

H·A·D NEWS

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

Number 72 ☞ April 2008



2008 Doggett Prize recipient David DeVorkin poses with Doggett Prize Committee Chair Donald Yeomans and HAD Chair Sara Schechner.

From the Chair

Sara J. Schechner, Harvard University

This week, I watched the young crescent moon meet the Pleiades in the evening sky. Here were two of my favorite astronomical objects made all that more beautiful by their rendezvous. I got to thinking—trite though it may be—how often the whole is more than the sum of its parts. How true this is for our division, where our programs and enthusiasm are enriched by the conjunction of professional astronomers and historians.

It has been a very busy year of meetings, prizes, and initiatives for the Historical Astronomy Division.

We had an excellent meeting in Austin in January 2008 with a Doggett Prize plenary lecture, two special sessions of invited speakers, two sessions of contributed papers, and one poster session. This year's recipient of the Doggett Prize, David H. DeVorkin, delivered a provocative lecture on "Astronomy and Its History on the Nation's Mall."

The first HAD special session commemorated the 50th anniversary of the International Geophysical Year and the dawn of space-based astronomy. Speakers included Jay Pasachoff and Joel M. Weisberg, who recounted their formative experiences on Moonwatch teams, William Keel, who spoke on early Soviet space astronomy, and McKim Malville, who recalled auroral research during IGY.

The second HAD session recognized the 400th anniversary of the founding of Jamestown (the first permanent English settlement in North America) and the role of astronomy in the exploration and colonization of America. Owen Gingerich and Jim Lattis shared new findings respectively on Thomas Harriot and Christoph Clavius, Sara Schechner explored the meaning of Captain John Smith's daring escape from the Indians in Virginia with the help of a sundial and Pocahontas, Katherine Haramundanis and Edward Gaposchkin investigated archaeological records on the Oregon coast for clues to 16th century longitude determinations, and Don Yeomans offered a survey of colonial American astronomy. Abstracts of all of these papers—and of twelve more, stimulating, contributed

papers presented the next day—are on the [HAD website](#).

We are now planning our special sessions for Long Beach in 2009 with an eye toward topics relevant to the history of telescope making, photometry, and the International Year of Astronomy. Stay tuned for more details.

The HAD special sessions are important to our division, and the HAD Committee has voted to make up to \$1000 available to organizers of future sessions to be used to defray travel costs of guest speakers when necessary.

We have also decided to establish a new HAD prize. As originally instituted, the Doggett Prize could be awarded for either a lifetime effort or a significant publication. In practice, however, only lifetime achievements have been recognized, and worthy books could not compete effectively. The playing field was not level. Being empowered to change these rules by majority vote, the HAD Committee is redressing the situation. Starting in 2012, the Doggett Prize will be reserved for lifetime contributions to the history of astronomy. The Committee also announces the establishment of a new prize—the HAD Book Award—to be given in odd-numbered years, beginning in 2011, to honor a recent book that significantly illuminates the history of astronomy.

We have also been pleased to see the launching of a new AAS Working Group for the Preservation of Astronomical Heritage, which was established by the AAS Council in January 2007 in response to an initiative from HAD. Thanks go to Steve McCluskey for chairing the Working Group in its critical first eighteen months. He will be succeeded as chair by Jim Lattis.

The Historical Astronomy Division is responsible for the preparation of the memorials to deceased members of the AAS that are published annually in the *BAAS*. Under the editorship of HAD vice-chair Tom Hockey, 29 obituaries were published this past year. As a result, we are essentially caught up on a long-standing backlog of unwritten obituaries.

The HAD Committee has also been considering the creation of a short cultural astronomy summer school to be attached to an AAS June meeting. The idea is to give astronomers and science teachers early in their careers some experience with historical methods and a cultural understanding of past astronomy, which might be of use in their teaching careers or interaction with the general public. Planning for this outreach program is in the preliminary stage, and we invite comments and suggestions.

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From the Vice Chair

Thomas Hockey, University of Northern Iowa

The Obituary Committee seeks a volunteer to translate an obituary (about 1000 words) of Friedrich Gondolatsch (died 2003) from German into English. The translator will be credited in the *Bulletin of the American Astronomical Society* along with the author.
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From the Secretary-Treasurer

Joseph S. Tenn, Sonoma State University

Since the last newsletter I have continued to update and improve the HAD website at <http://www.aas.org/had/>. The site now contains what is believed to be a near-complete set of back issues of *HAD News* and the great majority of the bibliographies produced by Ruth Freitag from 1988–2001 and appended to *HAD News*. Thank you to Alan Harris, Mary Kay Hemenway, and Wilbur Applebaum for donating or lending back issues for scanning. It is likely that there are still some issues missing, especially from the period 1980–84, when the newsletter issues were not numbered. If you have any, please contact me.

The website now contains titles of all papers presented at all HAD meetings together with a number of historical astronomy papers presented to the AAS outside the HAD sessions or before HAD began in 1981. All of these papers have links to abstracts.

I have also been lobbying the AAS—with partial success—to put all of the *BAAS* obituaries (produced by HAD) online. Only three years, 2003–05, are still unavailable, and the AAS Executive Officer has promised to see that they are posted. Obituaries can be found via the HAD website or [ADS](#).

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Minutes of HAD Business Meeting Austin, 8 January 2008

Joseph S. Tenn, Sonoma State University

HAD Committee members present: Sara Schechner (Chair), Joe Tenn (Secretary/Treasurer), Don Yeomans (Past Chair), Jay Holberg.

Absent: Tom Hockey (Vice Chair) [flight delayed, he arrived later that day], Gene Milone.

I. Approval of last year's minutes

The minutes of last year's meeting, which are available online as part of *HAD News* #70, were approved.

II. Secretary-Treasurer's Report

Joe Tenn reported on his activities since becoming secretary-treasurer in February 2007: He has expanded the website at <http://www.aas.org/had/>, published two 12-page newsletters, organized the regular (not special) sessions at this meeting, and kept track of HAD finances. The small HAD checking account has been closed, and the AAS financial manager now writes all checks. Income and expenditures for 2007 are posted elsewhere in this newsletter.

III. Committee Reports and ongoing HAD Activities

A. Obituary Committee

Under the direction of HAD Vice-Chair Tom Hockey, the Committee provided 29 obituaries for the current issue of *BAAS*. These cover 34 pages and include photos of nearly all the subjects. The backlog of unwritten obituaries is down to one.

B. Doggett Prize Committee

Doggett Prize Committee Chair Don Yeomans reported that, as previously announced, David DeVorkin is the 2008 Doggett Prize recipient.

There was considerable discussion of a proposed change in the rules for the award of the Doggett Prize. The present rules state:

The Prize shall be granted on the basis of either or both of the following criteria:

1. *a book, Ph. D. dissertation, article, or any other form of publication that significantly illuminates the history of astronomy, and that has been published during the previous six years;*
2. *long-term efforts of any kind that have significantly influenced the field of the history of astronomy.*

In the above, "history of astronomy" is taken in its broadest sense, that is, to include all historical studies of the astronomical research, observations, practices, and beliefs of all cultures, past and present. "History of astronomy" also includes the discipline per se, that is, the institutions and practices that make it possible to do historical research involving astronomy. The HAD Committee is empowered to change these rules by majority vote; such changes shall not apply to the current Prize cycle.

The Doggett Prize Committee noted that while approximately half the nominations are for criterion #1 (a single work), all six prizes awarded to date have been for criterion #2 (long-term efforts). It appears unlikely to current members of the Doggett Prize Committee that a single work will ever be ranked

above lifetime contributions, so the HAD Committee is considering dropping criterion #1. Comments were solicited from those HAD members in attendance.

Some supported the proposed revision, while several argued for maximum flexibility, stating that nothing is lost by retaining the possibility of a prize for a single book or other publication.

Some suggested that HAD initiate another prize for a single book, perhaps with smaller remuneration. The Doggett Prize, which would then be for lifetime achievements, would be HAD's highest award.

C. Nominating Committee

Sara Schechner reported that a new nominating committee will be appointed in 2008 to nominate candidates for the election for 2009–11 officers.

D. Membership drive

It was reported that the HAD booth organized by Tom Hockey is attracting attention and favorable comments. A number of AAS members have stopped by and inquired about joining HAD. One nonmember has applied to join as an Affiliate Member. An unanticipated effect of the establishment of the booth is that it provides a place for HAD members to congregate. The volunteers who staffed the booth were thanked, and Sara Schechner was thanked for creating the banner and table cover.

E. AAS Working Group on the Preservation of Astronomical Heritage (WGPAH) [This is not a HAD Committee but an AAS working group]

Steve McCluskey reported that the Working Group is concerned with finding a place for *Ap.J.* correspondence and old plate collections, and with the fates of 19th century observatories. There is much discussion currently about where to store the large plate collections that observatories are unwilling to retain.

IV. Future Meetings

A. Non-January meetings?

Sara Schechner reviewed HAD's current practice of meeting annually in conjunction with the January meeting of the AAS. HAD can hold additional meetings at other times and places and has done so a few times, most recently in Sept 2005 at Cambridge, UK, in May 1999 in Chicago, in June 1998 in San Diego, in June 1995 in Pittsburgh, in June 1993 in Berkeley and San Marino, and in June 1992 in Chicago. One of these meetings was held jointly with the Division on Dynamical Astronomy, one with the Division for Planetary Sciences, several with the AAS summer meeting, and at least one was stand-alone.

The question was asked, do we want to hold any meetings in the near future apart from the January AAS meetings? A specific request was made by

Andrew Fraknoi who addressed the meeting as a representative of the Astronomical Society of the Pacific, which is meeting jointly with the AAS in St. Louis in June 2008. The ASP would like to have an educational talk or workshop to help educators to prepare for the International Year of Astronomy, which will be in 2009 and emphasize 400 years of telescopes and the 1609 achievements of Galileo and Kepler. Fraknoi handed out flyers about the June program and encouraged HAD members to speak with him independently about getting involved.

B. The January 2009 meeting in Long Beach

Sara Schechner called for suggestions for special sessions at our next regular meeting. David DeVorkin suggested "Manufacturing of telescopes for amateurs," since the Los Angeles-Long Beach area has been the home of a number of companies that manufactured such instruments. Someone mentioned the possibility of having something related to the IYA, *i.e.*, on Galileo, Kepler, and/or the history of the telescope.

V. Announcement

Those in attendance were reminded of the HAD Minibanquet, held that evening at Louie's 106 restaurant in Austin, arranged by past HAD Chair Kate Bracher. [28 attended].

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The HAD Booth

At the suggestion of Vice Chair Tom Hockey, HAD maintained a booth in the exhibition hall at the January 2008 AAS meeting in Austin. The AAS provided space for this year, HAD rented furniture, and Chair Sara Schechner made a beautiful HAD banner and procured an astronomical table cover.

The purpose of the booth was to boost the Division's visibility among AAS members and encourage more to join. The following is a blend of the accounts of Tom Hockey, who organized the volunteers to staff the booth, and Jarita Holbrook, one of the most enthusiastic booth staffers:

The people who stopped by the HAD booth can be classified into four categories 1) HAD members, 2) people who did not know anything about HAD, 3) those who knew about HAD and were considering becoming members, and 4) friends.

Starting with the last, the HAD booth became Jarita's social center for the conference. She often scheduled to meet friends and collaborators there to catch up and discuss projects. Other folks were just walking by, saw her, and stopped to chat. The same was true of other HAD members manning the booth, their friends stopped by as well. Those considering

joining HAD were informed that dues are only \$8/yr for AAS members and \$10/yr for affiliate members, and the affiliate membership form is [online](#). Affiliate members must be members of some other professional society. Jarita helpfully pointed out that membership in the International Society for Archaeoastronomy and Astronomy in Culture (ISAAC) is only \$20 for three years, so that may be the cheapest way to HAD affiliate membership. People who did not know about HAD just took our newsletter and looked at our list of talks. Interestingly, when Jarita was at the booth alone it was mostly young women who didn't know anything about HAD who stopped by.

When other HAD members gathered at the booth the most interesting discussions emerged. We talked about various HAD talks at this and other conferences. We strategized about how to gang up on Brad Schafer so he wouldn't have the last word, again (we failed!) We discussed which were the most popular talks (standing room only for Tom's talk on how astronomers die, and oh yes, Brad's talk on the non-existence of written evidence of lunar standstill observations). Thus, the booth was a location for HAD members to meet and discuss HAD interests. Moreover, the booth also had the unintended consequence of serving as a networking hub for HAD members, normally spread diffusely through the conference center (and, for that matter, across the country).

Thanks to those who staffed the booth: Jim Lattis, Don Yeomans, Ken Rumstay, Jay Pasachoff, Brad Schaefer, Kevin Krisciunas, Joe Tenn, Arnold Heiser, Jay Holberg, Patrick Seitzer, Patrick Motl, Rosanne Di Stefano, Jarita Holbrook, Jennifer Bartlett, Mark Kay Hemenway, Kate Bracher, Peter Abrahams, Marcel Agueros, and André Heck.

Thank You, Donors

Had is grateful to the following individuals who donated since the beginning of 2007:

To HAD: Antoinette Beiser, Patrick Crane, Brenda G. Corbin, Thomas E. Corbin, Alan D. Fiala, Karl Hufbauer, Marie R. Lukac, James G. Peters, Frank H. Shu (in memory of Donald E. Osterbrock), Virginia I. Trimble, Peter D. Usher.

To the Doggett Prize fund: Charles W. Bowers, David H. DeVorkin, Alan D. Fiala, Thomas R. Williams.

Donations are accepted at any time, and are particularly convenient to make when renewing one's membership.



Book Review

André Heck, Strasbourg Observatory

Von Sonnenuhren, Sternwarten und Exoplaneten—Astronomie in Jena by Reinhard E. Schielicke (Verlag Dr. Bussert & Stadeler, Jena-Quedlinburg, 2008).

Here is an impressive historical work that we can recommend right away to those who read German and are interested in the history of European astronomy—in this case via an astronomy “hot spot” that shared the fate of 20th-century Germany.

Jena is the second largest town of Thuringia, with more than 100,000 inhabitants today. First mentioned in 1182, Jena underwent different dependencies and became a strong focus of resistance to the Napoleonic occupation in the early 19th century. Jena was incorporated into the German Democratic Republic (GDR) in 1949. Since 1990, it has been part of the Federal Republic of Germany. A list of famous citizens includes the poets Johann Wolfgang Goethe and Friedrich Schiller, the reformer Martin Luther, the philosopher Wilhelm Schlegel, as well as, closer to our interests here, Otto Schott, inventor of fireproof glass, Carl Zeiss, founder of the Zeiss Company, and the physicist Ernst Abbe.

Schielicke’s book covers the astronomy-linked activities in Jena, from the late Middle Ages (founding of the university in 1558) to current investigations of exoplanets, including the manufacturing of optical instruments at Zeiss and more public facets such as sundials in the Middle Ages and the local observatory. Abbe’s directorship of the 19th century observatory and the Karl Schwarzschild observatory are included.

The book concludes with several interesting appendices, a list of bibliographic sources, and an index of names. Probably some readers would have liked a general index as well—and this could be a suggestion for a possible second edition. The book contains many illustrations (over 370), unfortunately all in black and white. One would certainly have appreciated color for the most recent pictures.

But those two reservations do not remove anything from the intrinsic interest of this formidable historical work. One would wish similar compilations for all major astronomy centers of the world.

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Treasurer’s Report

HAD Account

Balance 12/31/06 **\$21,444.15**

Revenue 2007

Individual Dues	2351.00
Contributions	1,386.00
Interest	1,125.12
Distr. Market Value	-465.98
TOTAL REVENUE	4,396.14

Expenses 2007

Printing	242.90
Mailing Costs	39.68
Service Charges	84.10
Inter-unit Services	215.00
TOTAL EXPENSES	581.68

Net Change 2007 **+\$3,814.46**

Balance 12/31/07 **\$25,258.61**

Doggett Prize Fund

Balance 12/31/06 **\$32,905.00**

Revenue 2007

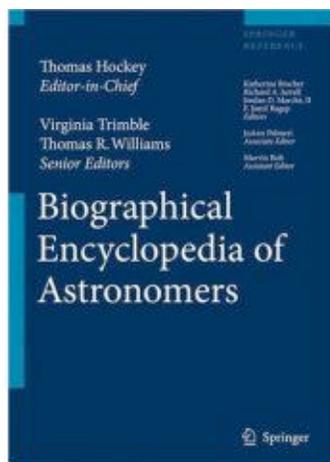
Contributions	775.00
Interest	1,700.00
Distr. Market Value	-704.00
TOTAL REVENUE	1,771.00

Expenses 2007

Certificate	385.00
Prize	1,000.00
TOTAL EXPENSES	1,385.00

Net Change 2007 **+\$386.00**

Balance 12/31/07 **\$33,291.00**



Book Review

Donald K. Yeomans, *Jet Propulsion Laboratory/Caltech*

Biographical Encyclopedia of Astronomers edited by Editor-in-Chief Thomas Hockey; Senior Editors Virginia Trimble and Thomas R. Williams; Editors Katherine Bracher, Richard A. Jarrell, Jordan D. Marché, II, and F. Jamil Ragep, Associate Editor JoAnn Palmeri; and Assistant Editor Marvin Bolt. (Springer, 2007).

After 6 years of effort, the 1341-page *Biographical Encyclopedia of Astronomers* (BEA) has finally been published. It was worth the wait.

Two-thirds of the entries are about individuals for whom there is no readily available standard source and well-known astronomers, whose biographical details are readily available elsewhere, are not given lengthy entries. Thus the entries for Newton and Halley are rivaled in length by far less well-known astronomers, but this latter group often lacks mention in standard reference books—at least those in English.

A serious attempt has been made to include many non-western figures who, until now, have been given little treatment in the histories of astronomy. Whether or not a particular astronomer is included depended less upon the person's ultimate importance to the field than upon that person's significance for the particular era in which he or she lived. Thus the entries are particularly rich in medieval Islamic astronomers whose works helped form a bridge between the astronomy of the ancients and the more modern era. The reader is not likely to recognize but a fraction of the entries, but that is the point of these two volumes.

Individuals include those born in mid-1918 or before. The oldest entry is Homer, while the youngest is Gérard de Vaucouleurs. The Fritz Zwicky entry underscores the gems that can be mined from these massive volumes. Zwicky was the first to point out the

vast amounts of dark matter in rich clusters of galaxies, he showed that gravitational lensing of one galaxy by another is much more likely than star-star lensing, and, with Walter Baade, he associated supernovae with the formation of neutron stars and the acceleration of cosmic rays. Despite these breakthroughs, Zwicky received relatively few honors, perhaps due to his personality. He referred to some of his colleagues as “spherical bastards,” meaning whichever way you looked at them.

The editors purposely used a broad definition of astronomer and hence we find entries for such persons as Dante Alighieri (fl. 1306) whose poem *The Divine Comedy* contained extensive mention of the astronomical conceptions of his day. The American poet Edgar Allan Poe has an entry because his poem *Eureka* is thought by some to be the first correct explanation of the dark sky paradox.

At times, the length of an entry does not correlate well with the importance of the individual to the astronomical sciences. Some significant figures in the history of astronomy (e.g., Seneca) were given but a short one-sentence entry together with a secondary reference, while far less notables received a fair fraction of a page with references. For example, there is a two-paragraph entry for Albert Curtz, an apparently incompetent editor for Tycho Brahe's astronomical tables.

A short foreword by Albert van Helden is followed by a lengthy essay introduction by Robert Alan Hatch on the origins of collective biographies and their uses as reference and research tools. With footnotes taking up more space than the essay itself, this introduction comes across as more of a separate research paper than an introduction to the *BEA* itself.

Alternate spellings of the individual entries are presented along with the more commonly used names, about 20% of the entries are accompanied by portrait illustrations, and nearly all the entries are followed by selected references for further reading.

There is a helpful general bibliography for works on the history of astronomy arranged by subject and separate indexes for entries, subjects and contributors. This is a very easy to use and intuitive reference work for anyone with an interest in the history of astronomy. There are 1533 entries by 410 contributors (Tom Williams alone contributed the most with 43 contributions). There are fascinating accounts of the greats within the history of astronomy, difficult to find information on the not-so-greats and the forgotten—and even some information on a few spherical bastards.

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Reflections on the BEA

Thomas Hockey, University of Northern Iowa

HAD News editor Joe Tenn asked me to share a bit behind the scenes of the just-completed *Biographical Encyclopedia of Astronomers* [BEA] project.

[Disclosure: Joe is a contributor.] This is difficult because, while my memory recalls being busy with it every day for six years, the rational side of my brain asks itself how such a thing could have possibly taken so much time. Here is my attempt to reconstruct the history of a book of history. My style is chatty and incomplete; this would be editorially unacceptable for the encyclopedia itself!

First, the name: What we collected is really the lives of persons who concerned themselves with the Universe beyond the Earth. Astronomy and cosmology both fit this definition, yet they were two different intellectual traditions until nearly the present day.

Biographical Encyclopedia of Astronomers and Cosmologists is too lengthy. Regardless, Augustine of Hippo and Robert d'E. Atkinson sit side-by-side.

The subject list is my own. Authors were not permitted to add subjects to the list. Not unexpectedly, I missed some people. That list grows daily, awaiting a second edition.

I tried to include those who 1) made unique, rare, original, or much improved observations (or measurements). Likewise, I tried to include those who 2) produced original theory influential to many. Some entries are on those who enabled others to accomplish 1) or 2), above.

A major reference source, in a similar vein as ours, restricts its subjects based on mortality. This demarcation is arbitrary because it is immediately obsolete. I did not choose to discriminate against people on account of their being pre-deceased.

As a point of personal privilege I included Homer (cosmologist) on our subject list. Otherwise, our subjects are very credibly historical. Only a few technologists, too famous to be excluded, appear. I

would love to see a future *Biographical Encyclopedia of Instrument Makers*.

We were careful with names. We write

**Ibn al-Raqqām: Abū ʿAbd Allāh
Muḥammad ibn Ibrāhīm ibn ʿAlī ibn
Aḥmad ibn Yūsuf al-Mursī al-Andalusī
al-Tūnisī al-Awsī ibn al-Raqqām**

(though Editor Jamil Ragep's abbreviation system [Ibn al-Raqqam] saves a lot of ink). To us, the seventh-century calendricist is Yixing, but you can find him in the *BEA* under I-Hsing, Seng Yixing, or Yixing Chanshi if you prefer. Similarly, you have your choice of Alfonso X, Alfonso el Sabio, Alfonso the Learned, or Alfonso the Wise. At the same time we tried to avoid being silly: There is no "Nicholas of Lynne => See Nicholas of Lynn."

Returning to my story: By the time most people heard of the *Biographical Encyclopedia of Astronomers*, it already was well along in planning. Author solicitation meant learning about the expertise within the pool of potential authors. Until very late in the process, I offered each prospective author a small set of possible subjects upon which to write.

It would have been easier to present the entire subject list and poll authors as to their preferences. However, I wanted to avoid a competitive environment in which multiple authors would vie for the same topic. Thus, a subject was proposed to one scholar and then offered to another only upon the first scholar declining.

This protocol took time, but was well worth it. After all, in some cases we were looking for the first-ever biography of a subject! The process was maintained until the late stages of solicitation.

The few exceptions: Unexpected events overtake every life, and some authors could not complete their assignments. Sometimes authors of demonstrated ability, already participating in the project, volunteered to step in and write an article that had been "orphaned."

It took upward of five hundred people to make the *BEA*. This is a wonderful collection of talent. For some authors, it is the first publication in what I suspect will be a strong career of scholarship.

At the other end of the spectrum, I was proud to publish in the *BEA* the last work of several eminent scholars. (Some articles are, sadly, posthumous.) The most up-to-date line in the *BEA* is the death date for author and subject Dorrit Hoffleit. I penned this event in upon learning of it, just before returning the last proof to the printer. Dorrit's *BEA* article appeared in her hundredth year.

I am pleased to say that the greatest concern nearly all of our authors presented to me was keeping track of their addresses. Ours is a peripatetic community! So after solicitation, I busied myself with sending out author reminders, collecting permissions to publish, planning the appearance of the encyclopedia with its editorial board, and other correspondence. It was fun “watching” the Earth rotate as daily e-mail came in from Europe and Africa, then North and South America, and then Asia and Australia ...

My most important task, equal to that of soliciting authors, was inviting a team of editors to join me in an enterprise I had no hope of finishing by myself. These were people I knew personally; not coincidentally they were all affiliated with HAD. This editorial board represents a mix of science historians and astronomers, each specializing in one or more broad area of astronomy.

Some publications are proud of their “international” panel of editors. However, I knew that this particular board would be an active one and need to meet in person. That proved true as at least a subset of the *BEA* editorial board met semiannually for the last seven years.

What did the editors do? More than you might think.

Upon receiving an article from an author, I put it into electronic form—if it was not already—by scanning or, in a few cases, retyping handwritten script. I then surveyed the resulting product for format conversion errors and did an initial copy edit. (I bet you thought publishers do all the copy editing—no!) However, the version received by the editor was very much still that of the individual author.

There is no *BEA* style per se. Authors were provided with extensive guidelines. (These were written by Senior Editor Thomas Williams.) The emphasis is on the word “guide.”

It was never our intention to mute the unique voice of an author as is accepted practice in some encyclopedias. (It is true that we did make across-the-board editorial changes, here and there, after agreement on a large list of spelling and punctuation issues not covered in the standard manuals.) If our Isaac Newton is iconoclastic, so be it. If our Albert Einstein does not sound like every other biography of the subject, perhaps “so much the better.”

Nonetheless, our authors were historians, astronomers, and educators; it was necessary to render the articles readable by members of any of these communities—and their students. To “translate” the *BEA* into a common language required much (uncredited) writing by the editors themselves, though,

of course, in conversation with the authors. This the editors did in addition to the normal fact-checking function of a content editor.

Moreover, the editors, capable of seeing the “big picture,” were able to make the assemblage of articles more valuable than the sum of their parts. For example, we wished the entries to be both implicitly and explicitly self-referential. The latter involved adding notation as to which names mentioned in a *BEA* entry are those of *BEA* subjects. Notice that this required that we establish definitive spellings of names to be used throughout the book.

Parenthetically, the decision to often use shortened names (usually omitting the middle name) within the body of an article was mine. I realize that this deviates from historiographical procedure. Yet—especially in the modern-subject entries, about a time when astronomy was increasingly a corporate activity—I felt long lists of long names deadened the prose.

All edited articles were reread by another editor and me. Sometimes there was a third round of editing. We by no means supplicated information theory: By doing so much review we did not imagine that we eliminated all mistakes. Still, we do believe that we reached a place on the asymptote just before that at which the number of errors corrected would equal the number of errors unavoidably introduced. May I add that Senior Editor Virginia Trimble holds the record for editing well over two-hundred *BEA* articles (and writing an original poem [!] about half of them).

Then came first proofs, those that at one time were called galley proofs. These were checked by both the authors and editors. This was a challenge because the *BEA* uses a larger character set than most books. Including those with diacriticals, forty different letters, each in upper, lower, bold, and italic cases and in multiple fonts, were used regularly, exclusive of numerals and mathematical symbols. (Here we benefited especially from Editor Jordan Marché’s skills in proofreading: I once characterized his ability “to distinguish a superscript period from a superscript period that is italicized.”) By the way, even in the 2000s “checked” still involves pdf printouts, a fine-point, red pencil, and lots of postage stamps.

Editor Richard Jarrell made an entirely separate editing “pass” to properly modernize the geography that appears in the article headers. We politely refused the publisher’s request for an index by country of origin! Rich explained it best when he wrote:

The only honest way to do this kind of list is by the modern geographical locations ... But that is totally misleading. We might put so-and-so in

Poland ... but he might have been a German-speaker from (then) Austrian-controlled Silesia, which, by much later treaty, ended up in Polish hands. And to say a certain Islamic astronomer is from Uzbekistan (though born in 985 AD) is nonsense. It would be even crazier to list them by where they came from in their contemporary terms: we'd need listings for Swedish-occupied Finland, The Roman Empire, the Caliphate of Cordova ...

Second proofs were examined by the editors as well. By this stage only limited changes could be made, ones that did not greatly affect formatting.

Only now could the indexes be prepared by—you guessed it—the editors. (Unless otherwise credited, all front and back matter was prepared by the editors.) I am fairly proud of things like our page-long index of historical comets, using the most-up-to-date nomenclature. In the index you will find listings of all astronomers (*BEA*-subject astronomers, and not), institutions, telescopes/instruments/spacecraft, organizations, large-scale research projects (e. g., *Carte du Ciel*, *Astronomische Gesellschaft Katalog*, etc.), prizes, astronomical objects (Sun, Moon, planets, asteroids, comets, stars, meteor showers, nebulae, the Milky Way, galaxies, etc.), popular theories (cosmogonies, cosmologies, etc.), along with related developments and techniques in physics (spectroscopy, photography, photometry, etc.). Tom Williams's indexing of observatories, by name, location, and private owner, is a reference work in itself.

Parallel to all this was Editor JoAnn Palmeri's work with the *BEA* photographs. Our goal was modest: We wanted an image to enliven approximately every other page. We nearly reached this target by JoAnn producing many of the images from archival sources herself. We were all mortified when a famous courier company lost an entire box of *BEA* photos, too late to be replaced.

A word about references: The objective was to include references that would be accessible to the reader. (Remember that we started in the days before JSTOR et al.) We felt no need to reference WWW sources. The ubiquitous and routine use of search engines today, I think, vindicates that decision.

If you see a short entry without attribution, I wrote it. These micro-entries serve as place holders for articles that might be included in a future *BEA* but which were not deemed appropriate for this edition. Surprisingly, I found these articles to be among the most difficult things I have ever written. Editor Katherine Bracher reviewed all of them for me.

The *BEA* took a long time, longer than any (especially I) could have predicted. Part of the reason was the merger of the original publisher Kluwer with Springer. This was an event that saw the nearly total turnover of *BEA*-responsible persons at the publisher. Fortunately for us, the one exception was Harry Blom—an astronomer, he's one of us!—who was instead promoted and kept us under his protective wing. Thanks, Harry.

In several instances, the *BEA* was a test case for new techniques used by the new, enlarged Springer. Modern publishing is a funny thing: Would you believe you can buy the *BEA* at Target?

In the final result, we have articles on subjects who have never been so treated before (e.g., Edward Halbach, Frank Bateson, and Jeronimo Muñoz) and articles for which there is no equivalent in English (e.g., Max Beyer, Jean-Philippe Loys de Chéseaux, Werner Kohlhörster, and Stéphane Javelle). Some entries are on subjects not written about biographically since their death (e.g., William Payne and Curvin Gingrich). Or for whom there has not been a biography in the better part of a century (e.g., Maude Bennot and William Swan). Sometimes we have published the first biography of a figure featuring his or her astronomical work (e.g., Luis Erro and George Higgs). If the subject's name starts with al- or Ibn, American and European readers are not likely to have seen it in biographical form before.

We have all three Bernoullis, all four Kirches, and all five Herschels. (We have six Wilsons, not related to each other.) Sure, "anybody" would include Georgio Abetti, but we have Antonio Abetti, too. Jean-Baptiste Biot? Of course. Plus Edouard-Constant Biot. We did not publish a John Evershed article and mention "his wife"; we have also an entry on Mary Ackworth Orr Evershed. We have Green, Greenstein, and Greenwood ... and most of my examples are gleaned just from volume I!

Some have argued that astronomy is the science most removed from human affairs. I am profoundly happy to have spent my recent career pursuing the most human aspect of astronomy—its biography. What is more, I have been able to leave the lonely confines of my writer's office (at least by way of the internet) and share the experience with legions of colleagues, many newfound.

I am lucky. There were people more able than I to direct this project. There are others who would have willingly done so. I just happened to be, at the time, the person willing.

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Ian R. Bartky, 1934–2007

Steven J. Dick, NASA

Ian Robertson Bartky, a physical chemist who turned to history for his second career, died December 18, 2007. In addition to his scientific career, he will be remembered for his meticulous research on the evolution of time systems, especially for his two books *Selling the True Time: Nineteenth Century Time-keeping in America* (Stanford University Press, 2000), and *One Time Fits All: The Campaigns for Global Uniformity* (Stanford University Press, 2007).

Ian was the son of Walter Bartky, a Professor of Astronomy at the University of Chicago, and eventually its Dean of Physical Sciences. The elder Bartky's astronomy textbook, *Highlights of Astronomy*, published in 1935 and reprinted as late as 1964, includes a considerable discussion of time and standard meridians, which may have influenced Ian, even though his father died in 1958 when Ian was only in his early 20s.

Imbued with the love of science from his father, Ian graduated from Illinois Institute of Technology, and went on to obtain his doctorate in physical chemistry from the University of California at Berkeley. His mentor was Nobelist William Giaque, and Ian always spoke fondly of Giaque's influence in setting rigorous standards that Ian followed when he went to the National Bureau of Standards in 1961. Ian spent most of his career there, and it was there that he acquired his professional interest in time, notably when the House Commerce Committee asked him in the mid-1970s to determine whether the dates of Daylight Saving Time should be extended. This resulted in an NBS report in 1976, which concluded that any energy savings would be miniscule. With his usual attention to detail, Ian researched the entire history of the problem, and thus acquired his second great love after science—history. With Elizabeth Harrison he published a well-known article on the issues involved with Daylight Saving Time in *Scientific American* in 1979.

My first interaction with Ian was leading up to the 150th anniversary of the U. S. Naval Observatory in December 1980. While working on an article for *Sky*

and *Telescope* on the early history of the Naval Observatory, I ran across documents in the National Archives from England proposing that the Navy's new Depot of Charts and Instruments—forerunner of the Observatory—erect a time ball as had been done in Portsmouth, England in 1829. Ian had been in the National Archives working on the history of time. When I mentioned this 1829 document, he said it was impossible, because the first time ball in the world was in 1833 at Greenwich, England. But the documents told the story, and this Eureka moment led to our article in the *Journal for the History of Astronomy* (volume 12, October 1981), on the world's first time ball. This was to the considerable chagrin of the staff at Greenwich, who thought they had the world's first time ball, and who still ceremonially drop one at 1 pm local time. Ian went on to write the history of time balls for the Naval Observatory's sesquicentennial symposium at the end of 1980, as published in *Sky with Ocean Joined*. We then collaborated on another article for *JHA* (volume 13, February 1982) on the history of the first North American time ball, dropped at the USNO beginning in 1845.

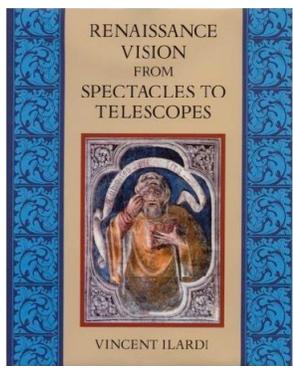
Time balls and Daylight Saving Time were only a small part of Ian's interest in time as he began to untangle the many issues involved in the history of timekeeping and time dissemination. His book *Selling the True Time* is a model of scholarship, and with it Ian proved to have that rare combination—a scientist with deep technical knowledge who could also ask and answer profound historical questions. He also had a keen appreciation of the role of human nature in history, always looking for the motivations for particular historical actions. Ian was very proud to have the book published by Stanford University Press. When Stanford also published his final book, *One Time Fits All: The Campaigns for Global Uniformity*, he was very proud of the glowing endorsement from Peter Galison, one of the country's foremost historians of science. With this book Ian also became the world's expert on the International Date Line, time zones, and standard time, among other aspects of time.

On March 29, 2008, a memorial service was held in the library of the U. S. Naval Observatory, which had become Ian's second home during his researches, often accompanied by his wife Betty, to whom he dedicated his last book, calling her his "steadfast partner in this endeavor."

Ian is survived by his wife of 47 years, a son, David J. Bartky, and a daughter, Anne B. Goldberg.

A more complete obituary will appear in a future issue of the *BAAS*.

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Book Review

Peter Abrahams

Renaissance Vision from Spectacles to Telescopes by Vincent Ilardi. (Memoirs of the American Philosophical Society, Vol. 259, 2007).

Renaissance Vision is a history of early spectacles (eyeglasses), focusing on 15th century Florence, Italy.

Developments in optical fabrication before the first known telescope of 1608 are significant to the history of the telescope. Italy has been noted as a likely source for late 16th century innovations leading directly to the first known telescopes (in Holland).

The fabrication of spectacles was a large-scale business in Italy; for example, from April to September of 1540, 24,000 spectacles were exported from Venice. Craftsmanship had developed to the degree that lenses were specified in approximate “prescriptions.” Thus, in Florence, a 1466 order from Milan for 200 spectacles was divided into 11 specifications, for presbyopia by age of user, and two increments of lenses for myopia.

Florence was one of the central sites for this industry, and the enormous collections of documents that survive from this time and place are the source for Ilardi’s research.

Historians of astronomy will find the most useful section to be Chapter 6, “From Terrestrial to Celestial Vision.” Ilardi discusses Bacon, Maurolico, Da Vinci, Digges, Bourne, Della Porta, and other pre-17th-century authors, continuing with a brief synopsis of Kepler’s contributions. There is a good summary of the development of the camera obscura; the introduction of a lens to the earlier pinhole camera was an important progenitor of the telescope.

The primary sources quoted in the book are both useful and obscure, and provide insights into unnoticed persons.

Raffaello Gualterotti of Florence, a correspondent of Galileo, claimed to be the inventor of the telescope and described an 8-meter telescope which he used circa 1570. Gualterotti’s texts are regarded with some skepticism but he merits a place in the chronology.

Tommaso Garzoni, 1589, is quoted regarding the working qualities of glasses and the tools used for grinding.

Giambattista della Porta is well known, but his book length *De Telescopio*, circa 1612, was not known until the manuscript was found in 1940, and only published in Italian in 1962. Ilardi’s summary is therefore quite useful, although the text is described as less than comprehensible and less than innovative.

A more important and more obscure contemporary was Carlo Manzini, of Bologna, whose *L’occhiale all’occhio* of 1660 is not available in English. Manzini ground lenses and fabricated telescopes for his self-constructed observatory, and his book included theory and practice. He introduces Domenico Rambottino of Venice, a skilled telescope lens maker and Manzini’s teacher. Ilardi’s text on *L’occhiale* distills Manzini’s instructions on lens fabrication and is a highly useful contribution to the knowledge of this obscure subject.

Ilardi has made extensive use of contemporary documents in assembling this history, and has deposited a massive microfilm archive at Yale’s Sterling Library.

It is therefore uncharacteristic that references to secondary and modern sources are sometimes less than critical.

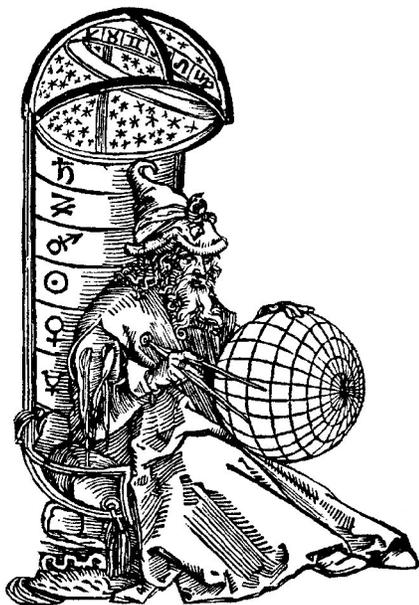
The Crystal Sun is cited, by “scholar Robert Temple”, and while this lengthy book on prehistoric lenses is essential, it is also laden with the most extravagant conclusions based on the most tenuous evidence.

Vasco Ronchi’s contributions to this history are less extravagant but still must be used with caution, and Ilardi balances his citations of Ronchi by noting authors who dispute his sometimes hasty conclusions.

Regarding the optical potential of Medieval and Renaissance mirrors, Ilardi disagrees with Sara Schechner (*Early Science & Medicine* 10 (2005), 137–62), basing his contention on her arguments concerning surviving mirrors, when her paper notes that no mirrors of these types are known to survive.

These minor oversights notwithstanding, *Renaissance Vision* is a valuable contribution to the scant literature on his subject.

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Historical Astronomy Division
of the American Astronomical Society

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Please send contributions for the next issue,
comments, etc. to joe.tenn@sonoma.edu.

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photographs and active links, may be found at the
HAD website at <http://www.aas.org/had/>

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