

NASS Conference Retrospective: Portland Oregon, August 2009
Roger Bailey

John Schilke was the local host for the NASS Conference in Portland. The conference was held at the downtown University Park Hotel and Conference Centre. Over 50 people were able to participate, 38 as full registrants attending the presentations on Saturday and Sunday. John arranged for the hotel, developed the sundial tour and designed a sundial to be dedicated on the tour and arranged entertainment for the conference dinner. Our thanks go to John and Fred for organizing an excellent conference.

Registration Thursday, August 20, 2009

Almost all those attending the conference were able to register on Thursday afternoon, to meet friends old and new and participate in the draw for door prizes. Again this year Fred Sawyer collected a remarkable number of prizes and people were able to choose, voting with their allotted tickets.

Barry Duell won the “Seriglas” painted glass sundial by Yorkcraft

Gino Schiavone won Cousins book, *Sundials, A Simplified Approach*

Mark Montgomery won Herbert’s book *Sundials, Old and New*

Art Paque won the Nocturnal geocoin

Julia Schiavone won Lennox-Boyd’s book *Sundials-History, Art, People and Science*

Emi Duell won the Dasypodius tee shirt produced by the Alsace Dasypodius Society

Tom Laidlaw won the paper dial materials, *Sundials & Timelines* etc.

Susan Schilke won the Pillar Sundial pendant

Logan Anderson won the Josiah Miller reproduction pewter sundial

The Father Time pewter statue was won several times, resting finally with Bob Kellogg

Ken Clark won Cowham’s book and CD *Altitude Sundials*

Sasch Stephens won Wheaton-Smith’s *Illustrating Shadows* books; Jody Heglund won the CD

Derald Nye won Savoie’s book *Sundials-Design, Construction and Use*

Sundial Tour: Friday August 21,2009

The heat wave in Portland broke and the day started with clouds and a light rain, clearing to sunshine later - ideal weather for a sundial tour.

Colby Lamb’s Sundial & Workshop

The first stop on the tour was the home, workshop and garden of Colby Lamb. Colby’s sundials are typically large finely machined horizontal sundials with a tilted conical gnomon providing a point projected onto hour and date lines. The hour lines are analemmas corrected for longitude and the Equation of Time to show mean



(clock) time. The engraved lines of the analemma are color coded to show spring, summer, fall and winter as green, red, orange and blue. John Carmichael commented that the sundials with the slanted conical gnomons looked like the mean time sundial designs of Hendrik Hollander. John suggested Colby might follow up on Hollander's design to produce a mean time sundial without the analemmas.

Rob and Julie Brown's Patio Sundial

The next stop was at the home of Rob and Julie Brown where they showed the unique sundial in the middle of the stone compass rose patio. The dial looked like an equatorial sundial with a polar gnomon on the meridian ring and a toothed equatorial ring. Markers in the stone patio indicated hour points. The unique feature was demonstrated when Ron turned on the water, converting the sundial into a rotating sprinkler! Below is the tour group around the sundial in Brown's patio.



Stephenson Elementary School Mosaic Sundial:

We also enjoyed Julie Brown's mosaic art. She mentioned that they had made a mosaic sundial with the grade 5 class at Stephenson Elementary School so we added this stop to the tour. This beautiful mosaic dial is a south facing vertical dial corrected for longitude. Unfortunately the unplanned stop and difficult access resulted in damage to the rear tire of the bus forcing a change of bus and driver at Marylhurst.

Marylhurst University Analemmatic Sundial:

Next was the key stop on the sundial tour for the dedication of an Analemmatic Dial at Marylhurst University designed by John Schilke and Jan Dabrowski. John and Jan explained the design, layout and construction. The Marylhurst President, Judith Johansen was pleased to participate in the dedication ceremony and to receive for the university a copy of NASS' "Analemmatic Sundial Sourcebook" presented by Fred on behalf of all the conference attendees.





The analemmatic sundial has a 20 ft. major axis, 14 ft. minor axis. The zodiac table and hour points will be engraved in cast concrete backed up by ornamental Box shrubs at each hour point. John Carmichael asked about seasonal markers and Roger Bailey demonstrated how this would be a good feature to add to the dial. Stand on the sunrise or sunset marker and view over the date on the zodiac table to see where the sun rises and sets through the seasons. Stand on the date mark and view over the seasonal marker to see when the sun raises or set. Jan Dabrowski will consider adding these seasonal markers to the sundial.

Lunch was set at the Convent of the Sisters of the Holy Names, Lake Oswego, the heart of Mary's Wood, the retirement community and home for John and Susan Schilke, adjacent to Marylhurst University.



Reed College Sundial

Our first dial in the afternoon was across the Willamette River at Reed College, a west coast "Ivy League" College following the Collegiate Gothic traditions of Oxford, Cambridge and the eastern US colleges. A classic vertical sundial was set in the top of the sally port of the Old Dorm Block built in 1912. The engraved hour lines on the stone sundial designed by Dr F. L. Griffin are offset to correct for longitude. Flanking the sally port are the carved heads of Lux, or light, on the east and Nox, or night, closing its eyes for sleep on the west. These are two of many interesting carved figures on the building.



Fort Vancouver Sundials:

Across on the Vancouver WA side of the Columbia River, the National Historical Site, Fort Vancouver was our next stop. This site originated as a trading post for the Hudson's Bay Company near the confluence of the Columbia and Willamette rivers. Two historical sundials are known to have been in place in front of and behind the main building. The original sundials disappeared long ago and have been replaced with garden variety brass sundials that look satisfactory to most tourists. NASS members were more discerning, commenting on the incorrect gnomon and hour angles, the displaced gnomon and other trivia.

Clark College Equatorial Sundial:

Also in Vancouver WA was the final sundial of the tour, a large equatorial sundial built by the staff and students of Clark College to commemorate the 50th Anniversary of the College in 1973. Clark physics professor Dick Shamrell enthusiastically demonstrated the use of this excellent sundial as teaching aid that required routine adjustments to correct for longitude and the Equation of Time. To commemorate the 75th anniversary of the college and 25th anniversary of the dial, Art Krenzel designed, fabricated and installed an analemma gnomon to correct for the equation of time. Art presented the full story of this analemma at the conference on Saturday. Below is a photo of Dick Shamrell and the Clark Equatorial with the analemma gnomon.



Group Photo – On the Browns' Patio:



Presentations: Saturday August 22, 2009

Equatorial Mean Time Sundials: Len Berggren gave the presentation as a co-author on behalf of Brian Albinson who was unable to attend the conference. He covered the various methods used to show clock time on an equatorial sundial. Adjusting for longitude and daylight savings are relatively easy by shifting the hour marks on the equatorial ring. For the Equation of time the analemma shape has to be projected onto the hour ring. Solid shapes, half year profiles and apertures can be used as correction gnomons. The focus was on the solid analemma shape, the bowling pin gnomon. Brian recently assisted Art Krenzel in the design of the analemmic gnomon for the Clark College Equatorial Sundial.

Re-Making the Clark College Dial:

Appropriately the next presentation was by Art Krenzel, outlining the details in the design, machining and installation of the analemmic gnomon on the Clark College Equatorial Sundial, a highlight of the sundial tour. Art acknowledged his team, the astronomy lecturer at Clark College, Dick Shamrell, the machinist Stuart Caruk and the sundial consultants Brian Albinson and Roger Bailey.

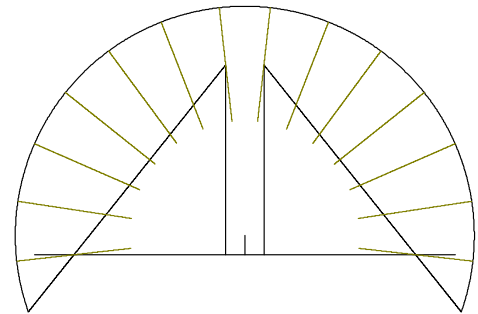


Equants, Scales & Castillon Tables:



This presentation by Fred Sawyer was another excellent example of how Fred reviews historical and complex mathematical concepts to come up with new simple sundial designs. He started with a review of his Equant Dial designs. These are horizontal sundials easily accommodating daily Equation of Time adjustments by simply rotating the array of hour lines. The Sawyer Equant as built by Bill Gottesman is a prime example. He then reviewed the Yabashi Point sundial and showed the math for other possible equant curves. This led to his new Equant Dial design - a specific, simple design that uses straight lines to replace the usual equant curves. The concepts embody the principles of dialing scales. Then

Fred outlined a similar approach by Jean de Castillon, an 18th century Italian astronomer, mathematician and philosopher who published a table for the simple construction of a horizontal dial based on knowing only one number. Fred then developed alternative Castillon Tables to show how his new design can replace dialing scales for the easy construction of traditional horizontal dials.



Error Analysis of a Monumental Garden

Variety Sundial:

We next switched in the presentations from the sublime to the ridiculous, from simple complexities to what happens when a poor “garden variety” sundial design is enlarged to monumental proportions. Roger Bailey outlined how he helped the Soap Lake Garden Club sundial project create a functional sundial, at least one that worked during the times when most people would observe the monumental sculpture. Defining, funding and building the “Calling the Healing Waters” sundial sculpture has been a 15 year project for the Garden Club of Soap Lake WA. The sculpture was designed by two local artists selected in 2003. In 2009 they started preparing the site and pouring the concrete foundations aiming to dedicate the monument on 21 June. In late April 2009 they asked the NASS Registrar for help in setting the hour lines and posts. Roger Bailey volunteered to provide advice to enable the sculpture to function as a sundial. The feathered arm of the sculpture was a poor gnomon, a worst-case scenario. The angles were wrong, it curved both up and around and it had multiple shadow projection points. A shadow plane analysis was used to determine correct hour



lines for the tip of the gnomon for the prime use period, hot summer days on the beach of Soap Lake. For most of the year the shadow is useless for indicating time but if no one is there it doesn't matter. Most people are impressed by the sculpture. It looks good. The shadow on the hour lines and posts indicates the time reasonably well. The project sponsors appreciated NASS assistance in successfully completing the project.



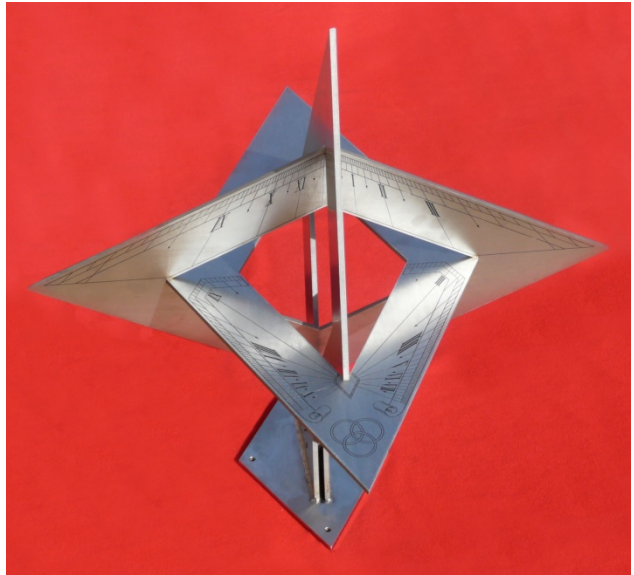
An Interactive Reflection Heliochronometer: After the break Silvio Magnani from Milan, Italy described his interactive reflection sundial project - using a small mirror to reflect the sun and a laser pointer to shine spots on a sundial layout on an interior wall. By manually aligning solar dots on the time line and analemma, accurate solar and clock time can be determined by the resulting position of the laser dot. The picture shows the sundial scale on the wall and the mirror/ laser combination on the window ledge.

In his presentation he gave several examples to show how to use the system to accurately measure time. The seasonal symbols and colours were an effective color code to determine the appropriate sector of the analemma.

NASS Flash: Fred Sawyer provided all participants with copies of all the presentations on a flash drive. As he did last year, Fred added to the storage area a number of sundial design programs and useful utilities. Having the presentations available has been very useful for me as I write these notes. At this moment I am enjoying one of the items he added, a list of internet radio stations by Sure Radio including WHSU Sunday Baroque. Earlier I used the Foxfire browser FTP plug in to update my website. They are especially useful as all the programs are self contained, running from the flash drive, great for traveling. In the spare space I have loaded in all the NASS Compendia. Thanks, Fred. I appreciate what you have collected, tested and stored on these amazing flash drives. [*You're all very welcome! - Fred*]

A Diamond Ring Sundial: Tony Moss, the sole attendee this year from the UK, introduced his talk as his professional dialing swan song. He claimed to be trying to retire, but friends keep bringing interesting must-do projects to him. This project, the Diamond Ring Sundial he insisted was his last. I grinned and winked but enjoyed the retirement cake decorated with the NASS logo and presented to Tony at dinner that night.

The challenge David Young and John Moir brought to Tony was to craft a sundial based on intersecting Borromean Rings. Three or more rings interlock. Cut one out and the whole thing falls apart. The rings can be any shape: circular, square, rhombic, whatever. In his usual entertaining instructive way, Tony described the intellectual and physical challenges in crafting a sundial based on diamond shaped Borromean Rings. Step by step he led us through: Designing, machining frosting, etching, assembling, welding etc. The final product is a remarkable sundial, well suited to commemorate the founding of the BSS on 5 May 1989.



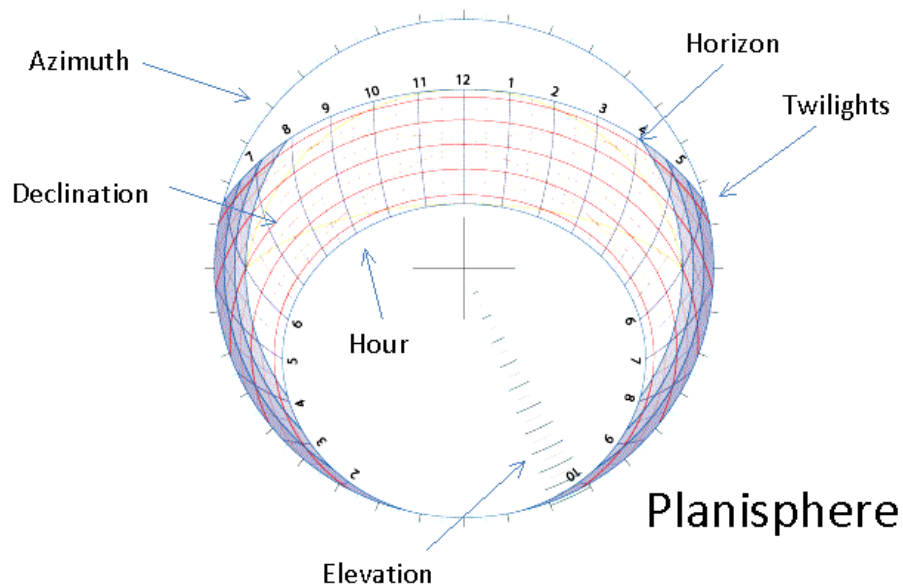
Geotagging Sundials: Roger Bailey started the afternoon session with a frequently asked question. “Are there any interesting sundials in Portland?” Or any other place you are visiting. The usual sources for this information, the NASS Registry, personal contacts, Google searches are generally inadequate. His next question was “What should we be looking at for the future?” A quick poll showed that most people at the conference had a digital camera and a computer with Internet access. Some had a GPS. A few had all these devices combined in one hand held device, a 3G iPhone, Blackberry or equivalent. This is the future. Consider the possibility of checking your 3G phone and finding all the interesting sundials in the area marked. Click for pictures, descriptions and GPS coordinates. All the technology is available. The only thing lacking is the data base. The challenge is now for users, NASS members to create the data base. He then went on to review the options including Waymarking, Google or Yahoo maps, Google Earth, Public Earth etc. His example was a sundial tour of Victoria on Google Earth.



Creating the Marylhurst Analemmatic Sundial: Jan Dabrowski then told us the background on the Marylhurst sundial we dedicated during the sundial tour. Jan, Professor of Astronomy at Marylhurst University, and John Schilke, local host for the NASS conference, worked as a team to create a sundial for the conference. They chose an analemmatic design and sold the concept to the university as a worthwhile educational tool. The talk outlined the work design concepts, mock-ups, layout and initial construction phases. Details were outlined in the sundial tour.

Photo-Etching A Clock Face: Tony Moss returned to present his instructional video on photo-etching. This was filmed in Tony's kitchen and workshop. Anyone considering etching should view this video as it demonstrates the technique and the pitfalls very well.

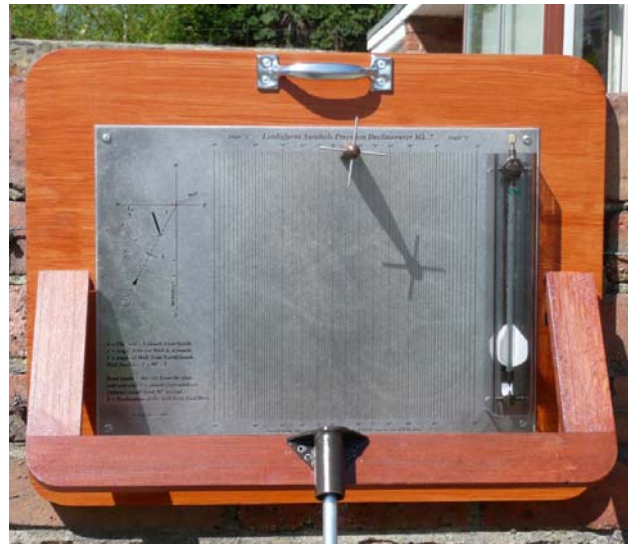
Personalized Analogue Computer for the Sun's Position: Tom Kreyche then handed out what looked like a couple of CDs. These were actually what he described as "your Personal Slightly-larger-than-Pocket-Sized Analogue Computer for Resolving All Questions Relating to the Sun's Position in the Sky". Printed on one is a polar chart that plots the Equation of Time and the solar declination around the year. It also includes a longitude correction. This disc is universal, not dependent on latitude. The other disc is a latitude dependant Planisphere, personalized for each person's home location. Azimuth is plotted around the disc. An altitude or elevation scale is included. Lines are plotted for declination, horizon for sunrise and set, twilights. This can be used as an azimuthal sundial using the shadow from a central vertical gnomon. Tom's favorite type of sundial is the Double Horizontal that combines the planisphere with a normal polar sundial.



Philognomonics: Where My Love Of Dialing Has Taken Me: Gino Schiavone started by coining the word philognomonics, the love of dialing. He then explained in an enthusiastic emotional presentation how dialing had changed his life. He is a craftsman, originally skilled in leather and bookbinding. An interest in sundials led him to create a miniature folding sundial bound in leather. At dinner, all participants received a personal one of these designed for their own location. Inside are a polar vertical dial with a thread gnomon and an analemmatic sundial with a pin gnomon. This is a self-orienting sundial. When both sundials

show the same time, the dials are oriented correctly. The time scales are corrected for longitude and daylight savings times. An Equation of Time graph is also included. This design started Gino in the sundial business years ago. He then went on to show some of his recent work, large sundial sculptures. They are works of art and functioning sundials.

Angling For Precision: Tony Moss was back again to give us the sequel to his previous (2007) presentation on his search for the ultimate wall declinometer. His presentation described the improvements in all the design elements that led to this accurate instrument for measuring wall declination. The principle is the same as a nail in a board pictured in Waugh, but what a difference! Whether it is the gnomon, the plumb bob, the etched plate, the support prop, whatever. All these elements have all been ingeniously reworked. This picture shows the final product in use, propped up against a wall.



John Davis receiving the custom Spectra Sundial for the Sawyer Dialing Prize at an earlier presentation in England.

Sawyer Dialing Prize Presentation to

John Davis: Fred presented the Sawyer Dialing Prize to John Davis (who unfortunately could not attend). As in previous years the award was money to fund a sundial project and a Spectra Sundial by Jim Tallman, Artisan Industrial Corp. John Davis will use the money to help place one of his magnificent double horizontal sundials on the campus of Purdue North Central University in Indiana. Fred Sawyer then reviewed the portfolio of sundials by John Davis that justified the award. Fred also gave John Davis's presentation prepared on John Seller, a sundial maker and probable forger in London in the 17th century.

Tickless Time: The entertainment following the conference dinner was more than retirement cake for Tony Moss. Fred and John worked with the Mary's Woods amateur theater group to present the 1918 comedy "Tickless Time". Susan Glaspell wrote this comedy in one act in collaboration with George Cram Cook. It was first performed by the Provincetown Players in

New York in Dec 1918, The play struck a familiar chord with the NASS audience and their spouses. The Mary's Woods group read this as a radio play with excellent interpretation. They

were somewhat bemused by the enthusiastic audience that understood the basis for the subtle jokes so well. Fred Sawyer provided the script published in 1920 as a pdf file on the flash drive.

Presentations: Sunday August 23, 2009 8:00 AM

In Search of Significant Alignments: In this presentation Barry Duell introduced us to “Diamond Fuji”, pictures of Mt. Fuji taken as the sun rises behind the mountain. The alignments are published in Japanese newspapers giving the date and time for different locations west of Mt. Fuji. Large crowds gather at locations with attractive foregrounds. The Double Diamond picture including the reflection on a lake is prized. The effect is shown in this Panoramic photo from Google Earth.



Barry wondered if there were locations around Portland where a similar phenomenon could be observed with Mt. Hood. He is working on the math to predict such significant alignments.

The Ladies' Diary & Forced Alignments: Fred Sawyer entertained us again with an introduction to the Ladies' Diary, an English Almanac (1704-1840), “Designed Principally For the Amusement and Instruction of The Fair Sex, the first such annual intended for a female readership.” In 1704 “Rhyming Enigmas” were introduced which became one of the most popular things in the almanac. The math became more challenging introducing calculus by 1720. In 137 years, about 1630 math puzzles were published, 18 involving gnomonics. Fred reviewed one example from 1757 based on observations of the shadow on a tilted sundial. The solution is based on the concept of a forced equinoctial that resolved the time angle independent of the latitude as $\sin t = \sin t_{fe} / \cos \delta$. Fred then looked at other latitude independent sundials including his Hectemoros sundial. The conclusion is that the Hectemoros sundial is a special case of Forced Equinoctial sundials.

NASS Website: Bob Kellogg then reviewed the new NASS website and the changes since Bob Terwilliger retired and the role of webmaster was outsourced to TIVEX Services, Marcus Dewan, as website host and management. He outlined the website committee: Robert Kellogg, Robert Terwilliger, Mac Oglesby, Dudley Warner, Walter Sanford, Jack Aubert, and Larry McDavid. The website has a new look and remains based on the original. The goal now is to establish a NASS content management system. Bob went through the various webpages and showed the new features. These included: publications, (Compendium, Shadow catchers, Lulu Books etc.), Links (making it visual), Search, Sundial Registry now and in the future, and Conferences.

NASS Registry Update: Larry McDavid then gave a report on the Sundial Registry noting that there are now 658 dials registered, 25 new this year and 16 updated. He is working to improve the quality of the submissions - both data and pictures. He showed how he has improved some of the pictures with Photoshop. This is why he requests original digital pictures that can be adjusted. He also reviewed some of the more interesting dials registered over the last year.

Website for Northwest Sundials: Woody Sullivan outlined his project to geotag all the sundials in the Northwest: Washington, Oregon and British Columbia. He hopes to make Seattle the sundial capital of North America. This geotagging or waymarking of sundials is along the same lines as Roger Bailey’s proposal earlier in the conference. Woody is using the My Maps feature of Google Maps to mark the sundials as this can be independent of websites other than his own. His Google Maps klm file can also be opened in Google Earth. See <http://www.astro.washington.edu/users/woody/Sundials/Home.html> .

The sundial icons are color coded to separate the best from the ordinary sundials, The placemake data and picture is fairly limited but clicking on the further information link opens up to a full webpage for each dial on Woody’s own website. He is seeking comments and input from others. Roger Bailey agreed to provide data on sundials in Western Canada, including a Victoria Sundial Tour. Perhaps this is an option for the NASS Registry in the future. Currently the location data is too limited for geotagging.

Making Precision Scrap: Tony Moss described one of his sundial projects that involved a detail custom design and rigorous photo etching procedures. He then showed pictures of the beautiful end produce. There was only one small problem. He got an hour number wrong and had to redo the dial. Most smiled and nodded to themselves “Been there, done that!”

Following the Board Meeting and Annual General Meeting the floor was open for short informal presentations. Roger Bailey presented “Pendray Estate Sundial Repair”, the story of a simple repair job, the gnomon replacement and cleanup of an old sundial in Victoria BC. Additional brief talks were given by Peter Abrahams, Woody Sullivan, Sasch Stephens, Art Krenznel.



Tony Moss displaying the cake presented at dinner to honor his retirement.