



H·A·D NEWS

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

Number 102 * November 2023

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Wayne Orchiston Wins the 2024 LeRoy E. Doggett Prize!

Terry Oswalt

Embry-Riddle Aeronautical University

The Historical Astronomy Division's Prize Committee is pleased to announce that Dr. Wayne Orchiston is the recipient of the 2024 LeRoy E. Doggett Prize for Historical Astronomy. The Doggett Prize is awarded biennially to an individual who has significantly influenced the field of the history of our discipline. During a career spanning six decades, Dr. Orchiston has made many contributions to the history of astronomy, only a few of which are outlined below.

Dr. Orchiston co-founded and serves as Co-Editor of the *Journal of Astronomical History and Heritage (JAHH)*. He is the original editor of Springer's Historical and Cultural Astronomy book series, as well as the Radio Astronomy Section Editor for Springer's third edition of the *Biographical Encyclopedia of Astronomers*. He is also author of the book *Nautical Astronomy in New Zealand: The Voyages of James Cook* (Carter Observatory, 1998).

Dr. Orchiston is currently on the faculty of the University of Science and Technology of China. He is also an Adjunct Professor in the Centre for Astrophysics, University of Southern Queensland, Toowoomba, Queensland, Australia where he supervises doctoral students in the History of Astronomy.

Dr. Orchiston began his career in 1961 as a Technical Assistant in the Division of Radio-



Wayne Orchiston, recipient of the 2024 LeRoy E. Doggett Prize for Historical Astronomy.

physics at the Commonwealth Scientific and Industrial Research Organization (CSIRO) in Sydney, Australia in 1961. Concurrently, as a part-time student, he earned a First Class B.A. Honours degree, was awarded the University Medal, and went on to complete a Ph.D. in environmental prehistory at the University of Sydney. In 1973 he accepted a post-doctoral position in Prehistory and Ethno-history at the University of Melbourne, which signaled his intense passion for the history of astronomy and, especially, ethnoastronomy. For example, at James Cook University in Townsville, Queensland, Australia, Dr. Orchiston launched the world's first part-time off-campus History of Astronomy doctoral program. Since then, Dr. Orchiston has held a series of academic and professional society positions, with increasing focus on the international aspects of astronomical history.

Dr. Orchiston is a prolific writer, with more than 500 astronomy publications, including fifteen books between 1998 and 2021. Many of these have become the standard reference works for the astronomical histories of New Zealand, Australia, Southeast Asia and Asia. He has also authored important reviews of the history of radio astronomy in Australia, India, Japan and New Zealand.

The Historical Astronomy Division is pleased to recognize Dr. Orchiston for his outstanding record of scholarship and his many contributions to the history of astronomy. The award will be presented to him at a plenary session of the 243rd meeting of the American Astronomical Society, to be held January 2024 in New Orleans, Louisiana.

terry.oswalt@erau.edu

The January 2024 HAD Meeting

Ken Rumstay, Valdosta State University (Emeritus)

The Historical Astronomy Division will meet next January in New Orleans, in conjunction with the 243rd meeting of the American Astronomical Society. Two special sessions will highlight the meeting, with additional sessions for contributed oral and iPoster presentations.

In our last issue of *HAD News*, I wrote:

“Hybrid AAS (and HAD) meetings will, it appears, be the norm for the foreseeable future.”

I need to stop trying to predict the future! After analyzing costs and registration figures from the past three meetings, the AAS Board of Trustees has determined that hybrid meetings are not sustainable, and that next January's meeting will be in-person only. I quote from their [report](#) of August 4th:

“Our addition of a virtual participation component was intended to increase meeting accessibility in uncertain times, improve inclusivity (particularly amid rising costs for registration and travel), and drive down environmental impacts.

“However, the actual number of active virtual participants at the past three hybrid meetings has been extremely low, with an average active virtual participation rate of 1.9% of all meeting registrants across every session for AAS 240, 241, and 242.

Note that only ~12% of registrants attend virtually, and only ~20% of those virtual attendees actively engage with the meeting content. Indeed, the Zoom rooms for the majority of AAS sessions sit nearly or completely empty.



The New Orleans Ernest N. Morial Convention Center, site of the January 2024 AAS and HAD meeting.

As I'd mentioned last time, making the entire January 2023 meeting in Seattle hybrid entailed an additional cost of over \$200,000. While I regret that this decision will prevent some of our members (who may be unable to travel to New Orleans for any of a variety of reasons) from participating, I can't fault the logic behind it.

The schedule of events for the January 2024 meeting in New Orleans is as follows:

Sunday, January 7th

- 2:00 – 3:30 pm HAD I (special session¹)
- 5:30 – 6:30 pm WGRAH meeting
- 7:00 – 8:30 pm AAS reception

Monday, January 8th

- 10:00 – 11:30 am HAD II (special session²)
- 12:45 – 1:45 pm HAD Town Hall
- 2:00 – 3:30 pm HAD III (contributed talks)
- 5:30 – 6:30 pm HAD IV (iPoster session)
- 7:00 – 8:00 pm Doggett Prize Lecture

Tuesday, January 9th

- 10:00 - 11:30 am HAD V (contributed talks)

¹*Astronomy During Epidemics and Pandemics*

²*AAS 125th Anniversary – Celebrating the History of AAS Divisions*

Regarding Monday afternoon's HAD IV session, please note that the AAS no longer allows traditional (print) or iPosterPlus presentations.

The HAD meeting schedule, with abstracts, may be viewed on our website at [https://had.aas.org/sites/had.aas.org/files/HAD%20meeting%20schedule%20and%20abstracts%20\(January%202024\).pdf](https://had.aas.org/sites/had.aas.org/files/HAD%20meeting%20schedule%20and%20abstracts%20(January%202024).pdf). The block schedule for the AAS meeting may be viewed at <https://submissions.miramart.com/AAS243/Itinerary/EventsAAG.aspx>. While at the meeting, be sure to look at the publishers' booths in the Exhibit Hall!

HAD will maintain a table at the American Astronomical Society booth throughout the AAS meeting. We're adorning our space with two banners depicting famous astronomers; these were prepared years ago by Crystal Tinch (AAS Communications Manager) with input from the HAD Committee. If you would be willing to supervise the HAD table during a coffee break or poster session, please let me know!

The HAD meeting in New Orleans promises to be an exciting one. We hope to see you there!

hadsec@aas.org



From the Chair

Terry Oswalt

Embry-Riddle Aeronautical University

HAD has been very busy since our spring Newsletter. We're planning a major presence at the January AAS 243 meeting in New Orleans, and we invite you to join us!

The AAS 243 meeting will be the venue for five HAD sessions and several very special events during the first three days in New Orleans. On Sunday, January 7th, Jarita Holbrook will host a special session "HAD I: Astronomy During Epidemics and Pandemics". Later that afternoon, Jennifer Bartlett will lead a splinter session of the Working Group on the Preservation of Astronomical Heritage (WGRAH). As you may already know, the AAS is celebrating its 125th anniversary at this meeting. Following up on this theme and an idea I mentioned in our last newsletter, HAD has invited all six AAS divisions to contribute speakers to a very first "HAD II: History of the AAS Divisions" session on Monday morning, January 8th. There has been so much interest in the idea that an extra session with other division history talks (HAD III) has been added to Monday afternoon, just after the HAD Town Hall meeting. Rounding out the afternoon is the HAD IV iPoster session. A nice assortment of other contributed talks (HAD V) has been added to the Tuesday morning schedule.

Monday will culminate in a special evening AAS-sponsored reception and plenary talk celebrating the recipient of the 2024 LeRoy E. Doggett Prize for Historical Astronomy. The Doggett Prize is awarded biennially to an individual who has significantly influenced the study of astronomical history by a career-long effort. This year, we honor Dr. Wayne Orchiston from the University of Science and Technology of China and also Adjunct Professor at the University of Southern

Queensland, Australia. HAD is very pleased to recognize Dr. Orchiston’s outstanding lifetime of scholarship and his many contributions to the history of astronomy.

Over the past few months, the HAD leadership has been discussing possible new initiatives. Did you know that *more than one third* of our members are students (see the figure below)? How might we best serve and engage you, our next generation of astronomical historians? How best might we serve and engage you younger members of our division? We’re working towards having a social media presence – please contact me if you’d like to be involved. Having representation on our leadership team seems appropriate – are you interested? How might we improve diversity, broadly defined, within our division?

HAD members Loretta Cannon and Teresa Wilson are developing an HAD podcast; Loretta is on the HAD leadership committee, and Teresa founded HAD’s This Month in Astronomical History column. While they haven’t chosen a single, specific format, they are considering (a) interviews with astronomers who were involved with significant NASA missions from the prior century, (b) two-person astro history discussions patterned on America’s Test Kitchen co-hosts Bridget Lancaster and Julia Collin Davison. Dr. Pamela Gay with the Planetary Science Institute is providing advice and guidance; she co-hosts

AstronomyCast and is Director of CosmoQuest. Loretta and Teresa may have a sample podcast available for AAS243. The HAD Committee has brainstormed other ideas for engagement – how about a zoom-based Astronomy History series? Let us hear your suggestions on what initiatives we should pursue, and volunteer to help make your idea(s) work! Please contact any HAD leadership committee member with questions; our contact information is [on our HAD website](#).

Alex King at the AAS is updating all the Division websites. Keep an eye out for a new look to the HAD page. You’ll still find titles and links for history-related presentations at AAS meetings, a complete archive of *HAD News*, links to AAS obituaries, an archive of This Month in Astronomical History, links to history of astronomy resources and a link to AstroGen.

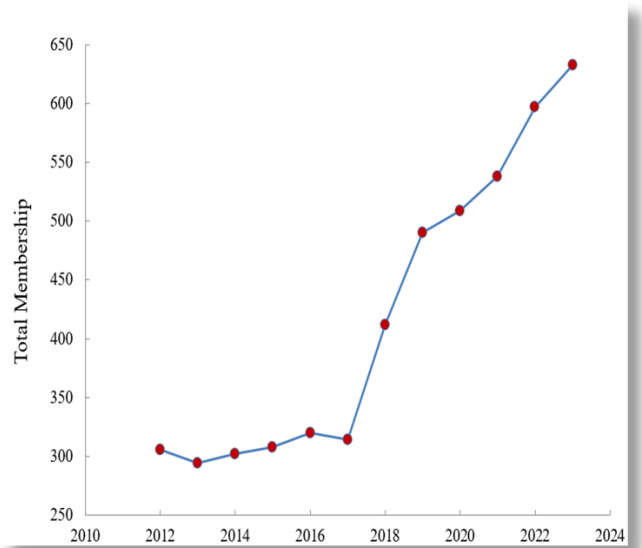
On a bittersweet note, Ken Rumstay’s term as HAD Secretary-Treasurer will be ending in January. HAD has been extremely lucky to have a person of Ken’s caliber, commitment to HAD and its members, and attention to detail these past eight years. You can bet we’ll figure out some way of keeping him engaged in our division! At the January AAS meeting Ken will officially hand the reigns over to Susana Deustua (more on Susana in the next Newsletter). Meanwhile, we’re looking forward to seeing you in New Orleans, in January!

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HAD Membership as of October 17, 2023

#	Member Classification
174	F AAS Full Member
148	E AAS Full Emeritus Member
117	GR AAS Graduate Student Member
108	JR AAS Undergraduate Student Member
31	AM AAS Amateur Affiliate
20	HAD HAD Division Affiliate only
22	ED AAS Educator Affiliate
2	DA Division Affiliate (two or more divisions)
5	IA AAS International Affiliate
4	Staff AAS staff member
1	P AAS Patron Member
1	SPS SPS Member

Total: 633



Current HAD membership, by category

Growth of HAD over the past decade



From the Vice Chair

J. Allyn Smith, Austin Peay State University

As the fall semester starts to wind down, I'm looking forward to New Orleans in January 2024. The meeting promises to be good as we celebrate the 125th anniversary of the AAS. HAD has organized a special session with each of the divisions getting an opportunity to present important aspects of their work over some part of the past 125 years. This session will take place Monday morning and will set the tone for the rest of the meeting so you can reflect on just how far we have come as an organization and a science in the time since our founding.

There has been an interesting discussion on the astrolearner email server in the past month or so concerning when the Gen. Ed. ASTRO-101 course came into being. One of the respondents suggested that HAD should take up this work to look at the history and evolution of the University Astronomy classes and how we arrived at the current situation. I find this to be an interesting area, especially since I teach those classes each year. I would welcome any inputs and background knowledge in the field and I will begin to put this together.

One of my primary functions as Vice Chair is to manage obituaries for our deceased colleagues, which are then published by the AAS online (<https://baas.aas.org/obituaries>) – this is one of the updated AAS webpages. Over the last few months, I have received several new obituaries (*thank you*), and I am in the process of finalizing them for publication online. Please bear with me as I made slow progress, but it is progress now versus drowning.”

I will close again without haiku. I look forward to seeing you all in New Orleans; it will be upon us before we know it.

smithj@apsu.edu



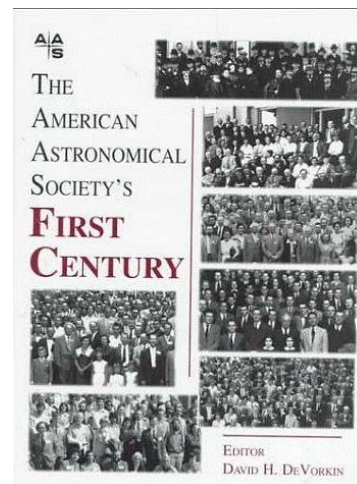
From the Secretary-Treasurer

Ken Rumstay, Valdosta State University (Emeritus)

Greetings everyone! As Terry noted, my term as your Secretary-Treasurer will end with the closing of the HAD Town Hall on January 8th. I have most thoroughly enjoyed serving in this capacity, and would gladly continue, were I not prohibited from doing so by our bylaws (available on our website at <https://had.aas.org/sites/had.aas.org/files/2020HADBylaws.pdf>) which state (Article III, Section 3): *The Secretary-Treasurer shall not serve more than two consecutive full terms.*

Dr. Susana Deustua, of the National Institute of Standards and Technology, has kindly volunteered to assume this office in January. We thank her for her willingness to serve, and I shall be glad to assist her however I may.

At our January 2024 meeting in New Orleans, we shall all celebrate the quasiquintennial (the 125th anniversary) of the founding of the American Astronomical Society. Being of advanced age, it doesn't seem to me that long since we celebrated the AAS Centennial in Chicago in the spring of 1999! Remember that wonderful picnic at Yerkes?



The volume prepared for the AAS Centennial in 1999.

The American Astronomical Society was founded in 1899, primarily through the efforts of George Ellery Hale (who also created the *Astrophysical Journal*) and Simon Newcomb. It was originally called the Astronomical and Astrophysical Society of America, and at one point the name American Astrophysical Society was proposed. Its current name became official in 1915.

To learn more about the history of the AAS, look on our website at <https://had.aas.org/resources/aashistory> or purchase a copy of *The American Astronomical Society's First Century*, edited by David DeVorkin (ISBN 978-1563966835).

At the January meeting we shall also celebrate the 175th anniversary of *The Astronomical Journal*. Established in 1849 by Benjamin A. Gould, 166 volumes (there was a brief hiatus during the Civil War) of the *AJ* have been published to date!

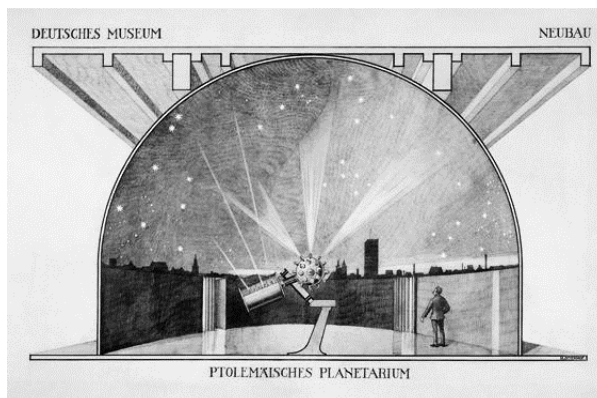
There is one more centennial of note this year, international in scope, which is of personal interest to me. For twenty-five years of my time at Valdosta State University, I served as Director of its Planetarium and Observatory, and one of my greatest joys was to provide planetarium shows to the public, including hordes of visiting school children. Our planetarium was originally equipped with a Spitz A3P optomechanical projector (the most ubiquitous device of its kind in America during the late 1960s); this was replaced with a Digitalis[®] digital projector in 2011.

Although the Atwood Sphere (now at the Adler in Chicago) predates it by a decade, what is widely considered to be the world's first true projection planetarium was unveiled in Jena, Germany in 1923. The ZEISS Model I projector consisted of two gear-coupled components, a sphere carrying the projectors for the stars and a "planet cage" for the display of the Sun, Moon and five naked-eye planets. A motorized drive made possible the simulation of annual motion at advanced speed, while rotation of the entire projector around a polar axis simulated diurnal motion. This provided the basic design for optomechanical projectors for the remainder of the century!

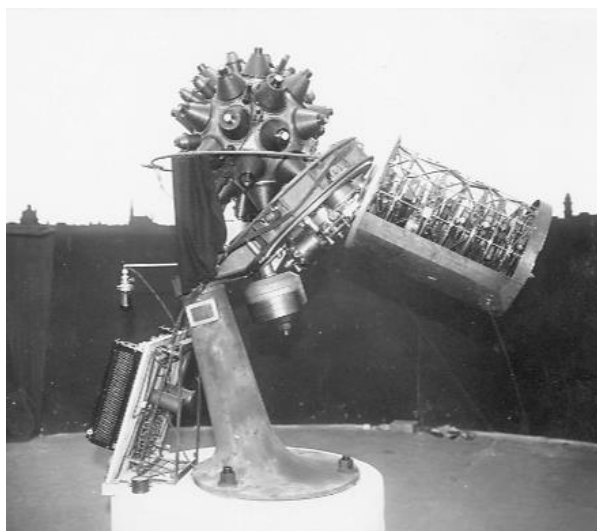
To learn more about the centennial celebration of "the wonder of Jena," visit the Centennial of the Planetarium website at <https://planetarium100.org/>.

Thank you all for allowing me to serve HAD for these past eight years. I hope to see many of you in New Orleans in January!

hadsec@aas.org



Drawing of the projection planetarium in Munich, ca. 1923. At a meeting in Munich on 24 February 1914 an engineer at the Zeiss optics firm named Walther Bauersfeld conceived the idea of an optical device to project the Sun, Moon, and planets on the inside of a dome.



The ZEISS Model I optomechanical projector. It was commissioned on 16 September 1923 and demonstrated to representatives of the Deutsches Museum the following month. The first public presentation took place in 1924.



The Zeiss-Planetarium in Jena as it appears today. Opened on 18 July 1926, it is the oldest continuously-operating public planetarium in the world.

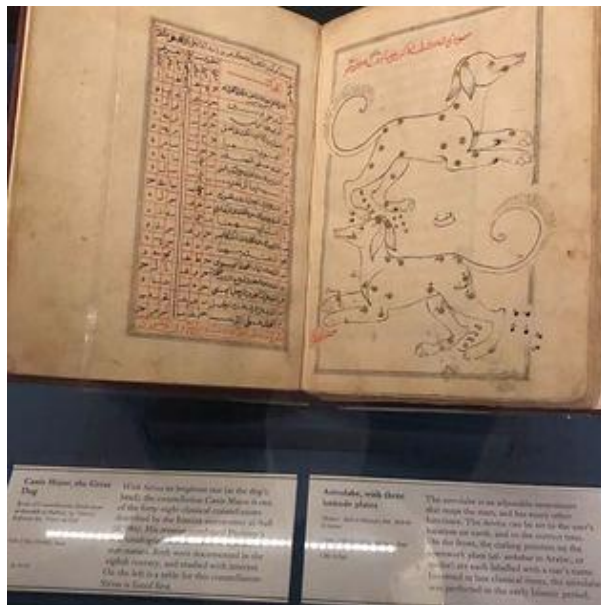


From the Past Chair: Two Very Rare Books on Display in Dublin

Kevin Krisciunas, Texas A&M University

This past June I took a 12 day trip to Ireland, a place I had wanted to visit my whole adult life. This involved doing such touristy things as drinking excellent beer, seeing the Cliffs of Moher, kissing the Blarney Stone, and attending an Irish music and dance performance in Killarney.

An Irish friend suggested that I visit the Chester Beatty Library in Dublin. Beatty amassed many artifacts from around the world, including 2700 Arabic manuscripts. Here is perhaps the most valuable, an Iranian copy (from 1504 AD) of *The Book of Fixed Stars*, written by 'Abd al-Rahman ibn 'Umar al-Sufi in 964 AD. It is from this book that we get many of the popular names of the naked eye stars, such as Betelgeuse, Alpheratz, and Zubenelgenubi.

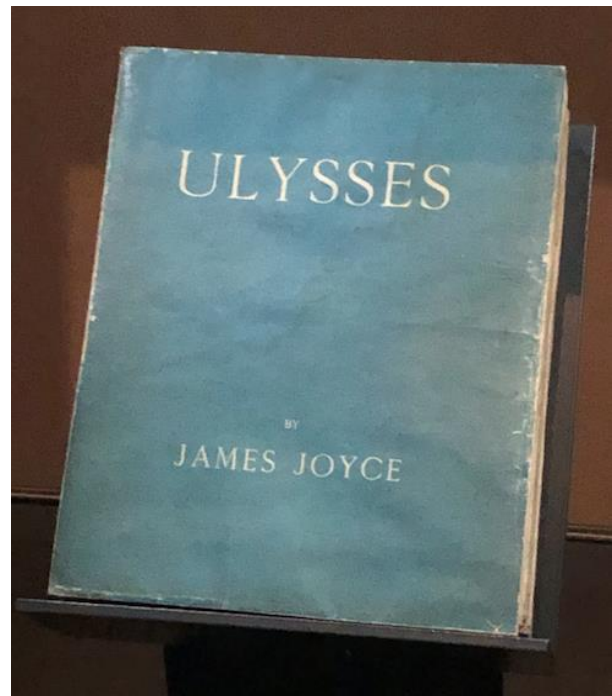


The image above depicts two pages from *The Book of Fixed Stars*. The museum’s caption reads, in part, as follows:

“With Sirius its brightest star (at the dog’s head), the constellation Canis Major is one of the forty-eight classical constellations described by the Iranian astronomer al-Sufi (d. 986 AD). His treatise combined Ptolemy’s star catalogue with the Arabian system of star names.

Both were documented in the eighth century, and studied with interest. On the left is a table for this constellation: Sirius is listed first.”

At the Museum of Literature of Ireland (MoLI), sitting in a bullet-proof enclosure, is the rarest of copies of the first edition (1922) of James Joyce’s famous novel, *Ulysses*. This is copy number one of 100 copies printed on special Dutch paper, signed and numbered by the author. It was presented to Joyce’s patron, Harriet Shaw Weaver, who kept it safe and sound for many years. After her death it was given to the Irish government. It’s hard to estimate how much this copy is worth, but I was told that copy number 30, which resides at Davy Byrne’s Pub in Dublin, is worth about \$250,000.



Ulysses is a roughly 700 page stream-of-consciousness novel that takes place in Dublin over a 24 hour period starting on the morning of June 16, 1904. In my seven days in Dublin I successfully located the main character’s house, government buildings, a chemist shop, pubs, hotels, bridges, Glasnevin Cemetery, and streets mentioned in at least ten of the eighteen chapters of the book.

Congratulations to Three HAD Members!

Ken Rumstay, Valdosta State University (Emeritus)

Three of our members have recently been honored, and we offer our congratulations to them here!



First up is Robert W. Smith (University of Alberta, Edmonton, Canada), who received the 2023 Paul Bunge Prize of the Hans R. Jenemann Foundation. This prize is awarded jointly by the German Chemical Society (GDCh) and the German Bunsen Society for Physical Chemistry (DBG). It honors outstanding work on the history of scientific instruments. Robert was honored for lifetime achievements, including his inspirational contributions on space telescopes.

The award was made May 31st at the conference “Writing the History of Scientific Instruments” in Munich, Germany. Additional information about the award may be found on the *ChemistryEurope* website at <https://www.chemistryviews.org/paul-bunge-prize-2023-for-robert-w-smith/>.

Readers will recall that, among numerous other honors, Dr. Smith was awarded HAD’s Leroy E. Doggett Prize in 2020.



Long-time HAD member, and frequent contributor to these pages, Virginia Trimble (University of California, Irvine) recently received the 2024 Abraham Pais Prize for History of Physics by the American Physical Society. The citation notes that she has received this honor “For extensive contributions to the history of astrophysics, particularly for reference works, articles, and biographical essays, especially works that include female astronomers, and for supporting the history of the physics community.”

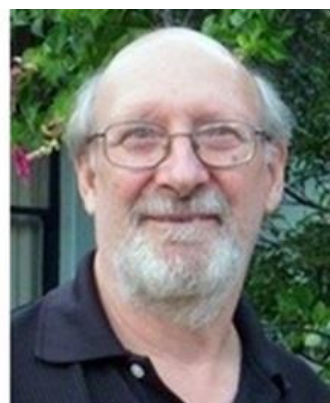
The award announcement went on to note that Dr. Trimble is a fellow of the American Physical Society, the American Astronomical Society, the American Association for the Advancement of Science, and Sigma Xi; she is a member of the National Society of Black Physicists, the International Astronomical Union, the American Academy of Arts and Sciences, and “another double handful of professional organizations.” Previously, she has received the AAS George van Biesbroeck Prize (2010), the Olcott Prize of the AAVSO (2018), the AIP Andrew Gemant Award (2019), and the first Keplerus Ellipsis Award of Societas Astronomia Nova (2020). Read more about the Abraham Pais Prize at https://aps.org/programs/honors/prizes/prizerecipient.cfm?first_nm=Virginia&last_nm=Trimble&year=2024.



This year’s LeRoy E. Doggett Prize winner Wayne Orchiston reports that, at the June 2023 Annual Conference of the Royal Astronomical Society of New Zealand, he was elected an Honorary Member of that society. He notes that this “was a wonderful and unexpected honour for me, as these are reserved for senior international astronomers with close New Zealand links. Following Brian Warner’s recent death, there are only three of us.”

This year has been quite eventful for Wayne! Springer has just released *Essays in Astronomical History and Heritage: A Tribute to Wayne Orchiston on His 80th Birthday*. This book was edited by two of Wayne’s former PhD students: Steven Gullberg (University of Oklahoma) and Peter Robertson (University of Melbourne). You can learn more about this wonderful volume on page twenty-three.

On behalf of the Historical Astronomy Division, we offer congratulations to these three members!



Three distinguished HAD members. From left to right: Robert Smith, Virginia Trimble, and Wayne Orchiston



The Latest Buzz from Holmdel

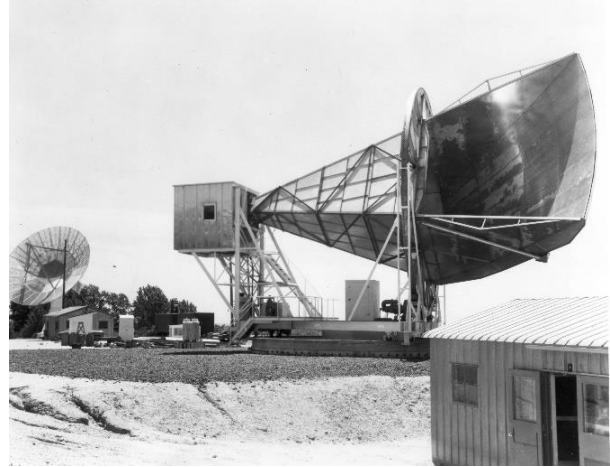
Jennifer Lynn Bartlett, Chair, WGPAH

On October 12, the Holmdel Township Committee and Crawford Hill Holdings LLC announced an agreement that would preserve the horn antenna through which Arno Penzias and Robert Wilson first detected the Cosmic Microwave Background (CMB) radiation at its historic location. The horn will be the centerpiece of a 35-acre park perched on the highest point in Monmouth County. Crawford Hill Holdings is the private development company that currently owns the site.

The Township's Open Space Trust Fund will pay \$5.5 million for the land, including the horn, but Crawford Hill Holdings will donate \$750,000 for conserving the antenna, repaving access roads, and a possible visitor center. A study commissioned by the township valued the tracts at \$1.92 million. However, Crawford Hill Holdings, which is owned by Rakesh Antala, acquired the property including an additional seven acres around the former Nokia facility for \$3.7 million in 2020.

In a letter to Mayor Domenico J. Luccarelli earlier this year, AAS president Kelsey Johnson [emphasized the importance of this instrument](#) in the development of our field and encouraged the community to find appropriate means to preserve this iconic antenna. The Institute of Electrical and Electronics Engineers (IEEE) History Center and the Scientific Instrument Commission of the International Union for the History and Philosophy of Science and Technology were also among the international organizations supporting local efforts to prevent relocation or demolition of the horn. The instrument, and its nearby control shed ("building 3"), has been a National Historic Landmark (NHL) since 1990 and an American Physical Society Historic Site since 2008.

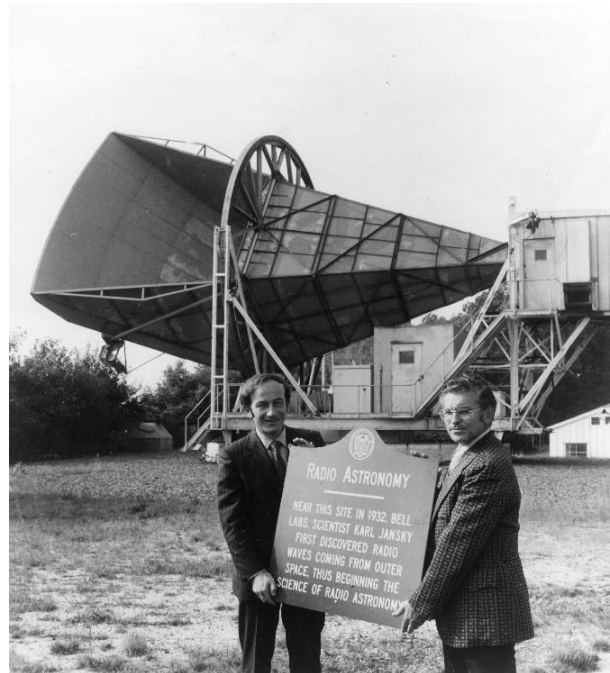
The former Bell Laboratories antenna is best known for its central role in the first detection of



A view of the Holmdel Horn on Crawford Hill c. 1973. In the background is 60-foot dish, which was used to transmit Project Echo signals.

Photograph credit: Bell Laboratories / Alcatel-Lucent USA Inc. / Collins Radio Company, courtesy AIP Emilio Segrè Visual Archives, Physics Today Collection; copyright Nokia Bell Labs, 1973.

<https://repository.aip.org/islandora/object/nbla%3A289936>



A view of the Holmdel Horn, c. 1973. In the foreground, Solomon J. Buchsbaum, Executive Director of the Bell Labs Communications Sciences Division (left) and David Cohen, Mayor of Holmdel, NJ display the historic marker that was to be placed in front of the Bell Labs Holmdel building on Crawford's Corner Road.

Photograph credit: Bell Laboratories / Alcatel-Lucent USA Inc. / Collins Radio Company, courtesy AIP Emilio Segrè Visual Archives, Physics Today Collection; copyright Nokia Bell Labs, 1973

<https://repository.aip.org/islandora/object/nbla%3A297969>

the remains of extremely hot radiation that permeated the Universe during its early evolution. In 1964, Penzias and Wilson found this persistent excess noise of 3 degrees Kelvin while calibrating the horn at a wavelength of 7.35 centimeters. For detecting observational evidence supportive of the Big Bang Theory, the men shared half of the 1978 Nobel Prize for Physics. Before Penzias and Wilson began using the horn for radio astronomy, it played a role in early satellite telecommunications experiments.

The aluminum horn extends from a 20×20 foot² (6×6 m²) aperture 50 feet (15 m) into an equipment cab where its receiver was mounted. The horn could view the whole sky; rotation around its horizontal axis changed its pointing in elevation while rotating the whole 18-ton structure around its vertical axis changed its pointing azimuth. In addition to its quantifiable aperture efficiency, the horn has minimal back and sidelobes, which avoided most thermal energy from the ground. The 10×20 foot (3×6 m) shed, with a steel roof that contained related equipment, is also part of the NHL.

As part of the October agreement, Crawford Hill Holding will retain and re-develop the vacant Nokia site. The two-story, 50,000 foot² (4,600 m²) edifice is not designated a part of the Landmark. Built in 1962 by Bell Laboratories, it once housed research laboratories and offices. Future uses of the property must be consistent with its former occupants; residential use is prohibited. The tract also has a parking lot and associated driveways.

The WGAH (Working Group for the Preservation of Astronomical Heritage) is pleased that the Holmdel Township Committee, the Holmdel community, and Crawford Hill Holding have negotiated a plan that provides for historic preservation, recreational greenspace, and economic development. We look forward to seeing the final design of these civic resources. We are delighted that the antenna will remain as testimony to its revolutionary past, as a community asset in the present, and as a source of inspiration to future generations of scientists and engineers.

wgpah-chair@aas.org



Cover of NASA technical report describing mechanical features of the horn antenna along radiation patterns and gain measured at a frequency of 2390 Mhz.

Image courtesy of NASA

<https://ntrs.nasa.gov/citations/19980227869>



Cover illustration for Volume 1, Number 1 (June 2016) of the online *Journal of Astronomy in Culture*. This journal has enjoyed a recent renaissance; see Steve Gullberg's report on the next page!



Journal of Astronomy in Culture

Steven Gullberg, University of Oklahoma

The editorial team is pleased to announce that we have restarted the International Society for Archaeoastronomy and Astronomy in Culture's (ISAAC) *Journal of Astronomy in Culture (JAC)*. The journal is now open for submissions.

JAC will focus on original research of Cultural Astronomy, with emphasis on Archaeoastronomy and Ethnoastronomy. The journal is fully open access and will practice continuous digital publication of accepted articles on its website, which later will be assembled into issues at least once per calendar year. Published articles will highlight advancement of research in the growing field of Cultural Astronomy and will enhance our understanding of many world cultures that have used astronomy throughout history. As an open access publication, there are no fees for authors or readers. The new version of the journal will deepen and broaden the impact of its predecessor.

The *Journal of Astronomy in Culture* has reached an agreement of collaboration with *Cosmovisiones/Cosmovisões*, the journal of the Sociedad Interamericana de Astronomía en la Cultura (SIAC), that publishes research of Cultural Astronomy in both Spanish and Portuguese. The two journals intend to publish each other's abstracts and also translate selected articles to be published in the opposite journal for increased world exposure. This joint activity between the two journals promises to be quite exciting.

You can use this link to find the journal or simply put its name into a search engine:

<https://escholarship.org/uc/jac>

JAC is one of 92 journals published by University of California eScholarship, and we cannot thank enough the great people there for all their support now and in the future. We look forward to the

many insightful submissions that we will receive!

Managing Editor:

Steven Gullberg

Editor in Chief:

Gerardo Aldana

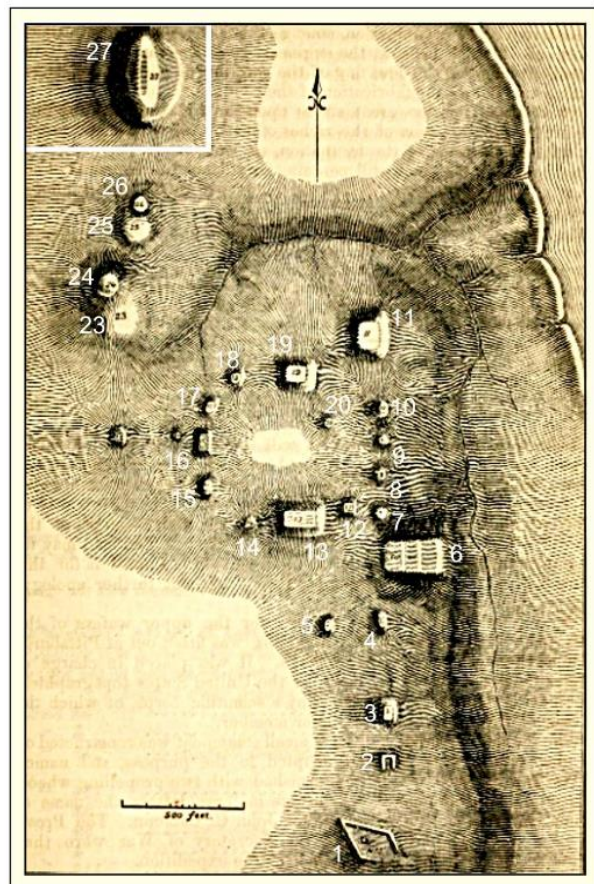
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Map of the St. Louis Mound Group made in 1819, from the article "In Search of the St. Louis Mound Group: Archaeoastronomic and Landscape Archaeology Implications" by William Francis Romain. This article appeared in Volume 2, Issue 1 of the *Journal of Astronomy in Culture* earlier this year. The entire article may be accessed online at <https://escholarship.org/uc/item/3xs1p7xc>



Proceedings of the 1981 Potsdam Michelson Colloquium (continued)

Hans J. Haubold (Office for Outer Space Affairs, United Nations, New York and Vienna)

Further to our information provided in Number 101, April 2023, of the Newsletter of the Historical Astronomy Division of the American Astronomical Society, we are entering into a contract for the publication of a volume provisionally titled “Michelson in Context”. This volume is dedicated to Dorothy Michelson Livingston and her lifelong dedication to her father’s research work and public education efforts at the occasion of the 50th anniversary of the publication of her biography of her father Albert Abraham Michelson. The volume will also contain the papers used for the preparations of, and published in, the proceedings of the 1981 Potsdam Michelson Colloquium and the 1979 Berlin Einstein Centenary.

Fifty years ago, in 1973, Dorothy Michelson Livingston published the first and only available comprehensive biography of her father, Albert A. Michelson, the first American Nobel Laureate in



At the 1981 Michelson Colloquium in the City Hall of Babelsberg/Potsdam during the opening session. From left to right: U. Ulmer (youngest daughter of Dorothy Michelson Livingston), D. Michelson Livingston, R.W. John (the colloquium co-organizer), and L.S. Swenson.

physics. Michelson performed, as discussed in long conversations with Hermann Helmholtz in Berlin, his aether-drift experiment in Berlin and Potsdam, Germany, in 1881.

In 1887 Michelson performed a much more sophisticated installation of this experiment in close collaboration with Edward Morley in Cleveland, Ohio, United States.

Today, the technique of the Michelson-Morley experiment is one of the most important ways and means in physics education, teaching, and research to perform interference experiments with light. On the 100th anniversary of the Michelson-type experiments in Potsdam and Cleveland, international meetings were held to recall the outstanding efforts of Michelson and Morley in their development of the experiment increasing more and more the precision of the respective measurements.

In the biography of Albert A. Michelson (1852–1931) his daughter shares personal reminiscences, describes her father’s family life, and follows Michelson from his birth in Poland to Jewish parents to the United States where his parents brought him at the age of three, settling in a gold-rush town in Nevada and then in San Francisco. Michelson graduated from the U.S. Naval Academy in 1873, studied in Europe, taught at Clark University, and was head of the department of physics at the University of Chicago from 1894 to 1929.

Michelson’s passion was the accurate measurement of the speed of light. He also invented the interferometer to measure distances using the length



The Astrophysical Observatory at Potsdam (known today as the Michelson building), about 1979.



In 1881 A.A. Michelson performed his experiment in this circular cellar (photo dated 1969) that is in the basement of the dome seen at the far right in the photograph on the previous page.

of light waves; he measured the meter using the wavelength of cadmium light for the International Bureau of Weights and Measures in Paris; and he used light interference to determine the size of stars. With E. W. Morley, he showed that the absolute motion of the earth through the ether is not measurable, contributing eventually to the development of the theory of relativity. Michelson received the Nobel prize in physics in 1907 for his optical precision instruments and for the spectroscopic and metrological investigations he made with them.

Dorothy Michelson Livingston travelled through European destinations which her father visited for his research work with light, including Paris next to Berlin and Potsdam. She already carried with her the draft manuscript of her father's biography and supporting material from his research writing. At the Berlin Academy she met Johannes Wempe, then Director of the Astrophysical Observatory Potsdam, showing her the Michelson Cellar in Potsdam (oral information to HJH). In Paris she met Louis de Broglie:

The Paris Académie des sciences de l'Institut de France, traditionally called Académie des sciences (Academy of Sciences) is one of the five Academies which are assembled in the Institut de France.

Louis de Broglie (1892-1987) is a French physicist best known for his research on quantum theory and for predicting the wave nature of electrons. He was awarded the 1929 Nobel Prize for Physics.

Dorothy Michelson Livingston's book is a unique source of information on Albert A. Michelson



Entrance to the today-named Michelson cellar as it looked in 1976, just before starting preparations for the Michelson exhibition to be shown to local and international participants at the 1979 Einstein Centenary and the 1981 Michelson Colloquium.

because there are almost no writings from him about himself. One must call upon the testimony of those who, like his daughter and very few co-workers like Robert A. Millikan (Nobel Prize winner in physics 1923), lived and worked side by side with him for a long time. This makes 'The Master of Light' a unique source for education and enlightenment.

On the following page a copy is shown of a letter from Louis de Broglie, stating the excellent work done by Dorothy Michelson Livingston over more than ten years writing the biography of her father. Here follows the text, in English, that speaks for itself:

"Paris, 9 April 1965

The secretary perpetual of the Academie des Sciences to Mrs. Dorothy Michelson-Stevens.

Madame

You had the kindness to give to our associate Mrs. Pierre Gauja, an excellent reproduction of the memoirs that your famous father had written in 1878 to study the speed of light.

He was only 26 years old, but this was already a masterpiece that was admired and appreciated by physicists and astronomers.

The academy of sciences de l'institut de France who was honoured to have Albert Michelson among their foreign associate has asked to thank you for the gift that will be preciousy preserved in his archives.

Respectfully yours, Louis de Broglie"

[translation H.J. Haubold]

INSTITUT



DE FRANCE

ACADÉMIE

DES SCIENCES

Paris le 9 Avril 1965

Les Secrétaires perpétuels de l'Académie des sciences à
Madame Dorothy MICHELSON-STEVENS.

Madame,

Vous avez eu la bienveillance de remettre à notre
collaboratrice, Mme Pierre GAUJA, une excellente reproduction
du mémoire autographe que votre illustre Père, avait consacré
en 1878 à l'étude de la vitesse de la lumière.

Il n'avait encore que 28 ans, mais c'était déjà là une
œuvre maîtresse qui fut universellement remarquée et appréciée
par les physiciens et les astronomes.

L'Académie des sciences de l'Institut de France, qui
s'honore d'avoir compté Albert MICHELSON, parmi ses
Associés étrangers, nous a chargés de vous remercier de ce
don qui sera précieusement conservé dans ses Archives.

Veuillez agréer, Madame, nos hommages respectueux.

Les Secrétaires perpétuels
Louis de Broglie

Letter of Louis de Broglie to Dorothy Michelson Livingston, 1965

A collection of appraisals in renowned journals for her final work, based on collected living and working facts for Michelson's biography, is the following:

"This work of a devoted daughter who is not herself a scientist catches the humanity of a complex, brilliant man through anecdotes and informed detail." *The New York Times*

"From personal recollection, from much reading, and from interviews, Mrs. Livingston has written a well-organized scientific biography of her father... In this book the author has attempted not only to discuss his scientific achievements, but also to portray Michelson the man — his personality and character, strengths, and foibles. He was dedicated but demanding and could be arrogant, strict, and severe... This book portrays Michelson not as a

legend, but as a real, believable person." — John N. Howard, *Science*

"[A] beautiful family portrait of Albert Abraham Michelson, America's first Nobel laureate for science. This biography is more than an intellectual exercise, more than merely of academic or scientific or historical interest. It is almost a religious work that begins with a 'quest for my father' and ends with a 'postscript' on Michelson's honours and continuing influence... an intelligently organized, emotionally motivated, intellectually controlled search for meaning in the life and works of a great man of science... Michelson's youngest daughter by his second marriage, has presented a sensitive, artful, honest, and superbly readable portrait of her father... [which] paints the full life, personal relations, and human figure of Michelson in a form that is a

worthy monument to his memory... We learn to know much more intimately where Michelson originated, how he matured, who recognized and helped him, what personal influences shaped his life, when and where his own exertions were influential in shaping the life of physics in the United States and the world... the author has been remarkably judicious and meticulous in handling her material.” — Loyd S. Swenson, Jr., *Isis*

“A non-physicist herself, [the author] has relied heavily on physicists who were familiar with her father’s work and with the field of optics in general, as well as archivists, historians of science, writers, and editors. Thus, this thorough biography is the fortunate combination of the efforts of many people, resulting in a valuable reference work as well as a very readable story about one of America’s greatest scientists... Its merit lies in the masterful way the author has melded voluminous information from many sources into a sensitive and realistic portrait of Michelson, showing him as a very real person with strengths and weaknesses, and showing his relation to scientists and the science of his period. It is a book well written and well worth reading by physicists and non-physicists alike.” — Jean M. Bennett, *Physics Today*

“Mrs. Livingston, Michelson’s last child by his second wife, is, as she says, neither a physicist nor a writer. Her book nonetheless has something for

both the general reader and the specialist. The former will find an interesting and even adventurous life, the latter some gems from unpublished correspondence.” — J. L. Heilbron, *The British Journal for the History of Science*

“The biography is a well-researched, accurate, and reliable work enhanced by the author’s invaluable first-hand experience with the subject. Michelson’s achievements are set against his personal life including his family, relationships to other scientists, and the struggles which inevitably develop in establishing a college science department.” — George T. Ladd, *The Science Teacher*

“This excellent biography by Michelson’s youngest daughter is a judicious mixture of anecdotes and details of the scientific achievements... Dorothy Livingston is to be congratulated on this very readable and informative biography of her talented father.” — W. W. Watson, *American Scientist*

To appraise the reader of this article, please be informed that on 1st June 2023 a book was published by A. Lucas: *Albert A. Michelson and his Interferometer* (Cambridge Scholars Publishing, ISBN 978-1-5275-0440-0). As a sample, the first two chapters of this book may be freely accessed at <https://www.cambridgescholars.com/resources/pdfs/978-1-5275-0440-0-sample.pdf>

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Dorothy Michelson Livingston and Barbara Haubold (right) enjoying long discussions on the Michelson biography in 1991 at the Michelson Livingston real estate in Wainscott, New York.



"Among the Clocks and Instruments": A Historical Approach to the Contributions of Women in Astronomy

Kayla Taylor and Ashley Lear, Embry-Riddle Aeronautical University, Daytona Beach Campus

In 1787, Caroline Herschel made history when she received funding from Queen Charlotte for her work and became the first paid female astronomer. Herschel earned £50 per year (between £6,000 and £10,000 in 2023 buying power, depending on which bank you ask) to work alongside her brother William as they cataloged and charted the star systems and nebulae of the night sky.¹

The field of astronomy and astrophysics has historically employed a greater number of women than other STEM fields. It's no wonder that Adrienne Rich, a second wave feminist and poet, turned to the likes of Herschel and Jocelyn Bell Burnell for inspiration in her poem "Planetarium," which is Rich's creative attempt to describe the vocational work of women within and outside the field of astronomy. Rich studied at Radcliffe College, which produced some of the earliest women to practice astronomy at the Harvard College Observatory.

This trend has continued into the modern age, and, in fact, the undergraduate program in Astronomy and Astrophysics at Embry-Riddle Aeronautical University enrolls more women than men.² Intrigued and inspired by this statistic, and by the impassioned poetry of Rich, Embry-Riddle professor Dr. Ashley Lear and freshly-minted M.S. Kayla Taylor co-authored an article in *Acta Astronautica* titled "A Woman 'in the Snow Among the Clocks and Instruments': How Adrienne Rich Reimagined the Lives of Women Astronomers."³

Lear and Taylor's longer historical study categorizes the experiences of women in astronomy through the lens of Rich's poem. Many women in the field today struggle with obstacles and biases that have been well-documented in biographical and qualitative studies of women in astronomy throughout history, despite the larger numbers of enrolled students and increasing presence of women practitioners in these fields.

For their historical analysis, Lear and Taylor looked at Caroline Herschel, the inspiration for Rich's poem, alongside the women described in Dava Sobel's *The Glass Universe*, an in-depth monograph on the women at the Harvard Observatory hired to work with glass plate photography from 1875-1975.⁴ In her biography *The Quiet Revolution of Caroline Herschel*, Emily Winterburn points out that Herschel's carefully honed personality of obeisance and humility, along with the advocacy of her brother and other male friends in the field, allowed her to be admitted before many other women into a position as a recognized astronomer. While she could not be considered a member of or speak at the Royal Astronomical Society meetings, Herschel was the first woman to be published in their proceedings as the discoverer of the "first lady's comet" and was compensated from the Crown (or the Queen, in her case) for her work with her brother William.

Hoffleit's "Pioneering Women in the Spectral Classification of Stars,"⁵ Zrull's "Women in Glass: Women at the Harvard Observatory during the Era of Astronomical Glass Plate Photography, 1875-1975,"⁶ and Sobel's *The Glass Universe*⁷ offer key insights about the women hired to examine glass plate photography during the foundational years of the Harvard Observatory. Hoffleit wrote her article at age 95 after receiving her Ph.D. at Radcliffe in 1938 and serving as the Director of the Nantucket Maria Mitchell Observatory from 1957-1978 and as a Senior Research Associate in the Department of Astronomy at Yale University. Her article offers biographical sketches of the women involved in establishing the common Draper and Harvard methods of spectral classification and examines the roles of women in spectral classification through the beginning of the 20th century. She focuses on the domestic backgrounds of the women, their attention to detail, and the emotional and physical exhaustion they endured while producing results for their male directors. Hoffleit's own experiences as an astronomer gave

her a shared lens through which to recount the experiences of these women.

Zrull's article was inspired by her work as Curator of Astronomical Photographs for the Harvard Observatory. While working on that collection, she noted how the photographs, taken by men, led to the identification of “thousands of stars on glass photographic negatives”⁶ by twelve women at the Harvard Observatory. These women's tasks were to “measure stellar magnitudes, classify spectra, and detect new objects of interest such as nebulae, variables, and rare star types”.⁶ Zrull's approach focuses on the work of these women, largely consisting of mathematical and scientific calculations, along with the lack of pay equity and the discriminatory treatment they received from male supervisors, aligning with Hoffleit's depiction of earlier women in the same area.

The idea to hire women for the Harvard Observatory came initially from Professor Edward Pickering, who in 1882 was struggling to keep the work of the observatory going because of limited funds from subscribers. As Sobel explains in *The Glass Universe*, Pickering decided to turn to women, advertising in an open invitation that “opponents of the higher education of women” often claimed that women were only “capable of following others as far as men can” but that his offer to employ them in observatories could serve as a counterargument to the idea that “knowledge is not advanced by their work”.⁷ Women from

schools like Vassar College were among the first to respond to this call.

Their work, along with the contributions of early examples of astrophotography on glass plates from Mary Anna Draper—widow of amateur astronomer Henry Draper—established the Harvard Observatory as a leading research institute for astronomical observations and the collection and study of glass plate photography. Women like Williamina Fleming and Annie Jump Cannon worked for Pickering at the Harvard Observatory. The need for intelligent and inexpensive women to engage in tedious observations, calculations, and cataloging resulted in more academic appointments for women in astronomy, while still relegating them to less prestigious positions with fewer opportunities to advance professionally or engage publicly at their institutions with the presentation of research findings.

Historically, women in astronomy have been physically under-represented in the field. While this lack of inclusion and discrimination has been acknowledged, female underrepresentation continues to persist in the modern astronomical community. Berné and Hilaire affirm that gender biases and disparities persist in astronomy and are especially prevalent in the allocation of telescope time, including the Hubble Space Telescope and the National Radio Astronomy Observatory.⁸ As a result, female-driven research is compelled to



Maria Mitchell, the first paid American woman astronomer - painting by H. Dassell, 1851.



Drawing of Caroline Herschel as a constellation, by Robin Mork, 2017.

either shift its methodology away from telescope observations or devote longer periods of time to achieve the same quality of work as male astronomers. Tuttle echoes this sentiment that women are presently undervalued in astronomy and states that “papers led by women [in astronomy] receive 10% fewer citations than those led by men.”⁹ With fewer citations to their research, female publications go unnoticed or are undervalued, leading to the work being overlooked and the women being passed over for proper recognition. These findings emphasize the need to address gender biases ingrained within astronomy to advance the unfortunate and seemingly archaic reality that women continue to face.

Since Spring 2018, the number of female students enrolled in the Bachelor of Science in Astronomy and Astrophysics program at the Embry-Riddle Daytona Beach Campus has increasingly surpassed the number of enrolled male students.¹⁰ Women constituted 63% of the Daytona Beach Astronomy and Astrophysics program in Spring 2023.¹¹ The Bachelor of Science in Astronomy program at the Prescott Campus has also made remarkable strides in closing the enrollment disparity between men and women. This significant shift in gender dynamics reflects the progress made in promoting gender inclusivity within astronomy, a historically male-dominated

field. The growth in female representation within these programs at Embry-Riddle also demonstrates an increased passion for astronomy and spotlights the supportive, empowering environment fostered by the programs’ administration and faculty. However, we must still be mindful of the hidden and unconscious biases that direct women in astronomy, particularly early on in their educational journeys, into gendered work, thus minimizing their potential contributions to the field and perpetuating gender stereotypes that have no place in the modern world.

Examining the historical experiences of women in astronomy and connecting those experiences to modern women in the field highlights the urgent need to communicate and eradicate discrimination in the scientific community. Embry-Riddle’s success shows how far we have come to promote diversity in astronomy, but it also indicates how recently this progress has started. Further, the same gendered obstacles still exist outside Embry-Riddle and across various universities encouraging STEM education and subsequent careers. As more women continue to pursue careers in astronomy and astrophysics, their valuable perspectives and research contributions will enhance our understanding of science and inspire future researchers, regardless of gender.

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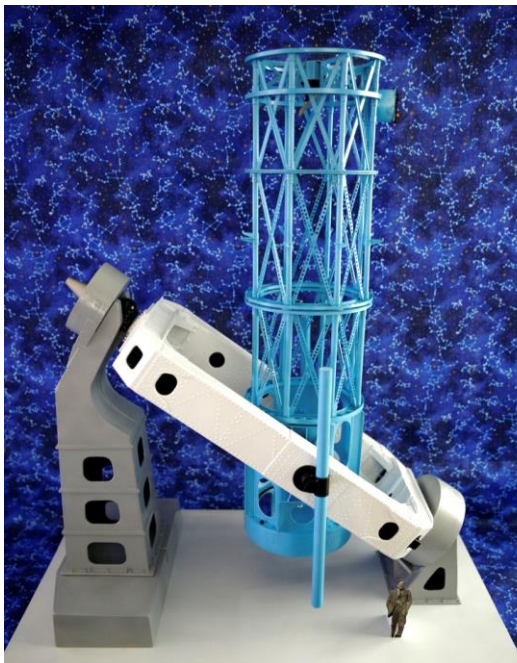
Edwin Hubble's "VAR!"

David Froiseth, Alachua Astronomy Club

It was literally a red-letter day on October 6th, 1923, when Edwin Hubble wrote "VAR!" in red on the glass photographic plate of the Andromeda Nebula¹. He had finally located a Cepheid variable star in Andromeda that could help him to measure its distance from earth, and prove it was its own galaxy far from our Milky Way. Thanks to the discovery made by Henrietta Leavitt in 1912 of the direct correlation between a variable star's period and its brightness, astronomers had the yardstick they needed to measure inter-galactic distances up to about 60-million light years². In his paper for a joint meeting of the American Astronomical Society and American Association for the Advancement of Science in late December 1924, Hubble estimated that distance to be about 929,100 light years³. Later measurements placed it

about 2.5-million light years away, but when the objective is to establish that "it ain't in the neighborhood" and the Milky Way was not the entire universe, 929,100-light years was good enough. This is widely considered to be the most important discovery in the history of astronomy.

With the 100th anniversary of that event coming up, I decided two years ago that I would build a working replica of the Hooker 100-inch telescope at Mt. Wilson, the instrument that Hubble used that night. This Amateur Historic Telescope Making (AHTM) project was intended to commemorate that event, but also to produce a telescope that I could use at our Alachua Astronomy Club (AAC) public star parties to allow guests to not only observe the heavens but get a history lesson as well. In March of 2022 I found a suitable telescope to cannibalize, a used Orion 5-inch f/5 Newtonian, and removed the parts I needed: the primary mirror and secondary mirror with spider. In the end I used only the primary mirror and center piece of the spider because, when trying to maintain authenticity, some parts just won't work. I had established March 15th of this year as my start date for the build to give me six months before the "reveal" at the September 12th meeting of the AAC here in Gainesville, Florida. After my presentation I encouraged club members to make working replicas of Galileo's refractor and Newton's reflector for our public star parties, and I



David's outstanding 1/20th scale replica of the Hooker 100-inch telescope at the Mt. Wilson Observatory. The cardstock figure of Edwin Hubble illustrates the size of what was the world's largest telescope in 1923.

encourage other astronomy clubs to consider AHTM projects. Although I still have some detailing work to do, the mirrors are fully adjustable, and the telescope uses 1.25-inch eyepieces. First light was September 7th and Vega looked great

As we all know, looking at the heavens through a telescope for the first time is the kind of moment that sometime produces the spark that creates future astronomers, astrophysicists, astronauts, directors of observatories and planetariums and sci-fi authors. When we introduce people to the heavens, we are likely to be having at least some influence on the future.

¹ <https://obs.carnegiescience.edu/PAST/m31var>

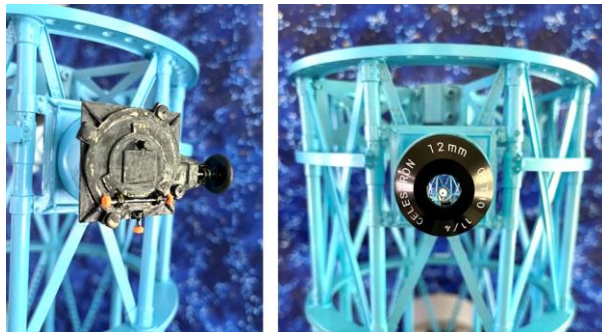
² <https://news.harvard.edu/gazette/story/2018/07/henrietta-swan-leavitts-research-transformed-astronomy/>

³ "Cepheids in Spiral Nebulae" (1924), Hubble, E. P. *Popular Astronomy.*; **33**; 252.

dave@alachuastronomyclub.org



The primary and secondary mirrors of David's model. This is a fully functional telescope, designed to be used at the Newtonian focus. When used in the Newtonian configuration, the prototype's secondary measured 24 ×36 inches.



Left: David has constructed a scale replica of the plateholder used on the 100-inch Hooker telescope when the famous photograph of M31 was obtained. *Right:* That part can simply be pulled off to access the 1.25-inch tube where standard eyepieces can be used.

This Month in Astronomical History

Ken Rumstay, Valdosta State University (Emeritus)

Our column *This Month in Astronomical History* (<https://had.aas.org/resources/astro-history>), now in its seventh year, first appeared in July 2016. Each month, when a new article is posted online, an announcement appears in the American Astronomical Society's *News Digest*. I'd like to take this opportunity to list the columns which have appeared so far in 2023, and to publicly thank their authors!

50th Anniversary of Pioneer 10's Encounter with Jupiter

November 2023, written by Kristine Larsen

Messier 51: From Solar System to Galaxy

October 2023, written by Michael Marotta

Lost Comets Rediscovered: Dr. Elizabeth Roemer and The University of Arizona's Lunar Planetary Laboratory

September 2023, written by Stephen Hussman

Mira Reveals Itself to David Fabricius

August 2023, written by Kristine Larsen

Mars: From Imagination to Exploration

July 2023, written by Aneka Kazlyna

All the Matter We Cannot See: The Invisible World of Vera Rubin

June 2023, written by Stephen Spears

"The Best Place on the Face of the Earth:" Wadesboro and the 1900 Total Solar Eclipse

May 2023, written by Thomas English

The Global Controversy Surrounding the Detection of Radio Variability in CTA-102

April 2023, written by Rebecca Charbonneau

Voyager 1: The Jupiter Flyby

March 2023, written by Loretta Cannon

Edward Emerson Barnard: Nontraditional Student and "First Gen" Role Model

February 2023, written by Kristine Larsen

The Huygens Probe Lands on Titan

January 2023, written by Michael Marotta

These columns represent one of HAD's most popular outreach efforts! If you think you might like to write one (and I strongly encourage you to consider it), please contact our editor Mike Marotta at mike49mercury@gmail.com. We are very grateful to Mike for three years of dedicated service to HAD, and to the study of the history of astronomy, in this capacity!

hadsec@aas.org

News From HAD Members

Ken Rumstay, Valdosta State University (Emeritus)

As I write this, our division membership stands at over 650 (see the graph on page four). HAD has doubled in size during the past seven years! We are always glad to hear from our members, and have recently received the following news items which we are glad to share on these pages.



I'd like to start by welcoming a new member to HAD! Joseph B. Houston, Jr. (hrajeh@aol.com) is Past President of SPIE (The International Society for Optics and Photonics and Past President, New England Section, of the Optical Society of America (now Optica). He was Lead Optical Engineer at Perkin-Elmer on Stratoscope II's primary and secondary mirrors.

Along with John Briggs, Joe presented a fascinating paper titled "Plowshares into Swords: How Astronomers and Telescope Makers Helped Win The Cold War" at the Centennial meeting of the Springfield Telescope Makers (Stellafane) this past August. Feeling that his presentation, especially the description of Martin Schwarzschild's unique contribution to fabricating and testing Modern Space Optics and thereby helping win the Cold War, might be of interest to the members of HAD, he has made it available on our website at [https://had.aas.org/sites/had.aas.org/files/Plowshares%20into%20Swords%20\(Stellafane%202023\).pdf](https://had.aas.org/sites/had.aas.org/files/Plowshares%20into%20Swords%20(Stellafane%202023).pdf).

Thank you, Joe, and welcome aboard!



Next is the following report from Steven Gullberg (srgullberg@ou.edu), whom we've already met on page eleven. He writes:

*My wife, Jessica, and I attended a conference called *The Artificial Sky: Naming, Explaining, and Simulating the Heavens* November 1-3 which was organized by both the IAU's Working Group for Star Names and Stellarium. Jessica's astronomy art was featured as a focal point at the conference and a dozen of her paintings were displayed in a gallery created for her that was very public and prominent at the university. It was a great honor and she enjoyed interacting with the public there. We also attended a public show at the Zeiss Planetarium where part of it included Jessica's 33 paintings of Babylonian constellations for Stellarium that were projected on the dome. It was wonderful to see them like this!*



Examples of artwork by Jessica Gullberg, on exhibit at the conference in Jena. More of her work may be seen in *HAD News* #97, page 20.

I used images from my field research of Inca astronomy to help me discuss the benefits of Stellarium for Cultural Astronomy education and for preliminary research before going to the field. Stellarium can be used for both educational demonstrations and for virtual simulations of light and shadow effects and solar horizon events which can help researchers in their preparations.

The whole conference was great, and I learned a lot more about Stellarium from its founder, Fabien Chereau, who gave a great presentation. He started this while a college student and I spoke with him to learn even more. Georg Zotti gave an excellent Stellarium presentation as well. Clive Ruggles gave a terrific presentation on the astronomy of the Mursi in Ethiopia and also astronomy in Polynesia — a focus of his co-authored new compendium of Hawaiian and Polynesian astronomy that will be published by the University of Hawaii Press. UHP had me review the manuscript a while ago so I know it will be a most valuable contribution that will help researchers for many years to come.

We also visited the State Museum of Prehistory in Halle where the actual Nebra Sky Disc is displayed. It's possibly the best curated museum I've ever seen, and it was great to see the disc in person. It was larger than I had expected. Our guide also gave some detailed insight as to the history of the discovery of the disc and how it illicitly traveled before the museum was able to take possession.

An additional pleasure was speaking with another attendee, Herman Hunger. It was Herman, along with Abraham Sachs, who transliterated the cuneiform on the Babylonian Astronomical Diaries tablets to Akkadian. Their three primary volumes are what I worked with for my award-winning Master's thesis.

The primary organizer was Susanne Hoffmann of the Friedrich Schiller University in Jena, and thanks to her efforts this was a very great conference!



Back in September we heard from Leila Belkora (belkora@cox.net), who told us about a new book she's preparing (and one that I look forward to reading):

I have a manuscript in preparation about the poet Robert Frost (1874–1963) and his engagement with the astronomy of his time. The first third of the book describes the extraordinary astronomical

*context of the poet's youth in San Francisco, which includes the visibility of several big comets and the construction of Lick Observatory. I show for the first time that Richard Proctor, the author of the book *Frost* later learned astronomy from, lectured in San Francisco in 1880 and again in 1881. Among Proctor's topics was the unusual line-up of the planets, many of which were near perihelion in 1881. (This line-up caused much fear-mongering.) The middle third of my book explains how Frost, now in the Boston area, learned astronomy and how he taught it to his children. I also discuss some of his poems about traditional astronomical subjects, such as the sun and moon. The last third of the book shows how Frost came to write about contemporary topics in astronomy, including the expanding universe.*

*Two articles drawn from this work have recently appeared in print in the *Robert Frost Review*, issue 32 (Fall 2022). The articles can't be accessed individually, but the issue is available on Amazon, or one can get issues by joining the Robert Frost Society, <https://libraryfoundationsd.org/robertfrost>. I wrote a blog post for Clemson University Press about the second of these articles; it is freely available here: <https://libraries.clemson.edu/press/2023/07/14/guest-post-the-real-phenomenon-behind-robert-frosts-iris-by-night/>. Another article on a different poem is due to appear in an open-access journal later this year, <http://www.cultureandcosmos.org/>. This article is an extension of my talk at the Cosmic Explorations conference last fall, https://www.youtube.com/watch?v=_hfddkiovrk.*



We heard from George Latura (glbeke@me.com) in late September. He writes:

At the 2019 HAD mini-banquet in Seattle, a sign-up sheet was circulated, requesting proposals for the 'This Month in Astronomy' regular feature.

*A submission of an idea about Caesar's comet for the month of July did not work out. The submission of a similar abstract for the 2021 SEAC Conference in Stara Zagora, Bulgaria, led to a Zoom presentation that produced a paper recently published in the *Proceedings: 'The Comet of Caesar, Pontifex Maximus, Gave Birth to the Roman Empire.'**

His paper may be downloaded and read at https://www.academia.edu/106618092/The_Comet_of_Caesar_Pontifex_Maximus_Gave_Birth_to_the_Roman_Empire. Thank you, George!



In addition to contributing the fine article on page twelve, Hans Haubold wrote to us on September 18th to inform us of an important international event:

Everything is well with me over here in New York and Vienna. We celebrated the event that, today, 50 years ago (1973) the Germanies became members of the United Nations. I prepared a series of five articles celebrating my minor contributions to the UN in the past 35 years.

Those articles have been published on the online digital magazine *Research Features*, and may be accessed at the following URLs:

<https://researchfeatures.com/unbssi-planting-seeds-space-exploration/>

<https://researchfeatures.com/avoiding-armageddon-urgent-search-near-earth-objects/>

<https://researchfeatures.com/spektr-uf-unlocking-secrets-uv/>

<https://researchfeatures.com/international-heliophysical-year-2007-building-foundation-broader-growth-science/>

<https://researchfeatures.com/remarkable-legacy-international-space-weather-initiative/>

I've read all five, and highly recommend them!



That's all for this issue! In just a few weeks I (or someone, anyway) will begin preparing the Spring 2024 issue of *HAD News*. Please send us news to include in this column!

hadsec@aes.org



An image from George Latura's paper "The Comet of Caesar, Pontifex Maximus, Gave Birth to the Roman Empire" (see previous page). This silver denarius, c. 18 BCE, features the bust of Caesar Augustus on the obverse and the comet of the god Julius on the reverse.

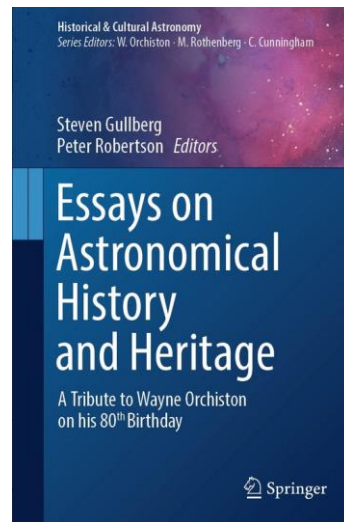
(Image courtesy of Roma Numismatics)

Book News

Ken Rumstay, Valdosta State University (Emeritus)

We always enjoy informing our readers of recently published books, particularly when the authors are members of our division! Here are three which are of particular interest. The descriptions which appear in italics are provided by the publishers.

If you would like to suggest a book for inclusion in this column, or (better yet!) review a book, please contact me at hadsec@aes.org !



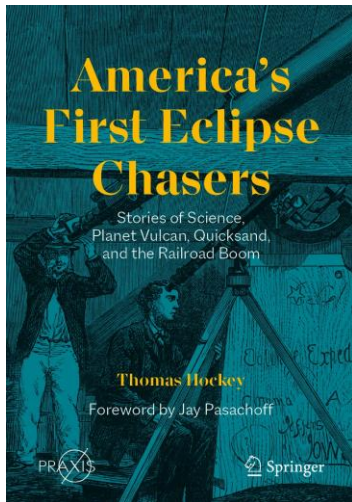
Essays on Astronomical History and Heritage: A Tribute to Wayne Orchiston on his 80th Birthday, edited by Steven Gullberg and Peter Robertson (Springer Historical & Cultural Astronomy, 2023, ISBN 978-3031294921). Also available as a Kindle e-book.

This is the celebratory volume mentioned on page eight! The publisher notes:

This multidisciplinary work celebrates Wayne Orchiston's career and accomplishments in historical and cultural astronomy on the occasion of his 80th birthday. Over thirty of the world's leading scholars in astronomy, astrophysics, astronomical history, and cultural astronomy have come together to honor Wayne across a wide range of research topics.

This exceptional collection of essays presents an overview of Wayne's prolific contributions to the field, along with detailed accounts of the book's diverse themes. It is a valuable and insightful volume for both researchers and others interested in the fields of historical astronomy and cultural astronomy.

Not surprisingly, among the 35-plus authors of papers in this volume are many HAD members, including Clifford Cunningham, David deVorkin, Stephen J. Dick, Ken Kellermann, Sara Schechner, William Sheehan, Richard Stephenson, Woodruff Sullivan, Virginia Trimble, and the late Jay Pasachoff.



America's First Eclipse Chasers: Stories of Science, Planet Vulcan, Quicksand, and the Railroad Boom, by Thomas Hockey, with a forward by Jay Pasachoff (Springer Praxis Books, 2023, ISBN 978-3031241239). Also available as a Kindle e-book.

This is the latest work by Thomas Hockey, recipient of the 2017 Donald E. Osterbrock Prize for the *Biographical Encyclopedia of Astronomers* (2nd edition). Tom's interest in the solar eclipse of 1869 stems in part from the fact that his current home lay on its path of totality! The publisher describes this book in these words:

In 2017, over 200 million Americans witnessed the spectacular total eclipse of the Sun, and the 2024 eclipse is expected to draw even larger crowds. In anticipation of this upcoming event, this book takes us back in history over 150 years, telling the story of the nation's first ever eclipse chasers.

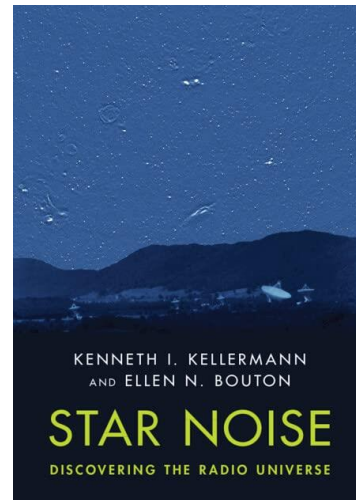
Our tale follows the chaotic journeys of scientists and amateur astronomers as they trekked across the western United States to view the rare phenomenon of a total solar eclipse. The fascinating story centers on the expeditions of the 1869 total eclipse, which took place during the turbulent age of the chimerical Planet Vulcan and Civil War Reconstruction.

The protagonists—a motley crew featuring astronomical giants like Simon Newcomb and

pioneering female astronomers like Maria Mitchell—were met with unanticipated dangers, mission-threatening accidents, and eccentric characters only the West could produce. Theirs is a story of astronomical proportions. Along the way, we will make several stops across the booming US railroad network, traveling from viewing sites as familiar as Des Moines, Iowa, to ones as distant and strange as newly acquired Alaska.

From equipment failures and botched preparations to quicksand and apocalyptic 'comets', welcome to the wild, western world of solar eclipses.

If you'll be at the AAS/HAD meeting in January, be sure to attend his presentation "Monetizing the Sky" on Tuesday morning!



Star Noise: Discovering the Radio Universe, by Kenneth I. Kellermann and Ellen N. Bouton (Cambridge University Press, 2023, ISBN 978-1316519356). Also available as a Kindle e-book.

The authors of this new volume, both long-time HAD members, are well qualified to narrate the history of radio astronomy! Ken Kellermann is the former President of the IAU Commission on Radio Astronomy and former chair of the IAU Working Group on Historical Radio Astronomy. Ellen Bouton is the NRAO Senior Archivist and manages the web page for the IAU Working Group on Historical Radio Astronomy. She and Ken coauthored the book *Open Skies*, reviewed in the December 2020 issue of *HAD News*.

The publisher describes their new work thusly:

Until Karl Jansky's 1933 discovery of radio noise from the Milky Way, astronomy was limited to observation by visible light. Radio astronomy

opened a new window on the Universe, leading to the discovery of quasars, pulsars, the cosmic microwave background, electrical storms on Jupiter, the first extrasolar planets, and many other unexpected and unanticipated phenomena. Theory generally played little or no role – or even pointed in the wrong direction. Some discoveries came as a result of military or industrial activities, some from academic research intended for other purposes, some from simply looking with a new technique. Often it was the right person, in the right place, at the right time, doing the right thing – or sometimes the wrong thing. Star Noise tells the story of these discoveries, the men and women who made them, the circumstances which enabled them, and the surprising ways in which real-life scientific research works.

We look forward to a review of this book in our next issue.

hadsec@as.org

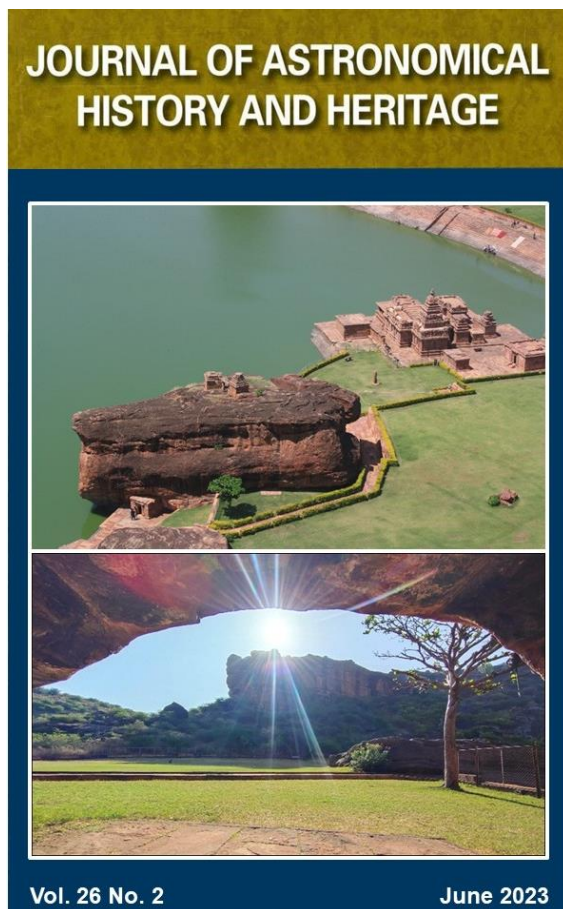
What’s New in the JAHH

Ken Rumstay, Valdosta State University (Emeritus)

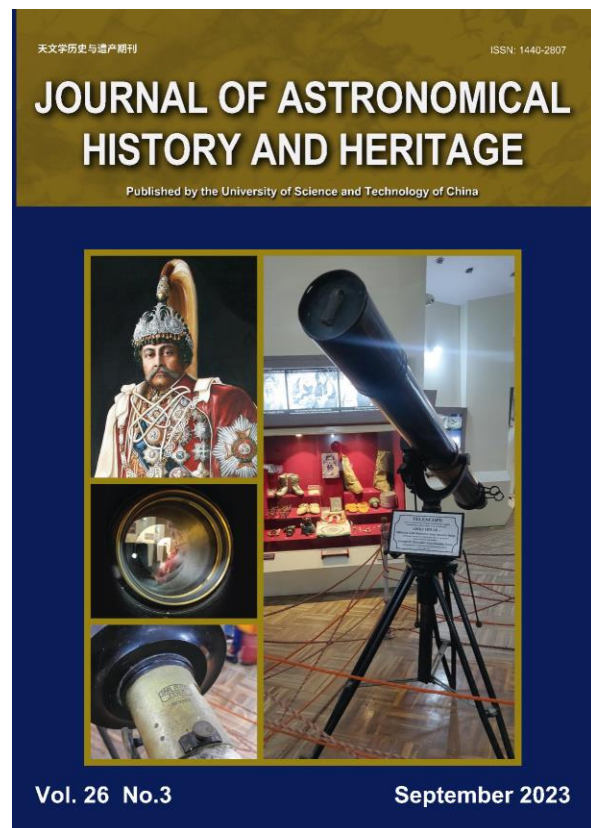
The *Journal of Astronomical History and Heritage* was founded in 1998 by Wayne Orchiston and John Perdrix. It is an online open-access journal published quarterly in March, June, September, and December. A large number of HAD members are involved in the production of this fine journal as editors, as authors, and as reviewers. If you would like to contribute to it in any capacity, please contact Professor Wayne Orchiston at jahh.editor@gmail.com or Professor Yunli Shi at ylshi@ustc.edu.cn.

All issues of the *JAHH* are freely available online at <https://www.sciengine.com/JAHH/home>. As a service to our members, the Tables of Contents for both the June and September 2023 issues are reproduced on the following pages.

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The cover of the June issue pictures a ‘solar alcove’ that is located at Badami near the valley of the Malaprabha River in Karnataka state. Read the story on pages 373–390 in the June issue of the *Journal of Astronomical History and Heritage*.



On page 683 of the September issue is a paper by Ramesh Kapoor, about a 130-mm Zeiss telescope with an unusual background. Constructed in the late 1920s, it was a gift from Adolf Hitler to the King of Nepal in 1938, and is now on display in the museum of the Himalayan Mountaineering Institute in Darjeeling, India. The cover shows the telescope, the King, and close-ups of the achromatic objective and the famous Carl Zeiss insignia.

JOURNAL OF ASTRONOMICAL HISTORY AND HERITAGE

ISSN 1440-2807

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Wide Field Survey Telescope releases its first image, the Andromeda Galaxy, on 17 September 2023



Published by The University of Science and Technology of China,
96 Jinzhai Road, Hefei, Anhui 230026, China.



Historical Astronomy Division of the American Astronomical Society

HAD News #102, November 2023, edited by Ken Rumstay. Please send contributions for the next issue, comments, etc. to hadsec@aaas.org.

A complete version of this newsletter, with color photographs and active links, may be found on our website at <https://had.aas.org/sites/had.aas.org/files/HADN102.pdf>.

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HAD News
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