

13th ANNUAL CONFERENCE - McLean, Virginia

Donald Petrie and John Schilke

The 13th Annual Conference of the North American Sundial Society opened on Thursday afternoon, September 13th at the Holiday Inn Tysons Corner Hotel, McLean, Virginia. Of the 45 attendees, five were from the United Kingdom, one from Australia, and one from Japan. The Society was saddened by the hospitalization of Jacque Olin, who had done so much in preparation for this conference. The members sent a card of comfort and support.



Before the conference, Mike, Geoff & Tony find a transplanted English dial at the National Cathedral in D.C.

H. Robert Mills' *Practical Astronomy*, which contains a multitude of clever ideas, diagrams, and tables.

Derald Nye won a copy of Margo Anne King's new book, *Designing Sundials – the Graphic Method*. Jack Aubert won a copy of Penelope Gouk's *The Ivory Sundials of Nuremberg 1500 – 1700*, a history of the beautiful instruments and many photographs of them. Susan Schilke has a Christmas present for John, A. J. Turner's *Catalogue of Sun-Dials, Nocturnals and Related Instruments* (in the *Instituto e Museo de Storia della Scienza* in Florence, Italy).

On Thursday afternoon there was an opportunity to win one of the dozen door prizes offered by Fred Sawyer. Don Snyder won a Sunwatch, a 1920s brass-encased compass and dial designed for the Boy Scouts of the day. Claude Hartman is the owner of a copy of Robert Adzema and Mable Jones' *The Great Sundial Cutout Book*, with both text and cutouts for devices to understand basic gnomonics. John Schilke won a Universal Equatorial Sundial, designed by Heinz Schumacher. Ann Lohr now owns a reproduction pewter horizontal dial; the 17th century original is in the Metropolitan Museum of Art and was designed for latitude 42°. Charles Olin won a copy of Søren Thirslund's *Viking Navigation*, a discussion of Norsemen's use of a sun compass to sail to North America.

Some years ago Mac Oglesby made several Shadow Plane Demonstrators, devices using the shadow plane concept in a clever horizontal dial; Betsy Warner won one of these. Susan Thom goes home with a Lucite Equatorial Sundial, and George Wilson won a copy of



Vernon Walker Education Center



Anticipating the unveiling



Learning through touch.



Tony Moss with his newly dedicated masterpiece



The Jamestown Commemorative Dial

The Bus Tour of sundials on Friday seemed to start ominously, with clouds threatening rain, but the intrepid group set out minutes after 9:00 a.m.

The first dial was at the Vernon Walker Education Center, a park with exhibits describing earth and celestial phenomena. The reception was very warm, with the guide explaining how the center and its dial came into being. It was clear, however, that there were many problems with the dial, the most immediate being the trees surrounding it. In itself, the dial was interesting because of its gnomon - a polished metal triangle, corrugated, presenting curious shadows around noon (invisible on that day because of the clouds).

In the Turner Farm Park in Great Falls, Virginia, the group was privileged to attend the dedication of the Jamestown Commemorative Dial – the first installation in what is planned to be an International Sundial Garden. Designed, built, and donated by Tony Moss, the horizontal dial plate includes the usual gnomonic lines and replicas of the seals of King James I, the Virginia Colony, NASS, the McLean & Great Falls Celebrate Virginia Society, and the Analemma Society. There were speeches by the various local governmental bodies, Charles Olin for the Analemma Society, Fred Sawyer for NASS, and an explanatory address by Tony Moss. The dial is a fine monument to Anglo-American friendship (as well as cooperation in making dials!). As soon as the speeches were over, all the schoolchildren in attendance simply had to touch the dial!

Following lunch at Dante’s Restaurant we went to Gaithersburg, MD, to the National Institute of Standards & Technology. Our identities having been carefully checked (never forget your passport!), we went into a garden to see the Lyman Briggs Memorial Dial, a very impressive, carefully constructed and mounted polar dial. There was much discussion about its scientific and artistic properties among the group as all stood in a light rain to look at it. In anticipation of our visit, a temporary replacement for the missing lower gnomon of this famous dial had been put in place, and NASS members were asked for advice on how best to make it a permanent repair. Unfortunately, time (the object of the visit) did not permit study of the other various metrological exhibits in the NIST museum.

Our next stop was at the Latitude Observatory in Gaithersburg – one of only 6 in the world. David Shayt, a longtime friend of NASS, joined us to give everyone a tour and an explanation of the observatory’s role in the study of the variation in latitude.

Returning to Falls Church, Virginia, we visited the home of Jack and Kate Aubert, where we admired (but could not test for want of sunshine) a fine declining vertical dial on the wall of their house. Jack was also able to show us a stone dial he made after visiting John Carmichael’s workshop during our Tucson conference. Jack & Kate provided greatly appreciated refreshments and a chance to rest, talk, and compare notes, making the short bus ride back to the hotel more congenial. We were free Friday night to seek victuals and drink on our own.

Following breakfast on Saturday, the formal program of presentation of papers began in earnest. The first was Roger Bailey’s “God’s Longitude and the Lost Colony,” presented by Fred Sawyer. Roger explained the perplexing problem of assigning a calendar date to a specific solar declination. For example the vernal equinox, the first day of spring can vary over 4 days and will not be 21 March again until 2102. Citing Omar Khayyam (11th century), he also pointed out the rule that a year be a leap year if, when the year is

divided by 33, the remainder is both nonzero and divisible by 4. He went on to explain the role of (16th century English) Sir John Dee in calendar reform and subsequent history of settlement in Virginia.



Steve Woodbury on concrete examples for instruction.

In a tripartite talk, Woody Sullivan, “Ten Tons of Basalt and Tenths of Degrees,” described a horizontal dial for a school athletic field, using a 30-inch steel ball as a nodus and a large basalt rock to support it. He also discussed the “Little Chief,” a Nez Perce shadow object in Hells Canyon, used as a signal to leave the comfort of the canyon in the spring for grazing areas. Finally, he asked members to select candidates for a planned sundial travelogue, called “Travelling with the Sun.” He distributed forms for suggestions and showed slides of some of some of his own choices.



The Briggs sundial at NIST, splattered with rain drops. The lower gnomon was a temporary replacement in anticipation of our visit. The curved back portion of this polar dial carries an analemma for noon.



Taking turns fitting into the Latitude Observatory.

Fred Sawyer carefully outlined the 17th century priority battle over the invention of a stereographic quadrant dial. Both Richard Delamain, a math tutor to Charles I, and William Oughtred, inventor of the slide rule and Delamain's teacher, laid claim to its invention. As a jury, our vote was 14 to 10, in favor of Oughtred. It was an appropriate time for a break in the proceedings, during which Bill Gottesman demonstrated the use of his theodolite.

Kevin Karney then discussed the "Variability in the Equation of Time" over periods of centuries, noting astronomical effects (e.g., obliquity of the ecliptic and eccentricity of the

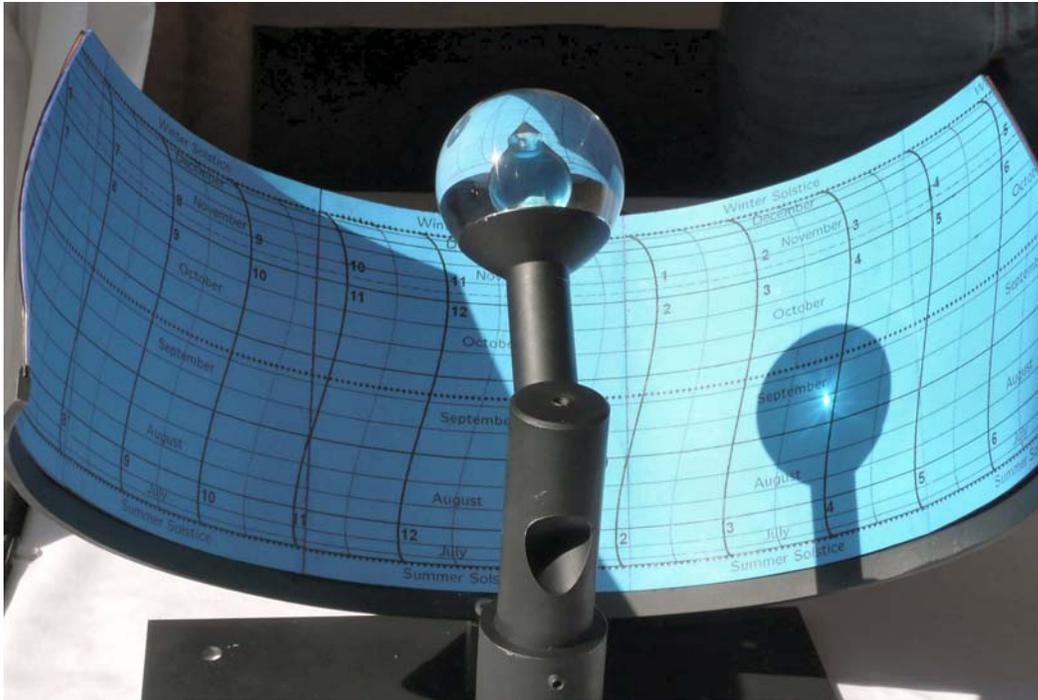
earth's orbit), refraction, calendrical and man-made effects like daylight saving time, and human errors. His suggestion: date your EoT! He further showed a "Design for an Equation of Time Clock and a Heliochronometer 'Accurate' for 500 Years."

Following the lunch break Tom Kreyche described "True Horizons for Double Horizontal Sundials," noting that the true (i.e. observed) horizon on land is a complicated affair, with trees, buildings, and other objects irregularly raising the altitude of the horizon from 0°. His example, at the Seattle Asian Art Museum, neatly demonstrated the phenomenon.

Julian Chen astonished the conference with a discussion and demonstration of his "Omnidirectional Lens in Sundials and Solar Compasses," which uses the increased index of refraction of a solution of copper sulfate in a carefully machined sphere within a Lucite sphere. The startling clarity and sharpness of lines or dots cast through the lens was truly amazing and stimulated a vigorous discussion. It is, sadly, not yet in mass production (but a patent has been applied for). He ended with a review of the solar compass and showed how to use his lens for increased accuracy.



The vertical declining dial that Jack built.



Julian Chen's sphere within a sphere used as a gnomon.

Bob Kellogg developed his plan "Towards an Interactive Website" to meet increasing interest in our site, especially for a registry of dials. With Python as the program language it is possible to control the access by members, private parties, and the viewing public, the model being Wikipedia. A serious issue was a closed member list. He expressed interest in incorporating many ideas expressed, although the project is still in its early stages.

The Meeting of the Board and Annual General Meeting, held next, are described elsewhere.

Saturday Ten-Minute Talks followed a break. Ken Clark spoke of knowing Richard Schmoyer, now deceased, whose dial is well known for its beauty and accuracy. Ken has his sundial papers.

Peter Mayer explained how one might consider "Using a Poncet Platform to Correct a Dial for the EOT." This type of dial, using a cone on a plane, is the invention of Adrian Poncet in 1978.

Warren Thom, referring to the article by Hollander last year, demonstrated looping programs for constructing dials with Python and Excel. He recommends awaiting newer versions than Version 3000, however.

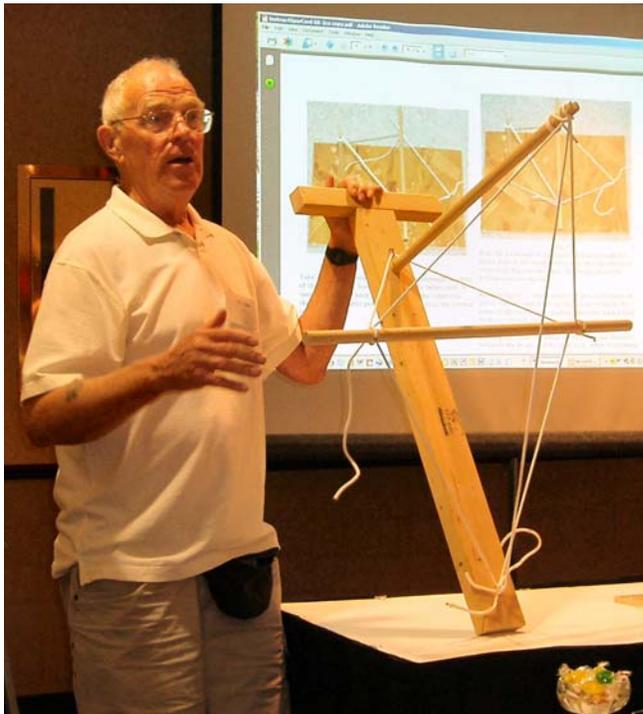
Fred Sawyer spoke of Jacques Ozanam, who was interested in mathematical recreations in 17th century Paris, and of his translator, Jean-Théophile Desaguliers. Ozanam published *Cursus Mathematicus – A Treatise of Gnomonicks* in 1693; the translation appeared in 1712. Fred has now reprinted and published this treatise as the latest installment in the ShadowCatchers series of reprints.

At the Sawyer Dialing Prize Presentation to Mac Oglesby Fred Sawyer referred to Mac's unusual dials, his willingness to help others make dials, his educational efforts among several generations of people, and his promotion of community interest in sundials. Once again this year the prize included a custom Spectra Sundial designed and produced by Jim Tallman of Artisan Industrials.



Fred Sawyer presents the Sawyer Dialing Prize to Mac Oglesby

In accepting the prize, Mac thanked many people who had helped him: Bill Maddux, who introduced him to dials, Fred Sawyer, who brought him into NASS, Bob Terwilliger about Compendium articles, Fer deVries, who has helped him through e-mail correspondence, Tony Moss for ideas, and David Roth, with slides of Bill Maddux and Mac and their work. Mac then distributed cylinder azimuth dials he had made as a gift for each conference participant – specific to his/her own location.



Mac demonstrates the construction of a spar & rope sundial

We then adjourned for cocktails in the Courtyard and the Conference Dinner in the Oakton Room of the hotel. At this event, Fred distributed Sundial photo wall calendars for 2008 – complete with photos of interesting dials and a notation of the equation of time in each date square.

Following breakfast on Sunday, the 16th, Mac Oglesby began a hands-on “Spar & Rope Sundial Project” with materials for members to construct such a dial.

Fred Sawyer spoke of “Bifilar Origins” in an article by Michnik in 1923. Fred discussed the history of the mathematical insights that led to the dial’s invention and gave “an embarrassingly simple” mathematical proof of the theory of the dial.

Bill Gottesman, in “Sun-Oriented Sculptures and Buildings,” explained how he had designed and laid out large standing stones in

Burlington, VT. Using a theodolite, he placed them with reference to equinox and solstice points.

In “Angling for Precision” Tony Moss reviewed the methods of laying out a vertical declining dial and placement of the style. He explained his Precision Declinometer and a “plumett for levelling.”

Don Petrie, in the Sunday Ten-Minute Talks, showed slides of different types of nodi for a rod gnomon on a vertical dial: ball, long pin, short pin, ring, and disc. The audience suggested that he put up a model to determine the best size of the nodus.

Bob Kellogg read Walter Sanford’s paper concerning using an equatorial map and gnomon length and dial face in education. Likewise, Steve Woodbury used globes to introduce sundials to school children in a series of steps from the globe of the earth to an explanation of how dials work; one can introduce disc dials later.

Barry Duell narrated his fascinating experience in Japan, where time in his town was until quite recently announced publicly by a bell. There were no sundials then, but there are many difficulties for non-Japanese who wish to introduce such novelties. He sought advice from the audience about what type of dial would be best.

There are some 6000 registered dials in the UK. Graham Aldred has been involved with restoration of several of them. He showed slides of the process of restoring a market cross dial.

Doug Wood spoke of the history of “Computers and Clocks,” from dials to clocks of various types, computers, and GPS, showing the error resulting from the method each uses. He demonstrated a computer program to test the accuracy of these and commented on the setting of clocks.

Three lucky holders of drawing tickets won copies of the Ozanam *Treatise of Gnomonicks*. The conference closed, with members happily again given much about which to cogitate and develop.

[Photos for this piece were contributed by several attendees. Thanks to you all!]

Plan to join us for the 14th conference in August 2008 in St. Louis, Missouri!

[As more detailed information becomes available, emails will be sent to recent attendees. If you wish to be added to this list, send an email to sundial.society@cox.net]



Graham Aldred discusses his restoration work on a market cross dial in England.