records as our largest summer meeting yet, with more than 2,200 registrants. AAS 240 also marked the first meeting we’ve ever held fully hybrid, with the majority of meeting content made available to both in-person and virtual attendees.

The packed 5-day program included highlights like:

- 21 prize and plenary lectures, including:
 - » **Jane Greaves** (Cardiff University), on her team’s discovery of phosphine in the atmosphere of Venus
 - » **Jocelyn Bell Burnell** (University of Oxford), on her exploration of membership data for the International Astronomical Union
 - » **Robert Lupton** (Princeton University) & **David Weinberg** (Ohio State University), on the Sloan Digital Sky Survey and the broad reach of survey astronomy
 - » **Thomas Zurbuchen** (NASA’s Science Mission Directorate), on the Astro2020 Decadal Survey and the future of astrophysics
 - » **Nicholas Scoville** (Caltech), on the evolution of gas and stars in galaxies
 - » **Courtney Dressing** (University of California at Berkeley), on multi-planet systems and habitability
 - » **Paul Scholz** (University of Toronto) & **Victoria Kaspi** (McGill University), on the CHIME fast radio burst project
- Public-policy town halls from NASA, the National Science Foundation, the Space Telescope Science Institute, the Astro2020 and Planetary Decadal Surveys, and more
- A splinter meeting on addressing the impact of satellite constellations on astronomy
- A special primer session on systemic change for equity in astronomy graduate education

During 8–12 January 2023, nearly 3,500 astronomers gathered for the winter meeting in Seattle, Washington, and online. As another fully hybrid meeting, AAS 242 offered a broad range of sessions, workshops, and events to its attendees, like:



- 17 prize and plenary lectures, including:
 - » **Jane Rigby** (NASA’s Goddard Space Flight Center), on the science performance of JWST
 - » **Richard Mushotzky** (University of Maryland), on the latest high-energy insights into accreting supermassive black holes in active galaxies
 - » **Norman Murray** (Canadian Institute for Theoretical Astrophysics), on why the day is 24 hours long
 - » **Erin Kara** (MIT), on the field of X-ray reverberation mapping, in which scientists use echoes of X-ray light to study how enormous black holes feed
 - » **Chanda Prescod-Weinstein** (University of New Hampshire), on understanding the nature of mysterious dark matter
 - » **John Mather** (NASA’s Goddard Space Flight Center), on getting JWST to space, what might we find, and what’s next
 - » **Anthony Brown** (Leiden University) on the Gaia space telescope, which has precisely mapped out nearly two billion stars in our galaxy
- A plenary panel discussion with members of the Mauna Kea Stewardship and Oversight Authority
- Special public-policy town halls like “NASA’s Transform to Open Science (TOPS) Initiative” and “The Heliophysics Big Year in 2023 and 2024”
- Topical career sessions, including “Strategies and Tactics to Enhance Diversity and Excellence in the Hiring Process” and “Understanding and Communicating Your Value Beyond Science”

Division and Topical Meetings

AAS 240 and 241 were both joint meetings of the AAS and its Historical Astronomy, High Energy Astrophysics, and Laboratory Astrophysics Divisions. Other Divisions and groups returned to in-person meetings or adopted hybrid models in 2022. The many events this year included:

- 19th Meeting of the High Energy Astrophysics Division, held 13–27 March in Pittsburgh, Pennsylvania
- 53rd Meeting of the Division on Dynamical Astronomy, held 25–28 April in Manhattan, New York, and online
- AAS Topical Conference Series 9: Exoplanets IV, held 1–6 May in Las Vegas, Nevada
- 2022 Triennial Earth-Sun Summit (TESS), held 8–11 August in Bellevue/Seattle, Washington
- 54th Meeting of the Division for Planetary Sciences, held 2–7 October in London, Canada, and online



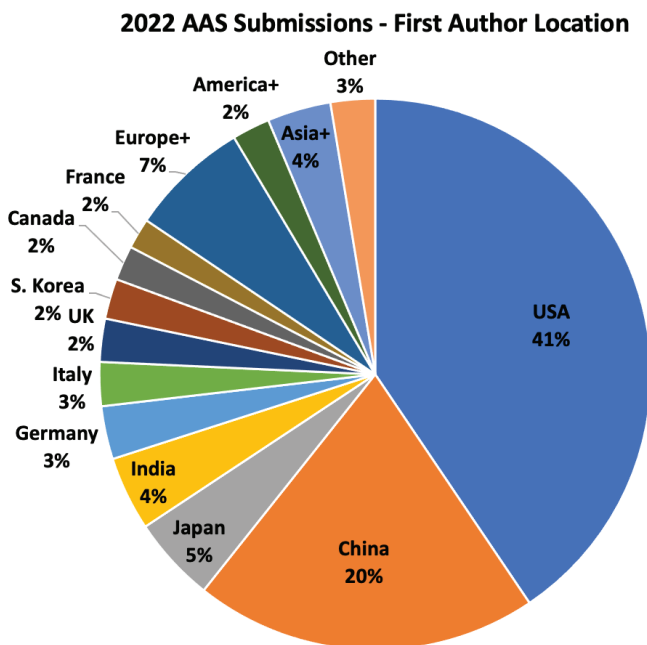
PUBLISHING

The AAS Board of Trustees changed the business model of AAS research journals to full open access effective 1 January 2022.

- Submissions and acceptances remained strong throughout 2022
- Author rates were set to include a substantial publication support budget for those without resources
- AAS journal articles saw a 342% increase in article downloads after this change

Authors publishing in AAS research journals have for many years received help from PhD Data Editors on curating and enhancing digital assets for their articles, including machine readable tables, animations, data behind figures, and linking to external data repositories. AAS Data Editors curated 22% of articles published in 2022 and will grow as a team to curate an anticipated increase in this material in 2023.

The Bulletin of the American Astronomical Society (BAAS) published over 3,000 abstracts from six AAS science meetings, 99 obituaries, and 45 community reports and commentaries, including the full proceedings of the LISA (Libraries and Information Services in Astronomy) IX meeting, in 2022.



AAS Research Journals received **6,530** submissions from **158** different countries in 2022.

The total number of published articles for last year was **5,423**.

3,312 *Astrophysical Journal*
624 *Astrophysical Journal Letters*
582 *Astronomical Journal*
314 *Astrophysical Journal Supplements*
296 *Research Notes of the AAS*
295 *Planetary Science Journal*



PUBLIC POLICY

JWST successfully completed its commissioning activities and released the first full-color images in July 2022.

President Biden and Vice President Harris were briefed by leaders from NASA and the White House Office of Science and Technology Policy (OSTP), as well as AAS members Jane Rigby, Operations Project Scientist, and Nancy Levenson, Space Telescope Science Institute Deputy Director. They unveiled the image of galaxy cluster SMACS 0723, known as Webb's First Deep Field White House event.

Also in July, three early career participants in AAS's Congressional Visit Day program, Rebecca Phillipson, Yaswant Devarakonda, and Maurice Wilson, used their recent advocacy training to meet with the White House to advocate for astronomy. The visit was timed to capitalize on the success of JWST's first science image release. We commemorated this moment, and thanked the OSTP and the Office of Management and Budget for their support for JWST, by gifting two large high-resolution photographs of JWST's first science image.

AAS Applauded Congress on the Passage of US Competitiveness Legislation. The bipartisan CHIPS and Science Act of 2022 was signed into law in the summer and included historic investments to revitalize America's scientific research and technological leadership. The bill authorizes funding increases for many science agencies, but most notable are the policy changes proposed for the National Science Foundation (NSF) creating the Directorate for Technology, Innovation and Partnerships. The science community saw this legislation as an opportunity to increase federal research and development funding and called on Congress to match their policy bill with real dollars in the FY 2023 Appropriations bills. Growth in NSF's topline will be important to fulfill the recommendations of the astronomical decadal surveys.

Bethany Johns joined the AAS in the spring as the Deputy Director of Public Policy is currently leading the Public Policy office as Interim Acting Director while Director Joel Parriott is on temporary assignment at the White House OSTP.

Bethany is a former Bahcall Fellow and has been working in science policy in Washington, DC, for over a decade. We bid farewell to Bahcall Fellow Julie Davis in the fall as she moved on to work as Federal Relations Senior Associate at the American Physical Society.

Advocating for the recommendations of the astronomical decadal surveys and the protection of dark and quiet skies remain top priorities, as outlined in the AAS Strategic Plan. We work with large coalitions to advocate for federal funding for NSF, NASA, and the Department of Energy Office of Science. AAS joined the International Astronomical Union's newly formed International Astronomical Union's newly formed Centre for the Protection of the Dark and Quiet Sky from Satellite Constellation Interference as a contributing member. Richard Green, member of the Committee on Astronomy and Public Policy and the Committee for the Protection of Astronomy and the Space Environment testified on behalf of the AAS at the National Space Council In-Space Authorization and Supervision Policy listening session on how federal agency coordination would mitigate the effects of large satellite constellations. You can follow these activities, analyses of bills and appropriations, and regulations that impact astronomy on the AAS Policy Blog.



L-R: Maurice Wilson, Rebecca Phillipson, former Bahcall Fellow Julie Davis, AAS President Kelsey Johnson, Yaswant Devarakonda, Astro2020 Decadal co-chair Fiona Harrison at the White House OSTP. The Event Horizon Telescope first image of the supermassive black hole at the center of our own Milky Way galaxy hangs on the wall.

SKY & TELESCOPE

2022 was an exciting year for *Sky & Telescope*, with the pandemic easing, the staff moving into its new offices, and many new developments in the magazine and other areas of S&T's business.

Magazine. S&T launched a new column, Beginner's Space, in the September 2022 issue. This monthly two-pager answers basic questions of interest to all entering amateur astronomy: What is the ecliptic? Constellations? An equatorial mount? The department's goal is offer novices a welcoming "open door" through which to enter both the general world of backyard stargazing and the more in-depth content in S&T.

The magazine also strove to enhance its efforts in diversity, equity, and inclusion (DEI), with many articles written by or focusing on women and people of color. For instance, for Black History Month S&T ran reviews of two books by Black authors: *Fear of a Black Universe* by Stephon Alexander (Feb. 2022) and *The Milky Way* by Moiya McTier (Feb. 2023). Both these initiatives — Beginner's Space and DEI efforts — are emblematic of S&T's efforts to appeal to a wider audience of astronomy enthusiasts.

In 2022, S&T authors continued to garner awards for their writing. Science writer Colin Stuart won the AAS Solar Physics Division's Popular Media Award for his cover story "How Well Do We Know the Sun?" (Apr. 2021). S&T Science Editor Camille M. Carlisle earned the David N. Schramm Award, granted by the AAS High Energy Astrophysics Division, for her web article "Gravitational Wave Detectors Find Mystery 'Mass Gap' Object" (posted 25 June 2020).

Website & Social. In 2022, S&T's website, skyandtelescope.org, attracted 6.3 million visitors, a 20% increase over 2021. Pageviews, at 12.5 million, were up 12.7% over the same period. Most visitors continue to hail from the US (53%), followed by the UK (8%), and India and Canada (each 6%). Topics of new videos produced in 2022 ranged from a Mars occultation to "How to Use a Sky Chart." Views of these videos totaled about 138,000, with subscribers increasing by roughly 2,500 over 2021. Instagram and YouTube subscribers both rose by over 25% in 2022.

Products & Tours. In 2022, in addition to producing a 2023 Observing calendar, the S&T editorial team began work on a special publication on the 2024 total solar eclipse. Plus, S&T ran three successful tours in 2022 — to Italy (April), Iceland (October), and Chile (October, see image). New and repeat tours post regularly at skyandtelescope.org/tours.

Other Initiatives. In December 2022, the AIP's Statistical Research Center delivered its final report on S&T's reader survey, conducted in summer 2022. The 100-plus-page report, which S&T has only begun to mine for its data riches, will help inform S&T's strategic plan over the next five years. In 2022, S&T also furthered its content-licensing initiatives, including signing contracts for a Chinese-language edition of its popular observing guide *Binocular Highlights*, and with the German publisher Spektrum to publish selected articles from S&T in its magazine *Sterne und Weltraum*. These and other agreements will help on both the revenue and outreach fronts.

Sky & Telescope's tour group visits Chile's Paranal Observatory in October 2022.



THE AAS FELLOWS PROGRAM



The AAS Fellows Program was established by the Board of Trustees in late 2019 to honor members for extraordinary achievement and service and their contributions toward the AAS mission of enhancing and sharing humanity's scientific understanding of the universe. AAS Fellows are recognized for original research and publication, innovative contributions to astronomical techniques or instrumentation, significant contributions to education and public outreach, and noteworthy service to astronomy and to the Society itself.

An initial group of 242 Legacy Fellows was designated by the Board and announced in early 2020 (nine of whom were added retroactively in early 2021). These include past recipients of certain awards from the AAS or its topical Divisions, distinguished AAS elected leaders and volunteer committee members, and previously unrecognized individuals with long histories of outstanding research, teaching, mentoring, and service.

In February 2022, the AAS honored another 23 members as Fellows.

Gary Bernstein	Henry Ferguson	Charles Lada	C. Robert O'Dell
Alan Boss	George Helou	Chung-Pei Ma	Ilaria Pascucci
Hsiao-Wen Chen	Luis Ho	Philip Massey	Farid Salama
Kelle Cruz	Judith T. Karpen	Harold McAlister	John H. Thomas
Imke de Pater	Richard Klein	Lucy McFadden	Tommaso Treu
Jacqueline Faherty	Richard Kron	Victoria Meadows	

DIVISIONS, COMMITTEES, WORKING GROUP & TASK FORCES

While the day-to-day operations of the Society are managed by AAS staff, what the Society can accomplish is greatly enhanced by our volunteer-driven Divisions, Committees, Working Groups, and Task Forces. Below are a few highlights from some of these many groups in 2022.

- The **Laboratory Astrophysics Division** celebrated its 10th birthday (and a new logo) during the AAS/LAD joint meeting in Pasadena in June.
- The **Division for Planetary Sciences's** Federal Relations subcommittee conducted visits to Capitol Hill in June focusing on the release of the 2022 Planetary Science Decadal Survey and advocating for an increase in planetary research and analysis funding.
- The **Committee on the Status of Women in Astronomy** represented the AAS in the STEM Equity Achievement (SEA) Change initiative partly sponsored by the American Association for the Advancement of Science and the American Institute of Physics.
- The **Committee for Sexual-Orientation & Gender Minorities in Astronomy** hosted a well-attended virtual panel discussion of LGBTQIA astronomers in March in collaboration with the University of Utah's College of Science.
- The **Education Committee** awarded four AAS Education and Professional Development (AAS-EPD) Mini-Grants to members for events scheduled for 2022.
- The **Beyond Academe Task Force** concluded its study and produced a report (available on aas.org) containing a strategic plan of action for AAS to engage students, academic departments, and non-academic employers to evolve the culture around non-academic jobs and expand options to prepare students for such positions.
- The **Solar Eclipse Task Force** hosted several planning workshops to prepare the community for the upcoming 2023 and 2024 solar eclipses that will cross North America.
- The **Light Pollution, Radio Interference, and Space Debris Committee** engaged with membership, politicians, the media, and the public in numerous ways to present the latest developments in the burgeoning space satellite business. In 2022, committee members provided hundreds of talks, publications, briefings with national agencies and international institutions, quotes for media and science writers, and materials like infographics and surveys.

MEDIA RELATIONS

The AAS Press Office consists of Press Officer Susanna Kohler, Deputy Press Officer Kerry Hensley, and the AAS Media Fellow, an astronomy graduate student who works part-time with the Press Office and the Communications team. Haley Wahl (West Virginia University) served as the Fellow during academic years 2021–2022, and Benjamin Cassese (Columbia University) took over for 2022–2023.

- In 2022, we curated and shared more than 2,000 astronomy-news press releases from institutions worldwide via the @AAS_Press Twitter account and the AAS website’s Astronomy in the News page.
- We issued a number of our own press releases throughout the year to our email list of more than 2,000 astronomy and space science writers worldwide. These releases highlighted AAS prize winners, described new initiatives on which AAS has partnered, and outlined results from important Society activities.
- We established an internal database of expert astronomy media sources to connect with astronomy reporters seeking quotes for news stories. Members of the astronomy community can

sign up with the AAS as expert media sources and help ensure that astronomy news stories contain a broad set of perspectives: <https://aas.org/form/media-expert-source-signup>.

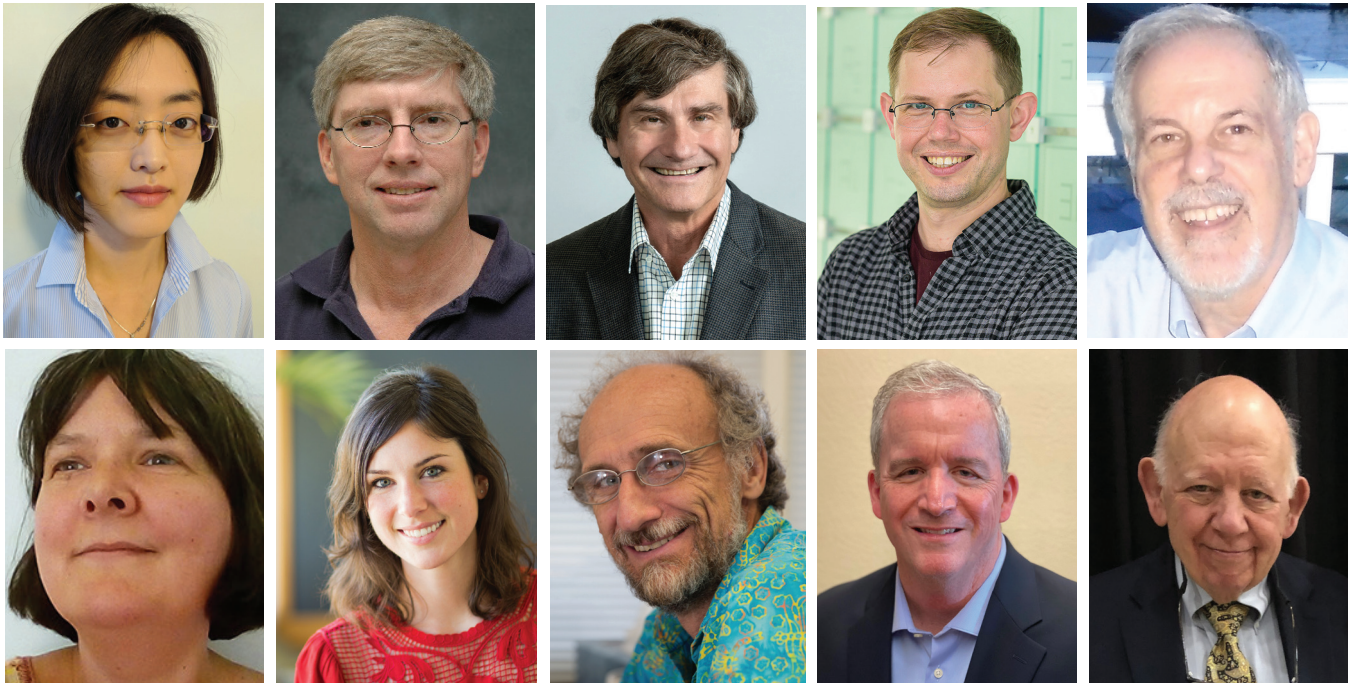
- We organized and ran full press conference programs at AAS 239 (the press program went forward despite the cancelation of the meeting), AAS 240, and AAS 241. Each included 30–40 presenters organized across 7–8 briefing sessions, and each had more than 100 press registrants who attended the live-streamed briefings and produced extensive media coverage of the results.
- We teamed up with Astrobites, a graduate-student-run organization that summarizes recent astro-ph preprints for a broader audience, to live-blog each AAS meeting. Under the leadership of an Astrobites Media Intern — Briley Lewis (UC Los Angeles) for AAS 240 and Zili Shen (Yale University) for AAS 241 — a group of Astrobites authors provided valuable summaries of meeting content that were then published on astrobites.org and aasnova.org.



Photos by © CorporateEventImages/Todd Buchanan 2022

2022 PRIZEWINNERS

To foster and recognize excellence in astronomy, the AAS presents honors, awards, and prizes for outstanding contributions to astronomical research, instrumentation, writing, and service.



Top row (l-r): Eve Lee, Norman Murray, Alex Filippenko, Brett McGuire, Richard Mushotzky. Bottom row (l-r): Jane Greaves, Erin Kara, Peter Wizinowich, Michael Lesser, Donald York.

Eve Lee - Annie Jump Cannon Award: For her illuminating work on the formation of stars, debris disks, and planets.

Norman Murray - Dannie Heineman Prize for Astrophysics: For his deep theoretical insight into an exceptionally broad range of astrophysical phenomena, including the dynamics of planetary systems, accretion disk winds in active galactic nuclei, and star formation and feedback in galaxies.

Alex Filippenko - Education Prize: For his passionate and wildly popular teaching of non-science majors, and for his mentoring of hundreds of teaching assistants and undergraduate research students.

Brett McGuire - Helen B. Warner Prize for Astronomy: For pioneering research into complex astrophysical chemistry, including foundational work on chiral and aromatic molecules in the interstellar medium.

Richard Mushotzky - Henry Norris Russell Lectureship: For a lifetime of innovative X-ray and multiwavelength research, including foundational studies of the properties of active galactic nuclei and the composition and structures of hot gas in clusters of galaxies.

Jane Greaves - Fred Kavli Plenary Lecture: For her team's unexpected discovery of phosphine in the atmosphere of Venus and its exciting implications for the possibility of life.

Erin Kara - Newton Lacy Pierce Prize in Astronomy: For her innovative and sustained contributions to high-energy astrophysics.

Peter Wizinowich - Joseph Weber Award for Astronomical Instrumentation: For pioneering work on the Keck adaptive optics systems.

Michael Lesser - Joseph Weber Award for Astronomical Instrumentation: For innovative and foundational work on methods of thinning, coating, and reading out large-format back-side illuminated CCD detectors.

Donald York - George Van Biesbroeck Prize: For exceptional vision in the conception and design of the Sloan Digital Sky Survey (SDSS), a major imaging and spectroscopic survey that has created the most detailed three-dimensional maps of the universe ever made.

CHIME/FRB team (not pictured) - Lancelot M. Berkeley – New York Community Trust Prize for Meritorious Work in Astronomy: For its dramatic progress on understanding fast radio bursts — brief and powerful flashes of radio waves with enigmatic origins — using observations from the CHIME radio telescope in British Columbia.

2022 AAS DONORS

The AAS acknowledges the donors, members, and friends who supported AAS's programs and initiatives in 2022.

Singularity: \$5,000+

Megan Donahue & Mark Voit
J. W. Harvey
Arnold M. Heiser
Neil deGrasse Tyson

Quasar: \$1,000-\$4,999

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Lawrence W. Ramsey
Nicholas Scoville
Randall K. Smith
Bruce A. Twarog
William C. Wells
Lee Anne M. Willson
R. E. Wilson
Arthur Zhu

Supernova: \$500-\$999

Anonymous (1)
Keith A. Arnaud
Rahul Bendre
Nancy S. Brickhouse
Larry W. Esposito
James Nathan Fry
Mona J. Hagyard
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Anneila I. Sargent
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John Vallergera

Nova: \$250-\$499

Anonymous (3)
Spiro K. Antiochos
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Bruce Balick
Jennifer L. Bartlett
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Jeffrey Bennett
Brenda G. Corbin
Donald R. Davis
David H. DeVorkin
William Van Dyke Dixon

Jeffrey Dudley
In memory of James Lee Chen, a man of many passions and talents.

Bruce Elmegreen
Antoinette B. Galvin
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Dave Hinzl
Devrie S. Intriligator
Kenneth J. Johnston
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Richard B. Larson
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In memory of Irene. H. Osterbrock

Felix J. Lockman
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Christopher F. McKee
Michael H. Moloney
Joel Ong

Joseph E. Pesce

Farid Salama
Paula Szkody
C. Megan Urry
Robert F. Wing
Charles E. Woodward
In memory of Beth Brown and Judy Pipher, supportive individuals who advanced many careers.

Supergiant: \$100-\$249

Anonymous (7)
M. Marsha Allen
Rodney C. Anderson
Paul E. Barrett
Robert J. Boyle
Paul A. Bradley
Joel N. Bregman
William T. Bridgman
G. Stanley Brown

In honor of Beatrice Tinsley

Douglas A. Caldwell
Julie Castillo-Rogez
Prithiva Channugam
In memory of Dr. Arlo Landolt

Edward B. Churchwell
Barry G. Clark
Daniel Cohen

In memory of James Lee Chen, a life-long lover of the stars.

Thomas E. Corbin

Patrick Crane
Conard C. Dahn
C. Richard DeVore
Bruce T. Draine
R. Paul Drake
John S. Drilling
In memory of Dr. Arlo Landolt

David Dunham
Joan Bixby Dunham
Denis A. Elliott
Steven Robert Federman
Henry Closson Ferguson
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Donald Groom

John A. Gunther
Shadia R. Habbal
James E. Hesser
Philip E. Hodge
Jon Todd Hoeksema
Brianna Hoffman

In memory of James Lee Chen, from the Amenity Collective.

David E. Hogg
Deidre Ann Hunter
Garth D. Illingworth
Kazunori Ishibashi
George H. Jacoby
Mark C. Jennings
Harrison P. Jones
Richard R. Joyce

In memory of Judy Pipher, a long-time friend and colleague and a real pioneer in the field of infrared astronomy.

Stephen W. Kahler
Michael S. W. Keeseey
John G. Kirk
R. C. Kirkpatrick
Patricia Knezek
Kathleen E. Kraemer
Hans A. Krimm
Jeffrey Linsky
Eric A. Lufkin

Stephen J. Mackwell
Harold A. McAlister
Patricia McDermott
In memory of Prof. Ashley Thomas McDermott

Neil A. McGee
Eileen T. Meyer
Sarma B. Modali
John Adrian Morgan
Michael J. Mumma
Susan G. Neff
Ira G. Nolt

Robert W. O'Connell
Knut A. Olsen & Dara Norman
Daryl Parker
Daniel Potter
Lisa A. Prato
Francis A. Primini
John C. Raymond
Robert D. Reasenberg
Barney J. Rickett
Jane L. Russell

In honor of Rodger Doxsey and Ray Duncombe

David B. Shaffer
Gordon K. Squires
Phillip C. Stancil
Peter Stockman
Curtis J. Struck
Woodruff T. Sullivan, III
Jean Hebb Swank
Jill C. Tarter
Corbin J. Taylor
Wayne H. Thomas, Jr.
John R. Thorstensen
Alan T. Tokunaga
J Trykowski

In honor of James Lee Chen, who, as president of the Shenandoah Astronomical Society, not only kept astronomical activities alive, but also growing.

R. Brent Tully
Michael S. Turner
Pradnya P. Vakil
Robert Craig Walker
Rene A.M. Walterbos
Kay Weiss
Thomas R. Williams
Steven P. Willner
Chao Yuan Yang

Giant: Up to \$99

Anonymous (5)
Ryan Arana
Ayelén Arruzzo
Nathan Barney
David F. Bartlett
Nicholas Bennett
In honor of Djochoua Belovarski
Sylvie Bernstein
Derek Beutel
London Black
Kazimierz J. Borkowski
Mark D. Boryta
Lawrence W. Bradford
Stephen W. Bruenn

DJ Bruggemann
James Brunkella
Michael E. Caudill
Regina J. Cody
Chris Combest
Lynn Ruth Cominsky
In memory of Garrett Jernigan and the early days of SAS-3.

Thomas Connor
Bill Cooper
Harold G. Corwin, Jr.
Joseph K. Daugherty
Stanley F. Dermott
Hélène R. Dickel
In memory of James B. Kaler

John R. Dickel
In memory of James B. Kaler

Harriet L. Dinerstein
Marek Doležal
Edward M. Donie
Thomas R. English, III
Robert Ewing
Travis Falk
Michael M. Fikani
Alexei V. Filippenko
In memory of Jay Pasachoff, one of astronomy's greatest educators.

Claire Finale
In memory of James Lee Chen

Maya Fishbach
F. Michael Flasar
Juhan Frank
Alex Marshall Freeman
Harold A. Geller
J. Richard Gott
Joshua Grandquist
Thomas Graves
Theodore R. Gull

Kathleen A. Hamilton-Campos
Martha S. Hanner
Stanley S. Hansen
Hakim Abdul Haqq
Dieter Hartmann
Amanda Hendrix
Howard Houben
Amy Huffenberger
In honor of Kevin Huffenberger

Beth Hufnagel
Connor F. Jennings
Dae-Gwon Jeong
David Geoffrey Johnson
Robert E. Johnson

Giant: Up to \$99 (contined)

Kenneth I. Kellermann <i>In honor of Don Osterbrock</i>	Julie H. Lutz William Marchant <i>In memory of James Lee Chen, for this enthusiasm at Shenandoah Astronomical Society events.</i>	M. Coleman Miller Simon Mitton Nancy D. Morrison Jackson L. Morse Beatrice E. A. Mueller Stuart Mufson Henry Murillo Jim Murphy Kenneth R. Nicolas George T. O'Brien Robert A. R. Parker Stephen Parker Jeremiah Paul Robert J. Peters Cathy Polmann Daniel Posada	Carlton Pryor Jani Radebaugh Stephen P. Reynolds Dr. Edward J. Rhodes, Jr. Kenneth S. Rumstay <i>In honor of Alan Hirshfeld, for all you've done for HAD!</i> Arthur Safar David Samson Thomas Edward Samulski Philip H. Scherrer Francois Schweizer Tamikka Sims Linda J. Spilker	Peter A. Strittmatter Aniruddha R. Thakar John R. Thomas J. Gethyn Timothy Taylor Vittitow Jan M. Vrtilik Frederick M. Walter Lisa Ann Wells Koen Wilcke James G. Williams Charles L. Wolff Tony H. Wong Rosemary F. G. Wyse Grace Yin
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IN MEMORIAM

The Society was saddened to learn of the passing of the following members in 2022. The Society, through its Historical Astronomy Division, strives to publish an obituary for each AAS member after we are informed of the member's death. Obituaries are published and available online through the *Bulletin of the AAS* website at <https://baas.aas.org/obituaries>.

John David Anderson	Paul D. Feldman	Eugene Newman Parker	Benjamin Shih-Ping Shen
John (Johan) Booth	David Frank Gray	William H. Parkinson	Ojars J. Sovers
James Bernard Breckinridge	Richard Edwin Hills	Jay Myron Pasachoff	Allen Victor Sweigart
Robert Warner Carlson	Edward S. Jackson	Thomas G. Phillips	Douglas ("Doug") Tody
James Lee Chen	Jesse Garrett Jernigan, Jr.	Judith Pipher	Leisa Townsley
William Johnston Cocke, III	James Kaler	Joseph T. Pollock	James "Jim" W. Truran
Clarence T. Daub Jr.	Arlo U. Landolt	Ronald G. Probst	Amelia Wehlauf
Frank Drake	Anny-Chantal Levasseur-Regourd	Robert J. Rutten	Matthew Willson
Murray Dryer	Julie Haynes Lutz	Maarten Schmidt	Michael Zeilik, II
Joel Acree Eaton		Alfred B. Schultz	Jack B. Zirker

2022 FINANCIAL REPORT

As of 31 December 2022, the AAS's net assets were \$13,335,562, representing a decrease of \$3,134,127 from 2021. This is largely attributed to the investment portfolio losses in 2022 and a new lease standard reporting requirement: all non-profit organizations were required report all leases in excess of 12 months on the balance sheet. Our new "right of use" asset was \$6,181,846, and the corresponding operating lease liability was \$7,342,536, resulting in a paper loss of \$1,160,690.

The *Astrophysical Journal (ApJ)* family, *Astronomical Journal (AJ)* and *Planetary Science Journal (PSJ)* all produced annual operating surpluses of \$871,985; \$27,463; and \$182,405, respectively. While we rolled out a new author publishing charge model when we converted the *ApJ* family and *AJ* to open access, our financial results met our expectations. We were able to grant publication charge support for authors in excess of \$614,000. We have segregated the Journal Program expenses that were included in the General Program expense category in 2021 and 2022. This segregation better represents the full costs of our Journals Program.

The market value of our portfolio decreased by \$2,711,649. In 2022, we drew \$1,100,000 from our portfolio to cover the costs associated with the cancelation of the 2022 winter meeting. The journal development expenses reached \$120,520. In 2021, we spent \$146,415 towards strategic initiatives.

In July of 2019, we created AAS Sky Publishing, LLC, as a wholly owned subsidiary of the AAS. Though this subsidiary we purchased *Sky and Telescope* business lines from F+W Media through a bankruptcy sale. At the time of the purchase, we also assumed the fulfillment of subscriptions paid to F+W for future years. F+W sold subscriptions through 2025. Since the entire subscription revenue was not collected by the AAS and two tours were cancelled due to the pandemic, we experienced a loss of \$1,034,738, down from \$1,247,456 in 2020. We do anticipate losses in the first few years as we build the content through an editorial advisory board and increase the subscription base. We do anticipate a surplus being produced by 2024.

In an attempt to diversify the revenue streams of the Society, we created AstronomyCom, Inc. (ACI), a wholly owned for-profit subsidiary of the AAS. This for-profit corporation is used to fund partnerships/ programs that are not considered to be tax-exempt

by the IRS but are closely related to our mission. Our eBooks partnership with IOP Publishing, our journals publisher, is accounted for in ACI. The revenue was \$39,904 in 2022.

Grant Support

Thanks to our membership donations over the years we have been able to award FAMOUS grants to 189 members in the amount of \$141,000 since 2017; Dependent Care grants to 223 members in the amount of \$56,800 since 2005; and student travel grants in the amount of \$198,140 since 2013.

Figure 1. AAS Balance Sheet		
Assets	2022	2021
Cash and Cash Equivalents	1,219,935	782,985
Accounts Receivable	1,628,700	1,173,883
Inventory	538,025	506,843
Prepaid Expenses	1,122,883	474,069
Investments	12,536,634	15,248,283
Deposits	243,749	112,233
Assets Held for Deferred Compensation	487,904	527,020
Goodwill, net	1,344,075	2,240,126
Property and Equipment	956,714	929,329
Right of use of assets - operating leases	6,181,846	
Totals Assets	\$26,260,465	\$21,994,771
Liabilities and Net Assets		
Accounts Payable and Accrued Expenses	1,158,013	901,379
Deferred Revenue	3,936,450	3,246,057
Operating lease liabilities	7,342,536	
Deferred Rent	0	850,626
Deferred Compensation	487,904	527,020
Total Liabilities	\$12,924,903	\$5,525,082
Net Assets		
Without Donor Restrictions	9,380,994	11,860,767
With Donor Restrictions	3,954,568	4,608,922
Total Net Assets	\$13,335,562	\$16,469,689
Total Liabilities and Net Assets	\$26,260,465	\$21,994,771

Figure 2. AAS Statement of Activities		
Unrestricted Activities	2022	2021
Revenues		
Journals	8,877,994	9,253,310
General Programs	3,751,217	3,385,381
Divisions	536,927	387,792
Other	(293,457)	338,259
Grants and Contracts	483,710	333,194
Bequests and Memorials	(15,937)	33,920
AstronomyCom, Inc	39,904	88,228
AAS Sky Publishing, LLC	3,769,703	4,051,503
Net Assets Released from Restrictions	127,512	56,303
Total Unrestricted Income	\$17,277,573	\$17,927,890
Expenses		
General Programs	4,774,848	3,097,542
Journals	8,031,226	7,657,739
Divisions	475,196	60,715
Other	1,202,097	636,261
Grants and Contracts	496,800	352,807
Bequests and Memorials	48,939	54,886
AstronomyCom, Inc	1,464	1,100
AAS Sky Publishing, LLC	4,726,776	4,909,322
Total Expenses	\$19,757,346	\$16,770,372
Change in Unrestricted Net Assets	(\$2,479,773)	\$1,157,518
Temporary Restricted Net Assets		
Bequests and Memorials	(216,071)	177,152
Contributions and Other	(195,964)	169,284
Divisions	(114,807)	212,364
Net Assets Released from Restrictions	(127,512)	(56,303)
Change in Temporarily Restricted Net Assets	(\$654,354)	\$502,497
Change in Net Assets	(\$3,134,127)	\$1,660,015
Net Assets Beginning of Year	16,469,689	14,809,674
Net Assets End of Year	\$13,335,562	\$16,469,689

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