



# ASP then & now

*Celebrating 130 Years*



2018 annual report



## A Message from the Board President

This annual report summarizes the activities of the ASP in its 130th year of existence, and highlights the extensive work of its dedicated staff in promoting science education through astronomy.

In a time of so many personal demands and distractions, astronomy continues to inspire and create an emotional impact in the public arena. Astronomical themes transmitted in both real and fictional contexts are woven throughout popular culture, and the latest news or imagery often sparks new ideas and memes that can become both transformative and personally engaging. What other field of science engages so deeply at not only an intellectual but also an emotional level?

These powerful forces serve as a bridge between the public and astronomical science, with the ASP proving its unique effectiveness in this role. It is a privilege to help steer an organization that so ably harnesses these forces, ensuring that the public is able to both understand and participate in what is, for so many, a truly meaningful and personal experience. Our progress in doing so is a result of your support, and on behalf of the entire Board, let me extend my thanks to all ASP members and donors for your generosity. We could not do what we do without you.

Sincerely,

A handwritten signature in white ink that reads "Chris Ford". The signature is stylized and includes a horizontal line at the end.

Chris Ford  
President, ASP Board of Directors

# A Message from the CEO

The Astronomical Society of the Pacific celebrates a milestone birthday this year.

Founded in San Francisco on February 7, 1889, the ASP has served the astronomy community for 130 years, helping professionals, amateurs, educators, and enthusiasts deepen their understanding of astronomy and improve their ability to share this knowledge with others.

The ASP was the first astronomical organization established in the United States, and with the growing popularity of astronomy in the late 19th century, quickly picked up members both nationally and internationally.

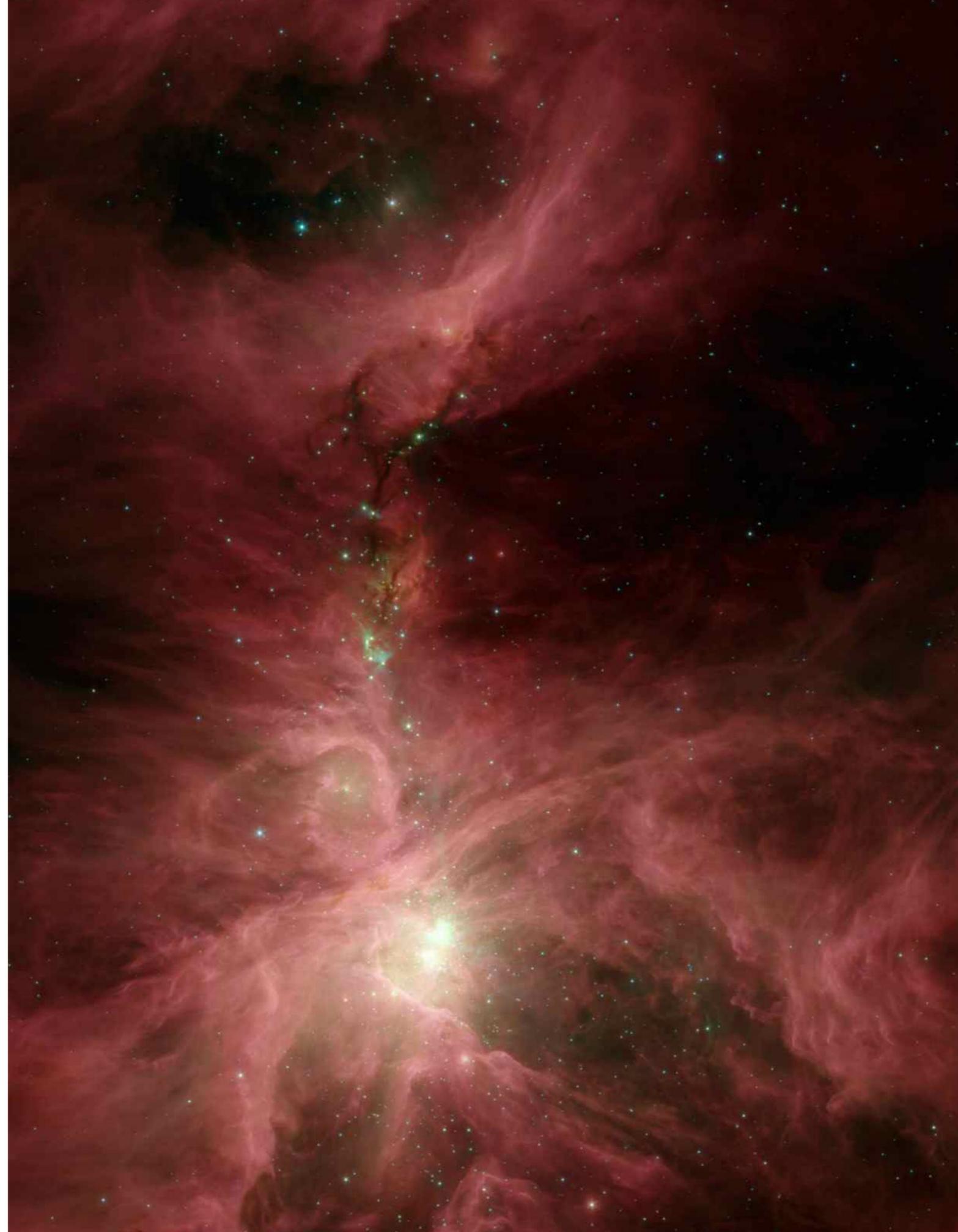
Unlike other professionally-oriented scientific societies founded during this period, ASP's membership was uniquely inclusive, welcoming anyone with an interest in learning about the cosmos. As ASP's founder and first president, Edward Holden, stated in his inaugural remarks, the "new society is designed to be popular in the best sense of the word. We wish to count in our membership every person...who takes a genuine interest in astronomy, whether [they have] made special studies in this direction or not." Today, the ASP's mission—to promote public science literacy through the awe and wonder of astronomy—has essentially remained unchanged since 1889.

This year's report looks back at our illustrious roots, traces our evolution, and describes the education projects and initiatives that define where we are now. I am proud and deeply honored to lead a society with such an amazing history and brilliant future. I hope you enjoy this report and take pride in your own part in making the ASP what it is today.

Sincerely,

A handwritten signature in black ink, appearing to read "Linda S. Shore". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Linda S. Shore, EdD  
CEO, Astronomical Society of the Pacific



# Amateur Observers

## Night Sky Network Amateur Astronomy Clubs Reach New Milestones

Managed by the ASP, NASA's Night Sky Network amateur astronomy clubs do extensive outreach in communities across the nation, hosting everything from star parties and community events to astronomy lectures and more. Since 2004, member clubs have led more than 36,000 events and, in 2018, reached a milestone, counting more than four million visitors directly interacting with NASA resources.

## New Website Supports the Girl Scouts

The ASP trains and supports amateur astronomers who work with Girl Scouts at NASA Night Sky Network events. This year, we also created an online resource ([bit.ly/astroall](http://bit.ly/astroall)) to help amateurs across the country more effectively support their local Girl Scout troops as they work toward completing their Space Science badges.



**1889** .....  
Amateur astronomers found the ASP after the 1889 eclipse



**1978**  
Amateur Achievement Award founded for outstanding research by an amateur

**1994** .....  
David Levy co-discovers comet Shoemaker-Levy 9, wins ASP Amateur Achievement Award



**2001**  
Las Cumbres Award founded to honor outstanding educational outreach by an amateur astronomer

**2004**  
Night Sky Network launched to support amateur clubs doing public outreach with 1,000 events held the first year

**2016** .....  
ASP partners with SETI Institute and Girl Scouts, connecting troops with clubs



**2017**  
Night Sky Network reaches 1 million people engaged in astronomy outreach through over 38,000 events led by amateur clubs

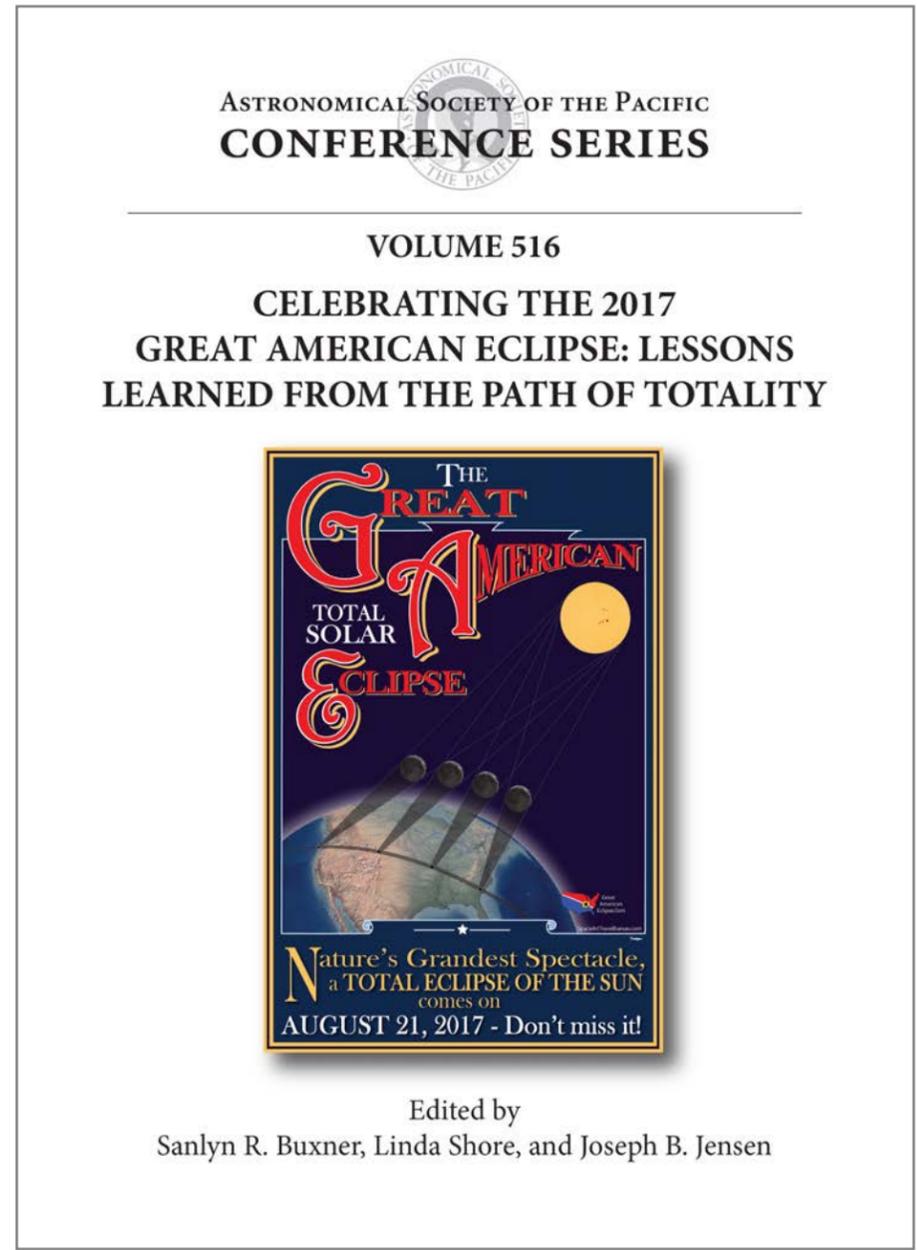
# Professional Astronomers

## Helping Scientists Connect with the Public

The ASP began work on a major National Science Foundation grant to help early-career scientists become effective communicators. Advisors from the American Association for the Advancement of Science (AAAS), American Geophysical Union (AGU), American Astronomical Society (AAS), Association of Science and Technology Centers (ASTC), and the National Radio Astronomy Observatory (NRAO) are assisting in the effort. By the end of this project, more than 350 scientists will receive new tools, resources, training, and ongoing support.

## Publications of the ASP (PASP)

This was a busy, exciting year for the technical journal of the ASP. We published 12 reviews and tutorials—nearly twice the number offered in any previous year—including a “how to” on ways to detect and measure the atmospheres of transiting planets.



**ASP Conference Series**  
The 130th anniversary of the ASP is also the 30th anniversary of our Conference Series, a collection of books highlighting astronomical research from around the world. This year, we introduced new science cases for the Next-Generation Very Large Array and featured a collection of stories about the 2017 total solar eclipse written by scientists, educators, amateur astronomers, outreach specialists, and more.

**1889**  
Issue #1 of *Publications of the ASP (PASP)* published

**1938** .....  
Edwin Hubble receives Bruce Gold Medal



**1988**  
*ASP Conference Series*, Volume 1 published

**2013** .....  
First ASP/AAS Astronomy Ambassador's Workshop helping scientists communicate more effectively



**2015** .....  
*ASP Conference Series*, Volume 500 published



**Lisa Hoover of Chabot Space & Science Center leading a session during the ASP's 130th Annual Meeting.**



# The 130th ASP Annual Meeting

Held in the California Wine Country, this three-day conference brought over 100 participants together to discuss and share best practices in astronomy education, public outreach, and communication, with an emphasis on promoting diversity and inclusion in astronomy and space sciences.

Sessions included plenaries on children's science books, on environments supporting women of color in STEM fields, and on the use of media and communications to broaden participation in science.

**1889**

First meeting of the ASP: February 7, 1889

**1915** .....

ASP meeting with AAAS and AAS held in Berkeley, CA



**1920**

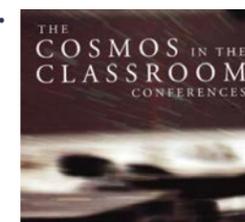
First ASP meeting held outside California (Seattle, WA)

**1980**

First ASP Annual Meeting to host teacher workshops

**1996** .....

First Cosmos in the Classroom Symposium



**2017** .....

ASP Annual Meeting focused on the 2017 Great American Eclipse



# Accomplishments & Awards

Each year, the ASP recognizes achievements in astronomy research, technology, education, and public outreach. We're excited to share the accomplishments of this year's winners.

**Catherine Wolfe Bruce Gold Medal Winner** | Dr. Tim Heckman  
A renowned observer with deep knowledge of spectroscopic diagnostics, Dr. Heckman's work has focused on galaxy formation and the relationship between galactic evolution and the life cycle of the super-massive black holes at their cores

**Maria and Eric Muhlmann Award** | Dr. Pieter van Dokkum  
For developing the Dragonfly Telephoto Array, a novel telescope design that led to the discovery of ultra-diffuse galaxies

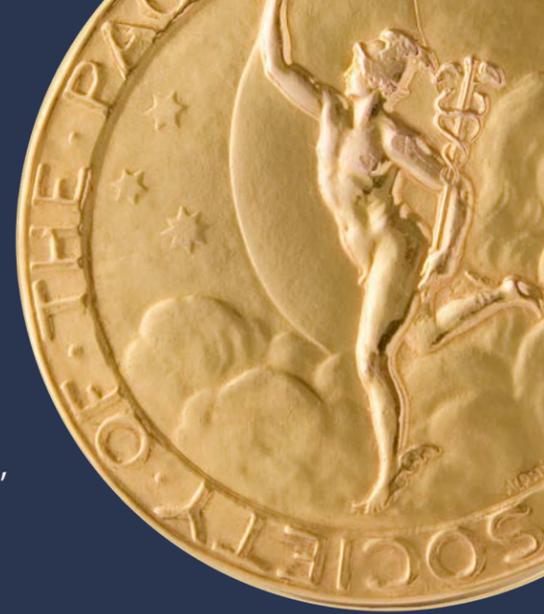
**Robert J. Trumpler Award** | Dr. Benjamin J. Fulton  
For his doctoral dissertation, which focused on identifying relationships between the sizes of rocky planets and those with gas atmospheres

**Amateur Achievement Award** | Thiam-Guan Tan  
For his contributions to exoplanet transit surveys and his role in helping discover more than 40 exoplanets

**Richard H. Emmons Award** | Professor David Hurd  
For a lifetime of contributions, from teaching at Edinboro University in Pennsylvania to creating astronomy education materials for the blind

**Thomas J. Brennan Award** | Peter Detterline  
For serving as Boyertown, Pennsylvania, planetarium director and contributing to programs that inspire high school students' interest in astronomy

**Las Cumbres Amateur Outreach Award** | Don Ficken  
For his outreach efforts with the St. Louis Astronomical Society and oversight of a program circulating telescopes through libraries in Missouri and Illinois



Dr. Tim Heckman, recipient of the 2018 Catherine Wolfe Bruce Gold Medal, accepts the award from ASP Board Vice President Kelsey Johnson at the Awards Gala, November 10, 2018.

1898 .....  
Bruce Gold Medal founded



1974 .....  
Carl Sagan receives inaugural Klumpke-Roberts Award



1993  
Brennan Award founded

1995  
Muhlmann Award founded

2006  
Emmons Award created for achievement in teaching college astronomy to non-science majors

2012  
Fraknoi Supporters Award founded

2016 .....  
Katherine Johnson receives inaugural Walker Award



# Member Communications

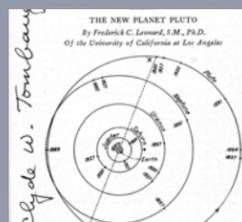
In 1925, the ASP began printing monthly “Leaflets,” describing big ideas in astronomy and sharing news of current astronomical discoveries with the public. These leaflets eventually evolved to become the wildly popular *Mercury* magazine, printed quarterly beginning in 1972 and emerging in its digital format in 2007.

Today, *Mercury* continues a tradition of bringing members compelling articles by well-known writers. Soon, it will have its own page on the ASP website, offering selected content from the magazine and blogs designed to attract potential members. We’ll continue to maintain a beautifully crafted quarterly magazine for members, while using the new website to broaden our audience and provide the wider world with an invaluable resource for up-to-date space and astronomy news.



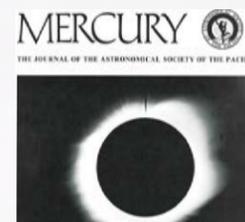
**1925**  
First edition of  
“ASP Leaflets”

**1930** .....  
Clyde Tombaugh announces  
discovery of Pluto in ASP Leaflets



**1941**  
First definition of  
“astrobiology” appears  
in ASP Leaflets

**1972** .....  
*Mercury* magazine  
launched



**2007** .....  
*Mercury* magazine goes digital



**2017**  
Astrophysicist/social  
media expert Ian O’Neil  
named *Mercury* editor

# Education Projects

## Dome+

Working with the California Academy of Sciences, the ASP is currently helping to create a new planetarium show supported by resources in English and Spanish. The show, which features research telescopes in Chile, focuses on the many jobs it takes to run professional ground-based observatories. A new toolkit for educators will be released in 2020.

## Project PLANET

Elementary schoolchildren are naturally curious about the stars and planets. What happens when you introduce them to imaginative astronomy-focused storybooks, hands-on activities, and visits to a local planetarium? That's what the ASP's new National Science Foundation-funded research project, Project PLANET, will find out.



**1984**  
*Universe in the Classroom* newsletter for teachers introduced

**1994** .....  
Bay Area Project ASTRO partnering astronomers with teachers launches



**2004**  
Astronomy from the Ground Up Project supporting museums launches

**2009** .....  
Las Cumbres Award founded for outreach by an amateur



**2010**  
Galileo Educator Network program for teachers launches

**2012** .....  
My Sky Tonight Project, creating activities for young children, launches



**2018**  
On the Spot Project, helping scientists communicate effectively, launches; Project PLANET, bringing astronomy to elementary classrooms, launches

# Education Products

## It's a Wrap! My Sky Tonight

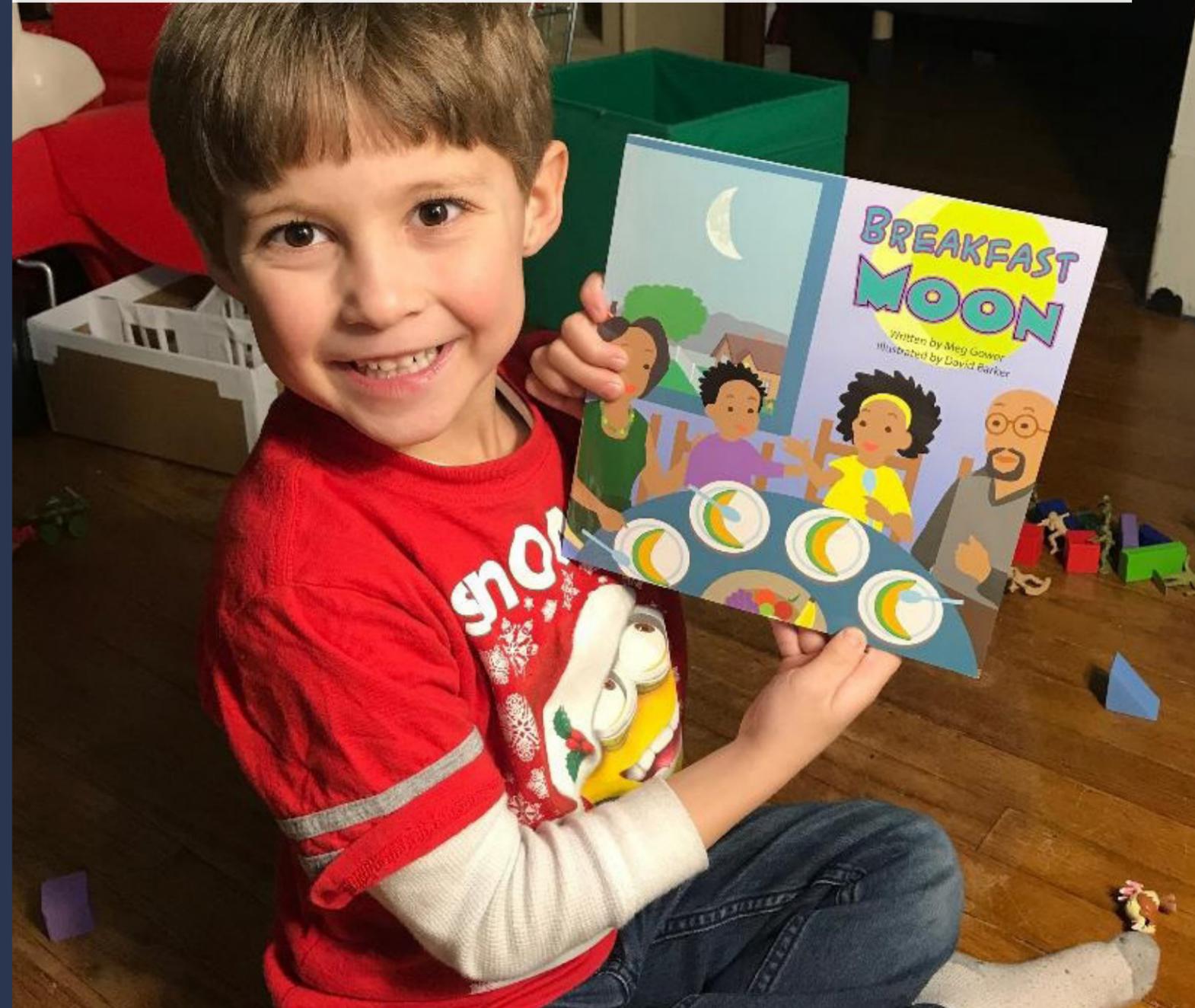
In 2018, we wrapped up our My Sky Tonight project, a research initiative focused on engaging 3-to 5-year-olds in science practices through hands-on astronomy activities. Over the course of this project, we provided hundreds of educators from museums, parks, and libraries with activities and online training.

## Breakfast Moon Captivates Young Children

We're proud to introduce *Breakfast Moon*, one of the exciting results of our My Sky Tonight project. This illustrated children's book tells the story of Mae and her brother, Arthur, who look for the moon in the sky each morning and record their observations in their Moon Journals. In addition to disseminating the book through direct sales, the ASP has also gifted copies to museums and parks across the country.

**"I loved this rendering of solid scientific information in an imaginative, childlike format! I think equating shapes to things children can touch (and eat!) is brilliant...the historical context, with Mae Jemison and Arthur Walker, adds more depth and complexity. Wow! What an accomplishment."**

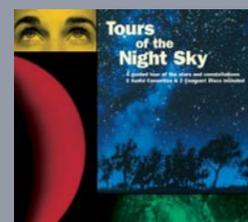
—Marilyn Kimura, Librarian, The Nuevo School, Hillsborough, California



1974  
Bumper stickers  
created

1978  
Retail catalog  
established

1987 .....  
Educational slide sets  
for sale; *Tours of the Night Sky*  
CDs introduced



1996 .....  
*Universe at Your Fingertips*  
activity guide published



2002  
Spanish edition of  
*Universe at Your Fingertips*  
published (*El Universo a sus Pies*)

2015  
*Total Skywatcher's Manual*  
published

2019 .....  
*Breakfast Moon*  
storybook for young  
children published



## Donor Appreciation

Our sincere thanks to the following organizations and individuals for their generous support. This list reflects gifts and grants received during the 2018 calendar year. Funds raised support our ongoing mission to foster scientific curiosity, advance scientific literacy, share the joy of exploration and discovery, and encourage the development of tomorrow's science, technology, and academic leaders. Although each star shines alone, they add up to a glittering night sky. Likewise, each donation adds to the next to make a great impact. Thank you for believing in the ASP!

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### Matching Gift

IBM

### Program Support

American Astronomical Society

Arizona State University

California Space Grant

Combined Federal Campaign

Harold L. Wyman Foundation

Jet Propulsion Laboratory

NASA

National Science Foundation

San José Astronomical Association

Science Museum of Minnesota

SETI Institute

### Corporate Partners and In-Kind Support

Zazmic Inc

+ ASP Board Member and / or Officer

\*\* ASP Staff Member

## FINANCIALS: Statement of Activities

for the year ended September 30th, 2018

|                                       | Unrestricted        | Temporarily Restricted | Permanently Restricted | Total               |
|---------------------------------------|---------------------|------------------------|------------------------|---------------------|
| Revenues:                             |                     |                        |                        |                     |
| Government grants                     | \$ 1,704,660        | \$ -                   | \$ -                   | \$ 1,704,660        |
| Donations and bequests                | 449,451             | -                      | -                      | 449,451             |
| Membership dues                       | 40,826              | -                      | -                      | 40,826              |
| Program service revenues              | 451,244             | -                      | -                      | 451,244             |
| Sales of conference series, net       | 16,119              | -                      | -                      | 16,119              |
| Sales of educational materials, net   | 16,155              | -                      | -                      | 16,155              |
| Investment income/(loss)              | 2,309               | 55,685                 | -                      | 57,994              |
| Other revenue                         | 83,828              | -                      | -                      | 83,828              |
| Net assets released from restrictions | 38,599              | (38,599)               | -                      | -                   |
| <b>Total revenues</b>                 | <b>2,803,191</b>    | <b>17,086</b>          | <b>-</b>               | <b>2,820,277</b>    |
| Expenses:                             |                     |                        |                        |                     |
| Program services:                     |                     |                        |                        |                     |
| Publications, retail & membership     | 300,037             | -                      | -                      | 300,037             |
| Public outreach programs              | 173,193             | -                      | -                      | 173,193             |
| Educational programs                  | 1,645,098           | -                      | -                      | 1,645,098           |
| Subtotal program services             | 2,118,328           | -                      | -                      | 2,118,328           |
| Supportive services:                  |                     |                        |                        |                     |
| Administration                        | 868,340             | -                      | -                      | 868,340             |
| Fundraising                           | 47,871              | -                      | -                      | 47,871              |
| Subtotal supportive services          | 916,211             | -                      | -                      | 916,211             |
| <b>Total expenses</b>                 | <b>3,034,539</b>    | <b>-</b>               | <b>-</b>               | <b>3,034,539</b>    |
| Change in net assets                  | (231,348)           | 17,086                 | -                      | (214,262)           |
| Net assets, beginning of period       | 170,660             | 290,511                | 992,685                | 1,453,856           |
| Net assets transfer                   | (81,015)            | -                      | 81,015                 | -                   |
| <b>Net assets, end of period</b>      | <b>\$ (141,703)</b> | <b>\$ 307,597</b>      | <b>\$ 1,073,700</b>    | <b>\$ 1,239,594</b> |

## Statement of Financial Position

September 30th, 2018

| <u>ASSETS</u>                                 |                     |
|---|---------------------|
| Current assets:                               |                     |
| Cash and cash equivalents                     | \$ 359,374          |
| Accounts receivable                           | 113,617             |
| Inventory, net                                | 207,785             |
| Prepaid expenses                              | 41,865              |
| <b>Total current assets</b>                   | <b>722,641</b>      |
| Non-current assets:                           |                     |
| Restricted cash and cash equivalents          | 30,331              |
| Restricted investments                        | 1,350,966           |
| Fixed assets, net of accumulated depreciation | 495,592             |
| <b>Total non-current assets</b>               | <b>1,876,889</b>    |
| <b>Total assets</b>                           | <b>\$ 2,599,530</b> |
| <u>LIABILITIES AND NET ASSETS</u>             |                     |
| Current liabilities:                          |                     |
| Accounts payable and accrued expenses         | \$ 291,211          |
| Deferred revenue                              | 103,994             |
| Notes payable, current portion                | 33,594              |
| <b>Total current liabilities</b>              | <b>428,799</b>      |
| Long-term liabilities:                        |                     |
| Notes payable, net of current portion         | 931,137             |
| <b>Total long-term liabilities</b>            | <b>931,137</b>      |
| <b>Total liabilities</b>                      | <b>1,359,936</b>    |
| Net assets:                                   |                     |
| Unrestricted                                  | (141,703)           |
| Temporarily restricted                        | 307,597             |
| Permanently restricted                        | 1,073,700           |
| <b>Total net assets</b>                       | <b>1,239,594</b>    |
| <b>Total liabilities and net assets</b>       | <b>\$ 2,599,530</b> |

## Leadership

### BOARD OFFICERS

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\*served in 2018; +serves in 2019

\*+ served in 2018 and serves in 2019

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Edna DeVore, SETI Institute (retired)

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Wayne Rosing, Las Cumbres Observatory

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Al Whaley, Internet Travel Network (retired)



Three spiral nebulae photographed circa 1919. When this photo was taken, astronomers believed nebulae were the early stages of solar systems, each with a young star at its center. It wasn't until 1929 that these objects would be recognized as galaxies far outside our own Milky Way. (Reprinted from *Scholar Select: The Adolfo Stahl Lectures in Astronomy, delivered in San Francisco, California in 1916–17 and 1917–18, under the auspices of the Astronomical Society of the Pacific.*)

## CREDITS & ACKNOWLEDGMENTS

### Chief Executive Officer

Linda Shore

### Project Manager

Joycelin Craig

### Writer/Editor

Ruth Tepper Brown

### Graphic Designer

Mando Daniel Design

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[www.astrosociety.org](http://www.astrosociety.org)

### San Francisco Headquarters

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415-337-1100

### Utah Conference Series Office

Utah Valley University, MS 179  
800 West University Parkway  
Orem, UT 84058

## IMAGES

### Cover Wrap

The cover composite image, created by designer David Barker, combines a photograph of ASP's founding members observing the January 1, 1889, solar eclipse with a modern photo of the night sky taken by amateur astronomer and ASP staff member, Dave Prosper. Here, Prosper identifies the constellations and stars featured in his original image.

Page 2

Ed White, Gemini 4 mission, June 3, 1965. First American to conduct a spacewalk.

Image credit: NASA.

Page 5

The Sword of Orion; NASA/JPL-Caltech/Univ. of Toledo

Page 7

Mt. Diablo Astronomical Society/Ken De Silva

Timeline

Image 4: Girl Scout Day at NASA Wallops Flight Facility Visitor Center, Wallops Island, VA / Shirley Lapole

Pages 10-11

ASP Annual Meeting, Rohnert Park, CA/Dave Prosper

Timeline

Image 3: ASP Annual Meeting/Brian Kruse

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Bruce Gold Medal Awardee, Tim Heckman, with ASP Board Vice President, Kelsey Johnson, 2018  
ASP Annual Awards Gala/Marcela Gries

Timeline

Image 3: Katherine Johnson receives award in Virginia/David Barker

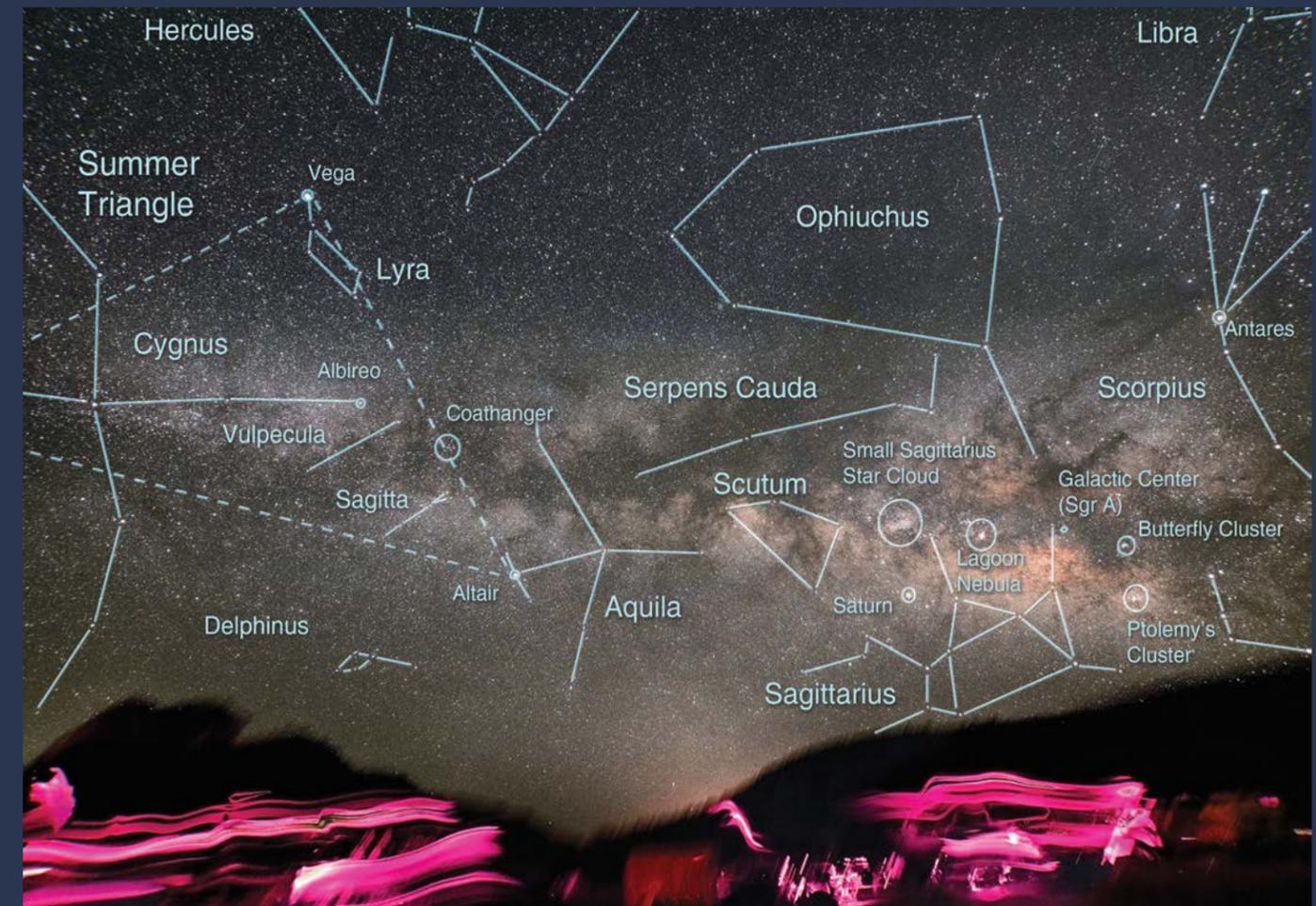
## IMAGES CONTINUED

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*Mercury Cover Image:* NASA's HST captured this billowing cloud of cold interstellar gas and dust rising from a stellar nursery in the Carina Nebula, 7,500 light-years away. This pillar of dust and gas serves as an incubator for new stars and is teeming with star-forming activity. Courtesy NASA/ESA/Hubble 20th Anniversary Team

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Shanelle Boluyt



Original image used as the background for our composite cover, with constellations identified. Milky Way, Texas Star Party, Fort Davis near McDonald Observatory, May 2018/Dave Prosper

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