



H·A·D NEWS

*The Newsletter of the Historical Astronomy Division
of the American Astronomical Society*

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New HAD Officers

Ken Rumstay, Valdosta State University

Well, as I write this the nation's midterm elections are behind us. And we've just wrapped up the election of new officers for the Historical Astronomy Division! Our newly-elected Vice Chair Kevin Krisciunas and the new At-Large Committee Members Rebecca Charbonneau and Philip Nicholson will assume office at the end of the HAD Town Hall on January 7th in Seattle. Current Chair Pat Seitzer will pass the gavel to current Vice Chair Alan Hirshfeld. He will then become Past Chair and Chair of the HAD Prize Committee, which will select the recipients of the LeRoy E. Doggett Prize for Historical Astronomy next year and the Donald E. Osterbrock Book Prize in 2020. As Vice Chair, Kevin will be in charge of soliciting and editing obituaries of all recently deceased AAS members.

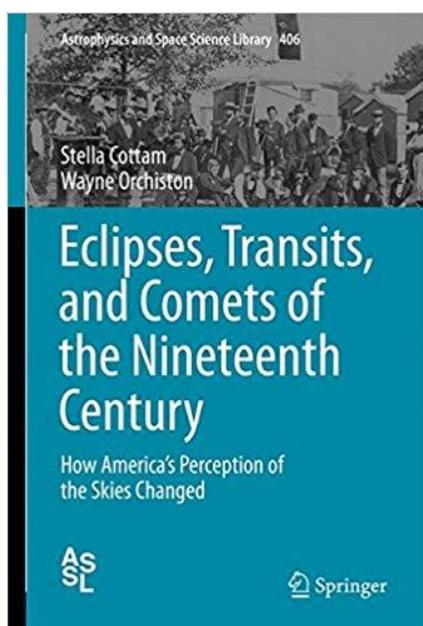


HAD's new officers (from left to right): Kevin Krisciunas, Rebecca Charbonneau, and Philip Nicholson

The election was a close one! I would like to thank the Nominating Subcommittee (Tom English, Richard French, and Chair Barbara Becker) for their efforts. My one regret is that, of 357 HAD members, only 108 (30.3%) cast a vote.

Finally, I would like to offer my special thanks to Marc Rothenberg, who will have completed six years of service as Vice Chair, Chair, and Past Chair, and thanks as well to Pedro Raposo and Robert Stencil, who have served on the HAD Committee during the past two years.

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The 2019 Osterbrock Prize

Marc Rothenberg, Chair, HAD Prize Committee
Rick Feinberg, American Astronomical Society

The Historical Astronomy Division is pleased to present the 2019 Donald E. Osterbrock Book Prize for Historical Astronomy to Stella Cottam and Wayne Orchiston for their publication *Eclipses, Transits, and Comets of the Nineteenth Century: How America's Perception of the Skies Changed* (Springer, 2015).

In this richly illustrated volume, the authors combine an analysis of the treatment of astronomy in periodicals and newspapers (especially the New York Times) with a mastery of the secondary literature to provide a scholarly yet readable treatment of the popularization of astronomy in the United States in the 19th century. The book reminds us that the press of that era extensively covered rare or spectacular astronomical occurrences —

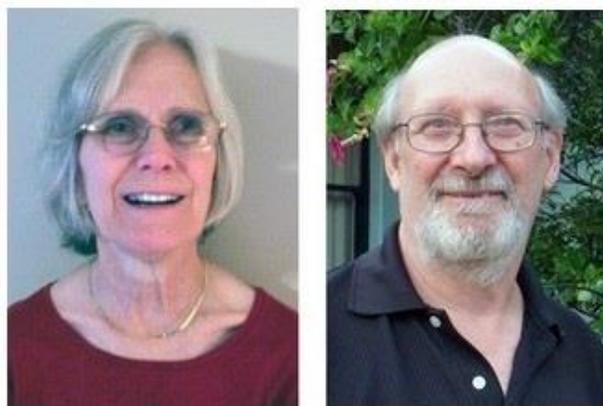
for example, solar eclipses, transits of Venus, and grand meteor showers — as important, newsworthy events. Cottam and Orchiston have provided an important resource for anyone interested in the history of the perception of astronomy outside the observatory.

Stella Cottam came to the history of astronomy after studying physics, medical technology, and library science and working as a microbiologist at the Veteran's Administration Hospital in Lexington, Kentucky, where she still lives. She earned her doctorate from James Cook University in Australia under the supervision of Wayne Orchiston and Richard Stephenson.

Wayne Orchiston lives in Thailand but remains affiliated with the University of Southern Queensland in Australia. He is president of Commission C3 (History of Astronomy) of the International Astronomical Union, co-founder and editor of the *Journal of Astronomical History and Heritage*, and editor of Springer's series of books on historical and cultural astronomy.

The Donald E. Osterbrock Book Prize is given in odd-numbered years. Books copyrighted in the two to five years before the award year are eligible. HAD originated the prize in 2009 and named it in memory of Don Osterbrock in 2010. Osterbrock was a longtime HAD member, a contributor to nearly every HAD meeting, HAD Chair from 1987 to 1989, and the recipient of HAD's highest honor, the LeRoy E. Doggett Prize for Historical Astronomy, in 2002.

The 2019 Osterbrock Book Prize will be presented to Drs. Cottam and Orchiston at the HAD Town Hall held in conjunction with the 233rd meeting of the American Astronomical Society in Seattle, 2019 January 6-10.



Stella Cottam and Wayne Orchiston, winners of the 2019 Donald E. Osterbrock Book Prize



From the Chair

Patrick Seitzer, University of Michigan

The last six months have been busy for several HAD officers, who read many excellent books nominated for the Osterbrock book prize. The prize went to Stella Cottam and Wayne Orchiston for their *Eclipses, Transits, and Comets of the Nineteenth Century: How America's Perception of the Skies Changed* (Springer 2015).

At last June's AAS meeting HAD member Bob Stencel hosted several members of HAD at the historic Chamberlin Observatory. Located at the University of Denver, it is equipped with a 20-inch Clark/Saegmuller refractor. Skies were clear, and attendees had a great observing experience with this historic telescope. Thanks, Bob!

This is my final column as HAD Chair. The last two years have been very educational for me in seeing how HAD operates and learning a lot of astronomical history. I look forward to seeing many of you at the upcoming AAS meeting in Seattle, where current Vice-Chair Alan Hirshfeld will take over as Chair. My congratulations to all newly elected members of the HAD committee, and my thanks to Bob Stencel and Pedro Raposo for their service during the last two years, and especially to Marc Rothenberg for his six years of service. His guidance has been most helpful.

My prime disappointment is not being able to encourage more students and early career professionals to join HAD. The January 2018 AAS meeting at National Harbor was a start, with HAD providing travel grants to three students to present at the meeting. Several excellent "This Month in Astronomical History" columns have been written by early career professionals. Much more remains to be done.

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From the Vice Chair

Alan Hirshfeld, U. Mass. at Dartmouth

My time as Vice-Chair has passed quickly, and I thank Pat Seitzer, our current Chair, and the members of the HAD Committee who helped me "learn the ropes" and prepare for my upcoming term as Chair. Besides weighing in on various HAD administrative issues, the Vice-Chair coordinates the preparation of AAS member obituaries, a task I have found both solemn and inspiring. I am grateful to the many AAS members who contributed essays memorializing the lives and work of their deceased colleagues. These thoughtful tributes speak eloquently of the devotion of astronomers to their research and to their involvement in collaborative efforts to push our field forward. The obituaries also highlight the importance of mentorship in fostering the next generation — in some cases, multiple generations — to carry on humanity's age-old exploration of the cosmos. One particular quote expresses a notion found in many of these memorial essays: "[I am] profoundly grateful for having known and having had the privilege of working with such a great scientific mind and such a wonderful person."

I myself wrote the obituaries of several colleagues I had known personally, trying to convey their accomplishments as well as their interpersonal style and their quirks. Many other deceased AAS members I recognized by name, having learned about their work in graduate courses, attending one of their research lectures, or reading in research journals of their notable contributions to the field. The list of obituaries includes several female astronomers who breached the professional barriers of their era to lay a freer pathway for their latter-day counterparts. In the obituaries, I also encountered numerous individuals whose names I didn't know, yet whose research results were vital to a

particular subfield or whose energetic promotion of astronomy brought astronomical scholarship before the general public.

During his lifetime, one of the obituary subjects reflected upon the desire to learn about the universe and to form a sense of place within it: “How many people, when they're young, look up into the sky and wonder where it all came from. We are the fortunate few who can answer the questions we asked when we were young.” A sentiment I imagine most of us can identify with.

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HAD Vice Chair Wins Award!

Ken Rumstay, Valdosta State University

Alan didn't mention this in his column, but it is certainly worth noting! Alan recently received a prestigious award from the AAS Solar Physics Division. In notifying him of this honor, Monica Bobra (Chair of the Prize Committee of the AAS Solar Physics Division) stated:

“I am writing on behalf of the Solar Physics Division (SPD) of the American Astronomical Society (AAS) to inform you that your article entitled “The Greatest Show on Earth” in the Wall Street Journal has been selected for the 2018 American Astronomical Society Solar Physics Division Popular Writing Award. As the chair of the prize committee, the committee that reads and evaluates the nominated articles and selects the winners, I congratulate you on writing what we felt to be the best popular science article written by a scientist about the Sun in any online or print media in North America. The committee was particularly impressed by your thorough review of several relevant books and ability to weave both science and popular culture together with engaging writing.”

The Solar Physics Division's Popular Writing Award is given annually to authors of popular articles about the Sun or the effects of the Sun on the Earth's environment. One award is given for an article written by a scientist; another for an article written by a journalist. Alan's article, about the total solar eclipse of 2017 August 17, appeared in the *Wall Street Journal*.

Congratulations Alan; well done!

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From the Secretary-Treasurer

Ken Rumstay, Valdosta State University

Greetings to all HAD members! I would like to begin by thanking everyone who has helped our division to function smoothly this year, notably my fellow officers Pat and Alan, and committee members Pedro Raposo and Robert Stencil. Also the members of the HAD Prize Committee: Brenda Corbin, Liba Taub, Pat Seitzer, and Chair Marc Rothenberg, And the members of the HAD Nominating Subcommittee: Tom English, Richard French, and Chair Barbara Becker. And, finally, the hard-working staff members of the American Astronomical Society.

I don't have much in the way of actual news to report, but particularly noteworthy is that HAD has decided to no longer require dues of members belonging to any of the AAS Junior Membership categories. Your officers have pondered for some time ways in which we might encourage younger astronomers and historians of astronomy to join our ranks, and this seems an excellent step.

The Historical Astronomy Division will meet in January, in conjunction with the 233rd meeting of the AAS in Seattle, Washington. It promises to be an excellent meeting, with eighteen contributed oral presentations, six posters, a special session on the Spitzer telescope, and a plenary lecture by David DeVorkin to celebrate the 150th birthday of George Ellery Hale! There will also be the annual Town Hall meeting, at which the 2019 Osterbrock Book Prize will be presented and the new division officers installed. And we will enjoy a wonderful HAD mini-banquet on Monday evening at the Bleuacre Seafood restaurant, a short walk from the convention center.

As always there will be a HAD table situated at the AAS booth, with our banners proudly on display. We would like to have the table manned by HAD members during the morning coffee breaks and afternoon poster sessions, and at other

times if possible. If you plan to attend the January meeting, and would be willing to devote an hour or two to representing HAD at our table, please contact me at hadsec@as.org; we would be most grateful for your help!

At the time of writing, the HAD meeting schedule will be as follows:

Sunday, January 6th

- 2:00 - 3:30 pm HAD I (*The Spitzer Observatory: The Evolution of a Space Mission*)
- 5:30 - 6:30 pm WGRAH meeting
- 7:00 - 8:30 pm AAS reception

Monday, January 7th

- 10:00 - 11:30 am HAD II (contributed talks)
- 1:00 - 2:00 pm HAD Town Hall
- 2:00 - 3:30 pm HAD III (contributed talks)
- 3:40 - 4:30 pm Plenary talk by David DeVorkin
- 5:30 - 6:30 pm HAD IV (poster session)
- 7:00 - 9:00 pm HAD banquet at Blueacre Seafood

Tuesday, January 8th

- 10:00 - 11:30 am HAD V (Osterbrock Prize talk)

Please note that the HAD two-day meeting registration fee will cover the entire meeting, through noon on Tuesday. I look forward to seeing, if not all of you, at least as many of you as possible in Seattle in January!

Finally, as we approach the end of another calendar year I would remind you to please renew your HAD membership, and to consider making a donation to the Doggett or Osterbrock Prize Funds. We rely on your contributions!

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Three Recent Meetings of Note

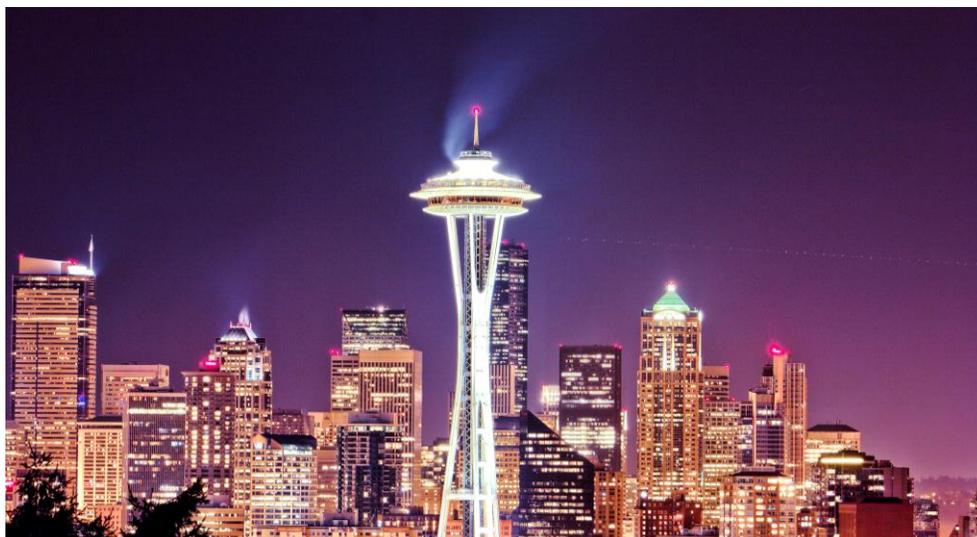
Ken Rumstay, Valdosta State University

During this past summer three important meetings of interest to our members took place. I wasn't at any of them, but I'll do the best I can.

The venue for the 232nd meeting of the American Astronomical Society (June 3-7) was the Sheraton Denver Downtown Hotel, in Denver Colorado. That is also the home of the University of Denver and its historic Chamberlin Observatory, and Bob Stencel went all-out to welcome all HAD members in attendance! The Chamberlin Observatory houses an historic 20-inch refracting telescope made by Alvan Clark & Sons, and on Monday evening Bob arranged an observing session at which visitors could view the heavens with it.

Just three weeks later, on June 25th, the University of California held a one-day symposium to honor Virginia Trimble, certainly one of HAD's most distinguished and colorful members! "Trimble Fest" was organized by Lynn Cominsky (Sonoma State University), David Helfand (Columbia University), Martin Rees (Institute of Astronomy, Cambridge) and Jennifer West (U.C Irvine), and commemorated Virginias 75th birthday and the 50th anniversary of her PhD.

By all accounts it was a marvelous event, with many of our members in attendance. Speakers shared their personal remembrances of Virginia, and Joe Tenn and Jay Pasachoff gave talks titled *Virginia and the History of Astronomy* and *The Glory of Solar Eclipses*. The program is available at <https://www.physics.uci.edu/trimblefest>.



The Space Needle dominates the Seattle skyline at night.

Finally, the end of summer brought the IAU XXX General Assembly in Vienna. The International Astronomical Union was founded in July 1919 but, as General Assemblies are held only once every three years, the one in August provided an occasion to commemorate its centenary with a special symposium. *Under One Sky: the IAU Centenary Symposium* was held August 27 – 31; details may be found on the symposium website at <https://astronomy2018.univie.ac.at/symposia/symposium349/>.

Also of interest to historians of astronomy was a three-day Focus Meeting on the use of historical observations for modern astrophysics; this was held August 20-31, and details may be found at (<http://www.astro.uni-jena.de/IAU/>). In addition, a resolution on the preservation, digitization, and scientific exploration of historical astronomical data was proposed and adopted at the General Assembly; resolution B3 may be found at <https://www.iau.org/static/archives/announcement/pdf/ann18029d.pdf>

Prior to the August General Assembly, several HAD members were chosen to fill important roles within the IAU! Elizabeth Griffin was elected to the Steering Committee for IAU Division C (Education, Outreach, and Heritage), and Sara Schechner (last year's Doggett Prize winner) was elected to the Organizing Committee for IAU Commission C3 (History of Astronomy). And, as if Trimble Fest were not honor enough, Virginia Trimble is the new President of the Organizing Committee for IAU Commission G1 (Binary and Multiple Star Systems)! Congratulations to all!

The IAU's Commission C3, on the History of Astronomy, is of course closely related to our division, and many of its Committee members are also members of HAD, notably Wayne Orchiston, its President, and Jay Pasachoff, who serves on the Organizing Committee. Information about IAU Commission C3 may be found on its website at https://www.iau.org/science/scientific_bodies/commissions/C3/.

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Some HAD members enjoyed an observing session at the Chamberlin Observatory during the June AAS meeting.



AAS Past-President David Helfand presents Virginia Trimble with a framed certificate at Trimble Fest.



Joe Tenn presented a summary of Virginia's numerous talks and publications dealing with astronomical history.



Yerkes Closes After 121 Years

Jennifer Lynn Bartlett, Chair, WGPAH

On October 1, Yerkes Observatory officially closed 121 years after its dedication in 1897. The University of Chicago, which owns the facility, claims to be continuing limited support for telescope operations and for use of the photographic plate collection. However, the details for accessing these resources for research are unclear. The recently-formed Geneva Lake Astrophysics and STEAM (<https://www.glaseducation.org/>) consortium is continuing to offer education and public outreach programs at alternative locations in the area. In addition, the Yerkes Future Foundation (<https://www.officialsaveyerkes.com/>) submitted a proposal to U. Chicago to assume responsibility for the historic facility; if their negotiations converge, they plan to re-open it to the public and to preserve its legacy of scientific exploration.

The University announced its plans to close Yerkes on March 7. They invited organizations to submit Expressions of Interest outlining a proposal to take over the unique facility and its operations.



Yerkes Observatory viewed from the air

In response, community leaders from the Williams Bay-Lake Geneva area formed the YFF and are continuing to pursue it. Because the organizers have no experience running an observatory, they are working with outside experts to assist them in crafting an operational, financial, and philanthropic plan for the future of Yerkes. Since holding a public meeting on May 18, communications from the University regarding the situation have been minimal.

AAS President M. Donahue (MSU) wrote to University leaders expressing our support for the transition of Yerkes to a non-profit organization capable of maintaining it appropriately. She asked that the final plan include protections to ensure the 40" refractor remains functional, the integrity of the building and grounds be respected, and the associated collections be cataloged and maintained appropriately. The response from A. Olinto, Dean of the Division of Physical Sciences, was non-committal. Copies of both letters are available on the web page of the Working Group on the Preservation of Astronomical Heritage (WGPAH; Donahue—<https://aas.org/files/aas-donahue-yerkes-letter.pdf>; Olinto—<https://aas.org/files/uofc-olinto-yerkes-response.pdf>).

At present, the University is providing minimal maintenance to the buildings and grounds to prevent deterioration while a long-term plan for Yerkes is developed; that is, basic utilities, including the air management system for the photographic plate stacks, remain in service. An effort to document the remaining instruments and artifacts began prior to the closure and is continuing. For instance, at least part of G. Hale's Kenwood spectroheliograph may have been found.



The 40" Dome at Yerkes, photographed on June 26, 2018

Eventually, some items may be transferred to the University Special Collections or other institutions or conveyed to the new owner.

Hale's vision of Yerkes as a multi-disciplinary research facility bringing together astronomy, physics, and chemistry is considered by many to be the beginning of modern astrophysics. He commissioned the 40" refractor from Alvan Clark and Sons; it was the world's largest telescope until 1909 and remains the world's largest functional refractor. In addition, he also played a significant role in founding our Society and creating the *Astrophysical Journal*, which AAS took over from the University in 1972. O. Struve built upon Hale's vision by tying together observational and theoretical work. Yerkes was central to astronomical research throughout the 20th century. We trust that the University and YFF will come to an agreement that will enable Yerkes to inspire and educate the public for another century.

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E. E. Barnard's Mars, His Moons and His Heavens

A. M. Heiser, Vanderbilt University

William Sheehan, in the third chapter of his biography *The Immortal Fire Within: The Life and Work of Edward Emerson Barnard* (Cambridge University Press, 2007), discusses Barnard's unpublished manuscript "Mars: His Moons and His Heavens". I have transcribed this hand-written manuscript and completed a digital version. It is in the form of a Word document that is about 66 pages in length. With the permission of the Alexander Heard Library of Vanderbilt University, we can offer the transcribed digital version to any interested HAD and AAS members, via e-mail.

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The Heyden Observatory at Georgetown University

Laura Caron, Georgetown University

The Heyden Observatory, formerly the Georgetown College Observatory, built in 1843, still stands above the campus of Georgetown University in Washington, DC. Founded by Jesuit physics professor James Curley, the observatory began with a focus on education and was home to early longitude and latitude calculations. After Curley's retirement at the age of 92, the Austrian Jesuit astronomer John G. Hagen arrived to take over the responsibilities of teaching and research in the building. Hagen ordered and oversaw the installment of a 12-inch Saegmuller equatorial with lenses by John Clacey in Boston in the observatory's dome. Hagen stayed at Georgetown studying variable stars until 1906, when he returned to Europe to become director of the Vatican Observatory.

After a series of directors, in 1928, Father Paul A. McNally took over the work of the observatory. He began to conduct solar eclipse trips and focus on the photography of solar eclipses. The most prominent of his photographs was taken in 1932, when he travelled to Maine and left with what the National Geographic Society recognized as one of the best solar eclipse photos taken up to that time. This line of work was continued by the observatory's final director, Father Francis J. Heyden, who arrived in 1945. He founded the graduate and undergraduate astronomy department at Georgetown adapting the program to ensure that his students would be able to work full-time in Washington, DC while also taking classes. Heyden welcomed over 90 graduate students, including females, African-Americans, and others from disadvantaged backgrounds.

But, in the late 1960s, facing various financial pressures, the university decided to close the observatory, despite its success and the large

number of graduate students still studying there. The program was officially closed in 1972. The building was dedicated in Heyden's name in 1987, in recognition of his outstanding work as a teacher and his generous care for his students.

The work of several dedicated students made sure that the observatory survived. Several students including Patrick Seitzer, Daniel Fleisch and Alice Monet founded the Georgetown University Astronomical Society, which continues today as the only group that uses the dome and historical telescope. The Astronomical Society has fought for the protection, preservation, and restoration of the building and its instruments, but continues to face challenges as it works with the university administration as they try to balance the desire to preserve the observatory and its equipment with funding and other resource constraints. The remaining equipment includes two Molyneux sidereal clocks from 1843, the 12-inch Saegmuller equatorial, a 4-inch Troughton & Simms telescope from the early 1840s, and a 5-inch Ross photographic lens. Along with these instruments are many photographic plates dating from as early as 1897.

The Astronomical Society hosts open houses at the observatory on Tuesday nights from 8:00 until 10:00 pm during the academic year, and offers tours by appointment. We host speakers from across all fields in astronomy, and would welcome anyone who would might want to join us for a tour or an event to contact us through [our website](#), via email (astronomicalsociety@georgetown.edu), or on [Facebook](#).

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The Heyden Observatory at Georgetown University

The answer to the question posed in Joe's column is that one-half the doctorates in astronomy in our list have been awarded since the year 2000.



The Astronomy Genealogy Project

Joe Tenn, Sonoma State University

The Astronomy Genealogy Project (AstroGen: <http://astrogen.aas.org/>) is alive and well. At the January HAD meeting in Seattle I will present my sixth annual progress report. In addition there will be a poster paper (coauthored with Arnold Rots and Peter Broughton) intended to make the AAS membership more aware of AstroGen.

We've compiled information about some 27,000 astronomy-related doctoral theses, including what we believe to be nearly complete coverage from the beginning of the modern doctorate in the early nineteenth century, for twenty-one countries. What do you suppose is the median year for these doctorates? (The answer appears below at left.) The great preponderance of our data has been obtained online, but we have had people go into a few libraries to look at old theses.

Meanwhile the AAS has eliminated its IT department, and has outsourced all such work. I hope to be working with the new IT firm soon on the website, and we are working feverishly to get ready. If you could spare a few hours, we could really use some short-term help checking data and correcting errors in the database, which currently resides in spreadsheets. If you have more time and are willing to take on a lengthier task, we would warmly welcome you to the AstroGen team. You could, for example, compile the theses of another country; is there one you have an affinity to and whose libraries you could negotiate (online)? Most current theses are in English, but older ones are likely to be in the language of the country, and finding one's way through a library may require language skills. Or perhaps you'd be willing to visit a nearby university library and determine the advisors of theses for which we lack information.

If you think you might be interested in helping, please contact me. And thank you!

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14th Biennial History of Astronomy Workshop: Call for Proposals

Sarah Reynolds, Indiana University, Bloomington

The Fourteenth Biennial History of Astronomy Workshop (NDXIV) will be held 2019 June 19 - 23 at the University of Notre Dame, Indiana, and will include a one-day trip to the Adler Planetarium in Chicago.

Theme: Images in the History of Astronomy

This year's theme focuses on the impact that images, both captured and created, have had on the history of astronomy. With this theme, we recognize a broad variety of images that have served as a medium for advances and discoveries in astronomy, including early depictions of constellations and cosmologies; the many centuries of images created to record and convey astronomical knowledge; artistic and symbolic uses of astronomical imagery; the development of the telescope, the camera, and other technologies for manipulating and capturing physical images; and the ongoing research use and potent societal impact of astronomical photography and visual data-representations today. As in previous years, this theme is intended to encompass a number of different time periods and geographical locations.

Call for Proposals

We will accept proposals for both papers and sessions. Single papers will probably have to be 15–20 minutes in length, depending upon the number of submissions. Organized sessions, with multiple papers addressing a particular question or topic, can contain papers of longer length, but must incorporate significant time for discussion. Proposals that directly address the workshop theme (see above) will receive preferential treatment, and proposals from graduate students and recent PhDs are especially welcomed. Proposals for papers should include a title and a one-paragraph abstract; session proposals should identify all presenters as well as titles and one-

paragraph abstracts for each presenter. All proposals, including a one-page CV for all presenters, should be sent by February 1, 2019, to Elizabeth Hamm at elizabeth.hamm@stmarys-ca.edu. Submissions will be shared with the review committee: Elizabeth Hamm, Jacqueline Feke, Scott Trigg, Stephen Case, and Pedro Raposo. Final decisions on paper and session acceptance will be announced around March 1. All presenters will be expected to register for the workshop and pay the registration fee. Questions regarding the workshop may be addressed to Sarah J. Reynolds at reynoldssj@uindy.edu.

The Adler Planetarium will bestow the Adler-Mansfield Prize on the author of an outstanding presentation given during the 2019 History of Astronomy Workshop. The award includes a modest stipend and travel expenses to the Adler Planetarium if the awardee wishes to carry out onsite research in the Adler's collections.

Invited Speaker

Our invited speaker will be Omar Nasim, Professor for the History of Science at the University of Regensburg, Germany, whose interdisciplinary research focuses on the practices of visualization and image-making in the observational sciences, especially 19th- and 20th-century astronomy. In his book *Observing by Hand: Sketching the Nebulae in the Nineteenth Century*, winner of the History of Science Society's Pfizer Award in 2016, Dr. Nasim brought both historical depth and philosophical insight into examining the rich and productive relationship between the acts of seeing, drawing, and knowing. With ongoing research in the history of astrophotography, Omar Nasim continues to explore the way images and visual representations are constructed, and how such constructions reflect a complex and dynamic interplay between science, technology, philosophy, and even art.

For further information, please visit our website at <http://www.nd.edu/~histast>.

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Historical Astronomy in Chile

Nicolle Zellner, Albion College

Chile is quickly becoming the mecca for both amateur and professional astronomers who wish to view the night sky mostly unhindered by light pollution; by the mid-2020s, Chile will be home to over 70% of the world's telescopes greater than 1 m in diameter. However, for thousands of years before now, Chilean skies were observed by generations of inhabitants with their own observations and stories of the night sky.

On a recent trip to Chile as a member of the fifth cohort of the Astronomy in Chile Education Ambassadors Program (ACEAP; #ACEAP2018 on twitter), I had the privilege of touring a few of the biggest and best telescopes in the world, which are partly funded by the National Science Foundation, and learning about the science they are conducting. We also learned about the

education and public outreach (EPO) activities being conducted by staff at each of the professional sites.

At the Cerro Tololo International Observatory (CTIO) near La Serena, we toured the 4-m Victor Blanco telescope. This telescope has been in the news recently for the discovery of 10 new moons of Jupiter, and it currently houses the DECam, dedicated to surveying and characterizing the universe's dark energy. At this site, many in the group stayed up all night, doing a little bit of astrophotography (Figure 1) and witnessing the clearest, darkest skies we had ever seen, thanks to light pollution control that was begun in earnest in Chile 20 years ago (Astronomical Heritage, 2014).

Historically, the astronomy in the area is rich but unknown. The Diaguita and Molle cultures in the immediately surrounding area are now extinct, though there are two examples of rock art (not necessarily connected with astronomy; Astronomical Heritage, 2014) on Cerro Pachón, the neighboring mountain to Cerro Tololo and the location of the Gemini South, LSST, and SOAR telescopes. Much of this area has not been explored, so, in my opinion, it is ripe for an investigation of the astronomy that was conducted and recorded by previous inhabitants. Indeed, a statistical study of Molle sites might reveal further astronomically relevant information (Astronomical Heritage, 2014).



A portion of the Milky Way and the Large Magellanic Cloud are seen with the Blanco 4-m telescope dome (at CTIO) in the foreground. The reflection of the Milky Way can be seen on the dome; Crux (the Southern Cross) and the Coal Sack Nebula can be seen above the dome. Photo by N. Zellner (ACEAP/NSF).

With its status as a “dark” world heritage site (Science Diplomacy, 2017), Astronomy is important to Chile’s economy. In May 2018, the Chilean government created a science ministry to promote science, engineering, and other technical skills and to support the development of these skills in the workforce of the future. Thus, when astronomers used the 4-m Victor Blanco telescope at CTIO and detected [stellar streams](#), the EPO staff quickly used this opportunity to engage local school children. These stellar streams provide evidence of ancient galaxies that were ripped apart by the Milky Way and are now being named by area school children after indigenous Chilean and Australian words for water. Not a lot is known about how the traditional inhabitants of Chile viewed the night sky, but studies are underway. In particular, the Mapuche culture in the southern part of Chile is receiving renewed attention by Yasmin Catricheo, one of my ACEAP teammates, a Physics teacher at Concepción School in Chillan, Chile, and of Mapuche heritage.

Due to ACEAP, I learned about the efforts to bring Chilean astronomy to local schools and to revive the traditional cultural history. In the next two years, Chile will experience two total solar eclipses, and the astrotourism (Astrotourism, 2015) industry is eagerly awaiting the influx of visitors. During the ACEAP trip, we also visited three tourist observatories around the country, and all of the staff members, as well as those at the professional observatories, are very excited to show off their solar eclipses, dark skies, and astronomical heritage to everyone.

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Pedro M. P. Raposo, Adler Planetarium

Sir John Herschel’s correspondence and Epsilon

Since 2009, the Adler Planetarium has hosted an online database dedicated to the correspondence of Sir John Herschel (1792-1871). This database was prepared by Marvin Bolt and Steven Lucy and conceived as an online counterpart to the work of Michael J. Crowe (editor), David R. Dyck, and James J. Kevin (associate editors), titled *Calendar of the Correspondence of Sir John Herschel* (Cambridge Univ. Press, 1998). More information about the database and its parent work can be found [here](#).

The content of the database has now been integrated with [Epsilon](#), a collaborative digital framework for nineteenth-century scientific correspondence recently launched by the University of Cambridge, UK. Records for Sir John Herschel’s correspondence can now be searched together with those concerning the letters of Charles Darwin, Michael Faraday, John Tyndall, and other prominent names in nineteenth-century science.

Stemming from the [Darwin Correspondence Project](#), Epsilon starts by covering a group of eight collections (physically located in the UK, continental Europe, the US, and Australia), including metadata for nearly 45,000 letters. In most cases, transcriptions are available. In the case of John Herschel’s correspondence, a synopsis for each letter is provided. This initiative might be a first step towards a comprehensive project to transcribe and/or digitize his letters, which originals are preserved in various institutions.

The Adler Planetarium is analyzing the possibility of further contributing to Epsilon with metadata for the letters of the Alvan Clark & Sons firm in the Planetarium’s archives. The Epsilon team is also looking for other potential partners. If you

work with collections of letters relevant to the history of astronomy in the nineteenth century and would like to propose a collaboration, please refer to [this page](#).

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Two New Books

Ken Rumstay, Valdosta State University

We conclude our newsletter with a look at two books recently published by HAD members.

In *Astrobiology, Discovery, and Societal Impact* (Cambridge University Press, 2018 ISBN 978-1108426763), Steven Dick presents his analysis of what it would mean for humanity were we to discover alien life. In his review, Paul Davies (Arizona State University) states that

Such an event would utterly transform our worldview. Steven J. Dick, the world's foremost scholar in this field, leads us from the lessons of history to the tantalizing promise of astrobiology's emerging technologies. Admirably, he does not shy away from confronting the ethical, societal and theological ramifications that most commentators fudge. This is a 'must-buy' book for anyone who thinks seriously about the age-old question of whether or not we alone in the universe.'

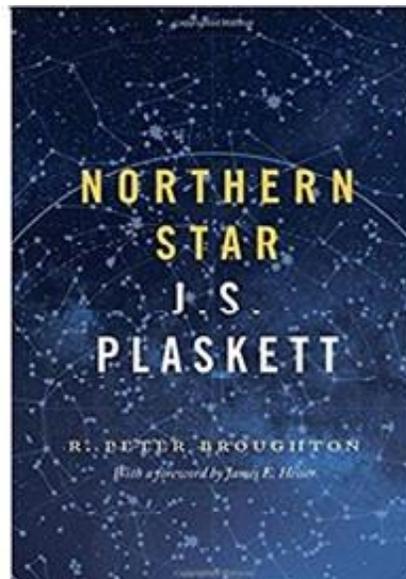
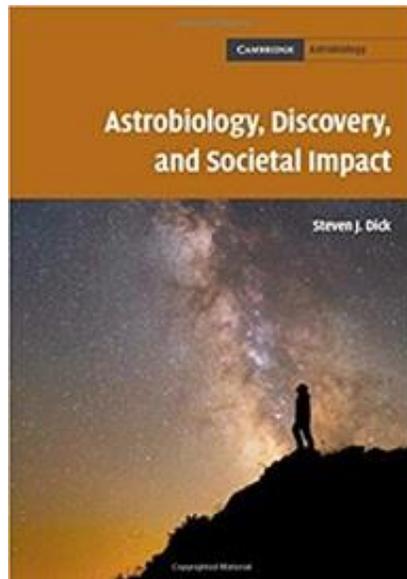
Covering everything from microbes to SETI and METI, Steven (who Chaired our division from 1993 until 1995) has written this book for a broad audience. It would be suitable for any university class addressing the societal impact of science.

The second book, *Northern Star: J.S. Plaskett* (University of Toronto Press, 2018, ISBN 978-1442630178) is by Peter Broughton, with a forward by James E. Hesser. Peter was President of the Royal Astronomical Society of Canada from 1992 to 1994, and joined HAD in 2002. He has written a comprehensive biography of John S. Plaskett, Canada's pre-eminent astronomer during the first half of the 20th century. The publisher's description states:

Northern Star explores Plaskett's unorthodox and fascinating life from his rural roots near Woodstock, Ontario through his days as a technician at the University of Toronto to his initiation in astronomy at the Dominion Observatory in Ottawa. His greatest achievements followed after he persuaded the government of Canada, in spite of the strictures of the First World War, to finance what was then the world's largest operational telescope. Peter Broughton's accessible and engaging prose illuminates Plaskett's numerous achievements and the social, political, economic, and religious milieu surrounding them. This richly illustrated volume invites readers to understand the pull that Plaskett's passions, personality, and motivations exerted on him during his lifetime.

I heartily recommend both of these fine books for your consideration, and have ordered both for my university's library!

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A complete version of this newsletter, with color photographs and active links, may be found at <https://had.aas.org/sites/had.aas.org/files/HADN92.pdf>.

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