



H·A·D NEWS

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

Numbers 65 & 66



February 2004

LEROY E. DOGGETT PRIZE NOMINATIONS SOLICITED

As mentioned elsewhere in this newsletter, HAD members attending the Atlanta meeting were gratified at the large turnout of AAS members for the plenary session at which the fourth Doggett Prize was presented to Michael Hoskin of Cambridge, UK. As stipulated in the rules for the Doggett Prize, each presentation triggers another two year cycle in the Doggett Prize schedule. The start of that cycle is to be announced in the February newsletter following the awarding of the prize.

Retiring Doggett Prize Committee chair, Barbara Welther, made a vigorous appeal for additional Doggett Prize nominations at the Atlanta HAD business session. Welther noted that in the past, the requirements for making a nomination were considered by some to be so onerous as to effectively preclude receiving nominations. Accordingly, she recommended that any member or associate member of HAD wishing to nominate someone for the Doggett Prize should first communicate that intent to the Doggett Prize Committee. Members of the committee may then be able to help minimize the effort required to prepare the formal nomination. In particular, the requirement that the person making the nomination would be required to provide copies of a book or books written by the nominee to all members of the committee would likely be waived.

The requirements for nominating an individual for the Doggett Prize can be viewed at the following URL: www.aas.org/had/doggett.html. We suggest that if any HAD member or HAD affiliate wishes to nominate an individual to receive the fifth LeRoy E. Doggett Prize in 2006, that such intent should be made known to the Doggett Prize Committee Secretary, Ronald Brashear, at an early date. A single page letter of justification and an abbreviated CV for the individual nominated should suffice for this early notification.

We hope that a number of nominations will be received for the committee to consider. There are many noteworthy historians who should be considered as candidates for this prestigious award.

The Chair's Corner

Tom Williams (trw@rice.edu)

The 2004 meeting of the Historical Astronomy Division in Atlanta came off smoothly and can be judged quite successful. All three paper sessions were very well attended, as was the HAD business meeting. Thanks to Owen Gingerich's timely efforts, we had six books from Walker Press to give away as door prizes; the drawing likely helped stimulate interest in the business meeting. We also had two fine poster papers, from Peter Abrahams and Fred Espenak, both devoted to aspects of the historical transits of Venus.

The highlight of the Atlanta meeting, though, was undoubtedly the Fourth Doggett Prize lecture presented by Michael Hoskin. For the first time, this lecture was presented in a plenary session of the AAS with over seven hundred society members in attendance. Hoskin's address on "The Real Caroline Herschel" was well received by those assembled. After the address, the certificate and award were presented to Hoskin by Doggett Prize Committee Chair Barbara Welther. AAS divisions are rarely granted the opportunity to present divisional awards in a plenary session of the society. However, former HAD chair Welther foresaw that in order to apply for a plenary session, her committee would have to accelerate its decision making process. We are pleased that the AAS vice presidents who schedule the plenary sessions were willing to grant the division this opportunity after the Doggett Prize Committee responded well to its challenge.

The next annual meeting of the HAD will be in San Diego on 9-10 January 2005. There will be two special events in connection with this meeting. First, the San Diego meeting marks the twenty-fifth anniversary of the founding of the AAS Historical Astronomy Division. We plan to recognize that event with a celebration of our division's history. We also plan to include at least one full session celebrating 100 years of astronomy at the Mt. Wilson Observatory. If you would like to present a paper relevant to either theme please let me know at an early date. The next edition of the HAD newsletter will address the plans for the San Diego meeting in more detail.

Continued on Page 2

Proudly announcing
'The New Astronomy: Opening the Electromagnetic Window and Expanding our View of Planet Earth'
A Meeting to Honor Woody Sullivan On his 60th Birthday

Date: Wednesday 16-Friday 18 June, 2004.
Venue: University of Washington, Seattle, USA.
Web Site: http://faculty.washington.edu/bhevly
LOC: Bruce Hevly, Karl Hufbauer (Co-Chairs), Bruce Balick and Jim Evans.
SOC: Wayne Orchiston (Chair), John Baross, Ron Bracewell, David DeVorkin, Steve Dick, Ken Kellermann, Robert Smith, Richard Strom and Virginia Trimble.

Conference Themes:

- (1) History of non-optical and space astronomy, and how it has changed astronomy overall (with some emphasis on radio astronomy).
(2) A cultural look at how our views of planet Earth (and of us) have been changed by the past fifty years of astronomy and space exploration (with some emphasis on astrobiology topics, particularly extraterrestrial life).

These two themes have been chosen because they:

- * relate to major research projects in Woody's career
* are important issues, which have not been collectively treated before
* are coherent enough to attract a group to Seattle
* hopefully will make for an attractive publication

Woody's Vision of 'Woodfest'

'In general I'm fascinated with the mutual influences of astronomy and culture on each other. I'd like to see the meeting be different from normal in having a much larger fraction than usual of papers that 'step back' and look at: where we are in astronomy and astrobiology (life in the Universe) and how we got here in the early twenty-first century, with a special emphasis on the past fifty years (but not strictly confined to that period). Current scientific research results are not excluded, but they should always be placed in the above context. Therefore, speakers should attempt much broader and integrative topics than they (perhaps) normally do. Talks should be as broad as speakers are willing to tackle, but of course still grounded in concrete examples and case studies. Here's a chance to try out some speculations, syntheses, assertions, etc.!'

Deadline for Offers of Papers: 31 March 2004.
Registration Fee: US\$80
Conference Dinner: Thursday 17 June (Woody's Birthday).
Optional Excursions: Saturday 19 June.
Further Details & On-line Registration: http://faculty.washington.edu/bhevly

Wayne Orchiston
Anglo-Australian Observatory and Australia Telescope National Facility
wo@aaopp.aao.gov.au or Wayne.Orchiston@csiro.au

The Chair's Corner, continued from Page 1

Considering the future annual meetings, it seems appropriate to note that many of our recent contributed paper sessions have been oversubscribed. There are both good and bad aspects to this recognition. The good news is that HAD continues to attract those who wish to present the results of their research related to the history of astronomy. The-more-the-merrier can be thought to apply. Unfortunately, the time available for these presentations is severely constrained by the format imposed within the AAS meeting schedule. As a result, papers that might have merited a 20-30 minute presentation are confined to 10-12 minutes; authors rush through their papers but little time is left for questions and discussion that can greatly enhance the value of the meeting. A number of alternatives suggest themselves: 1) meet for more than a day and a half; 2) hold meetings more than once per year, e.g. meet with the AAS at its spring meetings each year in addition to the mid-winter annual meeting; 3) hold meetings separately from the AAS to remove the constraints imposed by the AAS schedule (this has occurred several times); or 4) encourage presentation of papers in poster sessions rather than as oral presentations. Of these options, the HAD committee feels the fourth needs to be explored first as we are already planning an extra meeting in September 2005 (Cambridge, UK).

At the Seattle meeting, Don Osterbrock presented a fine paper in a poster session, while, as mentioned above, there were two poster presentations at the Atlanta meeting. With some thought, it is possible to present historical topics in a poster presentation. As you may recognize, it is now common for as many or more papers to be presented in poster sessions as in the oral sessions at an AAS meeting. If you are considering a paper for the San Diego meeting, please carefully consider whether or not you can make a useful presentation of your ideas in poster form. We will ask AAS to set aside space for a historical astronomy poster session in San Diego.

Best wishes to all,
Tom Williams

Future HAD Meetings
Mark your calendars for the following HAD meetings, and consider not only participating by attending, but also submitting papers:
January 9-10, 2005—San Diego, California
The theme in this meeting will be related to the Centennial of the Carnegie Institution of Washington's establishment of the Mount Wilson Observatory. The meeting will also mark the 25th anniversary of HAD.
September 6-10, 2005—Cambridge, England
A joint meeting with the AAS Division of Planetary Sciences is being planned.
January 8-9, 2006—Washington, DC
January 7-8, 2007—Seattle, Washington

2004 Doggett Prize and Lecture

The 2004 HAD LeRoy E. Doggett Prize for Historical Astronomy was awarded to Dr. Michael Hoskin at the AAS meeting on January 5, 2004. The ceremony was preceded by the Doggett Prize Lecture at a plenary session of the AAS at 11:40 that morning in the Hyatt Regency's Centennial Ballroom. Around 750 people were present for the lecture. The Chair of HAD, Tom Williams opened the session by introducing Barbara Welther, the Past-Chair of HAD who introduced Michael Hoskin:

"In 1994, when he was Chair-elect of the Historical Astronomy Division, Woody Sullivan proposed that the HAD establish a prize for work in the field. For the next two years he and the HAD Committee worked on the Prize rules which stated that the award was to be granted biennially to an individual who had significantly influenced the field of the history of astronomy, either by a recent publication or by a career-long effort. The membership of HAD ratified the Prize in 1996.

"Soon after the Prize was approved, the Division suffered a grievous loss of its Secretary-Treasurer, LeRoy Doggett, of the U.S. Naval Observatory. A generous donation in Doggett's memory became the initial endowment for the HAD Prize, which was renamed the LeRoy E. Doggett Prize for Historical Astronomy. A Prize Committee was appointed to make the selection, and the first Doggett Prize was awarded in 1998 to Curtis Wilson.

"Subsequently, the Prize was presented to Owen Gingerich in the year 2000 and to Don Osterbrock in 2002. Don lectured on the provocative topic, 'The View from the Observatory: History is Too Important to be Left to the Historians.'

"The first three recipients of the Doggett Prize all presented their lectures primarily to HAD members in regular HAD sessions. This year, however, on the tenth anniversary of the proposal for the HAD Prize, the AAS Vice Presidents invited the fourth recipient, Michael Hoskin of Cambridge, England, to deliver his Doggett Prize Lecture to the Society as a whole in this plenary session.

"Hoskin has long been renowned for both his scholarship and the high standards he has maintained in editing and publishing. Since 1969 he's been a Fellow at Churchill College, Cambridge, where he developed the archive for the papers of Sir Winston Churchill. In 1970 he founded the *Journal for the History of Astronomy* and has since served as its editor. The *Journal*, which is now in its 34th year, has helped to define the field of historical astronomy and give it a central focus. It was primarily for his lifetime work on *JHA* that a Minor Planet was named in his honor in 2001.

"His recent books demonstrate his broad perspectives in the field. They include *The Cambridge Concise History of Astronomy*, and *Tombs, Temples and Orientations: A new perspective on Mediterranean Prehistory*. The last volume, which summarizes many seasons of fieldwork around the Mediterranean basin, is a significant and original contribution to archaeoastronomy.

"The citation on his Doggett Prize Certificate that will be presented after his lecture reads as follows: 'To Michael Hoskin for his scholarship and high standards in editing and publishing that

have significantly professionalized the history of astronomy.'

"When he learned he was to be the fourth recipient of the Doggett Prize, he wrote: 'The Prize is indeed a very great honour, and although it is the result of the initiative of the historians of a particular country, it is as yet the only prize in our field and this award to a non-American raises it to international status. This compliment...will provide a highlight to my career.'

"Michael Hoskin is no stranger to the AAS. In 1986 he was honored as the Harlow Shapley Memorial Lecturer. He's also a leading expert on William Herschel and has written broadly on the Herschel family and its achievements. Last spring he published *The Herschel Partnership: As viewed by Caroline*. This work, which contains a wide variety of previously untapped archival material, will be the definitive source for Caroline Herschel's biography for many years to come.

"For his Doggett Prize lecture, Professor Hoskin will speak about 'The REAL Caroline Herschel.'"

Michael then told us about Caroline Herschel (1750-1848) who is famous as the discoverer of eight comets, and the author of an Index to Flamsteed's British Catalogue of Stars, which the Royal Society published at its own expense. She was the devoted collaborator of her brother William during the twenty years he spent 'sweeping' for nebulae; and in old age she reorganized William's 2500 nebulae into a zone catalog that enabled his son John to re-examine these objects systematically, a work for which she was awarded a Gold Medal of the RAS.

Nevertheless, as Michael told us, study of her autobiographies and other manuscripts shows that her attitude to astronomy was ambivalent. William had rescued her from drudgery in Hanover, and her primary concern was to express her gratitude to him, even when his interests turned from music to astronomy and as a result she was required to abandon her career as a singer. Yet although the decision was hers, she often resented the sacrifice she had made. From the talk, Caroline emerged as a complex and often troubled personality, very different from the serene observer of legend.

After the lecture, Tom Williams and Barbara Welther presented the Prize certificate to Michael. The Prize also included a \$1000 honorarium.



Tom Williams (left) and Barbara Welther (right) award the Doggett Prize certificate to Michael Hoskin

Minutes of the HAD business meeting Atlanta, January 5, 2004

The meeting was called to order at 1:15 PM

Tickets for door prizes were passed out by John Briggs & Don Yeomans

Minutes for the 2003 Seattle meeting were accepted

The Treasurer's report followed and was accepted [it is given in full elsewhere in this issue on Page 4].

The voting results for the changes to the HAD bylaws was announced. All changes were approved [the results are given elsewhere in this issue on Page 4].

The HAD Audit Committee for 2004 was appointed to consist of Roy Clarke & Alan Fiala.

The publication of *HAD News* was discussed. Only a few members had noted in correspondence that they needed printed newsletters. The HAD Committee proposed to have only an electronic version and to eliminate the professionally printed copy that is mailed out. Printed copies would be mailed to those who indicated that they need them. The floor was opened to discussion. Virginia Trimble noted that she needs a hard copy; Brad Schaefer agreed with Trimble. Brenda Corbin indicated a concern for people without email and libraries that kept hard copies. David DeVorkin pointed out the academic importance of publications and the significance of an organization having a printed newsletter is still quite great. DeVorkin suggested that we look into paying more for increasing printing turn-around. The Chair said that the Committee will look into these suggestions before publication of next newsletter.

The Chair then brought up the issue of Observatory reports which was discussed at the AAS meeting in Nashville. There is some resistance from directors to continuing the preparation of these reports. Is it important? What does HAD say? Jay Pasachoff pointed out that they are important but AAS should be flexible in the software format with which they accept reports. DeVorkin agreed and noted that every observatory has to report to someone internally to their organization, so we can easily argue how this information is important. To understand how an institution undergoes major change in its history, the first place a historian goes is the observatory report. So all we need is the text and the format not important to us. Steve Dick agreed with the historic importance of the reports. Bob Milkey noted a steady decline in the number of reports and that the issue is not just the format but an unwillingness to do the work. The software format may be overcome by using the PDF format. The Chair said that many astronomy departments reported that students go to these reports to help decide where to go to graduate school, so it was a positive recruiting tool. Others argued that students now go straight to web pages so reports may not be as great a tool as they once were in that regard. There was one comment that observatory & university web sites are unstable so they won't suffice as a long-term archive for observatory reports. DeVorkin noted that many of them are now online through the ADS project so there may be some long-term permanency. DeVorkin asked if there had been any discussion

about submitting the internal reports they do for their own organizations to AAS and not do new ones? The Chair said that there was no discussion about this at Nashville. Pasachoff suggested that HAD draft a resolution. Milkey suggested adding what HAD thinks is important to know in these reports to the resolution. If the observatory report doesn't have to be too long and detailed and can be boiled down, that may make it easier for observatory directors to produce reports. DeVorkin opined that HAD may need a working group to look into observatory reports and craft a resolution. The Chair then said that it is apparent that HAD would like to see these observatory reports continued.

Obituary report: Don Yeomans noted that the *BAAS* report has been published. He acknowledged the help he received from DeVorkin, Barbara Welther, and Tom Williams. Some obits are now in preparation. Some obits he does not have an author for yet although he does have leads on a few people. He needs authors for Mowbray & William Swann. Ron Brashear suggested submitting the obituary needs to the newsletter. Pasachoff even suggested that maybe we can choose our biographer now!

Nominating committee Report from Barbara Welther: The committee produced 3 dozen or so possible candidates but few would be eligible for the positions. They called all the potential candidates by Labor Day and had half a slate committed by end of the year. They asked Brashear if he would continue as Secretary-Treasurer and he said yes. Peter Abrahams & Dan Green will be on the HAD committee slate. Sara Schechner agreed to run for vice-chair/chair-elect. The February HAD News will have the slate in full detail.

Doggett Prize Report: Owen Gingerich & Curtis Wilson were selected as at-large members. There may be no carryover nominations for the next (2006) award, so we need new nominations for the next prize. The Prize Committee will help in getting the supporting material for people that submit nominations. Nominations are acceptable now.

Cambridge 2005 Meeting Report: The proposal has been accepted by DPS for a joint meeting in Cambridge. Alan Hirshfeld & Simon Mitton are working on a local organizing committee. The dates are Sep. 4-7. Interesting tours are planned; themes are yet to come. When we have more info from the LOC, then HAD will get to work on the meeting.

Denver AAS Meeting Report: No HAD sessions are planned. The Chamberlain Observatory will have an open house and reception.

San Diego HAD Meeting Report: This meeting marks the 25th anniversary of HAD. There will also be a special session to mark the centennial of Mount Wilson.

Brenda Corbin made an announcement: She is the chair of the working group on archives for IAU Commission 41 (History of Astronomy) and would welcome ideas.

The Door prize drawings followed with books donated by Walker & Co. Thanks were given to them for providing the prizes. The business meeting adjourned at 2:07 PM.

HAD FINANCIAL REPORT

HAD AAS-Held Funds & HAD Cash Account

Balance 12/31/00	\$4,219.00
<u>2001 Revenues</u>	
Dues	\$2,010.00
Investment Gains.....	\$556.00
<i>Total Revenue</i>	<i>\$2,566.00</i>
<u>2001 Expenses</u>	
Publications	\$794.00
Office Expenses	\$480.00
Other.....	\$46.00
<i>Total Expenses</i>	<i>\$1,320.00</i>
<i>2001 Change in Net Assets</i>	<i>\$1,246.00</i>
Balance 12/31/01	\$5,465.00
<u>2002 Revenue</u>	
Dues	\$2,148.00
Contributions	\$563.00
Investment Income	\$244.00
Loss on investments.....	(\$131.00)
<i>Total Revenue</i>	<i>\$2,824.00</i>
<u>2002 Expenses</u>	
Division Affiliate Fees	\$255.00
Publications	\$1,139.00
Travel.....	\$548.00
Other.....	\$17.00
<i>Total Expenses</i>	<i>\$1,959.00</i>
<i>2002 Change in Net Assets</i>	<i>\$865.00</i>
Balance 12/31/02	\$6,330.00

Doggett Prize Fund

Balance 12/31/99	\$21,335.00
Additions.....	\$1,269.00
Released	\$1,368.00
Balance 12/31/00	\$21,236.00
Additions.....	\$2,704.00
Released	\$610.00
Balance 12/31/01	\$23,330.00
<u>2002 Revenue</u>	
Investment Income	\$825.00
Contributions	\$524.00
Loss on Investments.....	(\$444.00)
<i>Total Revenue</i>	<i>\$905.00</i>
<u>2002 Expenses</u>	
Publications	\$498.00
<i>Total Expenses</i>	<i>\$498.00</i>
<i>2002 Change in Net Assets</i>	<i>\$407.00</i>
Balance 12/31/02	\$23,737.00

Respectfully Submitted,
Ronald Brashear, Secretary-Treasurer

HAD BYLAWS REVISION

Tabulation of 51 Votes Cast:

	<u>Approve</u>	<u>Disapprove</u>	<u>Abstain</u>
A. Modify Article III Par. 6 by moving the entire election process to dates five months earlier than current dates	50	1	
B. Adopt a revised nominating process in Art. III, Pars. 6a & 6b allowing for Nominating Committee to nominate only one candidate per position	46	4	1
C. Adopt a revised balloting procedure in Art. III, Par. 6c to permit voting by email	50	1	
D. Degendering bylaws language	44	7	
E. Adding as Art. IX, Sect. 4 allowing for temporary suspension of a limited section of bylaws when necessary	46	5	
F. Regularizing a few minor inconsistencies in reference to meetings & revise the program abstract requirements to coincide with current AAS procedures	51	0	

Respectfully Submitted,
Ronald Brashear, Secretary-Treasurer

ELECTION OF OFFICERS FOR 2005

The June issue of *HAD News* will contain the ballot for the election of HAD Officers for the 2005—2007 term. The timing of the election is earlier than in the past to reflect the recent change in the bylaws for election procedures. The reason for the change was so that we could have the results of the election in time to be reflected in the AAD Directory and to give those elected adequate time to prepare for travel to the HAD meeting in January.

The Nominating Committee has brought forward the following names for the slate. As reflected in the bylaws the slate only needs to contain at least one candidate for each vacancy for an officer, and at least one for each vacancy for a committee member.

Nominated for Vice-Chair/Chair-Elect:
Sara Schechner

Nominated for HAD Committee at-large members (2 vacancies):
Dan Green
Peter Abrahams

Additional nominees can be added to the ballot if they are a member of the Division and are proposed as a candidate for a position on the Committee by not fewer than ten (10) members of the Division, provided the nominee has stated to the Secretary-Treasurer a willingness to serve if elected.

HAD IN ATLANTA

HAD met in Atlanta on January 4-5, 2004 as part of the larger AAS 203rd meeting. On Sunday the 4th was the special HAD session on the Transits of Venus.

The first paper was by **Ronald Brashear** (Smithsonian Libraries), "Chasing Venus: Putting the Transits of Venus on Exhibition." Brashear spoke about how the upcoming 2004 transit of Venus provides a great opportunity to develop programs to educate the public about the history of the observations of the transits. The Smithsonian Institution Libraries is well-placed to take part in this effort with its collection of rare books that deal with the 17th- and 18th-century transits. The exhibition called "Chasing Venus" will be on display at the National Museum of American History, Behring Center, from March 2004 to April 2005. The Museum will loan a number of its 19th-century artifacts and the US Naval Observatory is also cooperating with the loan of a telescope and some rare books from the USNO Library to flesh out the story of the 19th-century transits. The talk took a closer look at the books and artifacts that will be used to tell the history of the transit observations in the special context of a library exhibition. Books and articles from a wide variety of authors such as Kepler, Horrocks, Capt. Cook, Rittenhouse, Mason & Dixon, and even John Philip Sousa (!) will help express the authors' excitement about the event to the public at large. The exhibition will also have an online component and this will live late in March at www.sil.si.edu/exhibitions/chasing-venus/.

Wilbur Applebaum (Illinois Institute of Technology) followed with his talk, "Jeremiah Horrocks, The New Astronomy, And The Transit Of Venus." According to Wilbur, Horrocks's importance in the history of astronomy has long been recognized. Working shortly after Kepler's death, he was among the earliest to adopt Keplerian astronomy, and went on to improve the Rudolphine Tables. His lunar theory was the most advanced of his time, its importance acknowledged by Newton. He is perhaps best known as the first to predict and observe a transit of Venus, which, along with other observations led him to improve planetary parameters and the solar parallax. Although his work was discovered only a decade after he died, it was deemed significant enough for Hevelius to publish Horrocks's treatise on the transit, and for the Royal society to publish most of his surviving manuscripts. With the approach of the transit of Venus in June, just over 120 years after the last one, Wilbur noted that it is appropriate that we celebrate Horrocks's achievement in his observation of the transit of 1639. In the fall of that year Horrocks discovered, contrary to the best tables of the day (Kepler's) that the rapidly approaching conjunction would see Venus on the face of the Sun. Horrocks notified three others, and prepared himself, using accounts he had read in Kepler, an account of Gassendi's observation of the transit of Mercury of 1631, and his own effort to observe a Mercury transit. Only he and his friend William Crabtree were able to observe the transit for the 15-20 minutes between its entry on the Sun and sunset. Horrocks then spent the next year writing several drafts, all of which were incomplete, when he died in January 1641. Wilbur can be contacted at applebaum@iit.edu.

Steve Dick (NASA) followed with his presentation on "The American Transit of Venus Expeditions of 1874 and 1882." Steve noted the key importance of these transits: When in 1874 and 1882 Venus passed in front of the face of the Sun, "every country which had a reputation to keep or to gain for scientific zeal was forward to cooperate in the great cosmopolitan enterprise of the transit," in the words of 19th century historian Agnes Clerke. The United States was no exception. With a US\$177,000 Congressional appropriation for the 1874 event, and US\$78,000 for 1882, the Americans sent out eight well-equipped expeditions for each transit. Under the U.S. Transit of Venus Commission, the responsibility fell to the U. S. Naval Observatory. Relying heavily on photographic methods, the Americans returned 350 plates in 1874, and 1380 measurable plates in 1882. Simon Newcomb grew skeptical of the results, but William Harkness produced a final value, after adjustments with other constants, of 8.809 arcseconds, with a probable error of 0.0059 arcseconds, yielding an Earth-Sun distance of 92,797,00 miles, with a probable error of 59,700 miles. Steve then asked the US\$64,000 question: How important were the transit of Venus observations? In the end it was Newcomb who had the final say, for it was his system of astronomical constants that was adopted internationally at a Paris conference in 1896. In determining a final value for the solar parallax from all methods, Newcomb gave all photographic observations of the 1874 and 1882 transit a weight of 2, compared to a weight of 40 for Pulkovo Observatory's determination of solar parallax from the constant of aberration. For more details about these transit expeditions, see www.usno.navy.mil/pao/History/ToV_Chapter_7.htm.

Jay Pasachoff (Williams College) presented the next paper, "Explanation of the Black-Drop Effect at Transits of Mercury and the Forthcoming Transit of Venus," that he co-authored with G. Schneider (Steward Obs., U. Az.) and L. Golub (Harvard-Smithsonian CfA). Jay discussed how they used the observations of the transits of Mercury of 1999 and 2003 taken with NASA's Transition Region and Coronal Explorer (TRACE) solar spacecraft. For the 1999 Mercury transit, for



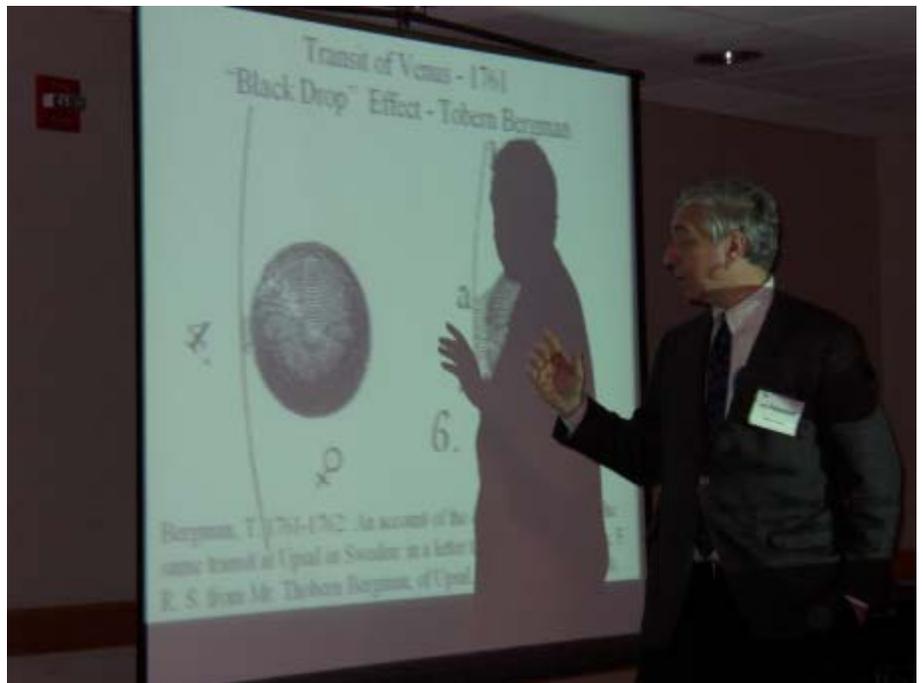
Vast crowd of 55+ people at the Transit of Venus session on Sunday

which data were acquired with the highest digital fidelity available for TRACE, they detected a black-drop effect, in spite of the facts that they were observing from outside the Earth's atmosphere and that Mercury has no significant atmosphere. Jay and his colleagues were able to show that the Mercury black-drop effect comes from a convolution of the instrument's point-spread function and the solar limb darkening. By implication, they should be able to explain Venus's black-drop effect in a similar way. It has long been known that Venus's black-drop effect is too large to come from Venus's atmosphere. For more information about the paper, go to www.transitofvenus.info/.

William Sheehan (Independent Scholar) was unable to attend the HAD meeting, so Tom Williams presented the paper, "David Peck Todd and the transit of 1882: A lover's triangle forms while an astronomer triangulates the distance to the Sun," for him. Tom ably recounted for Bill how the transit of Venus of 1882 was a remarkable event, the last transit in the 19th century and the last one to occur until our own time. Among those who undertook to study the transit was David Todd of Amherst College, who, when he was not included in the U.S. Naval Observatory's expeditions, was hired by the Lick Observatory trust to observe the transit from their site-in-development, Mt. Hamilton. Todd went west for the transit just as his wife and Austin Dickinson, Emily's brother, crossed a Rubicon in their love-affair. He successfully photographed the transit from Mt. Hamilton and the plates have survived. In time for the 2004 transit, Tony Misch of Lick and Bill have scanned them and presented them in cinematographic form and our transit-of-Venus movie will receive its American premiere. Tom played the video which was backed by the audio of John Philip Sousa's long-forgotten Transit of Venus March! To contact Bill, email him at sheehan41@charter.net.

The Sunday session ended with a non-transit paper, **James Bryan's** (McDonald Observatory) talk on "E. E. Barnard and the New Star in the Andromeda Nebula." James began by mentioning that in August 1885 a bright new star appeared near the center of the Andromeda Nebula, M31. Later called S Andromedae, it is now believed to have been a peculiar Type Ia supernova, and its remnant is an object of current interest. The star re-

mained visible to the naked eye for days and was accessible in telescopes for months. Astronomers in Europe and America left an extensive but sometimes unclear record of the event that was observed almost entirely visually. In 1885 E. E. Barnard was a student at Vanderbilt University and a comet discoverer. At the time, his interest in stars was apparently limited to their use as references to visually estimate the positions of comets. S And may have been his introduction to stars as objects of science. While he routinely communicated with journals, he never published his complete set of observations of S And. That is, other than to discuss in print apparent flickering of the star, there is no evidence that he made use of his numerous descriptions of its declining brightness. Examination of his forgotten light estimates of S And gives insight into what Barnard knew of observational methods for variable stars in 1885. Comparison of his results to those of his contemporaries as well as to a modern version of the light curve reveal both his accuracy and the main problem that faced visual observers. S And was positioned nearly centrally on the nuclear bulge, and the bright background created trouble for magnitude estimation. His account is an interesting description of what it was like to observe this historic supernova. It also offers an interesting contrast with Barnard's remarkable light estimates of Iapetus during that satellite's series of eclipses in the shadows of the globe and ring system of Saturn in 1889.



Jay Pasachoff creating his own black-drop effect at the Atlanta meeting

Historical Astronomy Division of the American Astronomical Society

Chair: Thomas R. Williams, trw@rice.edu
 Vice-Chair: Donald K. Yeomans,
 Donald.K.Yeomans@jpl.nasa.gov
 Secretary-Treasurer: Ronald S. Brashear, brashearr@si.edu
 Past-Chair: Barbara Welther, bwelther@cfa.harvard.edu
 At-Large Committee Members: John W. Briggs,
 jwb@hale.yerkes.uchicago.edu;
 Alan W. Hirshfeld, AHirshfeld@umassd.edu

Website: www.aas.org/had/had.html

HAD News is published in February, June, and October, and sent to all individual members of the Historical Astronomy Division of the American Astronomical Society. The deadline for receipt of articles, news items, and announcements is the first of the month prior to the month of publication. Please send contributions as plain text in email or as email attachments in Microsoft Word to Ronald Brashear at brashearr@si.edu.

The HAD meeting resumed on Monday morning at 10:00 AM with AAS Session 28, the HAD II session of contributed papers. The Regency V room was quite spacious and over 90 people filled the space at the beginning of the session. The first speaker was **Don Yeomans** (JPL/Caltech & the HAD Vice-Chair) with his talk, "Space Travel is Utter Bilge: Early Ideas on Interplanetary Exploration." As Don noted, until a few decades ago, interplanetary travel was the stuff of dreams but the dreamers often turned out to be farsighted while the predictions of some eminent scientists were far too conservative. The prescient dreamers included the Russian school-teacher, Konstantin Tsiolkovsky who, in 1883, was the first to note that only rockets could serve the needs of space travel. In 1923, Herman Oberth published a treatise discussing various aspects of interplanetary travel including the impulse necessary to escape the Earth's gravitational pull. In his spare time, a German civil engineer, Walter Hohmann, established in 1925 that the optimal energy transfer orbit between planets is an ellipse that is tangent to the orbits of both bodies. Four years later, an Austrian army officer, Hermann Potocnik outlined the benefits of space stations including those in geosynchronous orbits. Whereas Tsiolkovsky, Oberth, Hohmann, and Potocnik provided ideas and theories, the American, Robert H. Goddard, was testing liquid fueled rockets by as early as 1925. By the time he was finished in 1941, Goddard flew liquid fueled rockets that reached speeds of 700 mph and altitudes above 8,000 feet. In direct contrast to the advances by these mostly amateur engineers, many respected authorities scoffed at space travel because of the insurmountable technological difficulties. One year prior to the launch of Sputnik, the British Astronomer Royal, Sir Richard Woolley, declared, "space travel is utter bilge." While the theories of space travel were well developed by the late 1920s, space travel technology was still a poorly funded, mostly amateur, endeavor until the German army hired Oberth's student, Werner von Braun, and others to develop long range rockets for military purposes. In the early 1940s, Von Braun's team developed the rocket propulsion and guidance systems that would one day form the basis of the American space program.

Virginia Trimble (University of Maryland, College Park), followed with her thought-provoking talk, "The Maximum Duration of Astronomical Incomprehension." Virginia argued that, to those of us who lived through the period, the 24 years between the discovery of gamma ray bursts (1973) and their identification with very powerful events at cosmological distances (1997) seemed very long. She noted that her case will, however, be made that Mira variables, coronal lines, and others remained puzzling much longer, from the time when they

were recognized as requiring an explanation until a successful explanation was found:

- ★ Coronal lines in eclipse spectra duration = 70 years
- ★ Advance of perihelion of Mercury duration = 56 years
- ★ Solar neutrino problem duration = <33 years

It is possible that some phenomena now with us (the nature of dark matter, cosmic ray acceleration, etc.) will also exceed the GRB mark and perhaps even the coronal line record.

The next speaker was **Brenda Corbin** (U.S. Naval Observatory) who spoke on "Leslie Peltier, Amateur Astronomer and Observer Extraordinaire." Brenda's fascinating talk introduced us to Leslie Copus Peltier, (Jan. 2, 1900—May 10, 1980), who was called "the world's greatest non-professional astronomer" by none other than Harlow Shapley, and also referred to as the "the world's greatest living amateur astronomer." He began observing variable stars on March 1, 1918 with an observation of R. Leonis and at the time of his death had made a total of 132,123 observations of variable stars. These were reported to the AAVSO on a consecutive monthly basis stretching from 1918 to his death in 1980. As of October 2003, he was still on

AAVSO's list of the top 25 observers in its history. Born on a farm near Delphos, Ohio, his parents were well read and their home was filled with books on different subjects, including nature guides. As a young man he studied the flora and fauna of the area and in 1915 began his study of the heavens with Vega being the first star he identified. After the purchase of a 2-inch spyglass, his observations of variable stars began to be noticed by professional astronomers and the AAVSO loaned him a 4-inch Mogeys refractor; shortly thereafter Henry Norris Russell of Princeton loaned him via the AAVSO a 6-inch refractor, a comet seeker of short focus. He discovered 12 comets, 10 of which carry his name, and 6 novae or recurring novae. His design of the "Merry-Go-Round Observatory" was a novel approach with the whole observatory revolving around the observer while seated in his observing chair. Miami University (Ohio) later donated to him their 12-inch Clark refractor with its dome. His first book, *Starlight Nights: The Adventures of a Star-Gazer*, appeared in 1965. This autobiography, an ode to the joys of observing both the night sky and nature, was written in beautifully descriptive language that helped lead countless readers into astronomy. Departing from astronomy, in 1977 he published *The Place on Jennings Creek*. Written in the style of a 19th-century naturalist, the book was devoted to his family's home, Brookhaven, and its natural surroundings. Peltier was a shy person who rarely left Delphos, and worked as a designer of children's furniture and toys until his death. However, he was widely recognized during his lifetime with articles about him appearing in popular magazines such as *Reader's Digest* and *Newsweek*. Many famous astronomers visited him at Delphos including W.W. Morgan, W.A. Hiltner, Donald Menzel, the Boks, and others. He received many honors including an honorary Doctor of Science degree from Bowling Green State University (Ohio) and the AAVSO's first Merit Award in 1934. *Starlight Nights* returned to print in 1999 with a foreword by David Levy, and is now introducing a new generation to the beauty and thrill of observing. To contact Brenda, her email address is corbin.brenda@usno.navy.mil.



Don Yeomans reminds us that space travel is utter bilge.

ing from astronomy, in 1977 he published *The Place on Jennings Creek*. Written in the style of a 19th-century naturalist, the book was devoted to his family's home, Brookhaven, and its natural surroundings. Peltier was a shy person who rarely left Delphos, and worked as a designer of children's furniture and toys until his death. However, he was widely recognized during his lifetime with articles about him appearing in popular magazines such as *Reader's Digest* and *Newsweek*. Many famous astronomers visited him at Delphos including W.W. Morgan, W.A. Hiltner, Donald Menzel, the Boks, and others. He received many honors including an honorary Doctor of Science degree from Bowling Green State University (Ohio) and the AAVSO's first Merit Award in 1934. *Starlight Nights* returned to print in 1999 with a foreword by David Levy, and is now introducing a new generation to the beauty and thrill of observing. To contact Brenda, her email address is corbin.brenda@usno.navy.mil.

Unfortunately, the next speaker, B. J. McCall (UC Berkeley), was unable to make the meeting, and so the session continued with **Melissa Gottwald** (New Mexico State University) speaking on “The Clyde W. Tombaugh Papers and the Rio Grande Historical Collections: Preserving the History of Astronomy.” As Melissa reminded us, the study of the history of astronomy requires not only dedicated researchers, but also source material. This requires archives and libraries that are actively involved in preserving astronomy-related collections. It is also vitally important that astronomers and astronomy associations make the effort to deposit their papers in these institutions. One repository with a growing body of astronomy-related holdings is the Rio Grande Historical Collections (RGHC) in the New Mexico State University Library. Melissa spent some time discussing the considerations, from an archival perspective, of some of the issues of making astronomy-related collections available. Depositing the historical papers in the archives is only the beginning of the process; the archives must also arrange the materials and prepare descriptions that will facilitate research use. Melissa talked about the astronomy collections in the RGHC, with particular focus on the Clyde W. Tombaugh Papers. The Tombaugh Papers presented special challenges in part because of the size of the collection and the numerous types of materials it contained. Additional issues involved Tombaugh’s long and varied career which included not only the planet search at Lowell Observatory but also his work in optics at the U.S. Army’s White Sands Proving Ground and the establishment of the Department of Astronomy at New Mexico State University. The processing of the Tombaugh papers is ongoing and a finding aid will be available online in the spring of 2004. It is planned to also include David Levy’s interviews with Tombaugh’s colleagues. Everyone is encouraged to visit the website at archives.nmsu.edu/exhibits/tombaugh_website/index.htm.

The morning session ended with **Elizabeth Griffin** (Dominion Astrophysical Observatory) and her talk on “Challenges of Data Archives.” Elizabeth pointed out that although it is fully and freely acknowledged that astronomy research depends heavily upon an ability to access and share observations made at a variety of wavelengths and resolutions and with a variety of techniques, one encounters unexpected resistance to the creation and maintenance of even the most basic libraries of data. She discussed the associated problems that stemmed from the experience of an IAU Working Group. The IAU reluctantly agreed to set up a working group to look into the archiving of spectroscopic data in 1992. A plan that came out of that group was to stimulate creation of modern data archiving & awareness of the large cache of photographic plates. But the problem was overcoming the feeling that it was easier to re-observe objects than use old data; but this may not yield info on important changes in the objects if the old data is not preserved. There was also a great deal of reluctance to share data. Money was seen as the root issue as archiving other people’s data will be a low priority and is the first thing cut. In times of financial belt-tightening, when new observations become too expensive, there is a renewed interest in archiving and utilizing data. Fortunately, new technologies are allowing for archiving modern data. In addition, private observatories resist the notion of archiving data because there is no public funding for such initiatives. There are now some 3 million photographic plates in the world; now there is a huge capacity for storage, but people are forgetting how to get info from plates.

After the Doggett Prize Lecture (see the special article on page 3) and the HAD Business meeting, the HAD III session began in the Regency V room. Around 35 people gathered in the room and listened to the first presentation, **Bradley Schaefer** (LSU) on “The Latitude and Epoch for the Origin of the Astronomical Lore of Eudoxus.” According to Brad, the earliest presentation of the ancient Greek constellations that survives to today is the poem titled *Phaenomena* by Aratus which is a reasonable copy of a book of the same name by Eudoxus (c. 366 BC) which has not survived. Hipparchus’ sole surviving work (his *Commentaries*) also gives many direct quotes from Eudoxus’ book. Eudoxus reports on many astronomical lore items such as that the head of Draco skims the northern horizon and that Orion sets when Scorpius rises. Many of these lore items have their validity depend on the latitude and epoch of the observations on which the lore is based, so for example the two lore items just quoted will each yield rather fuzzy simultaneous constraints on the latitude and epoch of the observer. In all, Brad has found 172 useful constraints for Eudoxus’ lore, and the large number can be used to greatly increase the accuracy of the final joint constraint. His results are: (1) All lore reported by Eudoxus were based on observations from the year 1130 ± 80 BC and at a latitude of 36.0 ± 0.9 degrees north. (2) Brad’s derived date and latitude correspond only to the peak of the Assyrian culture. (3) The typical accuracy of the lore is 4-8 degrees, even though 1 degree accuracy is easy to be gotten by primitive methods. (4) About half the rise/set pairs recorded in the Mesopotamian MUL.APIN tablets are also given in Eudoxus’ lore. (5) The MUL.APIN tablets have been independently determined to be based on observations from roughly 1000 BC at a latitude of 36 degrees north, which is consistent within uncertainties to my results for Eudoxus. Given the close match in date/latitude/content, Brad concludes that both Eudoxus’ lore and MUL.APIN were derived from the same old Assyrian observations.

For the second talk, **Eric Altschuler** (Mt. Sinai School of Medicine) spoke on “First Description of Discrete Stars Composing the Milky Way in Thomas Watson’s *Hekatompathia* (1582),” a joint work he did with William Jansen (Independent Scholar). Eric noted that the first description of the Milky Way as being composed of a large number of discrete stars was in Sonnet 31 of Thomas Watson’s (d. 1592) *Hekatompathia* (1582). After prefatory material invoking classical sources and making clear he is discussing the Milky Way, Watson’s poem then starts:

Who can recount the vertues of my deare,
Or say how farre her fame hath taken flight,
That can not tell how many starres appeare
In part of heav’n, which Galaxia hight,
Or number all the moates in Phebus rayes,
Or golden sandes, wheron Pactolus playes?

Eric discussed the scientific, literary and historical significance of this finding. For more information on this talk, contact Eric at Eric.Altshuler@mssm.edu.

This was followed by **Peter Usher** (Penn State) who spoke on “Galileo’s Telescope and Jupiter’s Tablet.” A previous paper by Peter (*BAAS* 33:4, 1363, 2001) reported on the dramatic scene in Shakespeare’s *Cymbeline* that features the descent of the deity Jupiter. The paper suggested that the four ghosts circling the sleeping Posthumus denote the four Galilean moons of Jupiter. The god Jupiter commands the ghosts to lay a tablet upon the

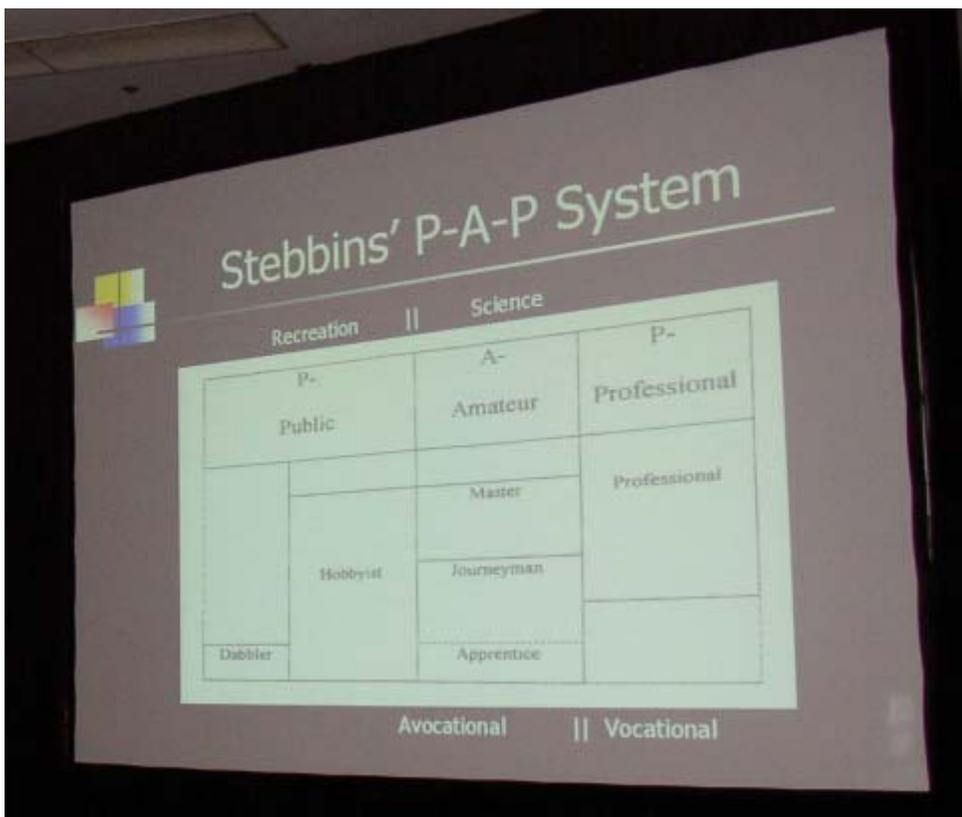
prone Posthumus, but says that its value should not be overestimated. When Posthumus awakens he notices the tablet, which he calls a “book.” Not only has the deity’s “tablet” become the earthling’s “book,” but it appears that the book has covers which Posthumus evidently recognizes because without even opening the book he ascribes two further properties to it: rarity, and the very property that Jupiter had earlier attributed, viz. that one must not read too much into it. The mystery deepens when the Jovian gift undergoes a second metamorphosis, to “label.” With the help of the *Oxford English Dictionary*, the potentially disparate terms “tablet,” “book,” and “label,” may be explained by terms appropriate either to supernatural or worldly beings. “Tablet” may recognize the Mosaic artifact, whereas “book” and “label” are probably mundane references to Galileo’s *Sidereus Nuncius* which appeared shortly before *Cymbeline*. The message of the Olympian god indicates therefore that the book is unique even as its contents have limited value. The first property celebrates the fact that Galileo’s book is the first of its kind, and the second advises that all results except the discovery of Jupiter’s moons have been reported earlier, in *Hamlet*. Much more information about this line of work can be found at the website: www.shakespearedigges.org/.

Because of some problems with computer compatibility and the projector, we skipped directly to **Tom Williams**’ (Rice U) presentation on “What Happened to the Amateurs After Professionalization? The Amateurization of Astronomy in Britain and the United States.” For nearly two centuries, Tom pointed out, astronomers have felt the need for a journal in which to publish their results, a venue for meetings in which to discuss those results, and a means for standardizing techniques and coordinating programs within the discipline. These factors are

typically the basis on which professional associations have been formed, but in many countries some form of an amateur organization now exists to serve these same purposes. In two case studies, Tom explored the different paths along which amateur organizations have developed in response to radically different dynamics in the professionalization of astronomy. In Britain, several failures preceded the successful formation of the British Astronomical Association (BAA). Within no more than a decade after its founding, the BAA’s specialized observing sections and credible journal were admired by professional and amateur astronomers alike, and served as a model for at least three failed attempts to form a similar organization in the United States. What emerged in the United States instead were six separate specialized observing associations, some of which now legitimately claim international status. Tom discussed how the radically different circumstances under which the professionalization of astronomy occurred in Britain and the United States influenced the amateurization of astronomy in both countries. Feel free to contact Tom at trw@rice.edu for more information or comments.

Peter Boyce (Maria Mitchell Obs.) followed with a presentation of a paper he did jointly with Alia Davis (SUNY at Plattsburgh and Maria Mitchell Obs.), “Remeasuring the Alignment of the Nantucket Meridian Line.” Peter told us that in 1840, William Mitchell (the father of Maria Mitchell) surveyed the NS meridian of the town of Nantucket, and erected two meridian stones to delineate true north. Peter and others had previously shown (L. Amory, et al., *BAAS*, 34, 1159, 2002) that the stones were erected as a means of facilitating the calibration of surveyor’s compasses for magnetic declination. The Nantucket meridian stones were apparently erected in response to a resolution of the legislature of the Commonwealth of Massachusetts

in 1830 requiring all towns “to make...accurate Plans of their respective towns...” The first known detailed map of Nantucket was completed by William Mitchell in 1838. During the summer of 2003 Peter’s group remeasured the Nantucket meridian stones using a relatively modern K&E transit instrument to make Polaris sights. Their determinations have an accuracy of 0.6 minutes of arc, which should be comparable to the accuracy with which the stones would have been set originally. The stones are now 3.5 ± 0.8 minutes of arc off of the N-S line, or about 4 inches of displacement. They believe that William Mitchell could achieve better accuracy than this. His positional observations of stars won praise from the U.S. Naval Observatory. The discrepancy from the N-S line might be explained by movement of the stones since 1840. Peter and Alia know that the south stone was recently removed for construction and replaced. In this case, its position was triangulated before removal with a modern laser theodolite, and it was supposed to be reset to within a few millimeters. However, it is possible that earlier, undocumented construction, such as the installation of sidewalks



Tom Williams shows us Joel Stebbins’ classification of sky-watchers into the P-A-P (Public-Amateur-Professional) system.

and curbs, resulted in a four inch shift in position of one or both stones. For more information, go to www.aas.org/~pboyce/mma/stones.htm.

The previous computer problem having been resolved, **Martin Gaskell** (Univ. Nebraska) was at last able to present the paper he co-wrote with T. A. Dobbins (ALPO), "Lowell's Martian 'Canals' in the Light of Modern CCD Imaging." As Martin reminded us, the question of the existence of the so-called "canals" on Mars was perhaps the dominant issue in late 19th and early 20th century planetary studies. Spacecraft imaging has confirmed that the thin straight lines depicted by Schiaparelli, Lowell, and others are not real. However, the question of how observers like Lowell could have been misled has not been fully answered. Martin argued that the best contemporary amateur CCD imaging provides important information because such images are taken with similar apertures to what Lowell used, and the CCD images resolution is identical to the resolution that could be achieved visually during the very best fleeting moments of perfect seeing. Inspection of CCD images taken during the perihelic Martian opposition of 2003 reveals many narrow "canals." The general impression is in some cases strikingly similar to what Lowell reported. To attempt to evaluate the subjective element in drawing canals, Martin repeated the classic experiment of Walter Maunder by having volunteers draw where they thought they saw canals in CCD images. These images were adjusted on a computer screen to give a resolution and magnification that roughly matched Lowell's view. Volunteers differed in how many canals they drew, but some of the main features they agreed on match up with "canals" reported by Lowell. Martin is concluded that Lowell's "canals" have more of a basis in reality that is commonly recognized. More information about this paper can be found at www.physics.unl.edu/directory/gaskell/preprints/preprints.html.

The final paper in the session was presented by **Thomas G. Brophy** (EMCS Consulting), a work he did jointly with P.A. Rosen (California Institute of Technology), Satellite Imagery Measures of the Astronomically Aligned Megaliths at Nabta Playa. Thoams described how astronomically aligned megalithic structures described in field reports (Wendorf, F. and Malville, J.M., "The Megalith Alignments," pp.489-502 in *Holocene Settlement of the Egyptian Sahara*, Vol. I, 2001) are identified in newly acquired georectified 60-cm panchromatic satellite imagery of Nabta Playa, southern Egypt. The satellite images allow refinement, often significant, of the reported locations of the megaliths. The report that the primary megalithic alignment was constructed to point to the bright star Sirius, circa 4,820 BC, is reconsidered by Thomas and his colleague in light of the satellite data, new field data, radiocarbon, lithostratigraphic and geochronologic data, and the playa sedimentation history. Thomas considered other possible archaeoastronomical interpretations for that alignment, including



Peter Abrahams showing us how transits of Venus were observed the good old-fashioned way in the 18th century.

the three stars of Orion's Belt circa 6,270 BC that are also implicated in the small Nabta Playa "calendar circle". Thomas discussed other new features apparent in the satellite imagery making it likely that the area presents a unified complex of astronomical significance. For more information or comments please contact him at tgbrophy@earthlink.net.

That was the end of the oral historical sessions for Atlanta, but we can't leave without mentioning a late entry in the poster sessions. **Peter Abrahams** (Independent Scholar), currently the President of the Antique Telescope Society, developed a poster session on the "Transits of Venus, 1761 and 1769."

Chasing Venus: Observing the Transits of Venus, 1631—2004

Speaking of transits, "Chasing Venus: Observing the Transits of Venus, 1631-2004" exhibition opens on March 24, 2004 in the Smithsonian Institution Libraries Exhibition Gallery at the National Museum of American History, Behring Center, 12th & Constitution Ave. NW, Washington, DC. "Chasing Venus" will tell the story of the transits of Venus using the marvelous illustrations in the rich collection of rare books from the Smithsonian Libraries, supplemented by appropriate artifacts from the National Museum of American History and the United States Naval Observatory.

"Chasing Venus" will remain in place through April 3, 2005. For more details about this upcoming exhibition, including a series of historical lectures in April and May, go to: www.sil.si.edu/Press/index.htm#ChasingVenus

In concert with the exhibition at the Smithsonian, there will be an online version available as well starting on March 24.



Three of the recipients of the LeRoy Doggett Prize for Historical Astronomy (left to right): Curtis Wilson (1998), Michael Hoskin (2004), and Owen Gingerich (2000) at the Atlanta HAD/AAS meeting.

HAD News
Dibner Library
NMAH 1041 / MRC 672
Smithsonian Institution Libraries
P.O. Box 37012
Washington, DC 20013-7012

PRSR STD
U.S. POSTAGE PAID
BOWIE, MD
PERMIT NO. 4434



H. A. D. NEWS