

The Bruce Medalists: Makers of Modern Astronomy

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Editor's Introduction

The ASP's Bruce Medal, first given in 1898, is the Society's highest honor, and one of the most coveted international awards in astronomy. But it has another distinction — it is the only award to which a historian has devoted a separate web site, detailing the accomplishments of each winner and giving references for further information, images, and more. We asked the author of the site, and the former Chair of the ASP's History Committee, Joseph Tenn, to tell us about the genesis of the site and to refresh our memory about the genesis of the award as well.

The year 1984 turned out to be a very good one for me. After 14 years of teaching physics and astronomy at Sonoma State University, I finally took a sabbatical leave. My family and I decided to spend it in the Mysterious East — Massachusetts, where I was offered hospitality by the University of Massachusetts, Amherst.

All of my education had been in physics, but when I completed my doctorate with a dissertation on the theory of liquid helium and sought a faculty position, the one I was fortunate to land was at Sonoma State, where I was asked to teach introductory astronomy as well as physics. Over the next fourteen years, I had become more interested in astronomy than physics, and by this time I was teaching about half and half.

From physics to astronomy, and then on to history of astronomy. I had become aware that everything I



The Bruce Medal

taught had been discovered by people, and the stories of their lives and discoveries were interesting. I had already written a few articles dealing with the history of astronomy, one of them a centennial tribute to Arthur Stanley Eddington for *Mercury* a couple of years earlier. I had been a member of the ASP for some years, and treasured the meetings where I got to meet and mingle with famous research astronomers.

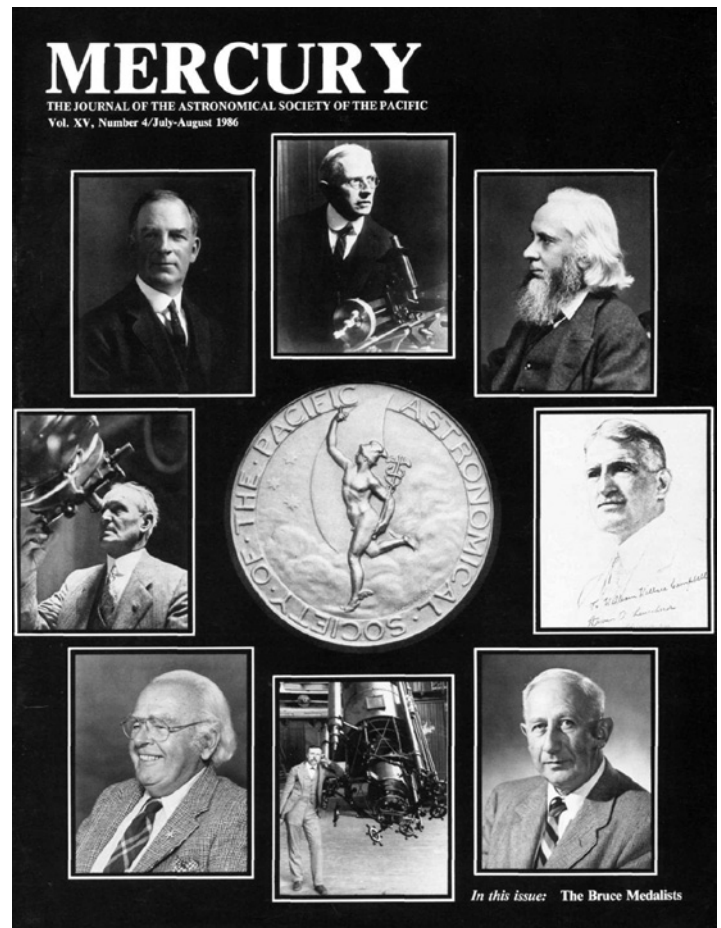
My colleagues and I at Sonoma State had even hosted the 1979 ASP meeting, attended by, among others, Halton "Chip" Arp, Bart Bok, Margaret and Geoffrey

Burbidge, Marshall Cohen, Gérard and Antoinette de Vaucouleurs, Holland Ford, Patrick Henry, Joseph Miller, Patrick Osmer, and Donald Osterbrock. At the banquet held on our campus ASP president Leonard Kuhi had presented the Catherine Wolfe Bruce gold medal to William A. Fowler for his work in nuclear astrophysics.

There was, of course, no Internet yet, and I had been limited in my historical inquiries by the fact that Sonoma State was founded in 1960 and did not have many back issues of journals. During my sabbatical, I could browse the magnificent Amherst College library and find every journal back to Volume 1. I began reading old issues of the *Publications of the ASP (PASP)*, now the technical journal of the Society, but originally a record of both astronomical research and Society activities. Soon I became interested in the Bruce medal, the ASP's highest honor, awarded for lifetime contributions to astronomy most years since 1898. One of the main duties of the ASP president each year was to write an account of the research for which the medalist was being honored, to be read at the presentation and then published in the *PASP*. Some of these ran to ten to fifteen fascinating pages filled with detail.

I found myself constructing a chart of the 78 medalists (through 1985) and systematically gathering information about them. A history of the medal (founded with a generous donation by Catherine Wolfe Bruce) and the medalists was the longest of the three popular historical astronomy articles I wrote that academic year. It appeared in *Mercury* in July/August 1986 and you can read a little of it in the box on page 4. I have put the entire article on the web (see the reference in the box); it includes a Bruce Medalist Trivia Quiz for those long-time ASP members or history buffs who want to test their knowledge of the winners. One amusing consequence of the article was that an editing error deleted the nationality of Jesse Greenstein, and the crusty old spectroscopist confronted me at a meeting and accused me of making him a "man without a country." Fortunately, the editor took full responsibility.

I learned many interesting facts about these leading astronomers of the nineteenth and twentieth centuries. Probably my most surprising discovery was that one astronomer actually declined the medal. It was William



The Bruce Medal cover of *Mercury* Magazine in 1986

H. Wright, the fifth Director of the Lick Observatory. I found the "smoking gun" in the Mary Lea Shane Archives of the Lick Observatory. Ever since becoming director of Lick, Wright had complained every year about being asked by the ASP to submit nominations for the medal. He had written the ASP secretary, "I must state at once that your request has caused me some embarrassment for the reason that I have long held the view that the conferring of medals ... are not appropriate rewards for scientific accomplishment. They seem to me more suited to the periods of childhood and adolescence than to that of maturity ..."

So when Wright was notified that he had been selected to receive the 1944 medal, I think he felt boxed into a corner. He declined. However, perhaps unwilling to cause international incidents, or because he had never made such statements to them, he did accept medals from the Royal Astronomical Society and the Paris Academy of Sciences as well as the Henry Draper Medal of the National Academy of Sciences. (I think that Wright's refusal of the 1944 Bruce medal

went generally unnoticed because there had been no 1943 medal and people assumed that both years were skipped because of wartime.)

For the centennial meeting of the ASP in 1989, I presented the world's largest poster paper. It filled six wide stands and consisted of a photograph of each of the by then 82 medalists, uniformly reproduced and with captions explaining their work. SSU student Miriam Tobin helped with it. I also gave an invited lecture on the medal. I collected the photos from ten countries, and I did it in six months flat, using only letter mail. People were very kind and generous. I still treasure a letter from the Royal Danish Academy of Sciences and Letters which reads, "Professor Anders Reiz has asked us to send you this photo of professor Strömngren. We trust you will take very good care of it, as the negative is not in our possession." And they had never heard of me! I got handwritten letters from several senior medalists, including Thomas Cowling, Lyman Spitzer, and Albrecht Unsöld. After the meeting I gave the posters to the ASP, which still has them on display in the Society offices.

Not long afterward *Mercury's* editor invited me to write an article about each medalist. I did so from January/February 1990 through September/October



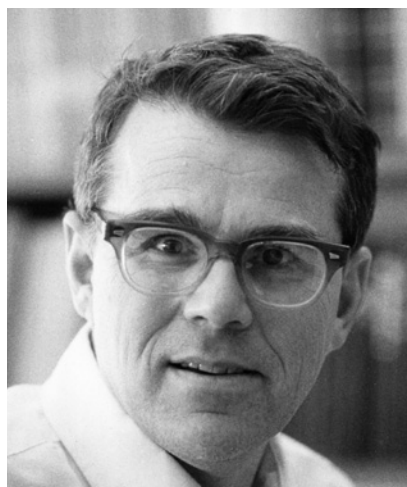
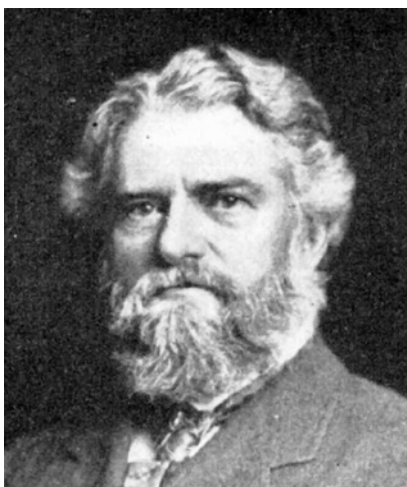
The author in front of the Bruce Medal poster paper

1995, writing essays and publishing the photos of the first 29 medalists. Then I got sidetracked, as a result of extensive summer travels (which took me back to Ethiopia, where I had been a Peace Corps volunteer in the 1960s), and I never got back to writing them. All of the articles are now on the Bruce Medalists website.

But in 1995 I discovered the new World Wide Web, and this seemed a better and eventually easier way to spread information about the medalists, who really were the makers of modern astronomy. I started with just a paragraph about each medalist (the captions from the photo exhibit). Of course, I couldn't resist providing more information over time, and each year there was another medalist to add. By 1999 it was possible to scan some of the photos and add pictures to the website. Some time in the early 2000s, I expanded

the website to feature an extensive page for each medalist, and then I added the lists of references and links to papers by and about them. I am very grateful to the SAO/NASA Astrophysics Data System, which has put most of the world's astronomy publications online. There are more pictures on the site now, too, and it continues to grow.

Just this year I heard from a grandson of Benjamin Baillaud (1848–1934), director of the Paris Observatory from 1908 to 1926, first president of the International Bureau of Time and of the International Astronomical Union, and 1923 Bruce medalist. As a result of our correspondence, a 32-page booklet



The first Bruce Medalist, Simon Newcomb (left) and the latest Bruce Medalist, Gerald Neugebauer (right).

The Origin of the Bruce Medal

by Joseph S. Tenn

[adapted from the Jul/Aug. 1986 issue of *Mercury* magazine]

Astronomers have always liked medals. Perhaps it is to make up for the lack of pecuniary rewards for seeking the secrets of the universe. So it should not be surprising that the institution of a medal was one of the first items to be considered at the founding of the Astronomical Society of the Pacific.

Speaking to the newly formed Society at its first meeting March 30, 1889, founding President (and Lick Observatory Director) Edward S. Holden presented among his list of objectives for the Society "...the foundation and ... the bestowal of the medal of the society as a reward for astronomical work of the highest class...in the future, if such a medal were founded, and if it were bestowed only for work of the highest class. . .the responsibility of the award would constitute an important stimulus to the society itself, which would have to judge of the merits of the various works proposed to be rewarded; and...such awards, if always bestowed with judgment and discretion, would soon make the voice of our society respected everywhere..."

The medal, if Holden could establish it, would bring the A.S.P. — and with it West Coast astronomy — to the attention of astronomers everywhere. ... But first he had to find the money.

Catherine Wolfe Bruce was an accomplished woman who devoted her life to travel, literature, languages, and art. ... She lived a quiet life in New York with her sister, and, although it has been suggested that the stars had long fascinated her, she had no direct connection with astronomy until the age of seventy-two.

It was then, in 1888, that she read a magazine article in which Simon Newcomb, the most acclaimed astronomer of the age, suggested that most significant astronomical discoveries had already been made. She wrote Newcomb in protest: "Such a blow from a friend! I think we are beginning — else why set to work [on] Photography, Spectroscopy, Chemistry and soon but perhaps not in this generation Electricity ... The world is young." At about that time she read a circular by Edward C. Pickering, director of the Harvard College Observatory, asking for a donor to give \$50,000 to build a telescope specially designed to make a photographic survey of the entire sky. On her own initiative, Miss Bruce gave Pickering the money.

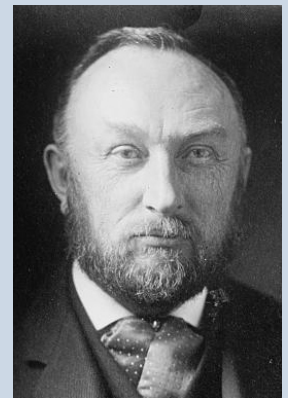
This was the beginning of a long relationship. In her remaining eleven years, most of them spent as a reclusive semi-invalid, Miss Bruce gave a total of \$174,275 to astronomers, much of it channeled through Pickering. Most of her gifts were of \$500 or \$1000 to enable an astronomer to hire an assistant for a year or to purchase a piece of auxiliary equipment, but a few were of \$10,000 or more. In all of her giving, Miss Bruce relied on Pickering for advice.

In 1890, and again in 1895, Holden received \$500 from Catherine Bruce for use at the Lick Observatory. In 1896 she gave him \$1000 to buy a large comet-seeker and photometers for visual use with the 36-inch refractor. So it was natural for him to turn to this generous benefactor to establish a medal for the A.S.P., and it was equally natural for her to ask Pickering for his opinion.

Through her sister Matilda, Miss Bruce wrote the Harvard director on March 8, 1897, asking some questions about such a medal, among them: "The decision seems to rest with the Officers & Directors of the Astronomical Society of the Pacific. Are they likely always to bestow it intelligently?" Pickering assured her that the Society could be relied upon. Within a month Matilda Bruce wrote back: "She is willing to give the \$2750. She prefers that the medal be international as in accord with the generous spirit of Astronomy. As she supposes our instruments & opportunities of observation on this side of the Atlantic are as good as those of the old World, our Astronomers would be at no disadvantage. As you say, a medal should only be given 'when a suitable candidate can be found,' so should not be restricted to 'the work done between certain dates.' My sister would like the medal to be as prized & sought for as much as those of Great Britain or France."

At Miss Bruce's request Pickering drew up the rules for the award of the medal. It was specified that each year the directors of six observatories, three American and three foreign, would be asked to nominate from one to three candidates "worthy to receive the medal for the ensuing year." The A.S.P. Board of Directors quickly announced that they would construe that phrase to cover "services rendered during the lifetime of the nominee."

[For the rest of the story, see: <http://www.phys-astro.sonoma.edu/BruceMedalists/BruceMedalHistory.pdf>]



Edward Pickering
(Library of Congress)

written by the grandson describing Baillaud's life and work and the intriguing history of a bust of Baillaud will soon appear on the site, both in its original French and in English translation.

I continue to enjoy gathering and disseminating information about the medalists and my hope is that the web site will be a useful tool for all who are investigating the history of modern astronomy. And, thanks to Miss Bruce and the ASP, each year there is a new medalist to learn about!

About the Author

Joseph S. Tenn taught physics and astronomy at Sonoma State University, in the California wine country, from 1970 to 2009.

In retirement, he keeps busy as secretary-treasurer of the Historical Astronomy Division of the American Astronomical Society (<http://had.aas.org>) and associate editor of the *Journal of Astronomical History and Heritage* (<http://www.jcu.edu.au/school/mathphys/astronomy/jah2/index.shtml>), as well as by continually expanding the Bruce Medalists website.



Resources for Further Information

Bruce Medalists Website:

<http://phys-astro.sonoma.edu/brucemedalists/>

Tenn, J. "A Brief History of the Bruce Medal" in *Mercury*, Jul/Aug. 1986, p. 103. On the web at:

<http://www.phys-astro.sonoma.edu/BruceMedalists/BruceMedalHistory.pdf>

Awards Section of the ASP Web Site:

<http://www.astrosociety.org/membership/awards/awards.html>

General History of the ASP:

<http://www.astrosociety.org/about/history.html> ♦

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