

NASS Conference 2017 - St. Louis, Missouri

Recorded by Steve Lelievre



Don Snyder, our local host

The annual North American Sundial Society conference was held at the Plaza Hotel in Clayton, a suburb of St. Louis, MO, from Saturday, August 19 to Tuesday, August 22, 2017. There were 47 attendees, with 37 as full registrants attending the technical presentations. Attendees' countries of residence included Austria, Brazil, Canada, Latvia, Mexico, UK, and USA.

The total solar eclipse of August 21 meant that the conference did not follow the usual schedule. The first presentations happened on the Saturday afternoon, preceding the registration event. Sunday was taken up by presentations and the Conference Dinner. Monday was set aside for a coach tour and eclipse viewing. Tuesday morning consisted of the Annual General Meeting followed by the final round of presentations, with the conference finishing at midday.

NASS Flash Drive – Fred Sawyer



Fred Sawyer

As has been the case for a number of years, delegates received flash drives containing an assortment of useful information compiled by Fred. This year's drives were in the form of functional ballpoint pens, with the drive located within a cap, and included PDF books and various software, as well as copies of the slide packs used by the conference speakers.

The Cahokia Woodhenge - Bill Iseminger

Bill spoke about the pre-colonization settlements now forming the Cahokia Mounds State Historic Site near St. Louis. The site includes 80 large earthworks or settlement mounds thought to house temples or as burial sites, dating from c. 1100 to 1300 C.E. Near one mound there is a Wood Henge consisting of a large circle of long wooden posts, with astronomical alignments such as solstice sunrise and sunset markers. [Note, a visit to Wood Henge was in the Monday Coach Tour itinerary but due to heavy traffic it was excluded, so that we reached the eclipse viewing site on time].

Laying Out an Analemmatic Dial – Roger Bailey

Roger discussed methods for calculating analemmatic sundials using descriptive geometry and the projection of the equatorial plane onto the horizontal plane, with the 'true length' technique used for projection of the gnomon. As well as reviewing the math involved, he offered tips on the laying-out process, such as placing points by means of triangulation from the ends of the dial's ellipse, the origin, or the north and south points.

In some circumstances, Roger suggested, it may be better to measure from the focal points of the ellipse. These lengths can be computed conveniently using the Sundial Atlas¹.

For finding North, Roger mentioned use of a plumb line, with correction for Equation of Time (EoT), Daylight Saving Time (DST), longitude etc. In some cases it is useful to work from the Prime Vertical (E-W) instead of the Local Meridian. The shadows cast are longer, albeit fuzzier. To round out his talk, Roger reviewed the placement of the sunrise and sunset markers (invented by him and independently by Rafael Solar).



Roger Bailey

A Video Gallimaufry – Fred Sawyer

A compilation of short video clips on sundial-related themes:

- Isaac Newton's Watch: a pocket watch donated to the Royal Society. Purported to have belonged to Newton, it actually was made after his death. The Society does have a real Newton timepiece: a vertical sundial carved by the young Newton on the wall of his childhood home was later extracted and given to the Society.
- Sundial by Prescription: a large ornamental dial with curved surfaces arranged so that light is admitted onto a series of number-shaped windows only at the applicable times of day.
- Tony Moss' Longyearbyen Sundial: a unique dial which, because it lies within the Arctic Circle, sometimes sees 24 hours of sun. Consequently the hour scale has to be doubled up at midnight as a kind of inverse of a noon gap.
- The Secret of the Prime Meridian: a brass strip marking the Greenwich Prime Meridian, adopted 1851, lies 102½ meters to the west of the newer International Reference Meridian from 1999. The latter is not explicitly marked but is easily located because it runs through a dog waste bin in the park adjacent to the Observatory.
- Vikings: Episode 1: A clip from the TV historical drama in which the protagonists discuss the possibility of navigating due West by use of a sunboard (a floating device used to confirm latitude at noon) and a sunstone (thought to be a piece of Iceland Spar, or optical calcite, that polarizes light from the sky and thus indicates the sun's position even on cloudy days). Fred provided all attendees with their own sunstone to encourage experimentation.

Registration

This year's registration activities included the usual draw for door prizes such as a selection of sundials and dialing books. Once again this year, we had a light hearted story-telling session with Steve Lelievre, Don Snyder and Frank King recounting what first piqued their interest in sundials.

¹ See www.sundialatlas.eu/atlas.php?app=14

Two 17th century dials – Fred Sawyer

In 1979 Rene Rohr started to restore a dial on the wall of a church in Rouffach, Alsace. Some markings were so degraded that their function wasn't clear, but Rohr eventually figured out that they represented celestial objects at the instant of a lunar eclipse on August 16, 1617. Rohr wrote about the talents of the “unknown astronomer” who had recorded the eclipse on a “remarkable night” and devised the dial. Fred described his own efforts to identify this unknown astronomer and why the occasion was remarkable. His research led him to astronomer Johann Ruderauf (a.k.a Johannes Remus or Quietanus), friend to Kepler and Galileo, and resident of the town. Fred determined that the eclipse was a selenelion, an occasion when the eclipsed moon and the sun are simultaneously visible. Getting a view of a selenelion is difficult as it depends on the observer's precise location. Thus the event would likely have seemed exceptional to Ruderauf.

The second part of Fred's talk described an eclipse sundial from 1646 by Athanasius Kircher. This dial is polar with a six-year calendar drawn on the face. The calendar was drawn in the form of a dragon or serpent weaving to and fro, with spots drawn on its back at certain points to represent eclipses. On the applicable date in a given year the gnomon shadow would cross one these spots. Fred explained that Kircher's dial was intended for reuse in 18 year cycles, but flaws in both the concept and printing would have made it less useful than intended or advertised.

Variants on the Foster-Lambert and Sawyer Equant Dials – Steve Lelievre

Dials with uniform movable scales, such as equatorials, Foster-Lamberts or Sawyer Equants, are suited to seasonal adjustments for Equation of Time, Daylight Savings, or other variations such as Hours to Sunset and Steve's tidal dial. For the latter, he adapted the Sawyer Equant. Instead of hour markings it shows the hours left to the next high tide. A movable ring is rotated daily to keep the dial in step with the lunar-tidal cycle. As with a mechanical tide clock, non-lunar effects lead to secondary cycles that affect the timing of the tides. These make both the tidal dial and tidal clocks imprecise, and necessitate monthly recalibration. For Steve's tidal dial, this is done using an additional movable ring to carry the scale of day numbers.

Eclipse Project – Bill Gottesman

Bill is the inventor of a unique eclipse sundial that uses a pinhole projection to determine the time of day from the orientation of the cusps of the eclipsed sun. Bill described his efforts to create a website that would allow members of the public to print out versions for their locations. Initially there was little response to Bill's publicity for the site, but in the days immediately preceding the conference a number of newspapers and a local TV station had provided coverage. By the morning of Bill's talk, his site was receiving a steady flow of traffic.

Francesco Bianchini - A Study in Fuzz – Frank King

The Basilica di Santa Maria degli Angeli, Rome, features a meridian line designed by Bianchini. Frank discussed our perception of fuzziness in the boundary of a light spot cast by a pinhole. Most people perceive a bright oval bounding the shadow area. Frank's analysis of the meridian layout suggests that Bianchini exploited this physiological response in his design. The oval, along with a movable elliptical mask of the same size, underpins the system for taking measurements. A symmetrical pair of measurement scales alongside the meridian line made measurement-taking easier than reading from a scale on the meridian itself would be. Connecting the points observed on each scale allowed the sun's position on the meridian to be found.

The Homan Heliochronometer – Geoff Parsons

Geoff reviewed how the Homan heliochronometer differs from Pilkington-Gibbs (P-G) designs. Homan's design shared features with various P-G models but there were sufficient differences to allow a patent. The designs shared the use of the equatorial plane, sighting screens and light slots, sight height reduction techniques, longitude correction, and placement of the minute scale. The Homan model used an analemma for Equation of Time adjustment and allowed adjustment to the nearest minute as opposed to two minutes with the P-G. In summary, Homan achieved a simple, elegant design with potential for greater accuracy.

Solar Decliners, or Sundials CLARAfied – Fred Sawyer

Solar declining dials are turned about the vertical to cast a shadow on a date line. They are similar to dials such as Flag Dials or the Locust Leg sundial, but the gnomon remains fixed instead of being positioned above the applicable date line. The whole dial is turned until the shadow falls on the chosen date line. Examples include the Ham of Portici, the universal Roman dial in the Museum of the History of Science, Oxford, and an elegant design by Erasmus Habermel from the early 1600s. Fred guided us from first principles through the concepts involved in designing Solar Decliners and the huge variety of possible forms, including an example by Fred in the form of a girl's head, honoring his granddaughter Clara. He introduced a new way to show mean time on these dials by modifying date lines instead of hour lines.

Unusual Sundials in Sonne & Alemma – Helmut Sonderegger



Helmut Sonderegger

Sonne and *Alemma* are Helmut's PC software for drawing sundials. His talk introduced some of the unusual dial configurations that can be produced by his software. With *Sonne*, examples include the Habermel dial described in the previous talk, gnomonic projection dials that combine a dial face with a map, and Fred Sawyer's 'compressed gnomonic projections' combining the gnomonic projection for two locations to produce a dial showing local time in each.

With *Alemma*, a huge variety of forms of analemmatic dial are possible, representing most of the common and not-so-common designs that have been described.

What People Expect From Sundials: My Experience In Latvia – Martins Gills

Martins opened with a brief review of the history of sundials in Latvia. Not many historical dials have survived. The oldest example dated to the 14th or 15th century. Martins is responsible for 19 of the recent dials and showed pictures of some of his work. He then discussed his observations and experience regarding factors that bring success to a sundial project: a novel or decorative design, an open location that draws the eye, use of materials that do not degrade and resist damage, use of Civil Time, and having elements of local significance such as local symbols in the artwork or use of local materials. As well, designs should educate and provide reflective enjoyment while drawing attention to gnomonics, astronomy and science.

Sundial Science and Solar Power – Roger Bailey

When a neighbor suggested that their condominium corporation put a solar power array on the building roof, Roger used his sundial expertise to assess the viability of the idea. He used sundial math to predict the power output of a solar panel at various orientations. He used meteorological records to adjust for cloud cover, and he used Gian Casalegno's *Sol Et Umbra* software to assess how the insolation would be reduced by nearby trees and other objects. Roger found that the project was not worth the cost. It would only be viable in places that have better insolation levels, or for locations that, unlike British Columbia, have subsidies or grants for solar power.

Bobyne's Cadran des Doigts – Fred Sawyer

This talk reviewed how bad a sundial could possibly be. In it, Fred discussed various historical proposals for telling time by your hands. The least bad proposal he had found was by Bobynet in 1647. It involved using index fingers and thumbs as a kind of primitive altitude dial. A lengthy rhyme had to be memorized and was used to assign an hour to each bone and knuckle. The method turns out not to be totally useless for the latitudes 47° – 50°, so Fred set out to rework and generalize it for more latitudes and even presented a table showing his results. Although his revisions improve the method somewhat, he recommends buying a dial instead.

Sundials in Mexico – José Montes



José Montes

José presented a general overview of the history and pre-history of sundials in Mexico. The aboriginal people are not thought to have had any hour-like system for dividing the day but are known to have measured the progress of the seasons and attached special significance to days when the sun would reach the zenith. Their temples had alignments for solstices, equinoxes and other significant dates in their calendar.

Colonization started in 1521, and a sundial is known to have been built into a church by 1559. Early dials were placed high on church walls. Often, there would be a dial for each cardinal direction. José showed photographs of example dials from the subsequent centuries. In the 20th century, celebratory dials and dials as public art appeared.

A Helidon – Mark Montgomery

Helidons are devices with tilting and rotating platforms allowing a model to be illuminated from any desired angle by means of a small spotlight. Mark took us through the history and purpose of these devices, reviewing the advantages and disadvantages of various designs. He then introduced an innovative design built by his son. Helidons are useful in gnomonics because they allow us to test small models of prospective designs before building commences; they can be used in place of formulae for a holistic, artistic perspective of how shadows move through the day and through the seasons; and they can contribute to new ideas by allowing us to see unusual shapes cast shadows.



Mark Montgomery

Book Auction



A number of books, generously donated by Hal Brandmaier, were auctioned with proceeds going to NASS. A total of \$718 was raised. Note, NASS re-donated 5 exceptional items to the Library of the Adler Planetarium rather than placing them in the auction.

Conference Dinner

This year's Conference Dinner took place at the Plaza Hotel, Clayton. The meal was three courses with a complimentary preprandial drink. As well, every attendee received a rather fine gift. For part-conference attendees, this took the form of a goodie bag with a souvenir mug, some fine sundial-themed occasional cards, and edible treats. Full registrants received a gorgeous equatorial or horizontal dial, custom made for their home latitude by Greg McDonough of WindowsillArt, UK.



These unusual dials are made from beach cobbles cut to form a dial face. The hour lines on the equatorial are tangential to a brass peg gnomon. A wonderful added touch is that the dials made for the NASS conference do not use a cylindrical peg. Instead, viewed from end on, they resemble the shape of the sun partially eclipsed by the moon, just as we would witness during the next day's coach tour. The horizontal dials use an underslung gnomon, so the hour lines form an

unusual pattern. Our thanks go to Fred Sawyer and to Mark & Phyllis Montgomery for their efforts in organizing these lovely gifts.

Conference Coach Tour

#1a. War Memorial, Forest Park. A large stainless steel ground-level vertical dial by Mel Meyer installed in 1989, in honoring those who fought in the Korean War. The dial is about 7' high, and is set on a small terrace surrounded by ornamental flower beds.

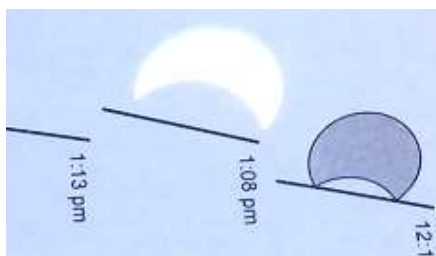


#1b. Dial honoring Mary Shields. Forest Park. A small horizontal dial on a simple pedestal in honor of Mary Harrison Leighton Shields, founder and first president of the Missouri Society of Colonial Dames of America. Shields is known for championing the display of the American flag at all public schools and for promoting the teaching and use of the *Star Spangled Banner*.



Tish Grant has a
Hallelujah moment

#2a. Eclipse viewing at Jefferson Barracks. We were fortunate in being admitted to the Jefferson Barracks, an active military installation, so that we could view the eclipse from a beautiful and wonderfully peaceful riverside location. All delegates were issued special safe viewing glasses, and many brought along devices ranging from pinhole projectors to triangular telescopes. Bill Gottesman demonstrated his eclipse sundial, which functioned perfectly. As we waited for the eclipse to start we were entertained with a sundial themed Murder Mystery skit. Thanks go to Phyllis and Mark Montgomery for the pun-drenched storyline, and to the entire troupe for their performances. We were very fortunate to have a clear sky for most of the duration of the eclipse and throughout the short period of totality.



#2b. Jefferson Barracks dial. A small horizontal dial replacing one that went missing in 1964. The dial suffers from incorrect positioning of the gnomon.

#3a. Missouri Botanical Garden, Herb Garden. Sculpture of a boy and horizontal sundial. Donated 1965.

#3b. Missouri Botanical Garden, Gardening section. Small horizontal sundial on low plinth.



Bill Gottesman with the Schmoyer Dial

#3c. Missouri Botanical Garden Schmoyer Dial. This elegant dial has close connections to NASS. The unfished casting was donated to the Garden by Don Synder and Bill Gottesman undertook the finishing. Schmoyer dials have an analemma-shaped style for Equation of Time adjustment.

#3d. Missouri Botanical Garden, Ottoman Dial. A fascinating and ornate 2008 dial by Roger Bailey inspired by a dial at the Topkapi Palace in Istanbul. A local sculptor engraved the dial and made the pedestal. The dial shows Italian and Babylonian hours, equal hours, Islamic prayer times, and has a Qibla line.

#3e. Missouri Botanical Garden, Cylindrical Dial. This dial is a form of equatorial dial shaped as a cylindrical section. It was made by Ronald Rinehart and donated to the Garden by him to mark its 150th year, and was unveiled during the 2008 NASS conference. A nodus is used to cast a shadow on analemma-shaped hour lines. The dial has scales for reading the date, and standard and daylight saving time. Dial furniture includes the NASS logo.

#4. Analemmatic dial at Long Elementary School, Crestwood MO. This 18½' diameter dial is made of colored concrete and forms the terrace of a small formal garden of raised planters.

#5 Beth Hamedrosh Hagodol Cemetery. This is a simple horizontal dial on a granite plinth, installed in memory of Simcha Leib.



Frank King squeezes between bushes to get a view of Roger Bailey's Ottoman Dial.

Annual General Meeting See separate minutes.

Two War Memorial Sundials – Geoff Parsons

Darwin, Australia, has a sundial for the war memorial in the ANZAC Memorial Garden. The elegant polar dial on a sturdy base was designed by members of the local Army Cadet Corps. It commemorates a devastating attack on the city by Japanese warplanes on February 19, 1942. The hour marks are placed along an E-W central line. Other markings show the date of the attack, and ANZAC Day. There is an Equation Of Time table that includes time zone offset.

Geoff then described an elegant horizontal dial marking the Battle of Bosworth Field in 1485. Dial furniture describes the battle. The gnomon is like a halberd with Richard III's lost crown hanging from the tip of the blade. A garden surrounding the dial is planted with red and white

roses to represent the houses of Lancaster and York, respectively, and yellow ones to represent Lord Stanley who switched sides to the Tudors once he realized that Richard III would be defeated. The garden has throne-shaped seats to represent the antagonists, with a half-sized one for the turncoat Stanley.

An Eclipse Sundial for Perry County, MO – Don Snyder

Perry County, MO, was on the path of totality for the solar eclipse of August 21, 2017. The county town, Perryville, organized a weekend-long festival to mark the occasion. Events included rededication of the newly-renovated 1904 courthouse. Don's proposal for an eclipse-themed sundial for the courthouse gardens was approved in January 2017. The new dial is a Horizontal showing local solar hours. A red declination line marks August 21, with icons to indicate the start and end of the eclipse, and for the period of totality. Local craftspeople created the dial to Don's design. The face is milk glass, the gnomon is steel and the pedestal is local limestone. Black granite plaques on the faces of the pedestal provide information about the dial and include a longitude-corrected Equation of Time graph.

Foster-Point & Homogeneous Analemmatic Dial Designs – Fred Sawyer

This talk introduced a new configuration of sundial. In explaining its genesis, Fred opened with a review of his 2003 Mean Time Dial which uses a graphical converter to turn an analemmatic dial's ellipse into a circle. The next relevant development was 2008's Homogeneous Analemmatic Sundial by Hendrik Hollander, which uses an Archimedes Trammel to make a similar conversion. For his new dial, Fred sought to build on these earlier dials, but avoiding the use of a trammel. For this, Fred took us back to the idea behind his 2001 Foster-point dial design. That dial had used the principles behind Samuel Foster's multiplication nomogram to produce a Horizontal Equant dial. Although Foster's nomogram applies only to a circle, Fred was able to show that the principle also applies to an ellipse. This being so, he was able to develop a novel form of analemmatic dial that uses an alidade, pivoting on the Foster Point, to indicate a position on a circular homogeneous hour scale. Being homogeneous, the dial can correct for Civil Time.

A 3-D printed Sunquest Dial – Bob Kellogg

The Sunquest Dial by Richard Schmoyer originated in the late 1950s, but Bob has brought the design into the 21st century by 3D printing them. Bob's talk (actually a video) told how he had become fascinated by sundials and the Sunquest design in particular, after reading Schmoyer's 1959 Scientific American article. Bob then described the process of creating a stereolithographic, or computer file, representation of a Sunquest Dial. For this he uses software called *OpenSCAD*. A scripting language is used to build up a complex virtual object using assorted simpler shapes. In some cases he uses *MeshLab* to check and refine his file.

Finally, *Slic3r* readies the file for 3D printing by sectioning the 3D representation into a large number of thin 2D shapes. These shapes correspond to the layers of material deposited by the

printer. In the later part of the video, Bob showed a dial being printed. Three lucky audience members won dials donated by Bob.

E.G. Hewitt: Sundial Patentee – Fred Sawyer

There is a sparsity of records about early American sundial makers, but Fred was able to find some interesting background for Edward Gurnee Hewitt, holder of a number of sundial patents from the early 20th century. Hewitt made a fortune as part-owner of a wholesale paper and glue business, and invested in other ventures with mixed success. His extended family included several notables, including business people, scientists and politicians. Around 1900 he adapted a failing toy-making factory in Brooklyn, NY, for manufacture of astronomical instruments including sundials. Fred reviewed the 7 sundial patents filed by Hewitt, and finished his talk by tracing the complicated history of two Hewitt dials recorded in the NASS Register.

Declining Vertical & Reclining Dials Using Equinox Lines – Art Kaufman

Art presented simple trigonometric methods for calculating dials by use of an equinox projection line and plane geometry. He described an approach involving projection of a due-south vertical dial onto the desired plane by using bird's eye and perpendicular views.

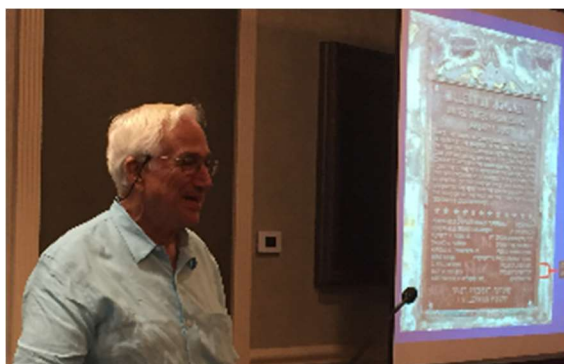
He demonstrated that sundial layout is within the capability of a person with high school trigonometry and neat, precise, drawing skills. The method relies on use of an equinox line, which can be established using ephemeris data for solar azimuth and altitude on the equinox. Art provided step-by-step demonstrations of the method for an example Decliner and an example Recliner.



Art Kaufman

Millennial Solar Monument, St. Croix, U.S. Virgin Islands – Will Grant

During a visit to St. Croix, Will encountered a large monumental sun sculpture at Point Udall, the eastern tip of the island. The sculpture was designed by C. William Rich and built by the island's Public Works department. Point Udall is the most easterly part of the United States in the Western Hemisphere, and hence saw sunrise earlier on January 1, 2000 than any other US location in the hemisphere. The purpose of the monument is to record that single instant.



Will Grant

The general form is inspired by the roman numerals MM for 2000. Two perpendicular stone-

built M shapes, about 18' high, cross at their centers. The middle of the structure is cut away to make room for a vertical pole which has a narrow viewing slot cut into it. Looking through the

slot one sees a marker post that is topped by a vertical pin. In this way, one can sight the sun's position as it was at the instant of sunrise on the chosen day.



Delegates pictured at the Analemmatic Sundial, Long Elementary School

Photo courtesy Beth Johnston

Minutes of the NASS Annual General Meeting, 2017

Recorded by Steve Lelievre, Secretary

The meeting was called to order at 8:05 a.m. August 22nd, 2017 at the NASS conference in St. Louis (Clayton), MO, with Fred Sawyer presiding. The officers present were Fred Sawyer (President, Compendium Editor), Art Paque (Vice-president, membership), Mark Montgomery (Treasurer) and Steve Lelievre (Secretary).

Minutes of the 2016 AGM held in Portland, ME, had been distributed with The Compendium of September 2016 and in the 2017 conference pack. There being no questions or comments, they were accepted as distributed.

Mark Montgomery, Treasurer, provided a brief recap of the half-year Statement of Financial Position distributed in the conference pack (the 2016 Treasurer's Report having been distributed with the March 2017 Compendium). He noted that all our current fixed assets are fully depreciated. He drew attention to a restricted equity amount of \$7000 that is designated for eventual payment to the Adler Planetarium and Astronomy Museum towards reimbursement of their costs in preparing a catalog of their sundials. Mark also noted that the Society has \$2393.63 of restricted equity relating to the Sawyer Dialing Prize. Summarizing, he portrayed our financial situation as "Doing pretty good".

Mark announced Pittsburgh, PA, as the prospective location for the 2018 conference, the date of which is to be determined.

A Membership Report prepared by Art Paque, was made available in the conference pack. Art reported our membership as 260, which is a gain of 8 on the August 2016 figure. He mentioned that although we had more members than last year, membership is lower than in 1990s and early 2000s (a pattern consistent with many other amateur and hobbyist organizations). He reported that newly recruited

members are less likely to renew than established members, with the most noticeable loss happening in the first 4 years. Art expressed concern that the situation may foreshadow a long-term contraction of membership, and without increased recruitment of younger members we may face difficulty in filling leadership positions in the future. His assessment is that the leadership turns over in a 5 – 10 year window. Art announced that he will be surveying existing members with the aim of getting a better understanding of how to direct our recruitment efforts. Finally, he expressed interest in finding new ways to communicate and engage with members.

There was a brief discussion on the merits or otherwise of adopting Facebook. Fred Sawyer observed that to be successful, a Facebook page would require frequent updates and new posts, and noted the sustained effort required of Bob Kellogg (our webmaster) to keep our main website fresh and interesting. With no one volunteering to run a Facebook page, the status quo prevails.

Susan Haynes requested that the society offer membership options that covered longer than the current maximum of 2-year terms, perhaps including a Life Member category. Fred Sawyer acknowledged the request and agreed to review the possibility with the other officers.

William Van Wyke inquired about the option of an email discussion list. In response, Mark Montgomery drew attention to the mailing list operated by Daniel Roth.² That list is already well-subscribed by NASS members and other enthusiasts from across the world. Roger Bailey noted that NASS officers operate a Question & Answer service to assist the public.³

Fred Sawyer noted that Bob Kellogg, Webmaster, was not in attendance this year and had not submitted a written report. Fred acknowledged the effort Bob makes in administering our website and reminded the meeting that Bob now acts as our Sundial Registrar as well.

Fred reported that after a long period of service as Secretary, Roger Bailey had resigned mid-year. Fred introduced Steve Lelievre who, in line with the NASS Constitution, had been appointed by the President to serve out the remainder of Roger's term.

Dudley Warner, Chair of the Nominating Committee, reviewed the committee's report (as circulated in the conference pack). Dudley confirmed that the nomination period had expired with only one nomination for each of the open posts and thus the nominees were acclaimed. Hence, Art Paque continues as Vice-President and Steve Lelievre as Secretary. Dudley endorsed comments earlier in the meeting about recruitment of officers, and remarked that it would be good to have more nominees in the future.

There being no business from the floor, the meeting ended at 08:23.

Plan to join us for the 24th Annual NASS Conference

16-19 August 2018 Pittsburgh PA

² <https://lists.uni-koeln.de/mailman/listinfo/sundial>

³ Note, the task of providing this service falls primarily on Art Paque