

Skylights

Newsletter of the Astronomical Society of Northern New England



JUN2024



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.

Skylights Editor:
Paul Kursewicz

What's Up In June

By Bernie Reim

The month of June is named for Juno, the Roman goddess who was the wife of Zeus and the queen of the gods. According to myth, Juno has the power to see through a veil of clouds that Zeus put up, so our latest mission to Jupiter was named Juno since it does much the same thing for us today, except that Juno uses scientific instruments that humans designed using the principles of mathematics and not magical powers.

June always marks the beginning of summer for us in the northern hemisphere. This year that will happen at exactly 4:51 p.m. on Thursday, June 20. The word solstice means "sun stands still". It always marks the longest day and the shortest night of the year as the sun reaches its highest point in our sky. That is about 68 degrees high in Gemini for us here at this latitude of about 43 degrees north.

Our landscape on Earth is lush and green again and the stars above have rotated into their summer positions as Scorpius and Sagittarius are visible again low in the southeastern sky along with the center of our home galaxy, the Milky Way, located a mere 30,000 light years beyond this area of our sky just below Scorpius and Sagittarius. The nights are getting warmer but also shorter. Every season has its unique aspects and it is always well worth getting outside to see what you might be able to witness and experience in this ever-changing celestial landscape.

The Summer Triangle has reclaimed its place soon after dark, nicely framing this arm of the Milky Way galaxy seemingly rising out of the teapot in Sagittarius like steam. This part of our galaxy is far more substantial than steam; it is composed of 100 billion stars all orbiting around the center of our galaxy at nearly 500,000 miles per hour along with our own sun and its family of planets. The sky and everything in it is not nearly as static as it seems.

This fact was recently made much more evident as I had the great fortune to see the best and longest display of the Aurora Borealis that I have ever seen. A whole series of powerful coronal mass ejections were unleashed from a huge set of sunspots 15 times larger than the earth and large enough to be seen with just your eyes and the solar eclipse glasses you just used on April 8. It was called a cannibal CME since the geomagnetic storms caught up with each other creating a much more powerful event, the most powerful one since October of 2003, which was the last time I saw the northern lights at this latitude.

That event knocked out much of the northeastern Canadian power grid and caused power failures in Sweden and even South Africa. The Carrington event in 1859, the largest and most powerful geomagnetic storm in recorded history, was caused by a similar huge set of sunspots like the ones we just had on May 10. That one triggered aurora all the way down to Cuba and Hawaii and started fires in telegraph offices.

By the time I got home from a wonderful concert around 11 pm, the northern lights were already going full blast, shooting towering blue, pink, and purple streamers high into the normally quite sky. Those colors are quite rare along with how far up into the sky beyond the Big and Little Dippers they were reaching, so I knew this would be a fantastic display of nature's power and beauty.

Armed with a good camera and a high ISO setting, I set out to record and attempt to capture this rare event, the best one in 21 years, but mostly to really experience it in the moment. They never died down during that whole night, so that moment lasted right up until dawn.

They did simmer down a little into the classic auroral arc that was more greenish, but continual bursts of energy rippled along this arc and at times took over the whole sky with giant pulsating waves of pure energy.

They seemed like they could no longer be confined to this arc so they burst out with rapidly changing dramatic blues, purples, and reds reaching all the way to the zenith and even into the southern sky as if they were creating a star gate or portal to other worlds leading me on to the great unknown.

I got hundreds of great pictures that memorable night, continually changing the foreground to contrast the terrestrial beauty of the trees and shrubs with the dancing celestial beauty of the sky above. I could not go wrong with any picture I took since the sky was so saturated with beauty and color that it provided a wonderful background to any terrestrial object I wanted to highlight.

Silhouettes of driftwood were particularly striking along the beach with the whole sky being alive and imbued with a subtle light that went far beyond what I could easily see visually, so every picture was a pleasant surprise when I briefly looked at it on my digital camera screen before I composed the next one.

Stalking the beach for good driftwood and lobster traps and other objects along with wild rose bushes and shrubbery as foreground at 3 in the morning with the temperature down in the 30's; the tide was rushing in rapidly as if it were

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What's Up "Continued from page 1"

trying to push me off the beach and into the protected dune grass and piping plover colonies. So I abandoned the beach and headed to the overflowing marsh where this magical celestial show was being reflected back to me and everyone present by the life-giving and sustaining terrestrial water. It was the ultimate call-and-response between the sun and the earth.

I talked to several people who drove up from Boston just to see this, so I felt very lucky that I was right here and did not have to go anywhere to experience this remarkable display of nature's power and beauty. The total solar eclipse I had just seen one month and 2 days earlier only lasted under 3 minutes, but now I could experience another fairly rare show of nature's subtle and awe-inspiring power for over 5 hours.

The exact physics of how all of this happens are very involved and interesting and can only add to your enjoyment of the experience, as is usually the case. There are two permanent rings of aurora, borealis in the north and australis in the south, that are always there to some extent as the magnetic fields of the earth are always interacting or responding to the constant and persistent solar wind of plasma and charged particles streaming past us at about 1 million miles an hour.

The whole earth is like a tiny pebble in this great rushing river of the solar wind that always washes over us as if we were not even there. But we are here, and fortunately we have a spinning core of hot liquid iron that generates our magnetic fields that protects us from this powerful solar wind and lets us hold onto our life-giving atmosphere.

These fields form a teardrop shaped geomagnetic tail around the earth. As the charged electrons race down to earth along these magnetic field lines, they excite gas atoms and molecules high up in our atmosphere, from 60 to 300 miles high. Then these atoms give off different colored photons. Blues and purples are caused by nitrogen below 60 miles up, greens are caused by oxygen and are more common since the human eye is most sensitive to green light right in the middle of the visible spectrum, and reds are caused by higher frequency atomic oxygen that is higher up where the atmosphere is much thinner. It is similar to being inside a giant neon light tube. As the excited electrons drop back to their rest state, they release these different colored photons.

Our magnetic fields are flexible and are always changing shape in response to the powerful solar wind. As the solar wind pushes them out they will snap back violently at times, generating what are called Alfvén waves which can move up to 50 million miles per hour, or nearly 10% the speed of light. Some of these charged electrons can surf on these Alfvén waves as our magnetic fields reconnect. The whole process is far more dynamic than anything we could know just by looking at the aurora.

Just like the beautiful and ethereal corona is always around the sun like a halo, the aurora are also always around the earth and also Jupiter and Saturn. We don't see them all the time, but just knowing they are there lets us tune in and appreciate nature more consistently.

All of the planetary action has shifted to the morning sky. This month opens with 6 of our 8 planets all nicely lined up in the eastern morning sky. They start with Mercury and Jupiter very close together in Taurus, then Uranus and a very thin waning crescent moon in Aries, then Mars in Pisces and the great line-up ends with Neptune and Saturn in Aquarius. The only one missing is Venus, which will not reappear again until next month in the evening sky.

All 7 of our other planets were lined up in the morning sky in June a couple of years ago, with the 5 brightest ones lined up in order from Mercury out to Saturn. That

was extremely rare and will not happen again until May 6 of 2492.

Saturn will be the first to rise at 2 am in Aquarius. It shines at first magnitude now and is getting a little brighter all the time as we catch up with it. Orange Mars is next in Pisces rising around 3:30 am and also shining at exactly first magnitude now and also getting a little brighter over time as we catch up with the red planet. Compare their colors and brightness's.

Mercury and Jupiter rise in Taurus just 20 minutes before sunrise. Then Mercury sinks lower and will turn into the only evening planet this month a few weeks later. Jupiter will slowly get higher and brighter in our sky, but it will not reach opposition until December 7 of this year. The king of the planets is now exactly 3 magnitudes or about 15 times brighter than Saturn and Mars. Every 5 magnitudes equals 100 times brighter, so each magnitude is the fifth root of 100, or about 2.5 times.

There are no good meteor showers until July, but there are 3 comets visible with a small telescope this month. They are 8th magnitude Comet 13P/Olbers in Auriga and Lynx setting right after sunset, 9th magnitude Comet C/2023 A3 (Tsuchinshan-ATLAS) in Virgo and 10th magnitude Comet C/2021 S3 (PanSTARRS) in Cepheus the King.

June 2. The moon passes 2 degrees north of Mars this morning.

June 3. Hale's 200 inch telescope was dedicated on this day in 1948 on Mt. Palomar.

June 4. On this day in 2000, the Compton Gamma Ray observatory was allowed reenter our atmosphere after nearly 10 years of our high-energy universe. Mercury passed 0.1 degrees south of Jupiter this morning.

June 5. On this day in 1989 Voyager 2 made its closest approach to Neptune and they broadcast the exciting new images live in "Neptune all night". The last transit of Venus occurred on this day in 2012. The next one will be in 2117.

June 6. New moon is at 8:38 a.m. EDT.

June 13. Pioneer 10 left our solar system on this day in 1983 and the Japanese Hayabusa spacecraft returned the first asteroid samples to Earth on this day in 2010.

June 14. First quarter moon is at 1:18 a.m.

June 16. On this day in 1963 Valentina Tereshkova became the first woman in space and is still the only solo space flight by a woman.

June 20. The summer solstice is at 5:51 p.m. EDT.

June 21. Full moon is at 9:08 p.m., very close to the solstice, which is rare. This is also known as the Strawberry or Rose moon.

June 26. Charles Messier was born on this day in 1730.

June 27. The moon passes 0.1 degrees north of Saturn this morning.

June 28. Last quarter moon is at 5:53 p.m.

June 29. George Ellery Hale was born on this day in 1868. He designed and built the 4 largest telescopes in the world from the 40 inch refractor in Yerkes in 1898 right up to the 200 inch Mt. Palomar telescope.

June 30. Saturn in stationary, beginning its retrograde or westward motion today in Aquarius. On this day in 1908 in Tunguska, Siberia, a comet or asteroid exploded a few miles above the ground creating a brilliant day time fireball brighter than the sun. The force was equivalent to 20 megatons of TNT, or about 1000 times the energy of the first atomic bomb. The impact leveled 80 million trees over 1,000 square miles, but no crater was ever found. ★

Moon Phases

June 6
New

June 14
First Quarter

June 21
Full

June 28
Last Quarter

Moon Data

June 2
Mars 2° south
of Moon

Moon at perigee

June 4
Uranus 4° south
of Moon

June 5
Jupiter 5° south
of Moon

June 14
Moon at apogee

June 27
Saturn 0.08° south
of Moon

June 28
Neptune 0.3° south
of Moon

Observer's Challenge* – June 2024

by Glenn Chaple

NGC 6118 – Spiral Galaxy in Serpens (Magnitude 11.7; Size 4.6' X 1.9')

Anyone brave enough to tackle the Astronomical League's Herschel 400 Program is all too familiar with this month's Observer's Challenge, the spiral galaxy NGC 6118 in Serpens Cauda. It is deemed by many to be the most difficult Herschel 400 object to see visually and is considered a challenge for a 10-inch scope under typical suburban skies. However, it can be glimpsed by a skilled observer using a small-aperture instrument if skies are dark enough. In a Cloudy Nights post, one correspondent reported seeing it with a 70mm refractor! Because of its faintness and a tendency to drift in and out of view, NGC 6118 is nicknamed the "Blinking Galaxy."

William Herschel discovered NGC 6118 on the evening of April 14, 1785. In his Catalogue of Nebulae and Clusters of Stars, he described it as "Faint, considerably large, extended south proceeding north following, resolvable, 3' long 2' broad." Older star atlases identify NGC 6118 by its Herschel designation H II-402, his 402nd Class II (Faint Nebulae) entry.

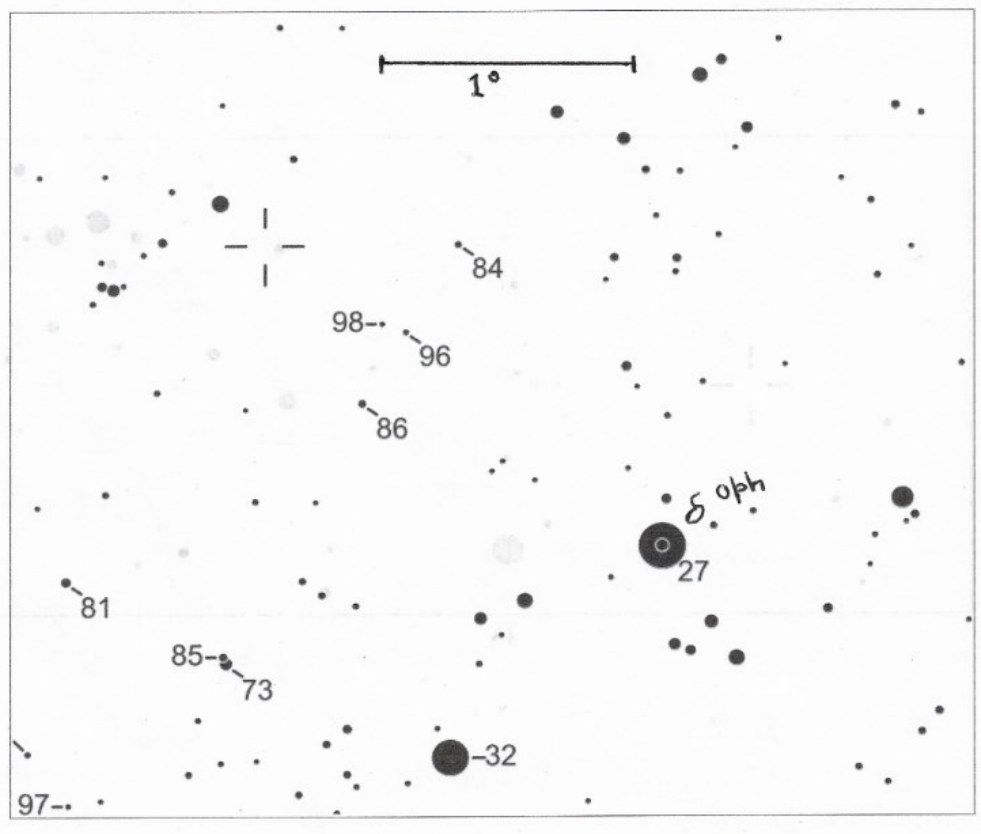
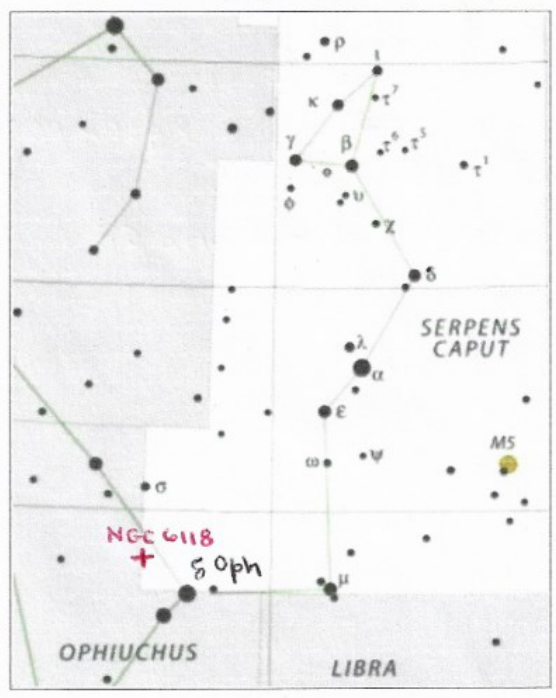
NGC 6118 is located at the southeast corner of Serpens Cauda at the **2000.0 coordinates RA 16^h21^m48.6^s and Dec -02°17'01"**, a little over a 2 degree star-hop northeast of the 3rd magnitude star delta (δ) Ophiuchi. A 6th magnitude star (HD 147550) that lies 17 arc-minutes to the galaxy's northwest may create a distracting glare.

A recent measurement places its distance at about 67 million light-years, which means those photons striking your retina left around the time of the demise of the dinosaurs. Given that distance and its apparent dimensions, NGC 6118 is slightly smaller than our Milky Way Galaxy.

**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.*

"Continued on page 4"

NGC 6118 Finder Chart



“Continued on page 5”

NGC 6118 Image

Mario Motta, MD (ATMoB)

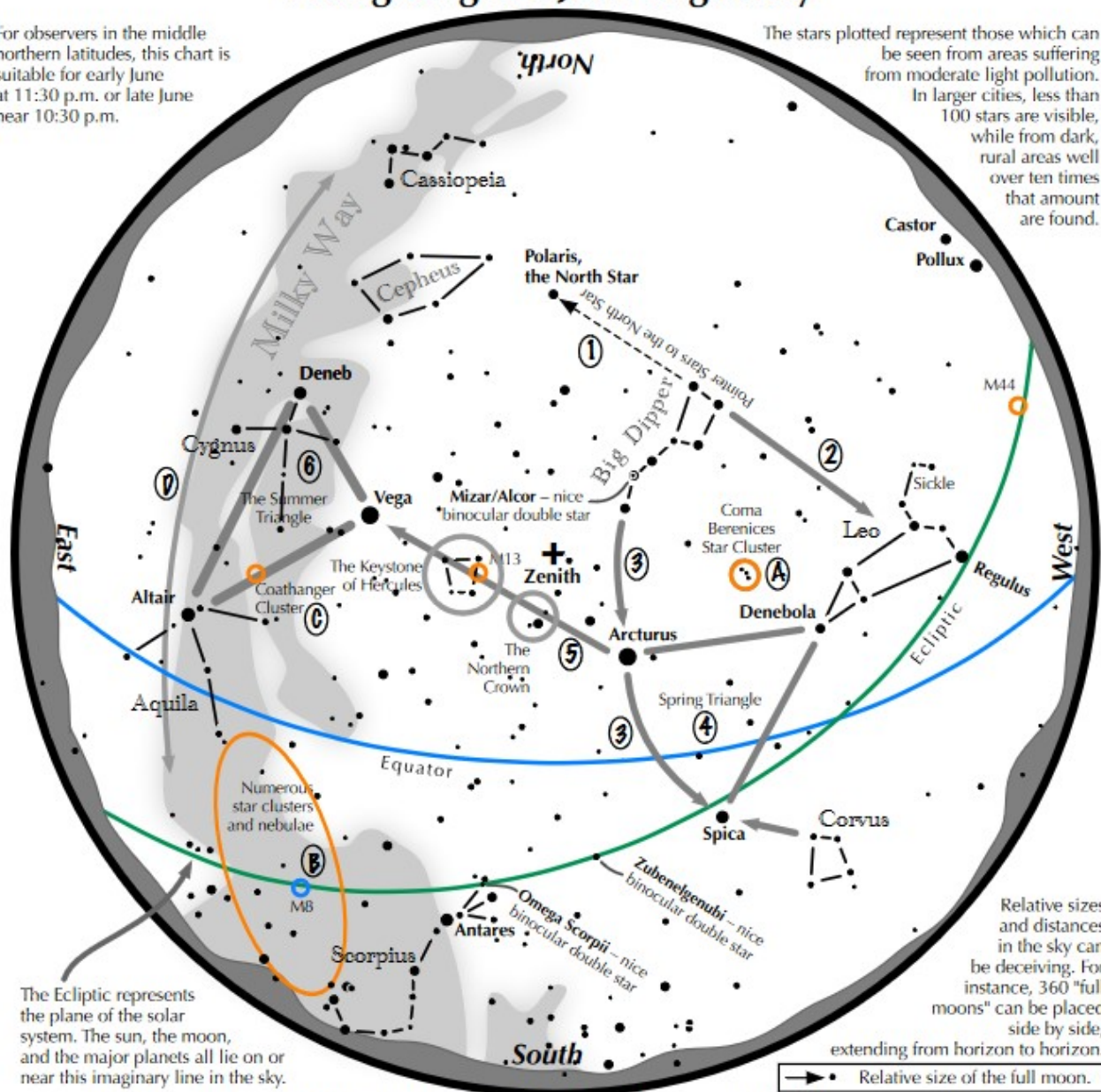
“This was taken with my 32 inch F6.5 telescope from Gloucester MA, about 3.5 hours total imaging, Lum from several years ago, and RGB last week with an interfering moon.”



Navigating the June Night Sky

For observers in the middle northern latitudes, this chart is suitable for early June at 11:30 p.m. or late June near 10:30 p.m.

The stars plotted represent those which can be seen from areas suffering from moderate light pollution. In larger cities, less than 100 stars are visible, while from dark, rural areas well over ten times that amount are found.



Relative sizes and distances in the sky can be deceiving. For instance, 360 "full moons" can be placed side by side, extending from horizon to horizon.

→ • Relative size of the full moon.

Navigating the June night sky: Simply start with what you know or with what you can easily find.

- 1 Extend a line north from the two stars at the tip of the Big Dipper's bowl. It passes by Polaris, the North Star.
- 2 Draw another line in the opposite direction. It strikes the constellation Leo high in the west.
- 3 Follow the arc of the Dipper's handle. It first intersects Arcturus, the brightest star in the June evening sky, then Spica.
- 4 Arcturus, Spica, and Denebola form the Spring Triangle, a large equilateral triangle.
- 5 To the northeast of Arcturus shines another star of the same brightness, Vega. Draw a line from Arcturus to Vega. It first meets "The Northern Crown," then the "Keystone of Hercules." A dark sky is needed to see these two dim stellar configurations.
- 6 High in the east are the three bright stars of the Summer Triangle: Vega, Altair, and Deneb.

Binocular Highlights

- A: Between Denebola and the tip of the Big Dipper's handle, lie the stars of the Coma Berenices Star Cluster.
- B: Between the bright stars of Antares and Altair, hides an area containing many star clusters and nebulae.
- C: 40% of the way between Altair and Vega, twinkles the "Coathanger," a group of stars outlining a coathanger.
- D: Sweep along the Milky Way for an astounding number of faint glows and dark bays.



Astronomical League www.astroleague.org/outreach; duplication is allowed and encouraged for all free distribution.

Principal Meteor Showers in 2024

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

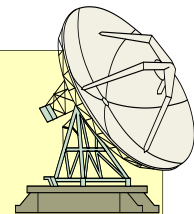
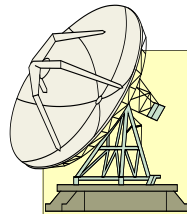
December 22
Ursids

Note: Dates are for maximum

MEMBERSHIP DUES

Membership fees are for the calendar year beginning in January and ending in December. Dues (see page 25 for prices) are payable to the treasurer during November for the upcoming year. New members who join during or after the month of July shall pay half the annual fee, for the balance of the year. Checks should be made payable to the Astronomical Society of Northern New England (A.S.N.N.E). If you would like to mail in your dues, use the form on page 25. Or you can use PayPal via asnne.astronomy@gmail.com

A Member who has not paid current dues by the January meeting will be dropped from membership, (essentially a two-month grace period.) Notice of this action shall be given to the Member by the Treasurer. Reinstatement shall be by payment of currently due dues.



Got any News?

Skylights Welcomes Your Input.

Here are some suggestions:

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

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.



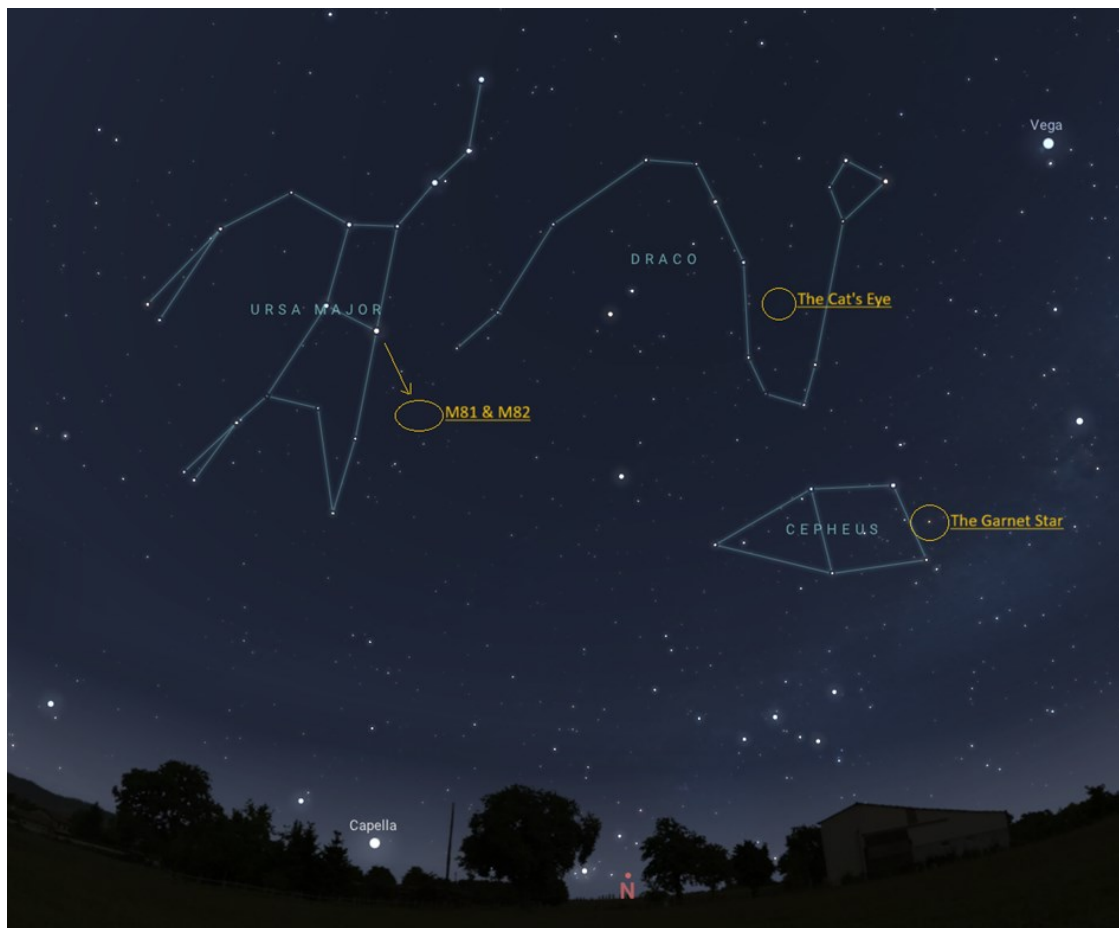
This article is distributed by NASA Night Sky Network

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!

Constant Companions: Circumpolar Constellations, Part III

By Kat Troche

In our final installment of the stars around the North Star, we look ahead to the summer months, where depending on your latitude, the items in these circumpolar constellations are nice and high. Today, we'll discuss **Cepheus**, **Draco**, and **Ursa Major**. These objects can all be spotted with a medium to large-sized telescope under dark skies.



From left to right: Ursa Major, Draco, and Cepheus. Credit: Stellarium Web.

Herschel's Garnet Star: Mu Cephei is a deep-red hypergiant known as The Garnet Star, or Erakis. While the star is not part of the constellation pattern, it sits within the constellation boundary of Cepheus, and is more than 1,000 times the size of our Sun. Like its neighbor Delta Cephei, this star is variable, but is not a reliable Cepheid variable. Rather, its brightness can vary anywhere between 3.4 to 5.1 in visible magnitude, over the course of 2-12 years.

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This composite of data from NASA's Chandra X-ray Observatory and Hubble Space Telescope gives astronomers a new look for NGC 6543, better known as the Cat's Eye nebula. This planetary nebula represents a phase of stellar evolution that our sun may well experience several billion years from now. Credit: X-ray: NASA/CXC/SAO; Optical: NASA/STScI

The Cat's Eye Nebula: Labeled a [planetary nebula](#), there are no planets to be found at the center of this object. Observations taken with NASA's Chandra X-ray Observatory and Hubble Space Telescopes give astronomers a better understanding of this complex, potential binary star, and how its core ejected enough mass to produce the rings of dust. When searching for this object, look towards the 'belly' of Draco with a medium-sized telescope.

“Continued on page 10



The Cigar Galaxy. Credit: NASA, ESA, CXC, and JPL-Caltech

Bode's Galaxy and the Cigar Galaxy: Using the arrow on the star map, look diagonal from the star Dubhe in Ursa Major. There you will find Bode's Galaxy (Messier 81) and the Cigar Galaxy (Messier 82). Sometimes referred to as Bode's Nebula, these two galaxies can be spotted with a small to medium-sized telescope. Bode's Galaxy is a classic spiral shape, similar to our own Milky Way galaxy and our neighbor, Andromeda. The Cigar Galaxy, however, is known as a starburst galaxy type, known to have a high star formation rate and incredible shapes. This image composite from 2006 combines the power of three great observatories: the Hubble Space Telescope imaged hydrogen in orange, and visible light in yellow green; Chandra X-Ray Observatory portrayed X-ray in blue; [Spitzer Space Telescope](#) captured infrared light in red.

Up next, we celebrate the solstice with our upcoming mid-month article on the [Night Sky Network](#) page through NASA's website!

Point and Shoot Camera Astro-Imaging (no telescope)

Canon PowerShot SX50 HS

Giant Sunspot Group AR3664

JPEG, FL 4800mm (digital zoom), ISO 100, f/6.5, 1/320 sec, 5-11-24

Single Image—Hand Held—Thousand Oaks Solar Filter



Earlier in the day I captured my last picture of the Northern Lights around 1:45am. Eight hours later, I took this image of the sun. AR3664 and its dark sunspots is one of the largest sunspot groups in recent history. And, it's the culprit that produced the beautiful auroras. This active region is not only big, but is violent, throwing off clouds of particles into the solar system. If directed towards Earth, then there is a likelihood of having Northern Lights. The sun's activity cycle peaks in 2025.

“Continued on page 12”

RAW Mode, FL 24mm, ISO 1600, f/3.5, 15 sec, 5-10-24



Time: 11:30 pm.

Before going to bed on the 10th I took a peek out my window. That's when I saw a faint reddish glow in the northern sky. Had to be Northern Lights. So I grabbed my camera and tripod, went out and started taking pictures. Polaris is the brighter star to the right of the power lines and a little above the green aurora spike.

“Continued on page 13 ”

RAW Mode, FL 24mm, ISO 1600, f/3.5, 20 sec, 5-10-24



Time: 11:47 pm.

Northern Lights through Ursa Minor, Draco, and Hercules. The arrow is pointing to Globular Cluster M13 (what looks like a very faint star). It's located in the "Keystone" of Hercules. The bright star near the lower right of my image is Vega. Polaris is the bright star far left middle, peeking through the branches of the tree.

"Continued on page 14"

RAW Mode, FL 24mm, ISO 1600, f/3.5, 20 sec, 5-10-24



Time: 11:54 pm.

Northern Lights through Bootes, Coma Berenices, and Canes Venatici. The bright star in my image is Arcturus. The loose open cluster of stars (right of center) is "Berenice's Hair," located in the constellation Coma Berenices. It is a naked-eye object in dark skies, and a very beautiful object in binoculars.

"Continued on page 15"

RAW Mode, FL 24mm, ISO 1600, f/3.5, 20 sec, 5-11-24



Time: 12:12 am.

I drew in the constellations and labeled them because when I first viewed this overhead shot, I had a hard time figuring out what constellations I was looking at. I need to point out that in all of my images there were no clouds present, just aurora. With one exception, a plane traveling through the bowl of the Big Dipper.

“Continued on page 16”

RAW Mode, FL 24mm, ISO 1600, f/3.5, 20 sec, 5-11-24



Time: 12:20 am.

Northern Lights occurring in the constellations Ursa Major, Ursa Minor, and Draco. Polaris is the brighter star lower center, between the two trees.

“Continued on page 17”

RAW Mode, FL 24mm, ISO 1600, f/3.5, 20 sec, 5-11-24



Time: 1:45 am.

I centered this picture on the Big Dipper and was able to capture all of the colors of the aurora during this intense flare-up moment. Polaris is the bright star middle right of my image in the pinkish/reddish sky. At the top are some green spikes blending into the blue aurora, which is blending into the pinkish/reddish aurora, which is blending into the whitish aurora. The bright white sky in the lower right corner of my image is not light pollution. That part of the sky is due north and is typically dark (see my previous picture).

[Astronomical Society of Northern New England \(ASNNE\) Membership Meeting](#)

[Minutes of 3 May 2024](#)

Business Meeting: The Business Meeting was called to order by President David Bianchi.

NOTE: The Business Meeting was held in the same room as the subsequent Regular Meeting. People started arriving for the Regular Meeting, so there was no need to brief the Regular Meeting on what had transpired during the Business Meeting. Directors/People Present numbers are totals from late in the Meeting.

Directors Present: David Bianchi, President
Bernie Reim, Vice President
Carl Gurtman, Secretary
Ian Durham, Treasurer
Gary Asperschlager, Director
Bern Valliere, Director

Plus: Paul Kursewicz, *Skylights* Editor

Secretary's Report: The Secretary was not present at the start of the Business Meeting. There was no usual Meeting at The New School in April, due to dangerous weather. The "Notes" from April had been sent out, and there were no comments.

Treasurer's Report: The Treasurer reported that our usual annual fixed costs were ~\$2,300.

Old Business:

Previously requested Events:

The Private Star Party for the for-profit investing group, has been moved to Thursday, 9 May.
There will be a "trial run" Presentation at the Cliff House, on Friday, 24 May.
Kennebunk Land Trust Star Party Auction winner: Kat Libby won the Star Party that ASNNE donated as a prize. She bid \$270 for the Star Party.

New Business:

David suggested that the date of the July Meeting be moved to Friday, 12 July, to eliminate any possible interference with peoples' 4th of July weekend plans. The Board agreed. Carl suggested that that be the date of our Barbeque.

“Continued on page 19”

When Carl also suggested that we set aside a Meeting date for everyone who wished to recount their Eclipse adventures, and show pictures, if desired, David set the 12 July Meeting as the time for that.

Carl suggested that we set a rate for our for-profit Star Parties and Presentations. It was agreed that the minimum charge be \$250. A maximum can be negotiated.

David reported from personal observation, that the grounds at the Talmage Observatory at Starfield, were in good shape. He also reported that there are quite a few telescopes, and telescope parts at the Observatory. Carl suggested that we offer the indefinite loan of those telescopes to our Members, and those left after that be sold, if possible, or donated.

Presentation/Star Party Future Plans:

Dr. Zucker, a principle investigator of the Radcliffe Wave, is not available to speak to ASNNE. Carl is in e-mail correspondence with one of her graduate students, to see if he can speak in her stead. Target: November Meeting.

The Business Meeting was adjourned at 7:30 pm.

Regular Meeting:

Regular Meeting: The Regular Meeting was called to order at 7:35 pm by President David Bianchi.

Directors Present: David Bianchi, President
Bernie Reim, Vice President
Carl Gurtman, Secretary
Ian Durham, Treasurer
Gary Asperschlager, Director
Bern Valliere, Director

Plus: Paul Kursewicz, *Skylights* Editor

Others Present: There were twenty-eight people physically present at the Regular Meeting, as well as two on Zoom.

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Presentation:

Carl introduced Dr. Francois Foucart, a University of New Hampshire Professor of Physics and Astronomy. Born in Brussels, Belgium, he studied engineering in Brussels and Paris, before moving to the US. He completed a PhD in Physics at Cornell, before working as a postdoctoral fellow at the Canadian Center for Theoretical Astrophysics in Toronto, and at the Lawrence Berkeley National Laboratory in California.

Interestingly enough, Professor Foucart gave a Presentation to ASNNE, exactly five years ago, to the minute, at 7:30; 3 May, 2019!

In his presentation, Professor Foucart described what we have learned about the densest objects in the Universe, neutron stars and black holes, in ten years of studying gravitational wave data. Scientists have learned from the data, much about the production of heavy metals, such as gold and platinum; its taught us lessons about cosmology, and interestingly enough, studying what has happened in absolutely massive objects, millions of light years away, and hence, millions of years ago, provides hints about high-energy particle interactions being studied today.

Professor Foucart described these massive neutron stars and black holes, and how the merging of these very dense objects causes strong gravitational waves, and how those waves are detected. Their interactions provide an additional test of Einstein's Theory of General Relativity.

In his work, Professor Foucart uses numerical simulations of how black holes should behave, and then compares those projections to the actual observational data. How well the model's theoretical projections match observational data, helps astronomers adjust their models, and also helps identifying which events observed in the heavens bear further scrutiny.

This Presentation gave ASNNE Members and guests an insight into what is being accomplished at the cutting edge of astronomy.

ASNNE Members and guests enjoyed the Presentation, and the questions asked throughout the talk showed they followed what was being presented. Professor Foucart carefully answered each question posed to him.

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"What's Up?":

Before getting into the specifics of "What's Up?" in the skies of May, Bernie shared some of his feelings when he observed the Total Solar Eclipse of 8 April, from Rangeley, Maine. He felt, as the Earth suddenly entered into darkness during a normal, bright, sunny, day a new window on the solar system open,

as he finally, intuitively, understood what is really happening with the constant motions of the planets and our moon. A great sense of gratitude overwhelmed him for everything that all of nature on Earth is always doing and providing for us.

He felt tiny and huge at the same time as every cell of his body became alive with this vision of the interconnectedness of all of nature and all of humanity on Earth. He was lifted right above the Earth and the scenic overlook in Rangeley, where he spent eight hours of making new friends and conversing with a few of the 5,000 or so people that shared that scenic spot.

Bernie then gave his usual thorough, comprehensive, and complete discussion of what's in store for us in the skies of May.

One highlight of May's skies is the Eta Aquarid meteor shower on the 5th of May. These meteors are tiny sand grain-sized pieces of Halley's Comet burning up in our atmosphere.

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> .

Astroshorts: There were a few Astroshorts.

Note: Dr. Foucart stayed through our Meeting, and answered questions at the end.

Next Meeting:

ASNNE's next Meeting is on Friday, 7 June, 2024, at the New School, in Kennebunk, at 7:30 pm. The Business Meeting; same location, starts at 7:00 pm. All are welcome to attend the Business Meeting

At the June Meeting, we will be honored to hear a Presentation by Dr. Fabian Kislak, a UNH Professor of Physics and Astronomy. Dr. Kislak will talk about his experimental work studying the polarization of X-rays, which carries geometrical information about the innermost regions surrounding neutron stars and black holes.

Respectfully submitted,

Carl Gurtman

ASNNE 2024 Public Star Parties

Submitted by Carl Gurtman

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PO Box 1338, Kennebunk, ME 04043

www.asnne.org

David Bianchi, Club President

FOR: THE COMMUNITY CALENDAR

PUBLIC STAR PARTIES - AN OPEN INVITATION!

The Astronomical Society of Northern New England (ASNNE) has set its schedule for Public Star Parties through August, 2024. ASNNE extends an invitation to the General Public to attend. ASNNE operates its own observatory, the Talmage Observatory at Starfield, on State Route 35, in West Kennebunk, Maine.

At Public Star Parties, held in as much as possible in the dark of the Moon, the General Public, as well as ASNNE Members, are most cordially invited to observe the heavens through our large Club telescopes, as well as Member telescopes. Stars, visible planets, and deep sky objects can all be viewed. Experienced ASNNE Members are on hand to guide the observing, explain what is being seen, and answer questions..

There is no fee.

The Talmage Observatory at Starfield opens at 7:30 pm for these events. Detailed driving instructions may be found at: <http://asnne.org/where-to-find-us.php>

The dates for the Public Star Parties are as follows:

April 12 Rain date: April 13

May 10 Rain date: May 11

June 8th No rain date

July 5 Rain date July 6

August 9 Rain date August 10

ASNNE is a local association of amateur astronomers that meets monthly

at the New School, on Rte. 1, (York Street) in Kennebunk, Maine. Meeting are on the first Friday of each month; all those interested in astronomy are welcome; from stargazers and hobbyists, to serious observers, astrophotographers, and those interested in astronomical theory. The general public is also most cordially invited and welcome.

For more information about ASNNE, including directions and events, or to contact the Club, you may also visit us at www.ASNNE.org.

Club Meeting & Star Party Dates

Date	Subject	Location
<u>June 7</u>	<p><u>ASNNE Club Meeting:</u></p> <p>Business Meeting starts prior to Club meeting.</p> <p>Club Meeting (in house & on Zoom): 7:30-9:30PM</p> <p>Guest Speaker: Our guest speaker will be Dr. Fabian Kislak. He is a Professor at UNH and in his presentation he will talk about his work studying the polarization of X-rays relative to neutron stars and black holes.</p> <p>Bernie Reim - "What's UP"</p> <p>Astro Shorts: (news, stories, jokes, reports, questions, photos, observations etc.)</p> <p>Last month we had our meeting at The New School. A Zoom meeting was conducted also. Our guest speaker was Dr Foucart. His presentation was about what we have learned after ten years of studying gravitational waves. Bernie gave his "What's Up" article.</p>	The New School, Kennebunk, Me.
<u>June 8</u>	<p>Club/Public Star Party: Dependent on the weather. No rain date.</p>	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:

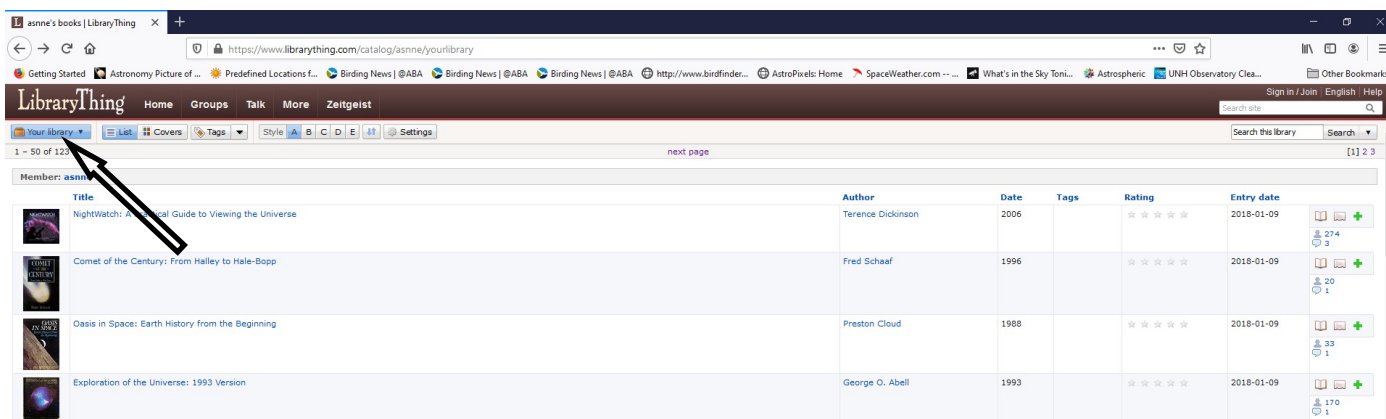
Get off turnpike at exit 32, (Biddeford) turn right on Rt 111. Go 5 miles and turn left on Rt 35. Go 2 miles on Rt 35 over Kennebunk River to very sharp 90 degree left turn. The entrance to the Starfield Observatory site is at the telephone pole at the beginning of the large field on the left. Look for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

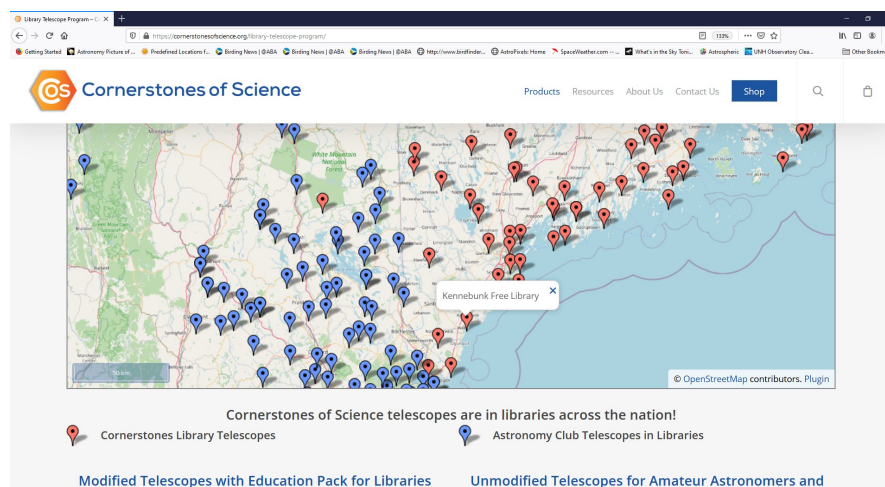
Astronomy Club & Library Resources

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.



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/>



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

2024 Membership Registration Form

(Print, fill out and mail to address above) or Use PayPal via asnne.astronomy@gmail.com

Name(s for family): _____

Address: _____

City/State: _____ Zip code: _____

Telephone # _____

E-mail: _____

Membership (check one):

Individual \$50 _____ Family \$ 60 _____ 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 _____

