

Skylights

Newsletter of the Astronomical Society of Northern New England



JUN2022



Member of NASA's
Night Sky Network



Astronomical League

ASNNE MISSION

ASNNE is an incorporated, non-profit, scientific and educational organization with three primary goals:

- 1) *To have fun sharing our knowledge and interest with others.*
- 2) *To provide basic education in astronomy and related sciences to all who are interested.*
- 3) *To promote the science of Astronomy.*

What's Up In June

By Bernie Reim

The month of June is named for Juno, the powerful Roman goddess who had many roles including being the goddess of marriage and childbirth, a special counselor for the state, and a protector of Roman people. Juno is equated to Hera in Greek mythology, who was the Queen of the gods, a daughter of Saturn, the wife of Jupiter; who was the god of the sky and thunder and the king of the gods, and the mother of Mars.

Juno was the perfect name for the NASA mission that arrived at Jupiter in July of 2016 and was recently extended to September of 2025. Juno will make several more close encounters with three of Jupiter's four large Galilean moons, Ganymede, Europa, and Io. Juno has taken many great new pictures of the King of the Planets in the past 6 years and will make more important discoveries over the next 3 years. Jupiter is 10 times the size of Earth in diameter and it has the mass of 318 earths.

June always marks the beginning of summer for us in the northern hemisphere. This year that will happen at exactly 5:14 a.m. EDT on Tuesday the 21st. This marks the longest day and shortest night and the highest point that the sun will reach in our sky for the year, which is 68 degrees high on the meridian at high noon. Then the days will already be getting progressively shorter for each of the remaining days of summer.

There are several interesting highlights this month, but one stands out as an once-in-a-lifetime event, so do not miss it. That is the extremely rare line-up of not only all 5 of the brightest planets in the morning sky, which happens about every 20 years, but this time they will all be lined up in order from the sun beginning as early as June 7. Look to the east about an hour before sunrise to catch this rare and spectacular line-up beginning with Mercury, Venus, Mars, Jupiter, and finally Saturn. They will all be within just over 90 degrees of each other and that sequence will last nearly until the end of June, but don't wait until then to see it, hopefully more than once.

As if all of that were not amazing enough for us, there is even more. The remaining two planets, Uranus and Neptune will also be in this great planetary line up, although you would need binoculars or a telescope to spot them mixed in with the other 5 brighter planets. Uranus will be about half way between Venus and Mars and Neptune will be about a quarter of the way between Jupiter and Saturn.

On top of all that, the waning gibbous and then waning crescent moon will slowly and deliberately and completely predictably work its way along that great gathering of our solar system family in close quarters at the rate of 12 degrees eastward per day. That will begin on the 18th with the moon passing just 4 degrees south of Saturn, which is the first one of the bunch to rise shortly after midnight. Then that parade with the moon as the most rapidly moving member will not end until the very last planet in the line is diligently highlighted, which is Mercury, on the 27th.

There will also be a wide range of magnitudes for this extravagant event. Venus is by far the brightest at -3.9, followed by Jupiter at -2.4, then Mercury at -0.1, and then Mars and Saturn tie for the faintest at 0.5 magnitude. So Venus will be nearly 100 times brighter than Mars and Saturn and only about 4 times brighter than Jupiter.

The biggest gap will be between the first one to rise, Saturn, and the second one, Jupiter, which rises about an hour after Saturn with orange Mars close on its heels. Then Venus rises about an hour after Jupiter and Mars with the last one, Mercury, rising about 45 minutes before sunrise which is 5 am.

Try to photograph this spectacular and relatively long lasting event as often as you can. Our entire solar system will be in view at once, with all 7 planets and the moon on prominent display from

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What's Up "Continued from page 1"

our perfectly placed viewing platform, our familiar home, the third rock from the sun. You will get a much better sense of our whole solar system as you watch this extremely rare event unfold, especially when the moon will rapidly march right through this entire parade. The only way to get an even better and more dramatic view of our whole solar system and its rapid motions is during a total solar eclipse. We will experience one of those right here over Maine on April 8, 2024.

Unfortunately it was not clear for most of us in New England for the recent long total lunar eclipse of the May super flower moon. I was able to watch it live from several different feeds from the Canary Islands to Arizona, where it was perfectly clear. It was one of the most colorful lunar eclipses I have ever seen, with the deepest and most beautiful shades of orange and crimson, at least from the live images on my computer screen. The whole 3 and a half hour event unfolded slowly and majestically with no sudden or dramatic and unexpected changes. Total solar eclipses are the exact opposite, packed with drama and surprising events at every turn in rapid fire succession when you are standing at the bottom of the moon's shadow cone which barely brushes the earth at all, creating a very narrow and sublime path of glory in its wake.

You could look at all total lunar eclipses as a form of report card on our earth, since the exact shades of orange and red projected onto the moon tells us the condition and clarity of our precious life-giving atmosphere at that instant. It would be very helpful if we could also get a sense of the carbon dioxide, methane, and water vapor content from our shadow, but we have some very good high-tech satellites to help us with that important knowledge. The lunar eclipses are very low-tech methods, but they still contain a wealth of information if you know how to read it.

There are a couple of other highlights this month, but nearly nothing in comparison to the great lineup. There will be another fairly bright comet visible this month, but you would still need a telescope or at least a good pair of binoculars to see it since it will only reach about 7th magnitude, or two and a half times fainter than anything visible to the naked eye. It is another comet discovered by the PanSTARRS observatory in Hawaii, this one is Comet C/2017 K2 (PanSTARRS). You can catch it traveling southwest through Ophiuchus, passing just below a huge star cluster on June 20. Its nucleus is about 25 miles across, which is 4 times bigger than Halley's Comet, but it will not get any closer to the sun than the orbit of Mars, so it will not get very bright.

Another highlight this month will be the nearly full moon occulting the star named Dschubba in Scorpius on June 12. This will only be visible to observers in the Northeast and parts of Canada, so we are lucky. The moon will pass right in front of this star starting at 10:17 p.m. EDT and then the star will reappear 52 minutes later. Dschubba, which means the "forehead" in Arabic, is a very interesting quadruple star, the middle one in the 3 stars marking the head of Scorpius. It surprised us by brightening considerably by about a full magnitude, peaking in 2004, thereby becoming the second brightest star in Scorpius after Antares. It faded back to about second magnitude now.

Since the full moon always has to take the opposite path through our sky than the sun does, notice that the full moon will not get very high at all this month. It will not even be high enough to completely attain its normal white color, since there will be more of our atmosphere to look through when it is that low in our sky. It will only reach about 24 degrees high on June 14th, which is where the sun would reach on the winter solstice. The moon prescribes a much higher arc in our sky in December, reaching 68 degrees high.

June 1. The moon passes near the dwarf planet Ceres this evening.

June 2. Mercury is stationary.

June 3. On this day in 1948 the 200 inch Hale telescope at Mt. Palomar was dedicated.

June 4. On this day in 2000 the Compton Gamma Ray Observatory reentered our atmosphere. It was only launched less than 10 years earlier, on April 5 of 1991, about a year after the HST.

June 5. On this day on 1989, the Voyager 2 spacecraft made its closest approach to Neptune. NASA broadcast this live and called it NEPTUNE ALL NIGHT. Saturn is stationary today in the eastern end of Capricorn, marking the beginning of its retrograde loop as it will be at opposition in 2 months, rising exactly at sunset.

June 7. First quarter moon is at 10:48 a.m. EDT.

June 11. Venus passes 1.6 degrees south of Uranus this morning.

June 12. The moon will occult Dschubba in Scorpius starting at 10:17 p.m. EDT. Use binoculars to see this event more clearly.

June 14. Full moon is at 7:52 a.m. This is also called the Rose or Strawberry Moon. It will also be a very close super moon since its perigee occurs just 29 minutes before it will be full.

June 16. Mercury is at greatest western elongation from the sun today at 23 degrees. On this day in 1963 Valentina Tereshkova became the first woman to orbit the earth. She is still the only woman to orbit the earth on a solo flight.

June 18. The moon passes 4 degrees south of Saturn this morning.

June 19. The moon passes 0.7 degrees south of the asteroid Vesta this morning.

June 20. The moon passes 4 degrees south of Neptune this morning. Last quarter moon is at 11:11 p.m. EDT.

June 21. The summer solstice is at 5:14 a.m. EDT. The moon passes 3 degrees south of Jupiter this morning.

June 22. The moon passes 0.9 degrees south of Mars this morning.

June 24. The moon passes 0.05 degrees south of Uranus this morning.

June 26. The moon passes 3 degrees north of Venus this morning. Charles Messier was born on this day in 1730.

June 27. The moon passes 4 degrees north of Mercury this morning.

June 28. New moon is at 10:52 p.m. EDT.

June 29. George Ellery Hale was born on this day in 1868. He designed and invented the 4 largest telescopes on Earth starting with the 40 inch refractor at Yerkes in 1898 and culminating with the 200 inch reflector at Mt. Palomar, his crowning achievement.

June 30. On this day in 1908, an asteroid nearly the size of a football field exploded 5 miles above the surface of Earth above Siberia with the force of 20 megatons, or about 1,000 times the energy of the Hiroshima atomic bomb. Called the Tunguska event, it leveled 80 million trees over an area of nearly 1,000 square miles, but never left a crater.



Moon Phases

June 7
First Quarter

June 14
Full

June 20
Last Quarter

June 28
New

Moon Data

June 1
Moon at apogee

June 14
Moon at perigee

June 18
Saturn 4° north
of Moon

June 20
Neptune 4° north
of Moon

June 21
Jupiter 3° north
of Moon

June 22
Mars .9° north
of Moon

June 24
Uranus 0.05° north
of Moon

June 26
Venus 3° south
of Moon

June 27
Mercury 4° south
of Moon

OBSERVER'S CHALLENGE* – JUNE, 2022

by Glenn Chaple

NGC 5474 Galaxy in Ursa Major (Magnitude 10.8; Size 4.7')

This month's Observer's Challenge is the peculiar dwarf galaxy NGC 5474 in Ursa Major. William Herschel, who discovered it on May 1, 1788, entered it in his deep sky catalog with the designation H 1-214, which translates to Herschel, Class I [Bright Nebulae], 214th entry). Anyone who has tried to observe this galaxy visually might argue that it belongs in Herschel's Class II (Faint Nebulae).

NGC 5474 can be located by using its coordinates (RA 14^h 05^m 01.6^s, Dec +53° 39' 44"), but I highly encourage visual observers to star-hop there instead. That's because the starting point is the beautiful double Mizar – the middle star in the handle of the Big Dipper. From Mizar, a series of stellar stepping stones that includes its naked eye partner Alcor (80 Uma), then 81, 83, 84, and 86 Uma will take you to M101, the Pinwheel Galaxy (refer to Finder Chart A). If you're unable to see this 8th magnitude face-on spiral don't bother with NGC 5474, which is also a face-on spiral but 3 magnitudes fainter.

If you can see M101, spend a few minutes trying to tease out as much detail as you can. The exercise will ready your eye for NGC 5474, which lies less than a degree south-southeast (Finder Chart B). My first attempt to capture NGC 5474 with my 10-inch f/5 reflector was "iffy." The limiting naked eye magnitude was around 5 – typical for my suburban skies. But there was a slight hint of humidity in the air, and all I could make out were fleeting glimpses of a small, ghostly circular glow. A few nights later, a mass of clear, dry air settled over the area, and I tried again. This time NGC 5474 was definitely visible – still a small and faint roundish blob, but steadily seen with averted vision. There was no sign of its oddly-placed nucleus. A big help in capturing NGC 5474 was knowing the galaxy's exact location and approximate size. My best view was with a 79X wide-field eyepiece that captured M101 in the same field of view.

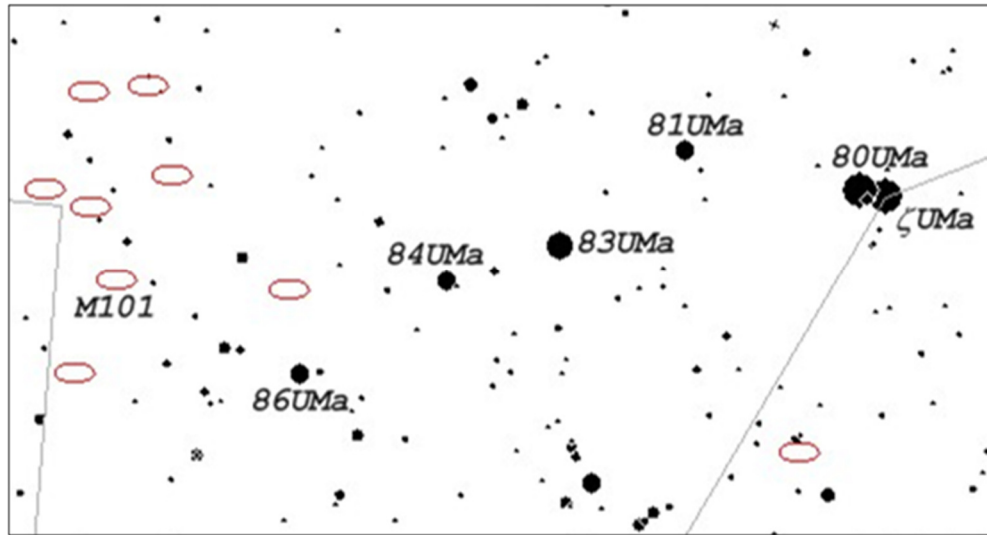
The nearness of NGC 5474 to M101 isn't coincidental. The little galaxy is a companion of the Pinwheel – both being about 21 million light years away. The odd skewing of its nucleus towards M101 was once thought to be a result of a gravitational tug from the much-larger galaxy but is now thought to be internally produced.

**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.*

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NGC5474 Finder Charts

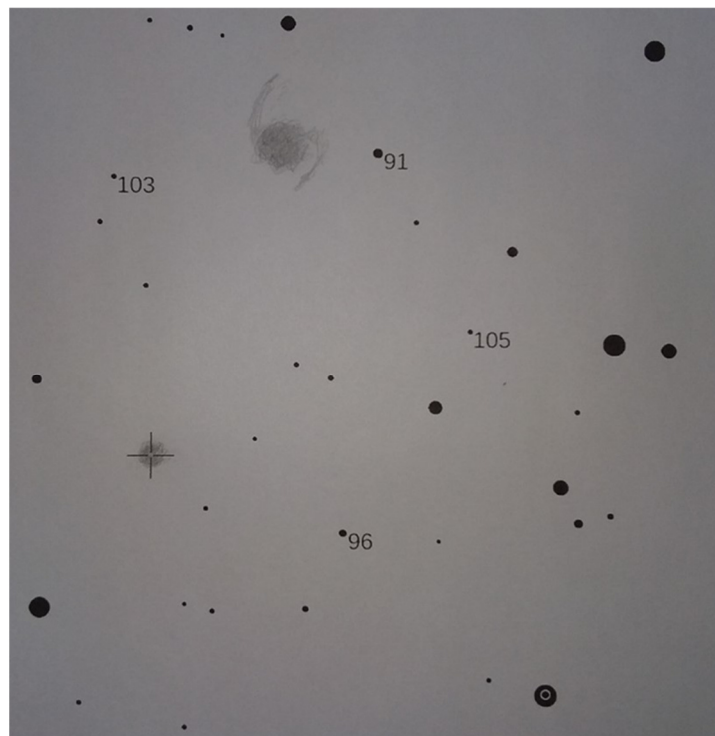
A



astrosurf.com

B

M101 (near top) and NGC 5474 (lower left, marked with cross) Chart prepared using AAVSO's Variable Star Plotter (VSP). Numbers indicate stellar magnitudes (decimals omitted). North is up in this 1½ by 1½ degree field. Chart limiting magnitude is 11.0. Galaxies drawn to scale.



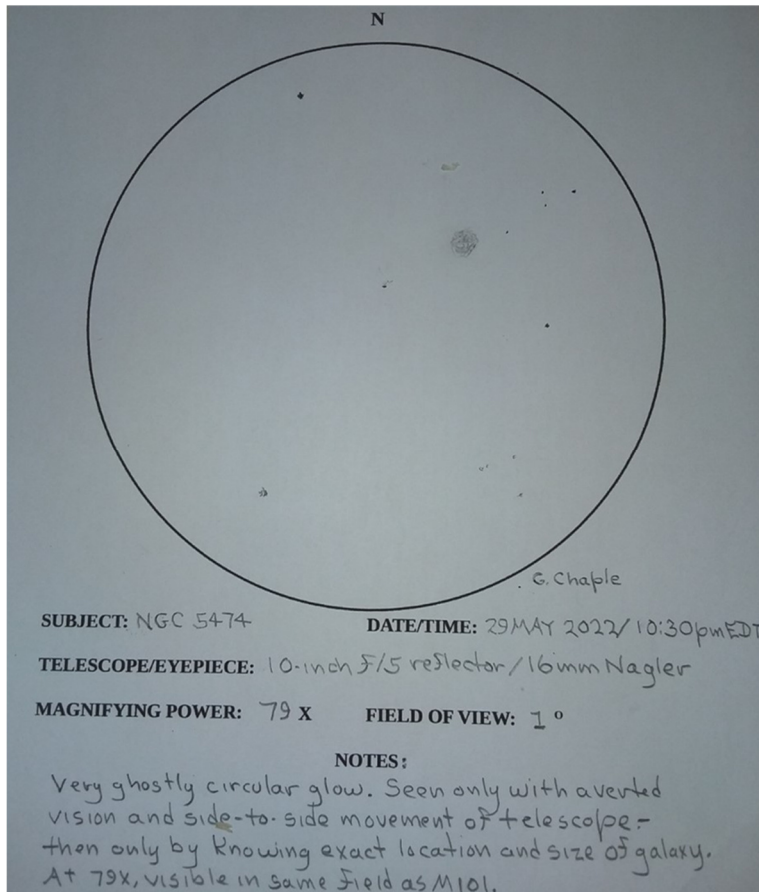
“Continued on page 5”

NGC 5474 Images

Image by Mario Motta, MD (ATMoB) 90 minutes of imaging Lum filter only. Taken with 32 inch F6.5 telescope, with ZWO ASI6200 camera, stacked and processed with pixinsight. North is up



Sketch by Glenn Chaple (ATMoB)



Principal Meteor Showers in 2022

January 4
Quadrantids

April 22
Lyrids

May 6
Eta Aquarids

July 30
Delta Aquarids

August 12
Perseids

October 9
Draconid

October 21
Orionids

November 9
Taurids

November 18
Leonids

November 26
Andromedids

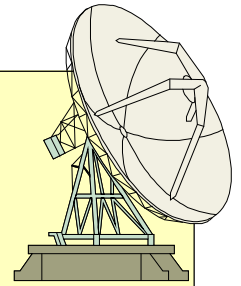
December 14
Geminids

December 22
Ursids

*Note: Dates are
for maximum*

Got any News?

Skylights Welcomes Your Input.



Here are some suggestions:

***Book reviews -- Items for sale -- New equipment --
Ramblings -- Star parties -- Observing -- Photos.***

Benefits of Membership

- Attend our monthly meetings and club star parties
 - Our Monthly Newsletter: *Skylights*
 - Discounts on *Sky & Telescope*. and *Astronomy* magazine subscriptions
 - Automatic subscription to the Astronomical League's quarterly newsletter, *The Reflector*
 - With proper training, access to the equipment at ASNNE's Talmage Observatory at Starfield.
 - By special arrangement, free admission to the Southworth Planetarium at USM in Portland
- Enjoy sharing your interest and have fun learning about Astronomy!

Our Club has Merchandise for Sale at: www.cafepress.com/asnne



***All money raised goes to our operating fund.
Any design can be put on any item.***

Contact David Bianchi dadsnorlax@yahoo.com for further details.



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.org to find local clubs, events, and more!

Solstice Shadows

By David Prosper

Solstices mark the changing of seasons, occur twice a year, and feature the year's shortest and longest daylight hours - depending on your hemisphere. These extremes in the length of day and night make solstice days more noticeable to many observers than the subtle equality of day and night experienced during equinoxes. Solstices were some of our earliest astronomical observations, celebrated throughout history via many summer and winter celebrations.

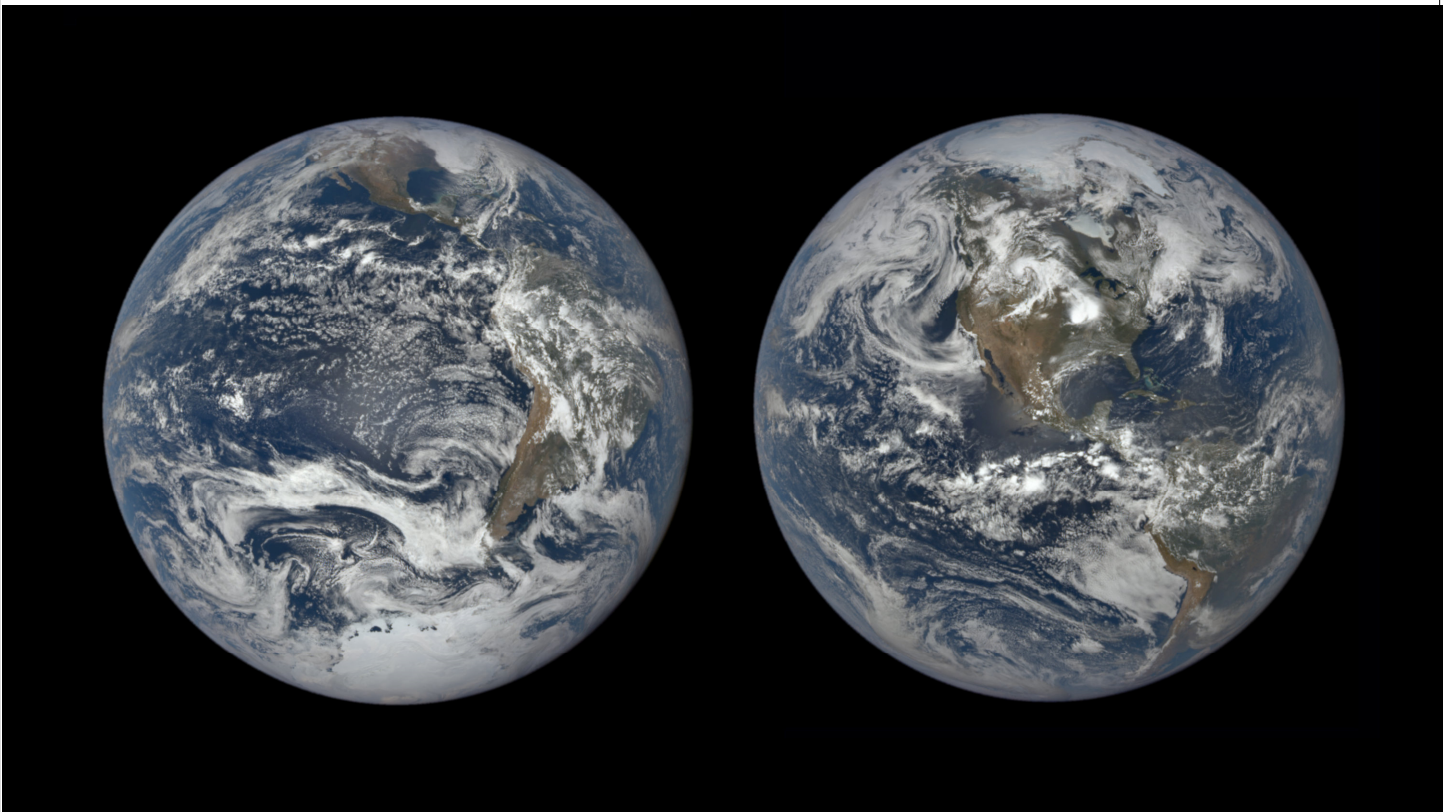
Solstices occur twice yearly, and in 2022 they arrive on June 21 at 5:13 am EDT (9:13 UTC), and December 21 at 4:48pm EST (21:48 UTC). The June solstice marks the moment when the Sun is at its northernmost position in relation to Earth's equator, and the December solstice marks its southernmost position. The summer solstice occurs on the day when the Sun reaches its highest point at solar noon for regions outside of the tropics, and those observers experience the longest amount of daylight for the year. Conversely, during the winter solstice, the Sun is at its lowest point at solar noon for the year and observers outside of the tropics experience the least amount of daylight- and the longest night - of the year. The June solstice marks the beginning of summer for folks in the Northern Hemisphere and winter for Southern Hemisphere folks, and in December the opposite is true, as a result of the tilt of Earth's axis of rotation. For example, this means that the Northern Hemisphere receives more direct light from the Sun than the Southern Hemisphere during the June solstice. Earth's tilt is enough that northern polar regions experience 24-hour sunlight during the June solstice, while southern polar regions experience 24-hour night, deep in Earth's shadow. That same tilt means that the Earth's polar regions also experience a reversal of light and shadow half a year later in December, with 24 hours of night in the north and 24 hours of daylight in the south. Depending on how close you are to the poles, these extreme lighting conditions can last for many months, their duration deepening the closer you are to the poles.

While solstice days are very noticeable to observers in mid to high latitudes, that's not the case for observers in the tropics - areas of Earth found between the Tropic of Cancer and the Tropic of Capricorn. Instead, individuals experience two "zero shadow" days per year. On these days, with the sun directly overhead at solar noon, objects cast a minimal shadow compared to the rest of the year. If you want to see your own shadow at that moment, you have to jump! The exact date for zero shadow days depends on latitude; observers on the Tropic of Cancer (23.5° north of the equator) experience a zero shadow day on the June solstice, and observers on the Tropic of Capricorn (23.5° south of the equator) get their zero shadow day on December's solstice. Observers on the equator experience two zero shadow days, being exactly in between these two lines of latitude; equatorial zero shadow days fall on the March and September equinoxes.

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There is some serious science that can be done by carefully observing solstice shadows. In approximately 200 BC, Eratosthenes is said to have observed sunlight shining straight down the shaft of a well during high noon on the solstice, near the modern-day Egyptian city of Aswan. Inspired, he compared measurements of solstice shadows between that location and measurements taken north, in the city of Alexandria. By calculating the difference in the lengths of these shadows, along with the distance between the two cities, Eratosthenes calculated a rough early estimate for the circumference of Earth – and also provided further evidence that the Earth is a sphere!

Are you having difficulty visualizing solstice lighting and geometry? You can build a “Suntrack” model that helps demonstrate the path the Sun takes through the sky during the seasons; find instructions at stanford.io/3FY4mBm. You can find more fun activities and resources like this model on NASA Wavelength: science.nasa.gov/learners/wavelength. And of course, discover the latest NASA science at nasa.gov.



These images from NASA's DSCOVR mission shows the Sun-facing side of Earth during the December 2018 solstice (left) and June 2019 solstice (right). Notice how much of each hemisphere is visible in each photo; December's solstice heavily favors the Southern Hemisphere and shows all of South America and much of Antarctica and the South Pole, but only some of North America. June's solstice, in contrast, heavily favors the Northern Hemisphere and shows the North Pole and the entirety of North America, but only some of South America.

Credit: NASA/DSCOVR EPIC Source: <https://www.nasa.gov/image-feature/goddard/2021/summer-solstice-in-the-northern-hemisphere>

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A presenter from the San Antonio Astronomy Club in Puerto Rico demonstrating some Earth-Sun geometry to a group during a “Zero Shadow Day” event. As Puerto Rico lies a few degrees south of the Tropic of Cancer, their two zero shadow days arrive just a few weeks before and after the June solstice. Globes are a handy and practical way to help visualize solstices and equinoxes for large outdoor groups, especially outdoors during sunny days!

Credit & Source: Juan Velázquez / San Antonio Astronomy Club

Point and Shoot Camera Astroimaging (no telescope)

Canon Powershot SX50 HS

Image & write-up submitted by Paul Kursewicz

Sombrero Galaxy (M104)

SPECS: RAW mode, f/3.5, 1200mm, ISO 1900, 77 x 1min lights, 7 dark's, 4-20-22.

Baader Moon & Skyglow Filter. And about a 50% crop.

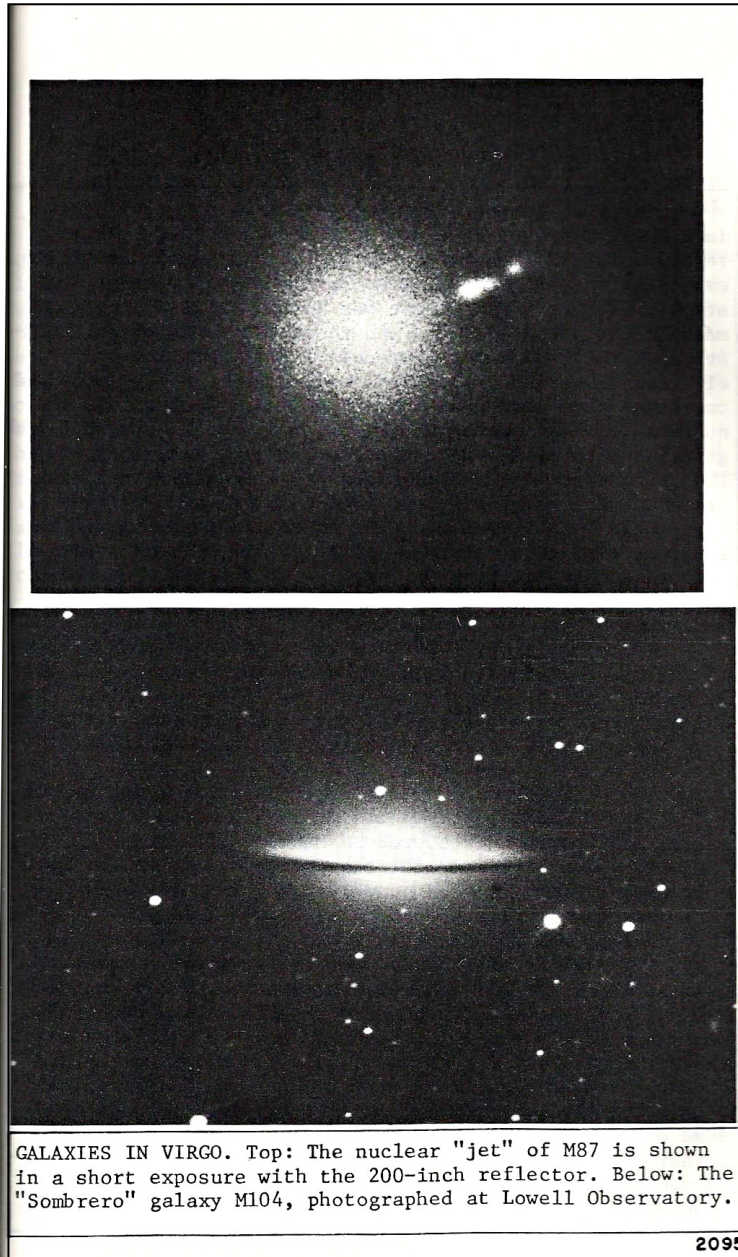


The **Sombrero Galaxy**, also designated as M104, or NGC 4594, is a lenticular galaxy situated between the borders of the Virgo and Corvus constellations. It is located at around 31.1 million light-years from our Solar System. This galaxy has a diameter of around 49,000 light-years, which is 30% of the size of our Milky Way Galaxy. The Sombrero has a very bright nucleus, an unusually large central bulge, and a prominent dust lane in its inclined disk. This dark dust lane and bulge is the reason for why Messier 104, is called the Sombrero Galaxy. It has apparent magnitude of +8.0, making it easily visible with amateur telescopes. The Sombrero Galaxy is visible in 7×35 binoculars or a 4-inch (100 mm) amateur telescope. An 8-inch (200 mm) telescope is needed to distinguish the bulge from the disk, and a 10- or 12- inch (250 to 300 mm) telescope is needed to see the dark dust lane.

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From the pages of "Burnham's Celestial Handbook" copyright 1978

Sombrero Galaxy M104 (Bottom Photo)



Burnham's says that M104 is a fine example of a galaxy seen nearly edge on, and has sometimes been regarded as a transition type between a spiral and elliptical galaxies. On photographs there is some indication of spiral structure at the ends of the projecting arms. The galaxy is usually accepted as a member of the Virgo Cluster of Galaxies although it lies some 20 degrees south of the main concentration. The Sombrero was discovered by P. Mechain in May 1781, and added by Messier to his copy in 1784.

[Astronomical Society of Northern New England \(ASNNE\) Membership Meeting Minutes of 6 May 2022](#)

Attachment (1) Draft Sample Invoice

Presentation:

We started our Meeting at 7:30, and went directly into the Presentation.

The Presentation tonight was by our Member Jon Wallace, and described how he went about taking solar images in the Hydrogen- α line, and his techniques of photo-stacking, and the use of various image-sharpening programs.

Jon, whose career included being an award-winning high-school science teacher - you could tell!, started out with him providing some relevant background on our Sun, the subject of his photographs.

The Sun is not solid, but is a spinning globe of plasma, with a strong magnetic field. Jon described the various zone of the Sun; the central zone where fusion takes place, the zone where heat is transferred by radiation, and the zone where heat is transferred by convection.

As the Sun unevenly rotates, its magnetic lines get tangled, sometimes breaking free to form loops. This is the genesis of the differing solar phenomena that we observe; sunspots, arcs, prominences, filaments, and flares. They are born below the photosphere, the Sun's visible surface, and break free onto the surface.

After this description, Jon, using various magnets and iron filings, demonstrated magnetic lines of force. Distributing small diffraction gratings (which break up light by wavelength), and various light bulbs, he demonstrated a continuous spectrum, and then, various spectral lines. Much solar photography is by means of the Hydrogen- α spectral line. He also demonstrated how the Sun ejects huge 'bubbles' of plasma.

Jon first takes a series of 500 solar photographs, and then he "stacks" them. Jon described the stacking program, and how he uses Photoshop, and related programs, to sharpen, and heighten certain aspects of his photographs. He showed video clips of himself performing these tasks, with examples of both the interim and final products.

To find more details of Jon's techniques, please visit his website; scienceguymaine.com

A question and answer period followed. Jon's Presentation was very well received.

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Business & Regular Meeting:

Directors Present: Ian Durham, President *Pro Tem* and Treasurer
Bernie Reim, Vice President
Carl Gurtman, Secretary
Gary Asperschlager, Director
Ron Burk, Director (on Zoom)

Others Present: There were 16 people, (total), present in person, and 4 people present on Zoom.

Meeting:

President Ian Durham called the Meeting to order.

Ian reported that we have a new riding mower, and it's already been successfully used. It cost \$1,800, and this, although necessary, severely depleted our reserves. We went from reserves of approximately \$3,300, to \$1,559. Ian owns a similar mower, and he's been using it for the last 14 years. We hope to be able to sell the old mower, and its snow-plow attachment.

In regard to fundraising, Ian handed out more green Clink bags with tags attached, and more CLINK tags. These had been prepared by Alyson Durham. Using these bags & stickers ensures that the redemption deposit is credited to ASNNE. Thank you, Alyson!

With costs increasing, we will need the income gained by charging for the Star Parties we hold for for-profit organizations. Carl very briefly summarized those initiatives. At Gary's request, he generated a formal Invoice form, to be used to bill the organizations. See attachment. Gary is still discussing with Hutttopia whether they wish to be billed after each Star Party, or one bill for the Season. Gary will decide how we'll handle the July 4th Weekend.

“Continued on page 14 ”

To re-iterate:

For dealings with Huttopia, on behalf of ASNNE, the point of contact, with Executive Authority, is David Bianchi, ASNNE E-Mail Manager.

For dealings with Point Sebago, on behalf of ASNNE, the point of contact, with Executive Authority, is Gary Asperschlager, ASNNE Director.

Carl also reported that *The Weekly Sentinel* is doing a fantastic job with the Press Releases he provides them. As an example, he showed *The Weekly Sentinel's* 29 April edition, high-lighting Jon Wallace's Presentation. The article was on page 2; on their own initiative, they had found, and published, a photograph of the Sun in **Hydrogen- α** , and they had generated a **catchy column head**. **Carl has sent a thank-you e-mail to *The Weekly Sentinel***

"What's Up?":

Bernie first informed us that he will have a guest on his radio show, *Scientifically Speaking*, the distinguished climate scientist, Katherine Hale.

Bernie then gave his usual thorough, comprehensive, and complete discussion of what's in store for us in the skies of May, named for the Greek goddess Maia, the goddess of the earth and plants. May Day, 1 May, is one of the four cross-quarter days, marking the midpoints of our seasons.

Earth's northern hemisphere really begins to move into Spring this month.

The great morning planetary parade continues to unfold, Only Mercury remains in the evening sky, and even our first planet will join all of the others in the morning sky later next month, in perfect order from Mercury through Saturn, which is a very rare occurrence,

The Eta Aquarid meteor shower will peak on the 6th, but will last about a week. These meteorites are debris from Halley's Comet, and their radiant will appear as the water jug in Aquarius.

This month will also host one of the longest possible lunar eclipses, 84 minutes of totality!

Our two brightest planets, Venus and Jupiter, begin this month just half a degree apart in the morning sky one hour before sunrise. Mars will catch up with Jupiter by the end of the month. They will be just half a degree apart. Saturn rises around 3 am at the beginning of this month in Capricorn, the Sea Goat, and it will rise by 1 am by the end of the month,

Mercury can now be seen low in our western evening sky in Taurus, just above the Pleiades. Then Mercury drops below our western horizon about a week later, only to show up again in the morning sky.

“Continued on page 15”

Bernie then covered "What Happened on this Day. . .", and the names of this month's moon.

Bernie's excellent presentation, in its entirety, can be found, this month, and every month, in *Skylights*, ASNNE's professional-quality newsletter; editor, Paul Kursewicz. *Skylights* may be found at: <http://www.asnne.org/newsletter.php>

The next ASNNE Meeting, will be at 7:30 pm, Friday, 3 June, 2022, at the New School in Kennebunk, Maine. The Regular Meeting will be preceded by a Business Meeting at 7:00 pm. All Members may attend the Business Meeting as they choose.

Respectfully submitted,

Carl Gurtman

Club Meeting & Star Party Dates

Date	Subject	Location
<u>June 3</u>	<p><u>ASNNE Club Meeting:</u></p> <p>Business Meeting starts at 7:00 PM</p> <p>Club Meeting 7:30 to 10:00PM</p> <p>Guest Speaker: TBD</p> <p>Bernie Reim - What's UP</p> <p>Astro Shorts: (news, stories, jokes, reports, questions, photos, observations etc.)</p>	The New School, Kennebunk, Me.
Last Month	We had our club meeting at The New School. Our keynote speaker was club member Jon Wallace . Jon gave an excellent presentation on Solar Imaging. He also did some hands-on presentations on spectral & magnetic field lines (all relating to our Sun). Bernie did his "What's-Up" presentation and certain club members contributed to Astroshorts.	
	Club/Public Star Party: TBD	Talmage Observatory at Starfield West Kennebunk, Me.

Directions to ASNNE event locations

Directions to The New School in Kennebunk [38 York Street (Rt1) Kennebunk, ME]

For directions to The New School you can use this link to the ASNNE NSN page and then click on "get directions" from the meeting location. Enter your starting location to generate a road map with complete directions. It works great. http://nightsky.jpl.nasa.gov/club-view.cfm?Club_ID=137

Directions to Talmage Observatory at Starfield [Alewife Road, Kennebunk, ME]

From North:

Get off turnpike at exit 32, (Biddeford) turn right on Rt 111. Go 5 miles and turn left on Rt 35. Go 2 miles on Rt 35 over Kennebunk River to very sharp 90 degree left turn. The entrance to the Starfield Observatory site is at the telephone pole at the beginning of the large field on the left. Look for the ASNNE sign on the pole.

From South:

Get off the turnpike at exit 25 in Kennebunk. After toll both turn right on Rt 35. Go up over the turnpike and immediately turn right on Rt 35. About 4 miles along you will crest a hill and see a large field on your right. Continue until you reach the end of the field. Turn right into the Starfield Observatory site at the last telephone pole along the field. Look for the ASNNE sign on the pole. If you come to a very sharp 90 degree right turn you have just passed the field.

Astronomy Club

&

Library Resources

Our club has a library of astronomy books which are stored at The New School in Kennebunk, Maine (our monthly club meeting location). To request a book(s), contact one of the club officers. A listing of books is provided here: <https://www.librarything.com/profile/asmne>. After clicking on the link, a window will open. Click on “Your library” near the upper left corner (as shown by the arrow below). Then scroll down to the end of the page to go to the next page.

Title	Author	Date	Tags	Rating	Entry date
NightWatch: A Practical Guide to Viewing the Universe	Terence Dickinson	2006		☆☆☆☆☆	2018-01-09
Comet of the Century: From Halley to Hale-Bopp	Fred Schaaf	1996		☆☆☆☆☆	2018-01-09
Oasis in Space: Earth History from the Beginning	Preston Cloud	1988		☆☆☆☆☆	2018-01-09
Exploration of the Universe: 1993 Version	George O. Abell	1993		☆☆☆☆☆	2018-01-09

Would you like to borrow a telescope? While many astronomy clubs may have a scope to lend out, there are also many libraries which have telescopes for their guests to use. Here are a couple of links.

The following link will bring up an active map (see screen shot below) of the USA showing the libraries which have telescopes to lend out: <https://cornerstonesofscience.org/library-telescope-program/>

Cornerstones of Science telescopes are in libraries across the nation!

- Cornerstones Library Telescopes
- Astronomy Club Telescopes in Libraries

Modified Telescopes with Education Pack for Libraries Unmodified Telescopes for Amateur Astronomers and

The below link will show a list of known participating library locations for the state of Maine. <https://www.librarytelescope.org/locations/usa/maine>

To join **ASNNE**, please fill out the below membership form. *Checks should be made payable to: Astronomical Society of Northern New England (A.S.N.N.E).* For more details, please visit our website: <http://www.asnne.org>



Astronomical Society of Northern New England
 P.O. Box 1338
 Kennebunk, ME 04043-1338

2022 Membership Registration Form

(Print, fill out and mail to address above)

Name(s for family): _____

Address: _____

City/State: _____ Zip code: _____

Telephone # _____

E-mail: _____

Membership (check one):

Individual \$35 _____ Family \$ 40 _____ Student under 21 years of age \$10 _____ Donation _____

Total Enclosed _____

Tell us about yourself:

1. Experience level: Beginner _____ Some Experience _____ Advanced _____

2. Do you own any equipment? (Y/N) And if so, what types?

3. Do you have any special interests in Astronomy?

4. What do you hope to gain by joining ASNNE?

5. How could ASNNE best help you pursue your interest in Astronomy?

6. ASNNE's principal mission is public education. We hold many star parties for schools and the general public for which we need volunteers for a variety of tasks, from operating telescopes to registering guests to parking cars. Would you be interested in helping?

Yes _____ No _____

7. ASNNE maintains a members-only section of its web site for names, addresses and interests of members as a way for members to contact each other. Your information will not be used for any other purpose. Can we add your information to that portion of our web site?

Yes _____ No _____

