



the Skyscraper

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AMATEUR ASTRONOMICAL SOCIETY OF RHODE ISLAND * 47 PEEPTOAD ROAD * NORTH SCITUATE, RHODE ISLAND 02857 * WWW.THESKYSCRAPERS.ORG

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Mars Exploration: Looking Forward from MER

A presentation by Dr. Andrew Knoll
Saturday, November 5 at Seagrave Observatory
& via Zoom, 7:00pm EDT

Meeting presentation will also be conducted over Zoom. Contact Linda Bergemann (L.Bergemann@aol.com) for Zoom Meeting link and information.

For more than a decade, NASA's MER rovers Spirit and Opportunity provided a field geologist's view of the Martian surface, providing a foundation for continuing in situ exploration of our planetary neighbor. A member of the MER Science team, Andrew Knoll will discuss scientific highlights from the mission, as well as continuing insights from MER's descendants, the Curiosity and Perseverance rovers. Much has been learned about Mars' environmental history, but outstanding questions remain, including the question of life.

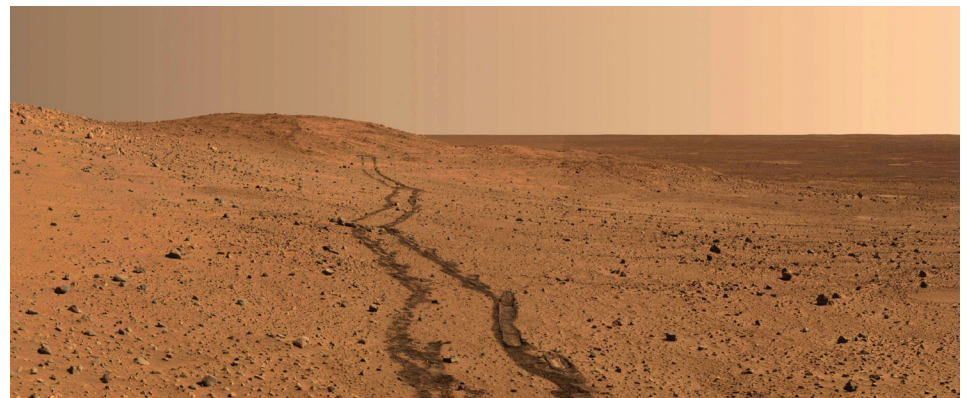
Andrew Knoll is the Fisher Professor of Natural History at Harvard University. He received his B.A. in Geology from Lehigh University in 1973 and his Ph.D., also in Geology, from Harvard in 1977. Following five years on the faculty of Oberlin College, Knoll returned to Harvard as Associate Professor of Biology in 1982. He has been a member of the Harvard faculty ever since,

-serving as both Professor of Biology and Professor of Earth and Planetary Sciences. Professor Knoll's research focuses on the early evolution of life, Earth's environmental history, and, especially, the interconnections between the two. For the past decade, he has served on the science team for NASA's MER mission to Mars.

Professor Knoll's honors include the Walcott Medal and the Mary Clark Thompson Medal of the National Academy of Sciences, the Phi Beta Kappa Book Award in Science (for his 2003 book *Life on a Young Planet*), the Moore Medal of the Society for Sedimentary Geology, the Paleontological Society Medal, and the Wollaston Medal of the Geological Society of London. Knoll is a member of the National Academy of Sciences, the American Academy of Arts and Sciences, the American Philosophical Society, and the American Academy of Microbiology.



**Seagrave Memorial
Observatory
Open Nights**
Saturdays, 7pm



President's Message

by Linda Bergemann

I am beginning to get in a groove with writing a monthly message for The Skyscraper; learning to be vigilant throughout the month for a topic that I think may be of interest to our members. This month, a seed was planted just before AstroAssembly, was nourished during a discussion at AstroAssembly, and budded out at our last Program Committee meeting. My thoughts this month are about online discussion groups.

Back in January, while we were still plagued by COVID, we started a Lunar Observers group that met by Zoom. We met every two weeks until recently. At first, it was all about the Moon and the observing program, but it grew to be a time to get together and discuss astronomy, in general. You could tell that everyone enjoyed getting together to share their experiences. Plus, it was fun!

Fast forward to AstroAssembly. In preparing for AstroAssembly, I spoke on the phone with Tony Costanzo, member of

Skyscrapers and owner of the Astronomy Shoppe, in New Hampshire. Tony invited me to his weekly Zoom discussion group to promote AstroAssembly to the attendees, and I accepted. There were fewer than a dozen online, and I felt at home immediately. Some were from around New England, but others were in Florida. They expressed genuine interest in what I had to say and asked about Seagrave Observatory. They were very impressed when I showed them a photo of the Alvan Clark refractor. I'm sure one or two will visit us someday soon. Unfortunately, I had to leave the meeting before it ended.

Then, during AstroAssembly, I was passing time chatting with Bob Napier when he mentioned our Zoom gatherings for the Lunar Observers group, and how he enjoyed them as a way to share the hobby.

That's the background. Now, I am encouraging you to seek out and join one or more of these online discussion groups that suit your interests. There are many happen-

Upcoming Events

Nov. 4 - 7 PM RIEEA Evening Under the Stars (Private Event)

Nov. 5 - 8:30 PM Public Observing at Seagrave

Nov. 12 - 7 PM Public Observing at Seagrave

Nov. 18 - 7 PM Night Sky Program at River Bend Farm, Uxbridge

Nov. 19 - 7 PM Public Observing at Seagrave

Nov. 26 - 7 PM Public Observing at Seagrave

Nov. 30 - Star Party at William L. Callahan School, Harrisville

Volunteers needed for all events.

ing all over the country and the world.

Tony Costanzo's group meets every Thursday afternoon at 1 PM on Zoom. You can contact Tony at tcostanzo@astronomy-shoppe.com for more information.

Skyscrapers member Steve LaFlamme also hosts another Zoom-based discussion group that he calls "Cosmic Coffeehouse" that meets on the 15th of each month at 7 PM. Contact Steve at astro-geek@comcast.net if you would like to join the fun.

These online groups are a great way to get to know other amateur astronomers. I hope to be at the next Cosmic Coffeehouse. See you there?

Note of thanks to Denise Turco

As many of you may know, long-time (60 years) member Ed Turco passed away on March 28, 2021 (<https://www.friendsjournal.org/edward-franklin-turco/>)

Recently, Ed's wife Denise generously donated a great collection of his books to Skyscrapers that we have offered for sale. The money realized from the sale of these

books will be used to help with infrastructure projects at Seagrave, as well as to help support our public outreach programs.

Thank you Denise for your gracious donation and continued support of Skyscrapers.

Dave Huestis
Historian/Librarian



The Skyscraper is published monthly by Skyscrapers, Inc. Meetings are held monthly, usually on the first or second Friday or Saturday of the month. Seagrave Memorial Observatory is open every Saturday night, weather permitting.

Directions

Directions to Seagrave Memorial Observatory are located on the back page of this newsletter.

Submissions

Submissions to *The Skyscraper* are always welcome. Please submit items for the newsletter no later than **November 15** to Jim Hendrickson, 1 Sunflower Circle, North Providence, RI 02911 or e-mail to jim@distantgalaxy.com.

E-mail subscriptions

To receive *The Skyscraper* by e-mail, send e-mail with your name and address to jim@distantgalaxy.com. Note that you will no longer receive the newsletter by postal mail.

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November's Total Lunar Eclipse at Moonset

by Francine Jackson

Many of us missed part or all of the May 15 – 16 lunar eclipse this year because of clouds; however, we have a reprieve – another total lunar eclipse is coming in just a few days. Unfortunately, though, there is a slight problem – you'll have to lose a lot of sleep.

Lunar eclipses have an advantage to them that solar eclipses don't. They are visible to anyone who can see the Moon, as opposed to having to trek someplace to a solar eclipse's path of totality. A total lunar eclipse is a beautiful sight to see, as its color each time can be different, from a coppery to a brilliant red. This is the result of the Sun, which is behind us, and is shining through layers of our atmosphere. If, for example, a volcano erupted just a few days previous, there will be so much dust and gas in our air that the Moon might seem to almost disappear when in Earth's primary shadow, the umbra.

On the morning of November 8th, the Moon will slip into the secondary shadow, the penumbra, at 3:02 A.M. A little over an hour later, at 4:09, it will begin to enter the umbra. At 5:16, it will be totally within the umbra, and will be totally eclipsed until 6:41. For us, the Moon will set at 6:32, so we will not see the entire totality, or witness the Moon return to the penumbra.

Let's hope this lunar eclipse will be able to be seen by all, as 2023 only has a penumbral eclipse in May, and a very partial one in late October, both of which will be seen on the other side of the world. And, 2024 doesn't look very promising, either. Let's hope for clear November skies!



The January 31, 2018 partial lunar eclipse occurred at Moonset, by Jim Hendrickson.

Total Lunar Eclipse of 2022 Nov 08

Ecliptic Conjunction = 11:03:18.4 TD (= 11:02:05.3 UT)
 Greatest Eclipse = 11:00:22.0 TD (= 10:59:08.8 UT)

Penumbral Magnitude = 2.4143 P. Radius = 1.2164° Gamma = 0.2570
 Umbral Magnitude = 1.3589 U. Radius = 0.6783° Axis = 0.2404°

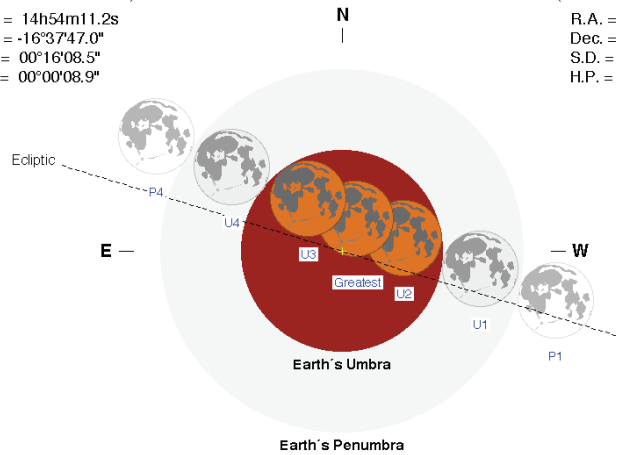
Saros Series = 136 Member = 20 of 72

Sun at Greatest Eclipse
 (Geocentric Coordinates)

R.A. = 14h54m11.2s
 Dec. = -16°37'47.0"
 S.D. = 00°16'08.5"
 H.P. = 00°00'08.9"

Moon at Greatest Eclipse
 (Geocentric Coordinates)

R.A. = 02h53m48.1s
 Dec. = +16°51'06.7"
 S.D. = 00°15'17.7"
 H.P. = 00°56'07.8"



Eclipse Durations

Penumbral = 05h53m51s
 Umbral = 03h39m50s
 Total = 01h24m58s

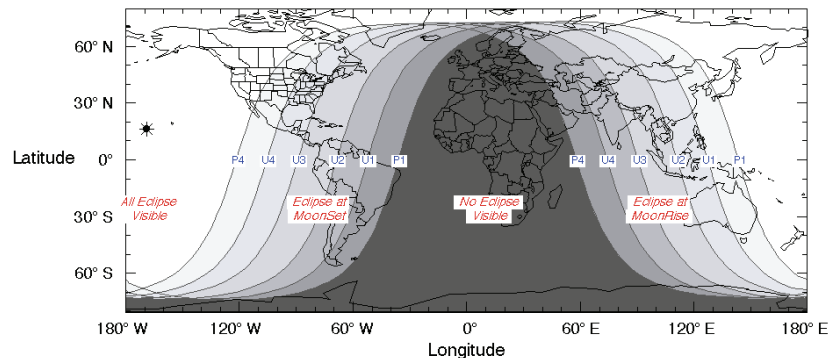
ΔT = 73 s
 Rule = CdT (Danjon)
 Eph. = VSOP87/ELP2000-85

F. Espenak, NASA's GSFC
eclipse.gsfc.nasa.gov/eclipse.html

Eclipse Contacts

P1 = 08:02:17 UT
 U1 = 09:09:12 UT
 U2 = 10:16:39 UT
 U3 = 11:41:37 UT
 U4 = 12:49:03 UT
 P4 = 13:56:08 UT

P1 Penumbral Eclipse begins	03:02
P2 Umbral Eclipse begins	04:09
Astronomical Twilight begins	04:51
P3 Total Eclipse begins	05:16
Nautical Twilight begins	05:24
Civil Twilight begins	05:57
Maximum Eclipse	05:59
Sunrise	06:27
Moonset	06:33



2009 Apr 29

Skylights: November 2022

by Jim Hendrickson

November brings some notable seasonal changes. The nocturnal sounds of the warmer months are silenced by the chilly night air, and the smells of autumn are rapidly fading into the freezing night.

Arcturus, which has been part of our evening sky since January, finally dips into the northwestern twilight in early November.

The swan, Cygnus, is on its slow, annual migration towards the northwestern horizon. Sagittarius settles into the southwestern horizon, taking with it the core of the Milky Way.

Fomalhaut, the brightest star in Piscis Austrinus, the southern fish, is prominently positioned low in the south during early evenings in November; this is the best time for viewing the Great Andromeda Galaxy and the myriad of objects residing in the section of the Milky Way within Cassiopeia and Cepheus, which pass high overhead in the evening.

Perhaps most notably, although not a natural phenomenon, Daylight Time ends on November 6, which sets our clocks back an hour, to 5 hours behind Coordinated Universal Time (UTC-05:00). This theoretically gives us an additional hour of nighttime viewing, but makes the apparent sunrise an hour earlier.

The latest sunrise occurs at 7:23 Eastern Daylight Time on the 5th. The Sun travels through Libra from the final day of October through November 23rd. It then spends less than a week moving through northern Scorpius, before entering Ophiuchus before sunrise on the 30th.

The Sun passes less than 0.1° south of Zubenelgenubi on November 4, and between Acrab and Dschubba, in Scorpius, on the 25th.

The Moon is at first quarter phase early on the 1st, and it already appears gibbous when it rises at 2:43pm. At dusk, you will find Saturn 4.7° north of the Moon. If you have exceptionally clear sky conditions during the afternoon, this would make for a good opportunity to locate Saturn during daylight. An accurately polar-aligned tracking mount and medium-high magnification with an orange or red filter will make this challenge worth a try.

The waxing gibbous Moon passes 2.6° southeast of Jupiter on the 4th.

On the morning of the 11th, the wan-

ing gibbous Moon passes 2.9° northwest of Mars, and on the 13th it rises just beneath and aligns with the twin stars Pollux and Castor in Gemini. Late on the 14th and through the night, the waning gibbous Moon lies just over 3° from the large open star cluster M44, the Beehive, in Cancer.

Last quarter occurs on the 16th, and just before midnight, the Moon rises 4.5° from Regulus, in Leo. On the 21st, the waning crescent appears near Spica, in Virgo, on the 21st.

The 27-day, 8% illuminated waning crescent Moon is 3.8° northeast of Spica on the 21st. New Moon occurs on the 23rd, beginning Lunation 1236.

On the evening of the 26th, the 3-day waxing crescent Moon passes within 1 arcminute of 3rd magnitude star tau Sagittarii just before moonset.

The Moon is first quarter for a second time on the 30th, and during the evening hours it passes just a few arcminutes north of asteroid 3 Juno.

The Full Beaver Moon coincides with a total lunar eclipse on the morning of November 8. For observers in New England, the Moon sets during totality.

Uranus is 2° to the east of the Moon at the time total eclipse begins. Our seventh planet is at opposition the following day, the 9th, and thus is at its closest and brightest for the year. At a distance of 18.69 AU from Earth, Uranus shines as bright as magnitude 5.7 and will show a tiny blue-green globe nearly 3.8 arcseconds in diameter. The third week of the month will be the best time to attempt to see Uranus without any optical aid in a dark sky.

Mercury and Venus both return to the evening sky in November, but they will remain low and challenging to observe.

Mercury is at superior conjunction on the 8th. This particular superior conjunction is notable in that it takes Mercury directly behind the Sun from our perspective. This is not a particularly rare event, as it previously occurred on May 5, 2020, and the next one occurs on May 14, 2026.

Mercury remains too low in twilight to be easily observed through November. It may be found telescopically, however, using the much brighter Venus as a guide. The best time to try this begins on November 29, when Mercury will be 3° to the left of Venus. Begin observing no earlier than 20

Events in November

1 First Quarter Moon

1 Moon 4.6° SE of Saturn

4 Moon 2.8° SE of Jupiter

5 Latest Sunrise (7:23am daylight time)

8 Full Moon / Total Lunar Eclipse

8 Moon 1.9° W of Uranus

8 Mercury Superior Conjunction

9 Uranus Opposition

11 Moon 2.9° NW of Mars

11 Saturn Eastern Quadrature

16 Last Quarter Moon

20 Venus 1.3° N of Mercury

23 New Moon

24 Jupiter Stationary

28 Moon 6.6° SW of Saturn

30 First Quarter Moon

30 Mars Closest to Earth (0.544 AU)

Ephemeris times are in EDT (UTC-4) for Seagrave Observatory (41.845N, 71.590W)

New Members Welcome to Skyscrapers

Linda Cesario
of Chepachet

Ed Meadows & Tom
Perkins of Coventry

Tony Costanzo
of Plaistow, NH

Wayne Buck & Isabella
Knox of Saunderstown

Glenn McCauley
of Providence

Peter Leveillee
of West Greenwich

Ed Clemence of Hope

Harry Jacobson
of Providence

Jenifer Giroux
of Cranston

Lorna & Andy Swanson
of North Scituate

minutes after sunset, and find a clear horizon free of obstruction, as the two planets will be just 1.5° in elevation, and will set only about 30 minutes after sunset.

Saturn, in Capricornus, reaches its eastern quadrature on the 11th, which is the point 90° of elongation from the Sun in our sky. It is also the point, as seen from Saturn, where Earth is at its greatest elongation from the Sun (5.8°). This maximum elongation also means that the shadow of Saturn on its rings is at its maximum offset as seen from Earth, giving Saturn a distinct three-dimensional view through a telescope.

The 4-day waxing crescent Moon appears 6° below Saturn on the 28th.

Neptune is only about 6° west-southwest of Jupiter all month.

Jupiter, in Pisces, remains our night sky's most prominent star-like object. Sitting

high in the southeast at evening twilight, Jupiter reaches its stationary point on the 24th, and resumes its eastward, prograde motion thereafter.

At the beginning of November, Jupiter remains in the sky until 4:00am, but by month's end, it departs by 1:00am.

Mars is the planet to watch in November. Moving westward through eastern Taurus and shining as bright as Sirius, the Red Planet is at its closest to Earth on the 30th, at a distance of 0.544 AU. Its disk now appears nearly full, and its 16 arcsecond size appears larger than the globe of Saturn. Surface details on the planet should be clearly visible through larger telescopes. It is notable that Mars's rotation is 40 minutes slower than Earth's, so the same features will be visible 40 minutes later each successive night it is observed.

November is a busy month for meteors,

although none of the active showers are predicted to produce a high rate of meteors. The most-recognized shower, the Leonids, is known for its 33-year outbursts associated with Comet 55P/Tempel-Tuttle, but is currently 11 years from its next predicted one, and is now just a modest shower, producing about 15-20 meteors per hour at its peak on November 17-18, when the waning crescent Moon shouldn't present too much interference.

If you do see meteors in November, it is likely that they are from the Taurid streams. The Taurids are lesser known, and usually produce lower hourly rates than the Leonids, but they have a broad period of activity extending from October through the end of November, and often produce brighter, slower-moving meteors with persistent trails, and even an occasional fireball.

Remembering Dave Rose

by Scott Tracy

Dear Friends,

On Monday Oct 10th Dave Rose passed away after a long battle with cancer. He chose not to share his diagnosis until he could no longer manage his life.

Dave was among my closest friends. I met him at an ASGH meeting in the late 70's. We soon found ourselves meeting up to observe. Together we enjoyed astronomy in many ways - Dave was an active observer and a past president of ASGH. He was among the first owners of the Coulter 13 inch Dob, which was a big deal back then. Dave was also a good travel partner as in when we flew to Florida for Halley's Comet or when we chased an eclipse (annular) to GA. We spent a full day at the National Air and Space Museum and left with our brains full.

Dave loved astronomy and space technology. He was a prolific reader - he could name the commander and crew of most missions from Projects Mercury through Apollo. He had many commemorative patches of the missions: up through Skylab, the historic US - Soviet hookup in space, and most Shuttle missions.

But most of all, he loved the star parties and events, especially Stellafane, as he loved to talk with his many friends and fellow amateurs and share nerd humor.

Dave was a good man - always upbeat and positive, sometimes while having to

deal with life's inevitable setbacks. Dave showed me around Stellafane my first time there (1982) and then he correctly declared that I MUST attend a Skyscraper's meeting - a whole new wonderful universe of amateur astronomy. I will forever be grateful that Dave brought me to this organization.

I miss Dave and I will be keenly aware of

his absence for some time to come. I will think of him whenever attending an astronomy event or when watching a liftoff of the new generation of rockets.

Peace, Dave

Respectfully Shared,
Scott Tracy



Cepheus: A House Fit for a King

by David Prosper

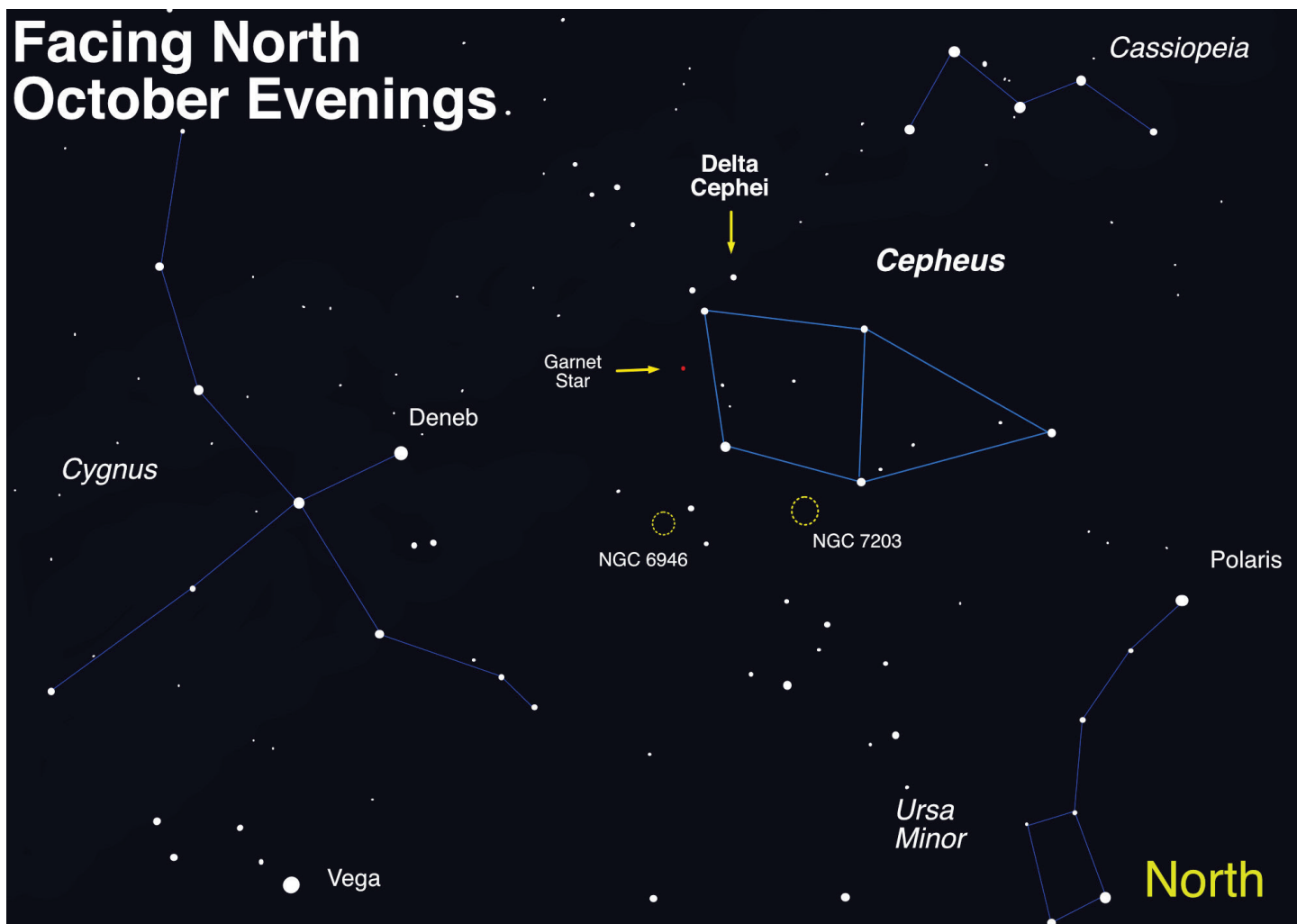
Sometimes constellations look like their namesake, and sometimes these starry patterns look like something else entirely. That's the case for many stargazers upon identifying the constellation of Cepheus for the first time. These stars represent **Cepheus**, the King of Ethiopia, sitting on his throne. However, many present-day observers see the outline of a simple house, complete with peaked roof, instead – quite a difference! Astronomers have another association with this northern constellation; inside its borders lies the namesake of one of the most important types of stars in modern astronomy: Delta Cephei, the original **Cepheid Variable**.

Cepheus is a circumpolar constellation for most observers located in mid-northern latitudes and above, meaning it does not

set, or dip below the horizon. This means Cepheus is visible all night long and can be observed to swing around the northern celestial pole, anchored by Polaris, the current North Star. Other circumpolar constellations include Cassiopeia, Ursa Major, Ursa Minor, Draco, and Camelopardalis. Its all-night position for many stargazers brings with it some interesting objects to observe. Among them: the “Garnet Star” Mu Cephei, a supergiant star with an especially deep red hue; several binary stars; several nebulae, including the notable reflection nebula NGC 7023; and the “Fireworks Galaxy” NGC 6946, known for a surprising amount of supernovae.

Perhaps the most famous, and certainly the most notable object in Cepheus, is the star **Delta Cephei**. Its variable nature was

first discovered by John Goodricke, whose observations of the star began in October 1784. Slightly more than a century later, Henrietta Leavitt studied the variable stars found in the Magellanic Clouds in 1908 and discovered that the type of variable stars represented by Delta Cephei possessed very consistent relationships between their luminosity (total amount of light emitted), and their pulsation period (generally, the length of time in which the star goes through a cycle of where it dims and then brightens). Once the period for a Cepheid Variable (or **Cepheid**) is known, its luminosity can be calculated by using the scale originally developed by Henrietta Leavitt, now called “Leavitt’s Law.” So, if a star is found to be a Cepheid, its actual brightness can be calculated versus its observed brightness. From



The stars of Cepheus are visible all year round for many in the Northern Hemisphere, but fall months offer some of the best views of this circumpolar constellation to warmly-dressed observers. Just look northwards! Image created with assistance from Stellarium: stellarium.org.

that difference, the Cepheid's distance can then be estimated with a great deal of precision. This revolutionary discovery unlocked a key to measuring vast distances across the cosmos, and in 1924 observations of Cepheids by Edwin Hubble in what was then called the Andromeda Nebula proved that this "nebula" was actually another galaxy outside of our own Milky Way! You may now know this object as the "Andromeda **Galaxy**" or M31. Further observations of Cepheids in other galaxies gave rise to another astounding discovery: that our universe is not static, but expanding!

Because of their importance as a "standard candle" in measuring cosmic distances, astronomers continue to study the nature of Cepheids. Their studies revealed that there are two distinct types of Cepheids: Classical and Type II. Delta Cephei is the second closest Cepheid to Earth after Polaris, and was even studied in detail by Edwin Hubble's namesake telescope, NASA's Hubble Space Telescope, in 2008. These studies, along with others performed by the ESA's Hipparcos mission and other observatories, help to further refine the accuracy of distance measurements derived from observations of Cepheids. What will further observations of Delta Cephei and other Cepheids reveal about our universe? Follow NASA's latest observations of stars and galaxies across our universe at nasa.gov.



This article is distributed by NASA Night Sky Network. The Night Sky Network program supports astronomy clubs across the USA dedicated to astronomy outreach. Visit nightsky.jpl.nasa.gov to find local clubs, events, and more!

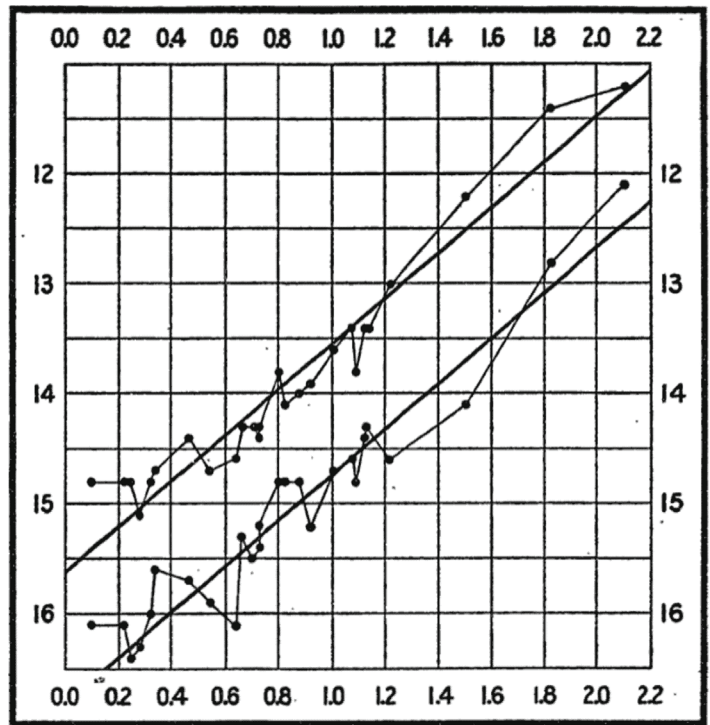


FIG. 2.

This historical diagram from Henrietta Leavitt's revolutionary publication shows the luminosity of a selection of Cepheid Variables on the vertical axis, and the log of their periods on the horizontal axis. The line drawn through these points shows how tight that relationship is between all the stars in the series. From Henrietta Leavitt and Edward Pickering's 1912 paper, "Periods of 25 Variable Stars in the Small Magellanic Cloud," a copy of which can be found at: <https://ui.adsabs.harvard.edu/abs/1912HarCi.173....1L/abstract>

Observer's Challenge: Messier 39: Open Cluster in Cygnus

by Glenn Chaple

Cygnus is a relatively large constellation centered on the star-rich fields of the Milky Way. It's surprising, therefore, that it's home to just two Messier objects – the open clusters M29 and M39. The latter, the larger and brighter of the pair, is this month's Observer's Challenge.

Credit for its discovery goes to Charles Messier himself, who observed the cluster on October 24, 1764. Some sources suggest that it may have been seen by Messier's fellow countryman Guillaume Le Gentil 14 years earlier, while others note a possible naked eye observation by Aristotle in 325 BC.

M39 is located at the 2000.0 coordinates RA 21h31m48.0s, Dec. +48°26'00". I found it by star-hopping 3 degrees roughly north of 4th magnitude rho (ρ) Cygni. This star can be found by tracing an imaginary line from delta (δ) Cygni through Deneb and extending it an equal distance beyond (refer to the two finder charts).

My first encounter with M39 came on the evening of November 11, 1977, when I observed both it and M29 with a 3-inch f/10 reflector and a magnifying power of 30X. I was able to prove for myself that M39 is indeed larger and brighter – bright enough to



M39 is too large for my 32-inch telescope to image it (would only see half of it), so, I took it with my 600mm F8 Sigma lens for my Nikon 7100 camera piggybacked. (effective FL is 900mm on this camera) Stack of 5 images of 1 minute duration each, then cropped a bit, mildly processed in Pixinsight.
By Mario Motta, MD.

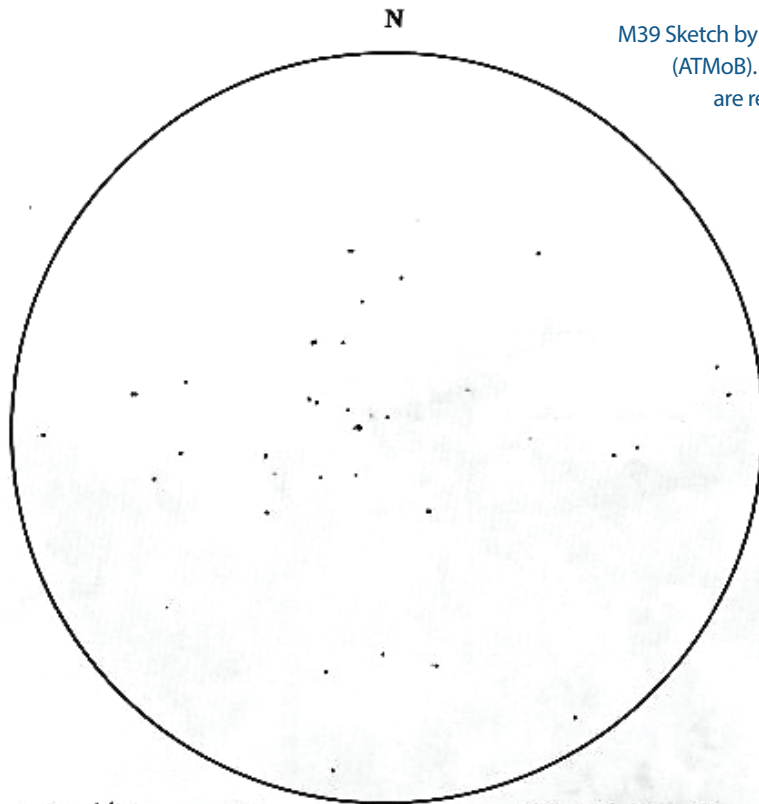
be visible in the scope's primitive 3X25mm finderscope. During a small-scope survey of all Messier objects conducted between the years 1996 and 2013, I revisited M39 with a 3-inch f/6 reflector and 39X eyepiece. In my logbook, I wrote "Large, sparse cluster, triangular in shape. Over 2 dozen stars down to 11th magnitude." For a fresh impression of M39, I viewed it on September 15, 2022, with a 60mm (2.4-inch) refractor, again with low power (this time, 25X) to capture its entire full-moon-sized span. I counted about 20 stars, which is two-thirds of the recognized cluster membership.

On all three occasions, I sketched M39. Reviewing them, I noticed a common denominator besides the triangular shape. Near the middle was a faint (for my small-sized instruments) double star. A search of the Washington Double Star Catalog (WDS) identified it as ARN 78, whose magnitude 7.6 and 8.8 components are separated by 50.0 arc-seconds. The WDS listed several other pairs within the bounds of the cluster – all too faint or close for ordinary backyard scopes.

At a distance of 800 light-years, M39 is one of the nearest Messier objects. Its true diameter is around 7 light-years.

The purpose of the Observer's Challenge is to encourage the pursuit of visual observing. It is open to anyone who is interested. If you'd like to contribute notes, drawings, or photographs, we'd be happy to include them in our monthly summary. Submit your observing notes, sketches, and/or images to Roger Ivester (rogerivester@me.com). To find out more about the Observer's Challenge, log on to rogerivester.com/category/observers-challenge-reports-complete.

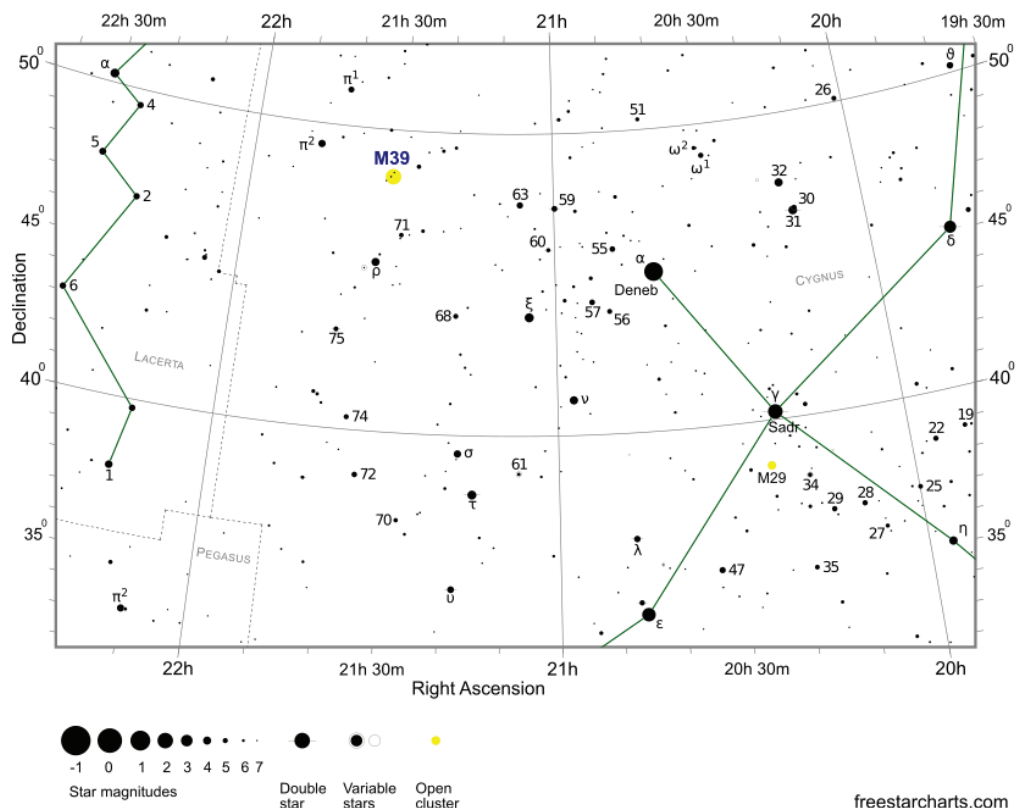
M39 Sketch by Glenn Chaple (ATMoB). East and west are reversed in this refractor field.



SUBJECT: Messier 39 **DATE/TIME:** 9/15/2022 9:20 pm EDT
TELESCOPE/EYEPIECE: 60mm (2.4-inch) f/11.7 refractor
 28mm Edmund RKE
MAGNIFYING POWER: 25X **FIELD OF VIEW:** 1.8°

NOTES:
 In rich Milky Way field. 20 stars down to 10th magnitude visible

Messier 39 - M39



No Replacement for Arecibo Telescope

by Francine Jackson

Although the Arecibo radio telescope was no longer the largest in the world, it was the most famous, even appearing in two blockbuster movies. Sadly, the 1,000-foot dish was recently damaged when a 100-foot hole was caused by breaking cables in 2020, and eventually the entire upper structure slammed into the dish, ruining the entire facility. As the structure was deemed too unstable, the facility was closed, but there was positive talk concerning repairing the dome.

Now, however, the NSF (National Science Foundation) has [announced](#) the telescope will not be rebuilt; instead, the NSF will create an education center at the site, in order to “promote programs and partnerships related to science, technology, engineering and math.” Unfortunately, there will not be funds to continue research that is still in use, such as the Lidar facility, which studies the upper atmosphere to analyze cloud cover and precipitation information.

This is the second large radio telescope no longer in use in the U.S.. For 25 years, from 1959 to 1984, the University of Illinois operated the [Vermilion River Observatory](#), a 600-foot by 400-foot carved-out river valley 45 miles from the main campus. An ae-



Arecibo Telescope's Receiver Platform before its 2020 collapse. Credit: University of Central Florida

rial survey had noted that the area was naturally contoured to create the shape needed for radio observing, and, once shaped, it was covered with asphalt and wire mesh, then a 15-foot trestle was constructed to carry the receivers. Unfortunately, erosion gradually made the operation defective, and vandalism, including that of the steerable dish, made working almost impossible, and it was decommissioned in 1984.

Today, there seems to be only one radio telescope made from a carved-out piece of land: [FAST](#), the 500-meter spherical facility located in a depression in Guizhou, China. Now the world's largest single dish telescope in the world, having a receiving area equivalent to 30 football fields, it is believed FAST will remain in its world-class status for at least 25 to 30 years.

Star Party Update

**Moonrise on the Seekonk
Sunday, October 9, 2022**

By Francine Jackson

It was another great, fun night for Moonrise over the Seekonk Sunday, October 9th. The evening was just cool enough, there were no clouds until later in the evening, and, best of all, there were no mosquitoes. Jim Hendrickson, Michael Corvese, Mark Munkacsy, Ron Zincone, Heidi Morgan and Francine Jackson all brought their portable telescopes, plus Peter, a friend of organizer Rick Richards, had his 20X80 binoculars.

While music played across the street, in the park, the crowd slowly came over to see what was happening with all of us and our telescopes. Surprisingly, the number of people present seemed to be less than previous years, and there were fewer children, possibly because Rick was on the other coast, enjoying his new granddaughter,



and Kerry, his replacement, wasn't aware of its normally incredible appeal. However, there were at least over 70 who did cross the street to see us.

The Moon rose beautifully through the trees across the river soon after 6:30 P.M., and everyone present marveled at its beauty. For those who wanted something different after seeing the Moon, Jupiter and Saturn were also shown, by Michael and Mark.

This was the fifth time we had been invited to this event. It had happened in different months, but November was clearly too chilly, and the summer months were jampacked with mosquitoes, so we will mention to Rick that the month of October seems a perfect time. And, all of us who came with our equipment agreed we will definitely be back next year.

The Sun, Moon & Planets in November

This table contains the ephemeris of the objects in the Solar System for each Saturday night in November 2022. Times in Eastern Daylight Time (UTC-4) through November 6 & Eastern Standard Time (UTC-5) from November 7. Ephemeris times are for Seagrave Observatory (41.845N, 71.590W).

Object	Date	RA	Dec	Const	Mag	Size	Elong	Phase(%)	Dist(S)	Dist(E)	Rise	Transit	Set
Sun	5	14 40.4	-15 36.2	Lib	-26.8	1935.4	-	-	-	0.992	07:23	12:29	17:36
	12	15 08.5	-17 37.5	Lib	-26.8	1938.7	-	-	-	0.990	06:31	11:30	16:28
	19	15 37.3	-19 24.0	Lib	-26.8	1941.6	-	-	-	0.988	06:40	11:31	16:22
	26	16 06.7	-20 53.4	Sco	-26.8	1944.3	-	-	-	0.987	06:48	11:33	16:18
Moon	5	0 09.0	-3 47.1	Psc	-12.5	1912.7	138° E	87	-	-	16:27	22:45	04:16
	12	6 02.0	26 37.3	Tau	-12.4	1787.1	140° W	88	-	-	19:21	03:28	11:31
	19	11 44.5	5 17.7	Vir	-11.2	1814.3	63° W	27	-	-	01:35	08:01	14:17
	26	18 04.1	-27 59.4	Sgr	-9.7	1970.9	28° E	6	-	-	10:05	14:24	18:46
Mercury	5	14 32.0	-14 24.9	Lib	-1.0	4.7	2° W	100	0.437	1.426	07:13	12:23	17:31
	12	15 16.2	-18 25.1	Lib	-0.9	4.7	2° E	100	0.458	1.446	06:46	11:39	16:32
	19	16 01.1	-21 40.5	Sco	-0.7	4.7	6° E	99	0.467	1.438	07:17	11:57	16:36
	26	16 47.1	-24 03.3	Oph	-0.5	4.8	10° E	97	0.461	1.402	07:46	12:15	16:44
Venus	5	14 54.4	-15 58.9	Lib	-3.8	9.9	3° E	100	0.724	1.712	07:41	12:44	17:47
	12	15 29.6	-18 33.9	Lib	-3.8	9.9	5° E	100	0.725	1.706	06:59	11:52	16:44
	19	16 05.8	-20 44.4	Sco	-3.8	10.0	7° E	99	0.726	1.698	07:17	12:01	16:44
	26	16 42.9	-22 26.1	Oph	-3.8	10.0	9° E	99	0.727	1.688	07:34	12:10	16:46
Mars	5	5 39.9	24 03.2	Tau	-1.3	15.5	137° W	95	1.491	0.603	19:47	02:23	10:00
	12	5 35.8	24 22.0	Tau	-1.4	16.2	145° W	96	1.500	0.577	18:13	01:51	09:29
	19	5 28.7	24 38.8	Tau	-1.6	16.8	154° W	98	1.509	0.558	17:37	01:16	08:55
	26	5 19.0	24 51.7	Tau	-1.7	17.1	163° W	99	1.518	0.547	16:58	00:38	08:19
1 Ceres	5	11 19.4	13 28.0	Leo	8.7	0.4	58° W	97	2.559	2.95	02:15	09:07	15:59
	12	11 29.9	12 43.9	Leo	8.7	0.4	62° W	97	2.558	2.871	01:01	07:50	14:39
	19	11 40.1	12 02.9	Leo	8.7	0.4	66° W	97	2.558	2.789	00:46	07:33	14:19
	26	11 49.8	11 25.5	Leo	8.6	0.5	71° W	97	2.558	2.705	00:31	07:15	13:59
Jupiter	5	0 00.3	-1 38.8	Psc	-2.6	47.0	137° E	100	4.953	4.183	15:49	21:45	02:41
	12	23 58.9	-1 46.0	Psc	-2.6	46.1	129° E	99	4.952	4.264	14:20	20:16	02:12
	19	23 58.1	-1 49.2	Psc	-2.5	45.2	122° E	99	4.952	4.354	13:52	19:48	01:43
	26	23 57.9	-1 48.3	Psc	-2.5	44.2	115° E	99	4.952	4.452	13:25	19:20	01:16
Saturn	5	21 26.3	-16 26.0	Cap	0.7	17.1	96° E	100	9.850	9.694	14:10	19:12	00:13
	12	21 27.1	-16 22.0	Cap	0.7	16.9	89° E	100	9.848	9.809	12:43	17:45	22:46
	19	21 28.1	-16 16.4	Cap	0.7	16.7	83° E	100	9.846	9.925	12:17	17:18	22:20
	26	21 29.5	-16 09.4	Cap	0.8	16.5	76° E	100	9.845	10.039	11:50	16:52	21:55
Uranus	5	2 58.9	16 34.8	Ari	5.6	3.8	175° W	100	19.678	18.69	17:39	00:43	06:47
	12	2 57.8	16 29.9	Ari	5.6	3.8	177° E	100	19.677	18.689	16:11	23:14	06:18
	19	2 56.6	16 25.1	Ari	5.6	3.8	170° E	100	19.676	18.702	15:42	22:46	05:49
	26	2 55.5	16 20.4	Ari	5.7	3.8	163° E	100	19.675	18.731	15:14	22:17	05:20
Neptune	5	23 35.8	-3 56.7	Aqr	7.8	2.3	130° E	100	29.914	29.263	15:33	21:21	02:08
	12	23 35.4	-3 58.8	Aqr	7.8	2.3	123° E	100	29.914	29.36	14:05	19:53	01:40
	19	23 35.1	-4 00.3	Aqr	7.9	2.3	116° E	100	29.913	29.466	13:37	19:25	01:13
	26	23 35.0	-4 01.2	Aqr	7.9	2.3	109° E	100	29.913	29.578	13:10	18:53	00:45
Pluto	5	19 55.0	-23 03.8	Sgr	14.5	0.2	74° E	100	34.640	34.904	13:07	17:41	22:14
	12	19 55.5	-23 02.8	Sgr	14.5	0.2	67° E	100	34.645	35.022	11:40	16:13	20:47
	19	19 56.0	-23 01.6	Sgr	14.5	0.2	60° E	100	34.649	35.134	11:13	15:46	20:20
	26	19 56.6	-23 00.1	Sgr	14.5	0.2	53° E	100	34.654	35.239	10:46	15:20	19:53

Reports

by Michael Corvese

Minutes - Skyscrapers July Meeting Saturday, July 9, 2022 | 7PM

July Speaker

Margaret Geller is an astrophysicist at the Harvard-Smithsonian Center for Astrophysics. Dr. Geller is a pioneer in mapping the nearby universe. Her long-range scientific goals are to discover what the universe looks like and understand how it came to have the rich patterns we observe today. The title of her presentation was "Caught in the Cosmic Web."

Two Motions Presented to Members

At the June 27th meeting of the Executive Committee two motions were made and passed that were presented formally to the members of Skyscrapers. A business meeting followed the presentation by Margaret Geller. Discussions and votes will take place at the August 6th meeting.

Motion #1: Memorial Garden

Moved that Skyscrapers spend an amount no more than \$600 to purchase plants to complete the memorial garden and to purchase an appropriate plaque for the same.

Description: Last year, Skyscrapers member Bob Horton undertook a project to add a memorial garden on the grounds of Seagrave Memorial Observatory in remembrance of all of the members who have passed on. With the help of others, the garden was planted in the courtyard and surrounded by a stone border. The garden was dedicated during AstroAssembly 2021. No monies were spent on this project to date. To complete the project, additional plants are needed and a small plaque identifying it as a memorial garden. We have a quote of \$413.20 for a 4" x 6" bronze plaque as shown below, with a 24' long stake. Additional plantings are estimated to be under \$200. Monies raised through the sale of books and magazines will be used to fund this project. Motion by Steve Siok and second by Steve Hubbard.

Motion #2: Radio JOVE Equipment

Moved that Skyscrapers expend an amount no more than \$400 to purchase and assemble an RJ 2.0 Radio Telescope on the grounds of Seagrave Observatory.

Description: Our May speaker provided us with an overview of Radio JOVE 2.0. Radio JOVE students and amateur scientists from around the world observe and analyze natural radio emissions of Jupiter, the Sun, and our galaxy using their own easy

to construct radio telescopes. Several of our radio enthusiasts expressed interest in this "cloudy weather" astronomy. More information can be found at: <https://radiojove.gsfc.nasa.gov>. The radio receiver and dual dipole antenna kit is available from NASA for \$232. Additional materials for completing the assembly (masts, coax cable, misc. hardware, etc.) are estimated at about \$150. Software is available at no cost. We expect to be able to use an existing Society-owned Windows computer, or borrow one. Monies raised through the sale of books and magazines will be used to fund this project. Motion by Ed Walsh and second by Bob Horton.

Both items will be funded from the sale of books and DVD's that have amassed approximately \$3,000.

Future Speakers - Ed Walsh

Aug 6- Steve Hubbard and Bob Horton-They will talk about their experience at the Green Bank Star Quest

Sept 3-Scott Kenyon (Astrophysicist who studies the formation of stars and planetary systems). The title of Scott 's presentation: Pluto's Revenge

AstroAssembly - Francine Jackson

Theme- The Sun & The Moon

Michael Corvese: Moon program

Jeff Padell: Sun

Bob Horton: 2024 Eclipse expedition

Brian Taylor (Mystic Planetarium): Artemis and its use in public education

John Briggs: 2023 Eclipse expedition

Joe Rao (broadcast meteorologist in the Northeast)- talking about his experience observing eclipses

Program committee - Michael Corvese

August 26-28-Tentative Camping Trip

Lunar Observing Group- New challenge for the Summer (check website)

Trustees- Bob Janus

A total of eight telescopes have been donated and will be available for members to borrow for observing the night sky. They are divided into two groups; beginners and experienced.

Good of the Organization

Steve Siok initiated a discussion on creating a schedule for members to volunteer one Saturday night a month at the observatory and greeting visitors..

Respectfully Submitted,

Angella Johnson

July 23, 2022

Minutes- Skyscrapers Executive Committee Meeting via Zoom Monday July 25, 2022 | 7PM

Meeting called to order at 7:02 PM by President Linda Bergemann

Present: Linda Bergemann, Kathy Siok, Dave Huestis, Ed Walsh, Francine Jackson, Steve Brown, Michael Corvese, Laura Linden, Steve Siok, Bob Janus, Jim Hendrickson, Bob Napier, Angella Johnson | Total:13

Agenda Items:

Open Action Items

Equipment Inventory- the trustees (Jim Crawford) have completed an update of the inventory..

Auditors report was received on July 12th

Community center reserved for December (Bob Janus)

AstroAssembly 2022 fliers is in the works (Planning Committee)

RIEEA (Rhode Island Environmental Association) Event (Michael Corvese)

Open Nights (Observatory Committee) 5-year Plan (Linda Bergemann)- projects the completion of a five year plan by the end of the year.

Officer Reports

Monthly Meetings- Ed Walsh

Ed Walsh visited Maragret Gellar after her talk. She expressed how impressed she was with Skyscrapers after interacting with the group and viewing our website. In particular she is impressed with the degree of outreach which is central to Skyscrapers' mission.

Aug 6-Steve Hubbard- He will discuss his experience at the Green Bank Star Quest

Sept 3- Scott Kenyon (Astrophysicist who studies the formation of stars and planetary systems). The title of Scott 's presentation: Pluto Strikes Back

October-AstroAssembly

Ed suggested that originally scheduled for November and December will be in person meetings to maximize the use of our facilities. Winter meetings will be shifted to online meetings via Zoom.

Suggestion for future presentations:

Phillip Levine for one of the online talks (Steve Siok)

Steve LaFlamme- backyard astronomy (Linda Bergeman)

Nico Carver- Astrophotography (Laura Linden)

Suggested for December- two or three local speakers-mini symposium (Kathy Siok)

AstroAssembly- Francine Jackson

Six Speakers-

John Briggs: Eclipse and solar telescopes of George Ellery Hale

Michael Corvese: Observing the Moon in detail through the lunar program

Bob Horton: 2024 Eclipse

Jeff Padell: Changing face of the Sun

Joe Rao (broadcast meteorologist)- Adventures of an eclipse chaser

Rick Lynch: Royal Observatory in Edinburgh Scotland

Order of presentations has not been decided- possibly two talks in morning (approx. 20 mins in length) and three in the afternoon and one at night

Flyers will be printed and delivered for advertising during the 2022 Stellafane Convention.

Finances-Laura Linden

Treasurer's Report - attached

Linda questioned the split for trustee expenses-capital equipment and maintenance. There was an issue with resolving itemization.

A cash flow report and an account balance report will be in the newsletter every month and the treasurer's report will be presented in the Executive Committee meetings.

Auditors Report- Bob Napier and Jim Crawford reported their results and it was agreed that a set up protocols should be in place -there needs to be a set of items specified for those new to the position.

Membership Update-Angella Johnson

Membership: 1 Junior member

Since we are getting new members a clipboard for visitors to sign is recommended.

Program committee-Michael Corvese

Solar Observing day was a success. Future plans include the following:

July 6--North Scituate Library Star Party (successful completion)

July 21--Water Fire (canceled due to weather)

July - Border Farms (canceled due to lack of interest/ not enough registered- RSVP)

July-Public viewing/observing after meeting saw a good turnout

Upcoming events

August 6- meeting followed by public observing

August 18- Water Fire

August 20- public observing night

August 25- Chase Farm Park

August 26- Border Farm

August 26-28--Tentative Camping Trip
Sept 16- Jesse Smith Library

Fall- International Observe the Moon Night (changed to Oct. 7) and Rhode Island Environmental Association (Nov 4)

North Scituate Preservation Society (booked to the end of the year-available June-December 2023)

The Program Committee is currently working on optics cleaning, astrophotography and member nights due to positive feedback on surveys sent out prior. Desire to go to four public nights per month.

Bob Janus suggested putting information in the Newsletter observatory report. Jim Hendrickson mentioned that in the past there were reports in the newsletter. Steve and Bob volunteered to be responsible for reports. (Bob Janus suggested that a short write up should be submitted to the newsletter and not just the Night Sky Network. Steve offered to volunteer)

Observatory Committee-Steve Siok

July 23rd meeting-19 adults/ 16 teenagers, 8 children and 4 Skyscraper volunteers

Steve Hubbard- operated the 12 inch

Mike Corvese- operated the Clark

Jim Hendrickson & Bob Janus (also operated the small reflector) - Greeters

August 6th and 20th-observing nights

Volunteers currently not established and need further discussion

Linda Bergeman recommended a discussion for both cloudy and clear nights videos and also wearing some distinction to identify volunteers. Volunteers are needed for the 16 inch and Alvin Clark telescopes. We currently have experienced operators for the Alvin Clark but that is not the case for the 16 inch. Jeff Padell is now able to assist with operation of the telescopes.

Trustees- Bob Janus

December dates proposed for the meeting at the Community House are Dec 2, 9, 16, 17 and Jan 7th. Bob contacted the Department of Public Works and only Dec 17th is available. Kathy offered to help with refreshments and help form a team to help.

A total of three roofing companies have inspected the roof but have not submitted a quote. Bob will try to find others who are willing to inspect and generate a quote. In the interim there is a need to discuss how to protect the Alvin Clark telescope and mount. Steve Siok mentioned that there are experienced members who should be available to work with the roofer to come up with a plan on how to protect the telescope.

Gas Tubing-Bob would like to relocate the gas line from the propane tank to the

heater in the meeting room. The gas tubing needs to be elevated and not on the ground for safety reasons. Bob intends to contact the gas company for an inspection and an estimate. There was a question from Steve Siok regarding the material of the tubing. It is believed that the tubing is made of copper. Depending on cost, it was suggested that maybe capping or additional signage might mitigate the problem.

North Scituate Library- Bob sent an email to the library to see if there is an interest in having another star gazing night held at the Seagrave Observatory on the 8th of August (rain date: August 9)

Unfinished Business

August 6th meeting - RadioJOVE and Plaque will be voted on during the Aug meeting.

November 4- RIEAA (Rhode Island Environmental Association) event

Steve Brown will redouble efforts to get going with plans for a series of programs.

New Business

Auditor's report- Included in the agenda is a copy of the auditor's report. Linda will meet with Laura and Kathy to go through the report and formulate a contingency plan. Kathy Siok suggested a protocol for transitioning committee members.

Equipment Loan- Steve Hubbard and Bob Janus are working on a protocol for equipment loans. There are eight types of telescope currently available for loan. All have safety stickers (not for viewing the Sun). Linda suggested making an announcement with pictures for loan. Kathy Siok asked about whether the library telescope format can be used. Steve submitted a draft for those loaning equipment. Bob will put a draft together and submit it to the trustees and decide when to start the program.

Space in the meeting hall-Linda is recommending making room for more visitors by getting rid of unneeded items. Dave Huestis mentioned fire safety and checking fire codes and Steve Siok observed that adding one row of chairs and relocating the desk in the meeting hall would help with more space/seating. Kathy advised that rearranging the tables in the hall would help as well as removing a few items that will be for sale during AstroAssembly. Safe has not been used in years by the treasurer- Laura recommends getting rid of it.

Comment about member privileges-Laura commenting that while helping to run the 12 inch a few members wanted to

use the 12 inch for astrophotography even though volunteers were still using it. Linda will add this issue to the next executive meeting as new business. Steve Siok added that in the past members were given keys and it was a benefit for being a member. This option will also be discussed.

"Good of the Organization"

Next Executive Committee Meeting:
August 22, 2022

Adjourned: 8:17PM by Linda Bergemann

Respectfully Submitted,

Angella Johnson

July 31, 2022

Minutes - Skyscrapers August Meeting Saturday, August 6, 2022 | 7PM

August Speaker

Steve Hubbard presented slides from his trip to Green Bank with Bob Horton. The Green Bank Star Quest Optical "Star Party" & Conference took place June 29-July 2, 2022 in Green Bank, West Virginia. The first national radio astronomy observatory, founded in 1957 and is located in the National Radio Quiet Zone in Green Bank.

Two Motions Presented to Members

Motion #1: Memorial Garden

Moved that Skyscrapers spend an amount no more than \$600 to purchase plants to complete the memorial garden and to purchase an appropriate plaque for the same.

Description: Last year, Skyscrapers member Bob Horton undertook a project to add a memorial garden on the grounds of Seagrave Memorial Observatory in remembrance of all of the members who have passed on. With the help of others, the garden was planted in the courtyard and surrounded by a stone border. The garden was dedicated during AstroAssembly 2021. No monies were spent on this project to date. To complete the project, additional plants are needed and a small plaque identifying it as a memorial garden. We have a quote of \$413.20 for a 4" x 6" bronze plaque as shown below, with a 24' long stake. Additional plantings are estimated to be under \$200.

All in attendance voted in favor of the Memorial Garden. The motion passed unanimously.

Motion #2: Radio JOVE Equipment

Moved that Skyscrapers expend an amount no more than \$400 to purchase and assemble an RJ 2.0 Radio Telescope on the grounds of Seagrave Observatory.

Description: Our May speaker provided

us with an overview of Radio JOVE 2.0. Radio JOVE students and amateur scientists from around the world observe and analyze natural radio emissions of Jupiter, the Sun, and our galaxy using their own easy to construct radio telescopes. Several of our radio enthusiasts expressed interest in this "cloudy weather" astronomy. More information can be found at: <https://radiojove.gsfc.nasa.gov>. The radio receiver and dual dipole antenna kit is available from NASA for \$232. Additional materials for completing the assembly (masts, coax cable, misc. hardware, etc.) are estimated at about \$150. Software is available at no cost. We expect to be able to use an existing Society-owned Windows computer, or borrow one.

All in attendance voted in favor of Radio Jove. The motion passed unanimously.

Both items will be funded from the sale of books and DVD's that have amassed approximately \$3,000.

Future Speakers - Ed Walsh

Sept 3-Scott Kenyon (Astrophysicist who studies the formation of stars and planetary systems). The title of Scott 's presentation: Pluto Strikes Back

Program committee - Michael Corvese

Volunteers are needed for the month of August to greet, guide, operate telescopes , etc..

August 26-28-Maine Dark Sky Camping Trip

Starting in September there will be four Saturday nights public viewing

AstroAssembly - Francine Jackson

There is a need for donated items for the raffle. Everyone is encouraged to register and volunteer, or donate snacks for morning refreshments. Kathy Siok is in charge of registration.

Theme- The Sun & The Moon

Michael Corvese: Moon program

Jeff Padell: Sun

Bob Horton: 2024 Eclipse expedition

Brian Taylor (Mystic Planetarium): Artemis and its use in public education

John Briggs: 2023 Eclipse expedition

Joe Rao (broadcast meteorologist in the Northeast)- talking about his experience observing eclipses

Note that the program details have changed since the flier was printed.

Trustees- Bob Janus

A total of eight telescopes have been donated and will be available for members to borrow for observing the night sky. They are divided into two groups; beginners and experienced.

Respectfully Submitted,

Angella Johnson

August 12, 2022

Minutes- Skyscrapers Executive Committee Meeting via Zoom Monday August 22, 2022 | 7PM

Meeting called to order at 7:03 PM by President Linda Bergemann

Present: Linda Bergemann, Kathy Siok, Steve Siok, Dave Huestis, Steve Brown, Bob Janus, Ed Walsh, Francine Jackson, Michael Corvese, Laura Linden, Jim Hendrickson, Jeff Padell | Total:12

Agenda Items:

Open Action Items

Open Night Schedule (Steve Siok & Michael Corvese)

Roofing contractor quotes (Bob Janus)- Fourth contractor has submitted a quote

Telescope Loan Program (Steve Hubbard & Bob Janus)

Occupancy of Meeting Hall (Bob Janus)

Develop Planet Info Cards for Open

Nights (Linda Bergemann)

Plan for Observatory Crew Identification (Bob Janus & Steve Siok)

Insurance Rider for Community Center (Laura Linden & Kathy Siok)

Officer Reports

Monthly Meetings- Ed Walsh

Sept 3- Scott Kenyon (Astrophysicist who studies the formation of stars and planetary systems). The title of Scott 's presentation: Pluto's Revenge.

October-AstroAssembly

November possibilities- Dennis Conti from the American Association of Variable Star Observers (AAVSO) is an avid deep sky and planetary imager. He earned his M.S. and Ph.D. degrees in Computer Science from Purdue University. Also, Steve LaFlamme and other candidates are being considered for the month of November.

December- Anthony Case from Harvard & Smithsonian's Center of Astrophysics is an astrophysicist. He is the instrument scientist for Parker Solar Probe, and the Solar Probe Cup (SPC) which will travel 95% of the way to the Sun to stare directly at it and measure the solar wind and coronal plasma that constantly flows away from the Sun. He also worked on the plasma instrument on the Deep-Space Climate Observatory (DSCOVR). Members expressed a desire for the speaker to visit in-person instead of by Zoom.

Suggestion on topics:

Speaker that is able to explain/discuss Betelgeuse ejection and compare solar ejections to the Betelgeuse ejection - (Laura

Linden)

Suggestion for future presentations:

Alan Sliski (Francine Jackson)

David Sliski - Exoplanets (Steve Siok)

AstroAssembly- Francine Jackson/Kathy Siok

AstroAssembly – Plans as of 8/18/22 Updated summary of the details and actions

1. Friday Night Schedule and details

Separate Event advertised on the Calendar (AstroAssembly Eve) Time: 7-9 PM Seagrave Observatory

Simple refreshments: only drinks Set up earlier

No Programs or registration required

Open to all Skyscrapers and those going to AstroAssembly. Volunteered for Friday night activities: Francine, Jim , Rick, Bob H

Two Speakers:

Joe Rao – Mars Occultation

Jonathon Pober – His project about the Moon

Observing until 10 PM weather permitting

Steve S will find operators for the telescopes. Bob Horton will stay until 10 for Clark

2. Saturday Schedule

Talks will be live streamed. Start time: 10:45 AM

Audio-Visual point person: Rich Doherty

Morning Refreshments: Set up the area the day before and make sure that there are supplies (Kathy) We will have to decide where to locate refreshments. Outside, weather permitting. Trustees may have to set up a gazebo.

Program

9:00 AM Start coffee and prepare area - Steve and Maria Brown & Kathy

9:30 AM Grounds open

10 AM Registration Opens (Linda will set up - Volunteers are sufficient)

11:00 AM Mike Corvese Talk

12:00 Lunch (Kathy, Laura, Francine)

Kathy will place an order. Laura will pick up lunch. Kathy, Francine and Laura – set up area and distribute lunches

1:00 Sara Schechner – 1st talk 2:30 Joe Rao – 2nd talk

4:00 John Briggs: Probably Virtual (We don't know yet)

Astro Photo Winner announced (Rick will print certificates during dinner break)

Dinner break (approx. 5:30 – 7:30 PM)

Speakers and a small group of Skyscrapers will meet for Pizza at Rick's. Kathy will order food from Dave's Market. Kay will pick up pizza and salad. Rick will provide all other items including dessert.

7:30 Intros etc

Distribute Astro photo certificates

Speaker: Rick Lynch

Observing (Steve S will find telescope operators)

3. Speaker details

All speakers have been confirmed (except John Briggs – some questions).

All titles, summaries and bios have been received and distributed to the committee.

Joe Rao and wife : 2 nights at local hotel – reservations have been made.

Dinner break on Saturday: Pizza, salad and dessert at the Lynch home for Sara & Ken, the Raos and a group of Skyscrapers. Skyscrapers will pay for the food, picked up by Kay Lynch.

Action item: Francine will get in touch with John Briggs to clarify and be in touch with Kathy.

4. Astro photo Contest : Jim Hendrickson

Astrophotography link (QR code in program book). Send by email to participants (live & remote).

Deadline to submit to contest: Thursday @ Noon

Start online display: Friday @ Noon

We should probably set up a laptop to view and vote.

5. Publicity

Initial email to membership and former attendees: Linda

Astro photo link included in email.

Website details will be updated with current plans: Jim

Reminder email sent out with Zoom link on September 30.

6. Program for AstroAssembly

Available days before Oct 1st

Prepared/ final format pdf – Jim

Proofed – Francine

Deadline for completion – September 19th

Make copies - RIC Fold & staple - Kathy

7. Trustees – related items

Clean up of Meeting Hall - Saturday Sept 17t or possibly a weekday when most can make it. Kathy will contact volunteers. Bob J will attend.

Sweep out observatories – Trustees

Grass Cutting - will be done mid-week

Put up Tents – Wed 9/28. Bob will contact volunteers: Mike Corvese, Rick, Francine others

Borrowed tents (5 pop ups) – put up 10/1 AM

Parking: will pass around a list to get more volunteers and contact former helpers.

Sunday clean up – Bob J, Bob H, Rick, Francine

8. Other

Linda - check with Jeff Norwood (vendor)

Kathy - email members for prizes. Get permission for a raffle.

Other prizes: continue to look for items. Rick suggested Eclipse Syrup?

50-50 Raffle

Astro Bake Off – Francine

9.0Volunteers

We will ask again at the September meeting. Also, send emails to membership to get more volunteers.

There was a good response to the August request for volunteers.

Finances - Laura Linden

Treasurer's Report - attached

Linda and Kathy questioned the format of Quicken software and how expenses are itemized.

Bob Janus offered to check on our exterminator contract and if there is a fee for the bee removal.

Program committee - Michael Corvese

Set to open all four Saturday open nights a month.

Upcoming events (volunteers needed for all events)

August 25– Chase Farm Park

August 26-Borders Farm

August 26-28–Maine Camping Trip

Sept 7- North Scituate Public Library (host at Seagrave)

Sept. 9- River Bend Farm

Sept 16- Jesse Smith Library

Oct 1- AstroAssembly

Fall- International Observe the Moon Night (Date TBD)

Moonrise on the Seekonk (Oct. 9)

Rhode Island Environmental Association (Nov 4)- This will be a social event. They are not interested in a formal program. The event will go on rain or shine. An alternate plan is in the works in case of rain.

North Scituate Preservation Society (booked to the end of this year). Events will be scheduled in late 2023.

Observatory Committee-Steve Siok

A preliminary schedule for September is available. There is a concern about the third week and therefore a need for volunteers. Michael Corvese has requested general membership to volunteer and three members have offered to help during the third Saturday night but more are needed.

There is a special request for volunteers to help during AstroAssembly weekend (Sept. 30 & Oct 1).

November is a normal month for open nights and the schedule will proceed as expected.

For December the observatory will only be open the 3rd and the 10th. The holiday party is the 17th and the observatory will be closed during the holidays.

Individuals who desire to be trained on the telescopes should be identified and trained (Steve Siok).

Laura Linden inquired about having lock boxes to resolve the issue of keys.

Michael Corvese pointed out that the Alvin Clark and 12inch telescopes are the only telescopes available for September. Volunteers currently not established and need further discussion

Linda Bergeman recommended a discussion for both cloudy and clear night videos and also wearing some distinction to identify volunteers. Volunteers are needed for the 16 inch and Alvin Clark telescopes. We currently have experienced operators for the Alvin Clark but that is not the case for the 16 inch. Jeff Padell is not able to assist with operation of the telescopes.

Trustees- Bob Janus

Bob Janus explained the issue with the 16inch telescope. There is a hornets nest which required the exterminator to make a site visit and it was successfully removed. There are a number of dead hornets in the cavity at the bottom of the wall.

Kathy Siok inquired about the reduction of mice droppings in the meeting hall. Bob Janus checked the schedule of the exterminator and it could be a result of the bait boxes being refilled.

Bob Janus measured the footprint of the meeting hall by counting the floor tiles which is approximately 19ft x 39ft. Discussion about determining the occupancy load of the meeting hall. Linda Bergemann and Bob Janus plan to meet and discuss this further.

A total of four roofing companies inspected but only one submitted a quote. The quote was for \$10,000. A timetable for working on the roof is also necessary since the roof will not be worked on before AstroAssembly and the weather will also change. Linda Bergemann mentioned that this would need to be voted on by the members and that is a three month process.

Steve Siok expressed concern about the railis for the slit and what the roofer is responsible for. The quote included an agreement that it would be Skyscraper's responsibility to remount the rails. Bob Janus

talked to Jim Crawford about the rails and how to mitigate the issue by welding tabs on the rails and fastening into the flashing.

Unfinished Business

Plaque for the Memorial Garden has been ordered.

Radio Astronomy kit-RadioJOVE arrived last week and it was delivered to Ed Walsh. Ed Walsh and Bob Janus will assemble and set up the telescope. There is a need for a computer and finding a proper location for the telescope. Laura Linden suggested the Ante Room as the location for the computer work station.

November 4- RIEAA (Rhode Island Environmental Association) event moving ahead.

Equipment Loan- Steve Hubbard and Bob Janus are working on a protocol for equipment loans. There are eight types of telescope currently available for loan. All have safety stickers (not for viewing the Sun). They are working on a form.

Space in the meeting hall-Linda & Kathy will meet and discuss what items to remove to make more space in the hall and to prepare for AstroAssembly.

New Business

Policy for Allowing Greater Member Access to Facilities- Linda Bergemann wants the observatory used as much as possible and to make things more available to our membership. Steve Siok suggested that this topic should be discussed by a special committee and presented to the Executive Committee. Linda Bergemann will appoint members to a special committee to consider this and provide a proposal.

"Good of the Organization"

Next Executive Committee Meeting: September 19, 2022

Adjourned: 8:17PM by Linda Bergemann

Respectfully Submitted,
Angella Johnson
August 31, 2022

Cash Flow 2022-08

4/1/2022 through 9/30/2022

INFLOWS	
Astro Assembly Income	
Astro Assembly Income:Banquet	590.00
Astro Assembly Income:Doantions	9.95
Astro Assembly Income:Registra-	1,610.00
tion	
TOTAL Astro Assembly Income	2,209.95
Astronomical League Membership	75.00
Contrib.	
Donation	
Donation:Amazon Smile Donation	59.62
Donation:Misc Donation	864.90
Donation:Refreshment Donation	0.00
TOTAL Donation	924.52
Dues	
Dues:Family	480.00
Dues:Junior	15.00
Dues:Regular	900.00
Dues:Senior	500.00
TOTAL Dues	1,895.00
Misc Income	50.00
Misc Income:Interest Inc	99.67
Misc Income:Sale of Items	2,289.08
TOTAL Misc Income	2,438.75
Shipping	188.23
TOTAL INFLOWS	7,731.45

OUTFLOWS	
Astro Assem Exp	
Astro Assem Exp:General Refresh-	9.95
ments	
Astro Assem Exp:Misc	-100.00
TOTAL Astro Assem Exp	-90.05
Astronomical League Membership	194.00
Expense	
Corporation, State Fee	10.00
Domain Name	152.94
Food & Dining	
Food & Dining:Groceries	0.99
TOTAL Food & Dining	0.99
Misc Expenses	493.70
Outreach	340.10
PayPal Fee	165.90
Refreshment Expense	209.91
Shipping Exp	214.02
Trustee Expense	
Trustee Expense:Capital Equipment	242.00
Trustee Expense:Property Mainte-	612.90
nance	
TOTAL Trustee Expense	854.90
Utilities	
Utilities:Electric	202.68
Utilities:Internet	479.94
Utilities:Pest Control	96.00
Utilities:Porta-John	1,120.00
Utilities:Propane	82.65
Utilities:Quicken	111.26
TOTAL Utilities	2,092.53
TOTAL OUTFLOWS	4,638.94

OVERALL TOTAL 3,092.51

Account Balances 2022-9 - As of 9/30/2022

Bank Accounts	
36 Month EZ Access-6686	25,364.59
Coastal1 Checking-4792	5,734.55
Coastal1 Savings-4783	12,508.59
PayPal Account	1,124.60
TOTAL Bank Accounts	44,732.33

Cash Accounts	
Cash Account	655.00
TOTAL Cash Accounts	655.00

OVERALL TOTAL 45,387.33

STARRY SCOOP

Editor: Kaitlynn Goulette



WHAT'S UP

This month, our evening sky showcases some nearby worlds. Saturn and Jupiter are both visible just after sunset and are fabulous telescopic objects. Saturn's closest orbital approach was a few months ago and the ringed planet remains a visual spectacle. A month following its opposition, Jupiter also remains an excellent target. With this gas giant's 10-hour rotation period, each night offers a different view of the planet. Within a single evening, the movement of the Galilean moons is apparent and makes them interesting targets. Mars rises just after sunset and appears a bright, orange-red color. It will continue to be a showpiece as we anticipate its opposition in early December.

On the morning of November 8th, much of the world is treated to a total lunar eclipse. This special event occurs when the earth is directly between the sun and moon, with the moon completely engulfed in the earth's shadow. In recent times, it's been nicknamed a "blood moon" due to the reddish color it takes on during totality. This color is caused by sunlight refracting through the atmosphere around the perimeter of the earth, where sunrises and sunsets are occurring, and illuminating the moon. For those of us in eastern America, the partial eclipse begins at about 4:10 am. Totality runs from 5:15 to 6:40 but is interrupted by the brightening sky, with sunrise occurring at about 6:25. As sunrise approaches, this rare event will become increasingly difficult to observe.

This month features two meteor showers, the Taurids and the Leonids. The Taurids is a long-running shower that starts annually on September 7th and ends on December 10th. It peaks this month on the night of the 4th into the morning of the 5th. This shower is caused by two separate debris streams, one produced by an asteroid and the other by a comet. The Leonids runs annually from November 6th to the 30th and peaks on the night of the 17th and morning of the 18th. Both of these meteor showers are best viewed from a dark place after midnight.

November 3rd marks the 65-year anniversary of the launch of Sputnik 2, which carried the dog, Laika. It was the second spacecraft launched into orbit around Earth, 32 days after Sputnik 1, and was also the first to carry a living creature. Along with the dog, Sputnik 2 also carried radio transmitters, a telemetry system, photometers, and a temperature control system for the cabin. Sadly, the dog did not make it, and the spacecraft reentered Earth's atmosphere after 162 days in orbit.

NOVEMBER'S SKY

4-5: Taurid Meteor Shower Peak

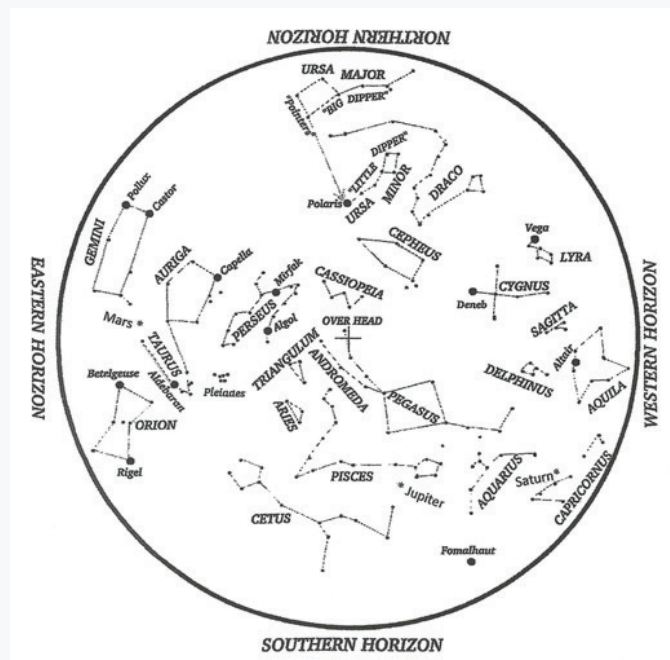
8: Full Moon

8: Total Lunar Eclipse

9: Uranus at Opposition

17-18: Leonid Meteor Shower Peak

23: New Moon



Credit: Roger B. Culver

Hold star map above your head and align with compass points.

OBSERVATIONS

I had a great time solar observing at my city's annual Pumpkin Fest event, which attracted over 10,000 people. Joined by some longtime school astronomy club members as well as Richard Sanderson, president of the Springfield STARS Club, I had a 90mm Coronado solar telescope focused on the sun. This telescope has a built-in hydrogen-alpha solar filter, which allowed hundreds of people to observe many details on the sun throughout the day. Solar flares and prominences were the main topic of conversation as they were easily visible around the edge of the sun's disk. Near the active regions, we viewed many sunspots, plage, and filaments. The sun is approaching maximum in its 11-year cycle, so I'm very excited about solar observing in the next few years. It was amazing how many people came up to me afterwards and commented on how it was their first time looking at the sun through a telescope. Participating in outreach events is always lots of fun because you get to share your love of astronomy with the public. It's an excellent experience for all.

At another fun event, I joined Jenny Powers, director of the Springfield Science Museum, to share views of the sun at Six Flags. My High School Space and Astronomy Club attended, along with Springfield STARS Club member Gene Dick. The telescopes were properly equipped with solar filters, which allowed us to have magnified views of the sun and glimpse many sunspots. We also had an activity table with a selection of UV reactant beads that were used by children to make bracelets, which was a fun way to demonstrate the UV light from the sun. It was definitely a fun time as we offered hundreds of people views of the sun.

Of course, my recent observations have included both Jupiter and Saturn. Following their recent oppositions, the views offered by these planets have been truly out of this world! I've been working on a project involving occultations of Jupiter's moons, which has been a fun experience. I always look forward to collecting cosmic data, even if it's during the wee hours of the morning.

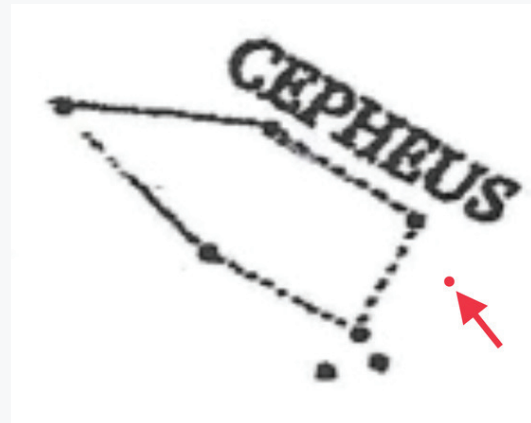


The purpose of the Starry Scoop is to communicate current astronomy and space events. If you want to share your observations or get digital copies of the Starry Scoop, contact starryscoop@gmail.com. Clear skies!

OBJECT OF THE MONTH

This month's highlighted object is Mu Cephei, also known as Herschel's Garnet Star. This is a red supergiant star in the constellation Cepheus that is also a variable star, which means its brightness varies with time. It's one of the largest stars in our galaxy and if it replaced the sun in our solar system, it would stretch to about the orbit of Saturn. Mu Cephei is also nearing the end of its life and will eventually go supernova, producing a neutron star or black hole due to its size.

To the unaided eye, Mu Cephei appears as a deep red color and is found at the southern end of Cepheus. Use the star map below to help you locate it. Good luck!



Herschel's Garnet Star



The public enjoys views of the sun at Six Flags.

Directions to Seagrave Memorial Observatory

From the Providence area:

Take Rt. 6 West to Interstate 295 in Johnston and proceed west on Rt. 6 to Scituate. In Scituate bear right off Rt. 6 onto Rt. 101. Turn right onto Rt. 116 North. Peeptoad Road is the first left off Rt. 116.

From Coventry/West Warwick area:

Take Rt. 116 North. Peeptoad Road is the first left after crossing Rt. 101.

From Southern Rhode Island:

Take Interstate 95 North. Exit onto Interstate 295 North in Warwick (left exit.) Exit to Rt. 6 West in Johnston. Bear right off Rt. 6 onto Rt. 101. Turn right on Rt. 116. Peeptoad Road is the first left off Rt. 116.

From Northern Rhode Island:

Take Rt. 116 South. Follow Rt. 116 thru Greenville. Turn left at Knight's Farm intersection (Rt. 116 turns left) and follow Rt. 116. Watch for Peeptoad Road on the right.

From Connecticut:

- Take Rt. 44 East to Greenville and turn right on Rt. 116 South. Turn left at Knight's Farm intersection (Rt. 116 turn left) and follow Rt. 116. Watch for Peeptoad Road on the right.
- or • Take Rt. 6 East toward Rhode Island; bear left on Rt. 101 East and continue to intersection with Rt. 116. Turn left; Peeptoad Road is the first left off Rt. 116.

From Massachusetts:

Take Interstate 295 South (off Interstate 95 in Attleboro). Exit onto Rt. 6 West in Johnston. Bear right off Rt. 6 onto Rt. 101. Turn right on Rt. 116. Peeptoad Road is the first left off Rt. 116.



47 Peeptoad Road
North Scituate, Rhode Island 02857