

## NASS Conference Retrospective - 2021

The 26<sup>th</sup> annual North American Sundial Conference was two years in the making. Because of Covid-19 restrictions, the 2020 conference was delayed until 2021, but with the same venue at the Hilton Garden Inn, Center City, Philadelphia.

### Thursday Social and Door Prizes

Beginning at 4:30pm on Thursday afternoon August 5<sup>th</sup>, Mark Montgomery, NASS Treasurer and Conference Coordinator welcomed sundialists and their spouses to the conference. After words of introduction, Mark called upon Betsy Wilson, who along with her husband George, hosted the NASS Conference in Indiana. She remarked about how her husband was a dial enthusiast and she appreciated the effort of those who design, build, and appreciate sundials. David Robinson then explained how as a retired professor, he looked for a hobby that balanced mathematics and engineering plus his new found interest in blacksmithing. He became hooked on designing wrought iron armillary spheres and has been making a variety of sundials ever since.



Figure 1 Thursday Evening Social

Photo: clockwise from left David Robinson, Joyce Robinson (obscured), Betsy Wilson (obscured), George Wilson (obscured), Roger Dignard, Fred Sawyer (obscured), Philomena Sawyer, Kate Aubert, Jack Aubert (back to camera)

Mark Montgomery announced that for first-time attendees they would receive a one-year free extension of their membership and *Compendium* subscription. The qualifying recipients at this year's conference were: Pam Morris, David Robinson, Roger Dignard, and Zoon Nguyen.

Fred Sawyer led the annual door-prize drawing of sundials and books pulling tickets out of 13 bags where attendees had dropped tickets to hopefully claim a prize. The winners were:

- |                        |  |
|------------------------|--|
| Roger Dignard          | <i>Universal Dialist's Companion</i> by Mike Shaw showing graphically how we relate to the sun at any latitude in the northern hemisphere. Included is a copy of Mike's 66 slide instruction manual  |
| Pam Morris             | <i>Sundials – History, Art, and People</i> by Mark Lennox-Boyd. The book describes in detail the main types of sundials and gives historical examples.   |
| Art Paque/Betsy Wilson | Each won a small replica of the Bellingham Dial designed by Sasch Sephens and Gretchen Leggitt, and painted on the south wall of Ciao Thyme by Gretchen Leggitt. This recently installed vertical sundial resulted from a worldwide design competition supported by many contributions, including donations from NASS. These models by Sasch Stephens reproduce the basic design and were created as thank-you gifts for the donors. |
| Pat O'Hearn            | <i>Sundials Old and New</i> by A.P. Herbert. One of the purposes of the book is "to give people fun making and using sundials". This is a classic British book.  |
| Zoon Nguyen            | <i>Sundials – The Art &amp; Science of Gnomonics</i> by Frank Cousins. This is a comprehensive work on gnomonics, covering the history, theory and layout of all traditional types of sundials, including dialing scales.  |
| David Robinson         | Beach Stone Sundial by Greg McDonough. This is a hand-crafted sundial from natural beach stone, cut and polished, and etched to contrast alternating hours. With a solid brass gnomon this is ideal on a windowsill.   |

Jim Holland	Solar Eye – (Glass Spheres) Meridian Mark by UK artist Pete Smith. The glass spheres are arranged so that when placed in the sun on a south facing surface, they “create an eclipse of shadow by light at noon”. The Solar Eye is fully adjustable to various latitudes.
Bill Thibault	<i>Designing Sundials: The Graphic Method</i> by Margo Anne King. With a ruler, compass, protractor, and these step-by-step instructions, you can design an accurate sundial for any place on earth. It explains how to choose the right type of sundial for your location and needs.
Mark Montgomery	<i>A Study of the Quadrant w/CD</i> by Mike Cowham. This book describes and illustrates 21 different types of quadrants and explains how to use the various functions engraved on them. Many of the quadrants can be used to construct sundials as explained in the text. A CD provides about 50 quadrant designs.
Will Grant	Pewter Sundial. This is a reproduction of a Colonial American Sundial from the eighteenth century. The 4 ½” original dial is from the collection of the Metropolitan Museum of Art. It was designed by Josiah Miller for latitude 42°, probably for Rhode Island, Connecticut or Massachusetts.
Bob Kellogg	<i>Sundials: An Illustrated History of Portable Dials</i> by Hester Higton. This work focuses on portable sundials used as timekeepers across three millennia. Most of the sundials come from the collections of the National Maritime Museum.
George Wilson	Ring Dial for by José Alfonso Solera. The dial is designed for 40° and 3D printed in sandstone painted in a rainbow of color. The altitude dial has two holes and two graduated scales for the hours: Spring/Summer and Autumn/Winter. Two indentations between the holes allow it to be hung using a chain or cord.
Tish Grant	Reproduction of a 1700’s sundial by R. Glynne. This modern version in brass on a marble base was created from a drawing by F.J. deVries in the 1980’s.

## Friday Sundial Tour

At 9am Friday Aug 6<sup>th</sup> the bus departed the hotel for a sundial tour of dials in Philadelphia. Though there were many dials in the area, the tour was limited to bus accessible dials in the immediate Philadelphia area. Even so, it was an exhausting day. Many of the dials below are new NASS Registry dials. Those that are in the Registry are updated.

1. Evelyn Taylor Price Dial at Rittenhouse Square near 18th and Walnut. (#147) (Fig. 2) The dial sculpture of two children at a giant sunflower was designed by Beatrice Fenton. The dial was a memorial to Price who was president of the Rittenhouse Square Flower Market Association 1916-1939 and the Rittenhouse Square Improvement Association 1934-1936.



Figure 2 Evelyn Taylor Price Sundial

2. Pan with Sundial east of the main entrance of the Penn Library in front of the Mark H and Bernard Goldstein Undergraduate Student Center. (Fig. 3) A beautiful dial sculpture of Pan with flute by Beatrice Fenton. Installed in a small plaza dedicated by the class of 1972 on their 33<sup>rd</sup> reunion. Unfortunately to have Pan facing the entrance (not its original location), the sundial faces nearly due south. Obviously, no one cares to check the time on this dial.



Figure 3 Pan Statue and Dial

3. Group photo taken at the meridian alignment sundial “The Point Where Things Change” at the Tastepoint Corporate Headquarters. (Fig. 4) The circular dial was made by Michael Grothusen in 2001.



Figure 4 Meridian Dial "The Point Where Things Happen"

Left to Right: Bill Gottesman, Joyce Robinson, Pam Morris, David Robinson, Bob Kellogg, George Wilson, Jack Aubert, Will Grant, Betsy Wilson, Jim Holland, Bill Thibault, Art Paque, Tish Grant, Fred Sawyer, Philomena Sawyer, Phyllis Montgomery, Jeff Kretsch, Mark Montgomery, Marvin Taylor, Zoon Nguyen, Kate Aubert, Patl O'Hearn, Roger Dignard, Paul Ulbrich

4. Two dials at Swarthmore College. The first dial (#35) is on the side of Kohlberg Hall, an impressionistic modern vertical dial with a “double” hour mark at 11am perhaps to remind viewers of daylight savings time noon. That second mark appears slightly askew. (Fig. 5)



Figure 5 Vertical at Kohlberg Hall

5. The second dial at Swarthmore College is an old dial at Pearson Hall. Here everyone gathered around to see this historic dial erected in memory of Howard White Jr. in 1903 by the class of 1895. (Fig. 6)



Figure 6 Horizontal at Pearson Hall

6. Four dials were toured at Haverford College. The first required the landscape engineer to bring out the gnomon that had been ripped from the dial long ago but had been recovered on eBay. (Fig. 7) The 1870 horizontal dial rests at the site of the Old Observatory of John Gummere.

7. The second dial at Haverford College is a vertical high on the wall of the Marian E. Koshland Integrated Natural Sciences Center (KINSC). (Fig. 8). It appears in good condition with the motto “Horas Non Numero Nisi Serenas”.

8. The third dial at Haverford College received some ridicule. On the wall of Founders Hall this vertical bronze dial announces at its top “Analemmatic Dial 1918”. (Fig. 9) The criticism of course comes from our linguistic heritage in that an analemma graces only the noon hour.

9. The fourth Haverford College vertical dial hides behind a tree, invisible to the casual observer never to see the light of sun. Even if it did, the gnomon is missing. (Fig. 10)



Fig. 7 Haverford 1870 Dial at Site of John Gummere Observatory



Fig. 8 Vertical Dial on KINSC Building



Fig. 9 “Analemmatic-1918” Vertical Dial



Fig. 10 Haverford Hidden Vertical Dial

10. At West Laurel Hill Cemetery, we saw an old statuary dial placed in the “Old Bell Tower” to protect it from the weather. The dial possibly dates from the mid-18<sup>th</sup> century from a casting of a London dial and statue. (Fig. 11) This may have been the oldest dial seen on the sundial tour.



Figure 11 West Laurel Hill Cemetery 18th Century (?) Dial

11. The last dial of the tour was “The Four Seasons” Dial by Alexander Calder at the Fairmount Park Horticulture Center. (#229) Even with the tip of the gnomon torn off and weathered graces holding the dial, it still is one of the most beautiful dials in Philadelphia. (Fig. 12)

## Sundial Presentations

Saturday August 7<sup>th</sup> began early with a number of dials, 3D printed examples, brass dials and inlay woodwork dial put out on tables for viewing and conversation between the conference presentations. Early birds were treated to a continental breakfast. Mark Montgomery and Fred Sawyer provided several extra presentations as Covid travel restrictions prevented Canadian and the UK members from attending.

## Slide Bingo

Fred began by introducing a new Bingo challenge based on the slides everyone would see in talks throughout the day. We had two winners: Dave Robinson took home a copy of Time of Our Lives (The Adler Sundial Catalog), and Pat O’Hearn won a replica of the ancient Philippi sundial.

## Presentations - Mark Montgomery

Mark Montgomery (Fig. 13) discussed learning how to assemble and interpret a German Nocturnal that uses the North Star’s small polar offset to determine time at night. He demonstrated a replica of a 1568 German Nocturnal. But there were challenges. It used Italian hours (hours from sunset) designed for 42° latitude (Rome). The front of the nocturnal is marked with signs of the zodiac (as were astrolabes), so on the back is a conversion from Julian Calendar Date to Zodiac degrees of the sign. Mark then presented a simple conversion formula between Julian and Gregorian dates. And even Polaris had moved a bit. While about a degree from the pole today, in the mid-16<sup>th</sup> century it was nearly 3 ½ degrees away, making alignment of the nocturnal much easier.

Most colorful was Mark’s presentation of a hemispherium that he designed and had visitors at the Adler Planetarium add bits of colored plastic to fill in white hour and declination lines as well as the brightly colored background. (Fig. 14) Mark presented the equations for construction as well as examples of hemispherical dials.

Mark gave a presentation on the beautifully designed armillaries by Paul Manship, who “believed a major purpose of art was to reconcile the passage of time with permanence.” Mark presented Manship’s “Hercules Upholding the World” (#863) (1918), and in the same year his most



Figure 12 1905 Calder Dial at Fairmount Park



Figure 13 Mark Montgomery



Figure 14 Mark's Hemispherium

famous “Cycle of Life” of which there were 6 copies ranging from 2 foot to 8 foot in diameter.

One of the most important presentations given by Mark was the idea of a traveling NASS exhibit to not only stimulate an interest in sundials, but widen diversity and attract new members to NASS. Mark started the discussion by suggesting a poster or foam-board display with a presentation geared for a library or school lobby. Mark recorded comments and discussion:

- |                |   |
|----------------|---|
| Bob Kellogg    | Use QRC codes linking panel content to pages on the NASS website  |
| Pam Morris     | To attract young people consider developing "survival" based games or stories. Challenging activities will attract more people. Tie to STEAM and hobby/tech activities - like robot teams in schools  |
| Jeff Kretsch   | Offered to test any displays at the Turner Farm Observatory public nights where each Friday astronomically oriented visitors look through telescopes. They also look at the displays in the Observatory’s classroom. Jeff also offered to take a display to the local public library.   |
| Sara Schechner | Many museum studies have shown that panels filled with text are bypassed. It is a poor use of money. If used, ensure they are visual based and limit text. Instead, consider developing a maker space or concretely defined projects for youth groups - like Girl Scout Buckets. The bucket will provide most of the materials needed and a list of things not provided (i.e. glue, tape, scissors, etc.), with CLEAR instructions. |
| Jack Aubert    | Use a video display instead of a static display. Jack builds a monitor and computer in a box that can be hung on the wall. The computer can display any information. If the monitor has a touch screen, it can be interactive.  |
| Paul Ulbrich   | Go to math teacher conventions and show how sundials can reinforce math. However, the content must tie directly to school curriculum requirements.  |
| Roger Dignard  | Have a college sundial competition that requires an interdisciplinary group to design and build a sundial.  |
| Art Paque      | Highschool curriculum is fixed [with variations from school district to school district]. Must work with teachers to identify their teaching needs.   |

Mark concluded that this was all good feedback and that a traveling display may not be the best use of NASS resources. He will scratch his head over the winter to develop an alternative approach along the lines of Sara's and Pam's ideas. If any NASS member wants to contribute to Mark’s thinking, please send him comments at [Mark.Montgomery2003@yahoo.com](mailto:Mark.Montgomery2003@yahoo.com)

### Presentation – Patrick O’Hearn

Pat presented “Creating an Altitude Dial with an Attitude”, describing the process of creating a wooden sundial with mother of pearl and other inlay materials. (Fig. 15) In the past he’d made an elegant “unrolled” Shepherd’s dial of alternating colors of wood. But this time, using the BSS Monograph “A Study of Altitude Dials” by Mike Cowham, Pat described the theory of a circular dial that becomes extended into



Figure 15 Pat O’Hearn’s Wood Inlay Sundial

an ovoid with declination dates (zodiac) on the left circular arc and hours from 12 noon to 6am/pm on the right. Then with compass, protractor, and straight edge he demonstrated how the lines were laid out based on an extensive spreadsheet of angles. Next, and most interesting, Pat described the process of wood inlay using templates of a line drawing (dolphins and a light house) adhered to various materials and cut with a jewelers' blade on a coping saw. Then using a flex epoxy mixed with pigment, the pieces are glued together in reverse (back side) and sanded flat. The wood is carefully routed and the inlay glued in place.

### Presentation – Roger Dignard

Roger presented “Shadows of Time” in several videos that he has made. (Fig. 16) He created videos to explain how sundials work starting with the fundamentals of sunlight hitting an equatorial dial to a variety of dials. The videos present the shadows of a polar dial where sundial furniture is added, a direct east and west dial, a simple horizontal dial, with a segue into longitude correction (and a nod to the railroads for establishing zone time) and the equation of time. The videos were provided to attendees (and were all presentations) on a thumb-drive containing a record of the conference. Roger’s videos are available at <https://www.youtube.com/channel/UCEWjfNsHV5Q7hsgHSDbsn8A>



Figure 16 Roger Dignard

### Presentations – Fred Sawyer

Fred presented a number of topics this year. (Fig. 17)

“Extending the Foster Dialing Calculator” began with a reminder of the Foster Point circular and analemmatic dials he introduced in past years. Both of these dials were based on a circular calculator (a multiplication nomogram) developed in the 17<sup>th</sup> century by Samuel Foster. Fred showed how the calculator could be extended to an elliptic version that allows for more complex strings of calculations. He gave everyone a printed example of this calculator and took the group through several dialing problems they selected from a list Fred had prepared to demonstrate the capabilities of the extended calculator.



Figure 17 Fred Sawyer

“Leybourn’s Horological Trigon” was a joint presentation by Seattle-based artist Matthew Dockrey and Fred. Matthew had produced a video detailing some of the wonders contained in William Leybourn’s Art of Dialling, including his horological trigon. He was pleased to have Fred present the video and then augment it with additional comments and alternative approaches of his own. Fred had the trigon on hand for people to examine.

“Double Craticle Elliptic Gnomon Sundials” was a mathematical excursion into explaining and extending the self-orienting dial Fred introduced in 2011 as an elliptic gnomon in the meridian of a polar dial with straight hour and declination lines. Fred then extended the theory for a horizontal dial with the elliptic gnomon either in the NS meridian or EW plane. He then handed out the dialing lines drawn for the latitude of each attendee and provided elliptic wooden gnomons so people could experiment with the dials when they returned home. Incredible! (Fig. 18)

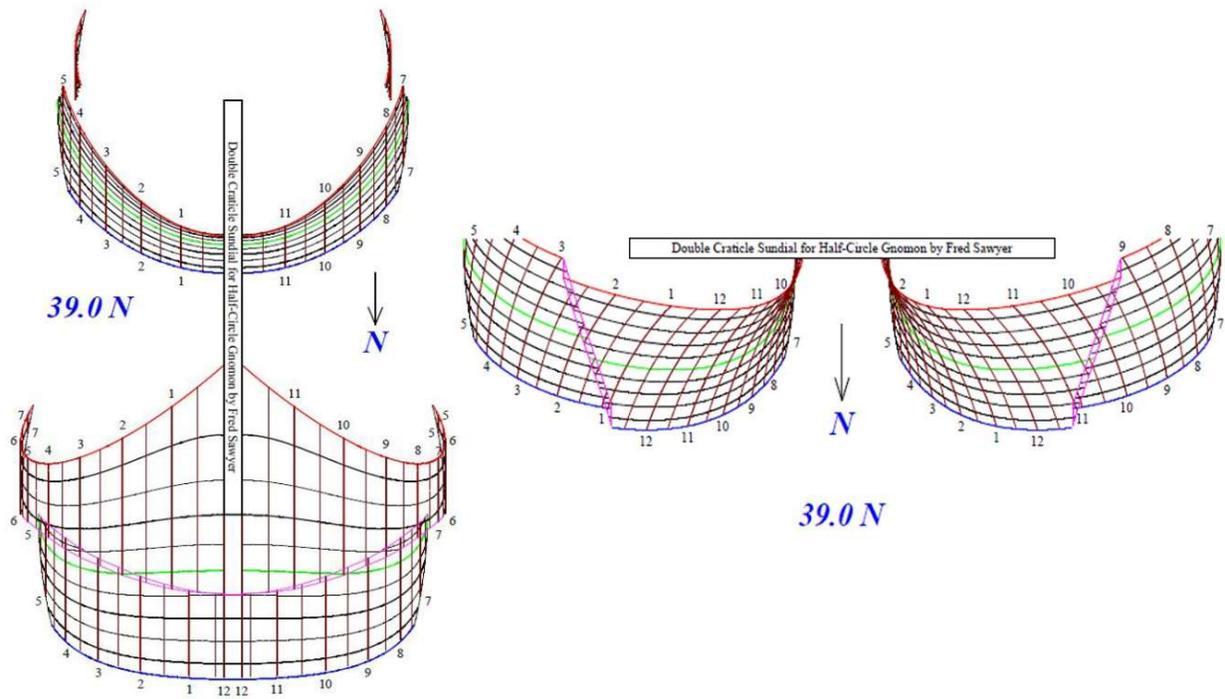


Figure 18 Fred's NS and EW Craticle Dial with Half-Circle Gnomon

“Completing and Exploring the Freeman Universal Altitude Sundial” was a discussion of J.G. Freeman’s algorithm for an altitude sundial. Fred noted that it really did not suffice as an instrument, so he fleshed it out and showed that Freeman’s innovation was equivalent to substituting a latitude scale in place of the auxiliary declination scale found on the Regiomontanus universal altitude sundial. Fred then derived the equations needed to reduce the usual rectangular block of hour lines on such dials to the minimum space and lines required for the dials to function.

“Francis Line’s Dial in the King’s Privy Garden” was a historical review of the wondrous dial created by Francis Lines in 1669 for King Charles II in the Privy Garden at Whitehall Palace. At the time, this was “the most expensive instrument ever created,” containing at least 195 separate sundials. (Fig. 19) A reproduction of this dial briefly made a modern-day appearance in the 2004 film “Libertine” starring Johnny Depp. As Fred stated “Strong Contender for Worst Movie Ever Made...If you are in any way likely to be put off by perpetual drunkenness, sexual orgies, foul language and close-ups of syphilitic body parts – this is not the movie for you....” Fred took us on a tour of the

This image shows only a 2 dimensional slice of the dial. There are actually 17 globes – 8 of which are in the plane perpendicular to the one illustrated here.

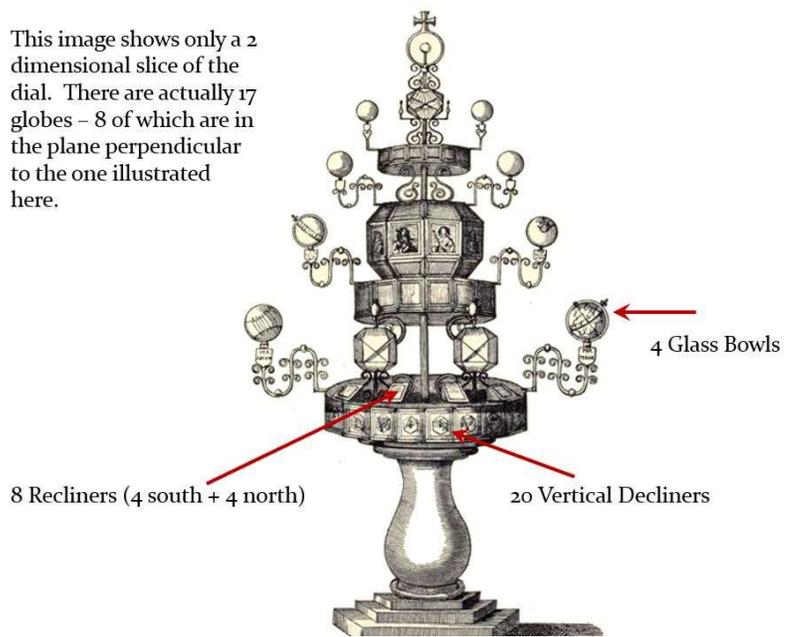


Figure 19 Line's Dial in the King's Privy Garden

multiple dial types: globes, double paned glass dials with innovative gnomons and dial lines. But for all its glory the Privy Garden dial fell quickly into neglect and in 1675 some of the King’s revelers knocked the dial down and demolished it.

“The Sinagua Solar Calendar” was Fred’s examination of astroarchaeology of the Sinagua petroglyphs on a near west facing cliff wall near Sedona AZ. (Fig. 20) Two jutting stones created shadows that through the seasons seem to constantly pass over circular drawn symbols and align with jagged lines (possibly symbolizing rivers or floods). These long shadows generally last for only 6-7 minutes before “the base stone shadow(s) begin to recede”, quickly shortening on the far declining cliff wall. Fred walked through the shadows and significant petroglyphs first suggested as a solar calendar in 2005 by Kenneth Zoll, now Executive Director of the Verde Valley Archaeology Center.

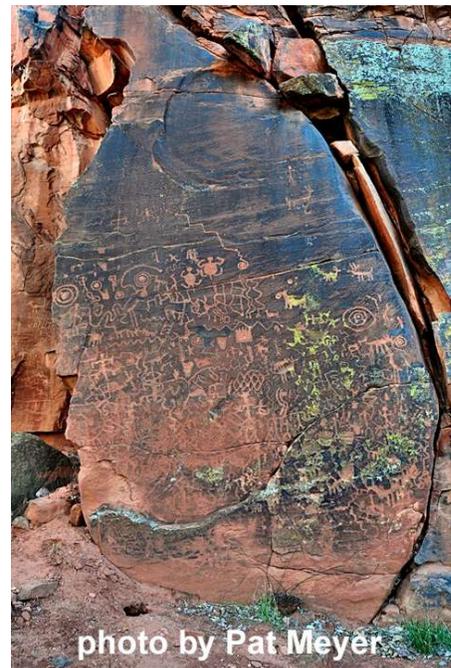


Figure 20 Petroglyphs at Sinagua

### Presentation – Bob Kellogg

Bob is deeply involved in 3D printing and talked about “Building & Using An Astrolabe After Chaucer”. (Fig. 21) The origin of the astrolabe may have been Apollonius of Perga (265-170 BCE) who wrote extensively on conic sections, invented stereographic projection and created the two-dimensional rete of stars. Ultimately this led to the astrolabe in the Arabic tradition which passed through Europe to England, whence Chaucer in 1390 wrote a text on the astrolabe beginning “Lytle Lowys my sonne I aperceyve wel by certeyne evidences thyn abilitie to lerne sciences touchinge nombres and proporciouns...” In creating a modern astrolabe many choices can be made in the design. Bob chose to design an astrolabe in the style described by Chaucer, including a dragon’s head on the rim of the rete. The parts of the astrolabe were described: the mater or tympan that holds the astrolabe parts and has both degrees and hour marks on the rim, the climate plate that is a representation of azimuth and elevation (almucantar) lines as well as unequal hour lines, the rete containing the ecliptic for the sun and points for the stars, and an alidade for measurements. As part of the presentation Bob handed out individual astrolabes to each attendee for their latitude.



Figure 21 Bob Kellogg

### Presentation – Frank King

Even though Frank could not attend the conference because of Covid travel restrictions, attendees were treated to his zoom video “Sundials and Prayer Times” examining how the sundial influenced Jews, Christians, and Muslims. The subtitle of the video is “Check the Sun, then Say your Prayers”. Frank explained Christian prayer times of Prime (Sunrise), Terce (3<sup>rd</sup> Hour), Sext (6<sup>th</sup> Hour), None (9<sup>th</sup> Hour), Vespers (Sunset) and the nighttime prayer times of Compline, Matins, and Lauds. Then he explained the migration of None from the 9<sup>th</sup> hour to earlier in the day by a reinterpretation of what the 9<sup>th</sup> hour meant, and finally with total abandon, the move of the None prayer to mid-day and hence our common word for the mid-day hour of “noon”. (Fig. 22)

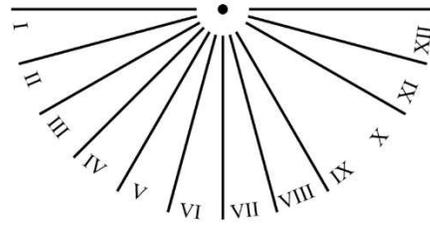


Figure 22 Scratch Dial and Numbering the Unequal Hours

### Presentation – Bill Gottesman

Bill, like Bob, is exploring 3D printed sundials and talked about an “Ongoing Steampunk Sundial Project” with the goal to make a “ridiculously complex, highly mechanical” dial being a little artistic to draw the user in. (Fig. 23) Bill explained that he wants to use solar polarization based on something like the diploidoscope or modified Wheatstone polarizer. For example, he showed dichroic glass that reflects certain colors and transmits the complementary spectrum. He continued discussing polarizers and how they might be used with figures or drawings in cross-polarized alignment. Finally, he demonstrated a steampunk base that can be tilted from 23° to 51° latitude by turning a geared mechanism. Bill showed the fundamental design using a 3D animation from the construction program called OpenSCAD. (Fig. 24)



Figure 23 Bill Gottesman



Figure 24 Bill's Steampunk Adjustable Latitude Base

## Presentation – Will Grant

Will has a home in Ware Neck, VA with an unobstructed western view that just begs for an hours to sunset sundial. Will explained that he is partial to interactive sundials and commemorative dials that highlight events. (Fig. 25) He also likes colorful dials as exemplified by the 2012 Asheville NC conference where the group photo was in front of the Burnsville “Quilt Dial” (#676). The issue with west facing sundials is that as the sun gets low in the sky, the shadows get long and indistinct. That’s why Italian Hour sundials with hours to sunset are ideal. Will described previous dial designs by Mac Oglesby and Roger Bailey, and then the discovery of a recent hours to sunset dial in Vancouver (#919) by Steve Lelievre. This dial by Steve Lelievre immediately struck Will’s fancy: it was a west facing vertical dial, it was printed on composite laminate similar to Mac Oglesby’s dial, was done with Italian hours, and had a thorough and clear explanation of the dial and its use. (Fig. 26) Will contacted Steve who guided him through the process step-by-step and provided a pdf file for printing a 24x39 inch dial at a commercial print outlet (e.g. Staples). The final step is adding a UV top-coat and mounting. The gnomon will be a blue heron 3D printed by Steve. Steve’s final advice about the plastic gnomon, “The plastic is not UV resistant and not ... water resistant. You’ll need to spray-paint it (multiple coats getting the edges as well as the sides) with Rustoleum or other exterior grade paint. As well, the plastic will soften and distort if the material gets above about 50C. Using a pale paint, for example, light grey or white...”



Figure 25 Will Grant

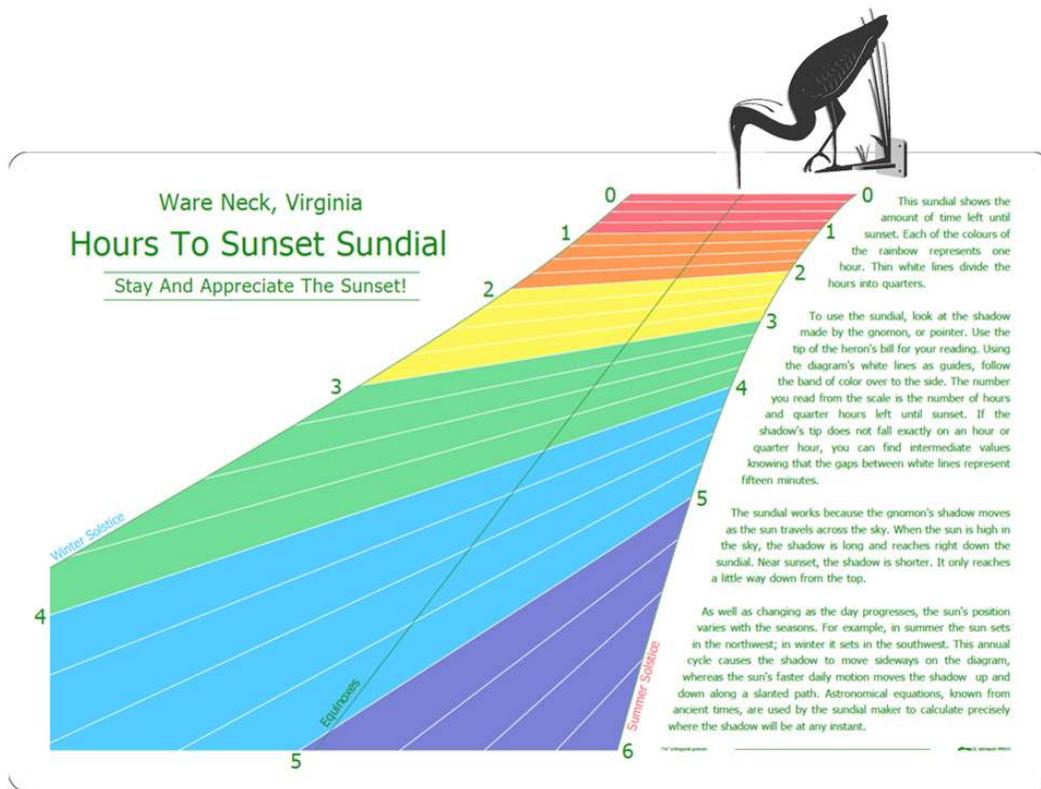


Figure 26 Will's Hour to Sunset Dial and Heron Gnomon designed by Steve Lelievre

## Presentation – Janet Saad Cook

“How I Paint With Light” was a Tedx video presentation by well-known artist Janet Saad Cook, reviewing how she uses metals and optically coated glass to create reflected images of sunlight that move and change with the day and season. The video was augmented by photos Janet provided of several of her creations.

## Sawyer Dialing Prize – Sara J. Schechner

This year’s Sawyer Dialing Prize was awarded to Sara Schechner “for her career in education and conservation of our dialing heritage, and in particular for her authorship of *Time of Our Lives – Sundials of the Adler Planetarium*”. Fred presented Sara with an award certification, the traditional cash prize of \$200 and a custom made **Spectra Sundial** by Jim Tallman of Artisan Industrials.

Dr. Schechner is a historian of science, and in particular, of astronomical instruments. She is the David P. Wheatland Curator of the Collection of Historical Scientific Instruments at Harvard University. She is also a lecturer on the history of science at Harvard. Previously at the Adler Planetarium, she was pivotal in authoring and producing *Time of Our Lives*.



Figure 27 Sara Schechner Accepts Sawyer Dialing Prize Certificate and Spectra Dial made by Artisan Industrials

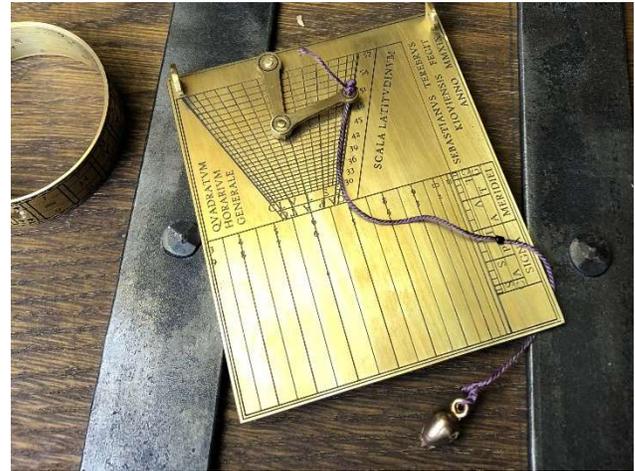
She acknowledged the Sawyer Dialing Prize with a presentation on “Sundials That Tell Us More Than the Time”. In her talk, she examined sundials that indicate the political, religious, economic and geographic context in which they were created from the humble dial to the princely treasure. Sundials could be found embedded in eating utensils, swords, guns, or your writing kit. Early consumers wanted pocket sundials with style, much the way iphone and smartphone users today show off their technology. Cities specialized in the manufacture of

different styled dials. Living in London you might have an equatorial from Augsburg or in Paris you would choose the Butterfield Dial. For the rich, dials were of silver and gold. The middle class might have brass and the lower class might use a shepherd's dial out of paper and wood. And just like now when you can purchase a fake Rolex, there were fake pocket sundials that would bring a higher price on the marketplace. Near the end of her talk, she emphasized the downfall of the utility of the sundial as clocks became more accurate and the railroads began introducing standardized time, augmented by the telegraph. So many factors can be read into sundials besides just time.

### Conference Dinner Saturday August 7<sup>th</sup>

The conference dinner was held in the Garden Room of the Hilton Inn. Attendee's dinner preferences were color coded on place cards for correct (and efficiently served) dinner orders. Small 3-inch 3D printed sundials were given to all attendees by Bob Kellogg. More significant, Fred handed out to each full-conference attendee a beautiful brass Regiomontanus sundial that came in a pouch (and with full instructions).

Spouses received a replica Liberty Bell, a selection of chocolate, and a set of note cards by Mark Montgomery featuring photos of the various sundials visited on our sundial tour.



<https://www.etsy.com/shop/MasterTerebrus>

Each year it takes a lot of effort to find an appropriate dinner gift. This year Fred made a special order with Master Terebrus, an architect-engineer from Kiev. Since 2017 has become a master craftsman of sundials, nocturnals, quadrants, rules, and astrolabes.

### Minutes of the Annual General Meeting of NASS

Recorded by Jack Aubert and Bob Kellogg

President Fred Sawyer called the AGM to order at 8:10am on Sunday, Aug. 8, 2021. Officers present were Fred Sawyer (President), Bob Kellogg (Vice President and Webmaster), and Mark Montgomery (Treasurer). Steve Lelievre (Secretary) was unable to attend due to Covid 19 travel restrictions between Canada and the US.

#### Prior Minutes

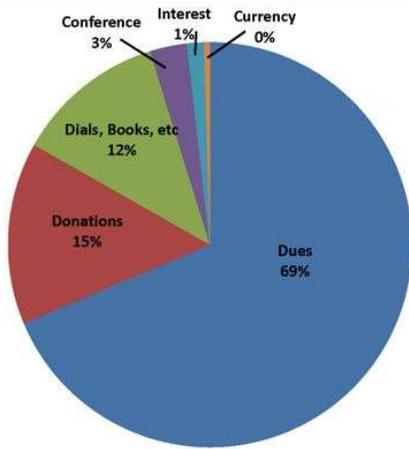
Fred Sawyer called attention to the AGM minutes from the July 10<sup>th</sup> 2021 meeting held via zoom. The minutes were contained in the attendee's folder for review and accepted as reported.

#### Financial Report

Mark Montgomery presented the statement of financial position and financial activity as of 30 June 2021 which was included in conference handouts. He reviewed the sources of income, dues, donations, sales, and subscriptions; and expenditures, publishing of *The Compendium*, the Sawyer Dialing prize and special projects. He pointed out that income and expenses were quite close to breaking even. He reported that the UK bank account (managed by Graham Aldred for NASS) that had been maintained as a convenience for UK member subscriptions had been closed as it was no longer needed.

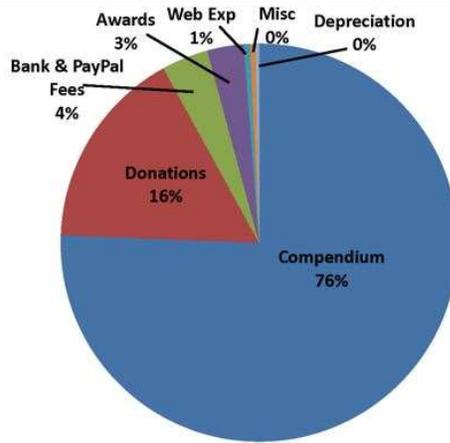
## NASS Income Sources

Jan 2016 – June 2021



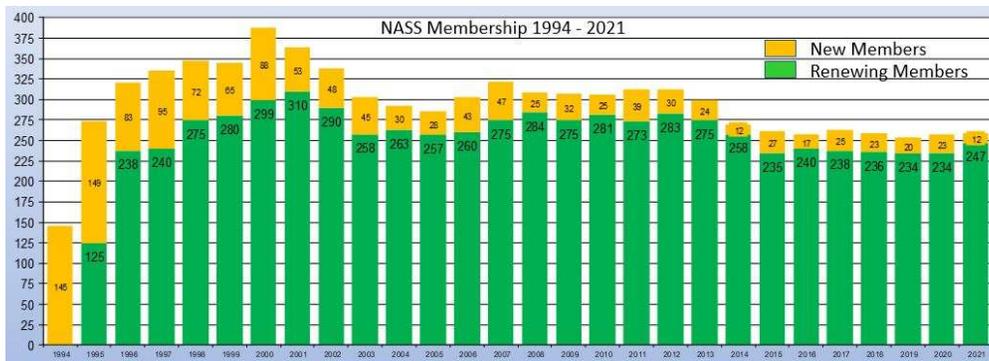
## NASS Expenditures

Jan 2016 – June 2021



### Membership report

Fred reviewed the numbers of members over the years. Membership has been quite stable over the last several years. During the past year NASS lost 13 members but added 12 new members and recovered 3 members who had lapsed for a current total of 259.



### Webmaster report

Bob Kellogg thanked Jack Aubert for his technical support of the web site. He noted that the web site does not collect persistent cookies, only session cookies. He mentioned the ranking of page visits including “join”, “officers” and “publications”. He said that the current Content Management System, Joomla!3 is being replaced by Joomla!4. We will wait for a while to make sure the new release is stable and will then take the opportunity to introduce some minor revisions of the web site including some typographical changes and a revised logo.

He reiterated the request for members to forward any interesting news stories regarding sundials that they may run across. He discussed the Registry, thanking Steve Lelievre for the Sundial Registry map of dials and Roger Bailey for curating the entries and adding accurate latitude and longitude readings. He pointed out that the web site has a fully indexed search capability so that one can easily find all dials that correspond to some keyword like the location or the dial type.

#### Election of officers

Jack Aubert read the nominating committee report, nominating Bob Kellogg and Steve Lelievre for Vice President and Secretary respectively. Their short biographies were included in attendee handouts. The nominations were closed in mid-July and with no other nominations, Bob and Steve were re-appointed by acclimation to their current positions.

#### Next Conference

Fred Sawyer announced that next year's conference (dates not yet set) will be in Vancouver and will be arranged with the help of Steve Lelievre, Len Berggren and Mark Montgomery.

The meeting was adjourned at 8:40.