Skylights

Newsletter of the Astronomical Society of Northern New England

DEC 2025

Skylights Editor:
Paul Kursewicz

Member of NASA's Night Sky Network

Astronomical League Member

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 December

By Bernie Reim

The month of December always marks the beginning of winter for us in the northern hemisphere. This year that will happen at exactly 10:03 am EST on Sunday the 21st. That is called the winter solstice and it marks the longest night and the shortest day of the year. The word "solstice" means "sun stands still".

If you took a picture of the sun from the same location at noon every few days you will see that the final image traces a tilted figure 8 in the sky. That is called the analemma and most of the old-fashioned globes have one on them. The top of this figure 8 marks the highest point of the sun at the summer solstice and the lowest part marks the winter solstice where we will be soon. The fall and spring equinoxes occur just below the cross over points. The top half of this analemma is narrower and the whole figure 8 is tilted based on your latitude on Earth.

Even though the weather is getting colder and the nights are getting longer and the days keep getting shorter until the 21st of this month, there are still several good highlights to see this month that will be well worth any effort that you make to see them and get outside in nature under the same night sky that all 8 billion of us on Earth always share.

Saturn is still close to its best for the year and now sets around midnight. Jupiter is still getting a little brighter and closer each evening heading for its opposition on January 10 of next year when it will be at is brightest and closest for the year and rising at sunset like a full moon. It starts the month rising around 8 pm and finishes up the year rising around 6 pm. We have lost both of our next-door-neighboring planets, Venus and Mars, since they are approaching their solar conjunction in early January and are not visible this month.

There will be at least one comet visible in an average telescope this month. That one is called Comet 24P/Schaumasse. There will be a nice conjunction of Mercury and the slender waning crescent moon one hour before sunrise on the morning of the 17th. The nearly full moon will once again cover up or occult some of the stars in the Pleaides open star cluster in Taurus on Wednesday the third. Then there is a minor meteor shower on the 22nd called the Ursids and the major highlight this month will be a favorable showing of the annual Geminid Meteor shower which lasts from the 4th to the 17th and peaks on the morning of 14th.

Saturn will be your first evening planet now that Mars has finally drifted too close to the sun, not to be seen again until next early next year in the morning sky. Mars will not reach its next opposition until February of 2027. It is about as far away from Earth now as it can get at 2.4 times the earth-sun distance, called an AU, or astronomical unit. By comparison, Mars can get as close as 33 million miles, or just one third of an AU. It is about 8 times farther away now than it will be in February of 2027.

You can find the ringed planet easily in the western part of Pisces the Fish right below the Circlet in Pisces which consists of 5 stars in the rough shape of a pentagon. The rings are very narrow right now, only tilted open at one degree. Saturn ended its retrograde or westward motion against the fixed background of stars on Thanksgiving Day and is now moving in its normal, direct or eastward motion through Pisces again. Saturn now shines with a soft golden glow at first magnitude. Neptune is still very close to Saturn, just 4 degrees to its left or east in Pisces. However, Neptune is only 7.7 magnitude, which makes it about 500 times fainter than Saturn. Neptune only covers 2.3 arc seconds of the sky compared to 17.6 arc seconds for Saturn. Saturn is just under a billion miles away and Neptune is 2.8 billion miles away, or 4 hours at the speed of light. Look for our last planet's beautiful bluish hue in a small telescope since it is so easy to find now just to the left of Saturn. Poor Pluto was demoted to an icy dwarf or Kuiper Belt object back in 2006.

Jupiter is still in retrograde in Gemini. Since it takes 12 years to orbit the sun, Jupiter spends one year in each of our 12 zodiac constellations.

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What's Up "*Continued from page 1*"

It now rises around 8 pm and it will rise around 6 pm by the end of this year, ready for its opposition on January 10 of next year. You can see all four of its large Galilean moons in a good pair of binoculars. Jupiter shines at minus 2.6 magnitude, or fully 30 times brighter than Saturn. Jupiter also covers 45.5 arc seconds of the sky, which makes it more than twice as large as Saturn.

By comparison, the full moon covers half a degree of the sky. There are 60 arc seconds in a minute and 60 minutes in a degree. That is 40 times bigger than Jupiter. The King of the Planets is about 4.3 AU away or 36 minutes at the speed of light.

Mercury is now at its best for the year in the morning sky. Our first planet rises around 5:30 am on the first of this month, which is about 90 minutes before sunrise. It will achieve greatest elongation west of the sun on December 7 in Scorpius at 10 degrees above the horizon. Look for a thin waning crescent moon to join Mercury one hour before sunrise on the morning of Wednesday December 17.

Try to find Comet 24P/Schaumasse as a good challenge if you have access to a small telescope. It is passing right through about 20 galaxies in Leo this month and should reach between 9th and 12th magnitude. Discovered 114 years ago on December 1 of1911 by the French astronomer Alexandre Schaumasse, this is only one of three comets he discovered.

It has a fan-shaped tail tilted away from the sun and they saw the classic green glow around the nucleus and coma.

The bonus meteor shower this month is the Ursid meteor shower which is active from the 17th to the26th and peaks on the 22nd, right after the winter solstice. Caused by Comet 8P/Tuttle, this is a minor shower that only produces about 5 to 10 meteors per hour at its best from a dark sky site with no light pollution and no moon to interfere with any of the show. They will all originate from a point in the sky called the radiant which is located just above the bowl of the Little Dipper (Ursa Minor) and near the Big Dipper (Ursa Major). The two pointer stars in the bowl of the Big Dipper that point to Polaris about 30 degrees away are called Merak and Dubhe. The two corresponding stars in the bowl of the Little Dipper are named Pherkad and Kochab, which means guardians of the pole, since they formed twin pole stars about 4,000 years ago. Our new pole star will be Gamma Cephei in Cepheus the king in 2,000 years and in 13,000 years our pole star will be close to Vega in the constellation of Lyra in the Summer Triangle. We will be right back to Polaris in 26,000 years. This cycle is called precession of the equinoxes and is caused by the earth wobbling like a top in space with our axis slowly and continually pointing to a slightly different part of the sky. This axis moves at the rate of 1 degree every 72 years.

Discovered by Pierre Mechain in Paris, France on 1/9/1790, this comet orbits the sun every 13.7 years. He also discovered 7 more comets and 2 more that don't have his name on them including this one because Pierre did not also calculate their orbits.

Pierre Mechain was a contemporary and some time rival of the most famous comet hunter in the world at the time, Charles Messier. Messier developed the first large catalog of celestial objects to document those objects that did not move from night to night and therefore could not be comets. Comets don't zip right through the sky like meteors, but they do move a little from night to night like one to two degrees. Messier had 110 such objects on his list, published in 1787 after a final edit by Pierre Mechain. They included galaxies, open and globular star clusters, and nebulae. Messier also discovered 13 real comets that did move. 100 years later a much more comprehensive catalogue called the New General Catalog was published containing about 8,000 similar objects.

The last and most major highlight for this last month of the year will be the Geminid meteor shower, which is often the best meteor shower of the 6 or so fairly good ones that we get each year. The second best one would be the Perseids every August 12 which averages around 60 meteors per hour or one per minute. Those two are nicely spread out with one in summer and one in winter, but the other 4 are more clumped together. Two in spring, the Lyrids in April and the Eta Aquarids in May and then the October Orionids and the November Leonids.

This is a favorable year for the Geminids because the moon will be waning crescent, 3 days past last quarter and not rising until around 3 am. You can expect up to 120 meteors per hour or two per minute this year from a dark sky site with no light pollution. This shower is active from the 4th to the 17th and peaks on Sunday morning the 14th. Make sure that you properly prepare yourself to make the most of this great shower if it is clear. Bundle up since it is usually quite cold by the middle of December and find a good open field so that you can see as much of the sky as possible. Also bring photography equipment if you have it or just bring a tripod for your cell phone if you have a newer camera with a good time exposure setting.

All of these meteors will emanate from a point in Gemini near Castor called the radiant. Brilliant Jupiter is also right there now, nearly lined up with Castor and Pollux in Gemini. In mythology Castor is the mortal twin and Pollux is the immortal twin son of Zeus. Meteors will appear anywhere in the sky, but they will all originate from this radiant in Gemini. It is best to look about 45 degrees away from this radiant, but constantly keep scanning the entire sky.

"*Continued on page 3* "

Moon Phases

Dec 4
Full

Dec 11
Last Quarter

Dec 19
New

Dec 27
First Quarter

Moon Data

Dec 1-3
Waxing Gibbous

On the 3rd Moon covers Pleiades stars

Dec 5-10
Waning Gibbous

On the 7th Moon is 4 1/2° below Pollux and 5° right of Jupiter forming a triangle in SW

Dec 12-18
Waning Crescent

13th & 14th Moon rises in wee hours of morning shouldn't interfere with Geminid meteor shower

Dec 20-31
Waxing Crescent

On the 26th Moon less than 3° upper right of Saturn

What's Up "*Continued from page 2*"

Gemini is part of the Winter Hexagon and will be up in the eastern sky when it gets dark enough. It is next to Orion and Taurus. You may also catch a few early Ursid meteors, but just trace each meteor back to its source and you will know which shower it was a part of. You may also see a few stray meteors that are not part of either one of these two showers. You can usually expect about 2 or 3 stray meteors per hour on any given good night. Remember that each of those brilliant streaks that you will see that night is caused by a tiny sand-grain-sized piece of comet dust from the asteroid named 3200 Phaethon.

It is probably an old nucleus of a comet since asteroids don't form tails when they get near the sun. These meteors tend to be brighter than most of the other showers because they are denser. These meteors will hit our upper atmosphere at 50 to 60 miles high at a slower speed than most of the other meteor showers. The Geminids will hit us at about 20 miles per second or about the same speed that we are always orbiting the sun.

Even if it will not be crystal clear and perfect that Sunday morning the 14th, it is still well worth your effort to get outside and get more in tune with nature and contemplate the many wonders of the night sky that are always there regardless of anything particularly dramatic like meteor showers or northern lights or occultations or eclipses. You actually have a good chance to see more northern lights this month since the sun is still very active and we just had a good display of them on Tuesday November 11, which was also Veteran's Day. If you are far enough away from any lights you may even see the faint outline of the winter Milky Way just to the left of Orion and the Winter Hexagon. You are looking out the edge of our marvelous slowly and powerfully rotating conglomeration of 300 billion stars 20,000 light years away when you contemplate this part of our galaxy which also contains about as many planets as stars. The summer Milky Way is much wider and brighter because then you are looking into its center which is located 30,000 light years away. Remember that there is a supermassive black hole in that area at our center which has the mass of 4 million suns. Follow the galaxy as it appears to rise out of Sagittarius and then continue up along the summer triangle and splitting apart in Cygnus the Swan. The entire galaxy is about 100,000 light years across. You will also see several satellites and possibly the ISS (International Space Station) while you are looking up anticipating the next brilliant meteor. Also look and listen for any interesting terrestrial events like any nocturnal creatures that may be stirring about or any birds or any noises by a lake if you can observe all of this near a lake with its wonderful reflection of some of the stars and planets above it.

Dec. 3. The moon passes 5 degrees north of Uranus in Taurus this evening. Look for the moon occulting several of the stars in the Pleiades open star cluster in Taurus tonight.

Dec. 4. The moon is at perigee or closest to the earth today at 6:07 a.m. at 221,806 miles. Full moon is at 6:14 p.m. EST. This will be another close and large supermoon. This is also known as the Cold Moon, the Long Night Moon, or the Moon Before Yule.

Dec. 7. The moon passes 4 degrees north of Jupiter tonight. Mercury is at greatest western elongation at 21 degrees west of the sun.

Dec. 10. The moon passes 0.7 degrees north of Regulus tonight and Neptune is stationary, ending its retrograde motion.

Dec. 11. Last quarter moon is at 3:52 p.m. EST. Annie Jump Canon was born on this day in 1863. She was part of the famous "Harvard Computers" that developed the spectral classification system based on the surface temperature of stars.

Dec. 13. Russell Porter was born on this day in 1871. He was an engineer that designed the dome that houses the 200-inch Mt. Palomar Telescope in CA and he was also an Arctic explorer.

Dec. 14. The Geminid meteor shower peaks this morning. Tycho Brahe was born on this day in 1546. He was the greatest observer of his time before the telescope was invented. He collaborated with Johannes Kepler to figure out that planets really orbit in ellipses and not perfect circles and other planetary laws of motion.

Dec. 19. New moon is at 8:43 pm EST.

Dec.21. The winter solstice is at 10:03 a.m. EST.

Dec. 22. The Ursid meteor shower peaks tonight.

Dec. 25. Isaac Newton was born on this day in 1642.

Dec. 26. The moon passes 4 degrees north of Saturn tonight.

Dec. 27. Johannes Kepler was born on this day in 1571. First quarter moon is at 2:10 p.m.

Dec. 28. Arthur Eddington was born on this day in 1882. His photographs of a total solar eclipse off the west coast of African on May 29 of 1919 helped prove Einsteins General Theory of Relativity correct.

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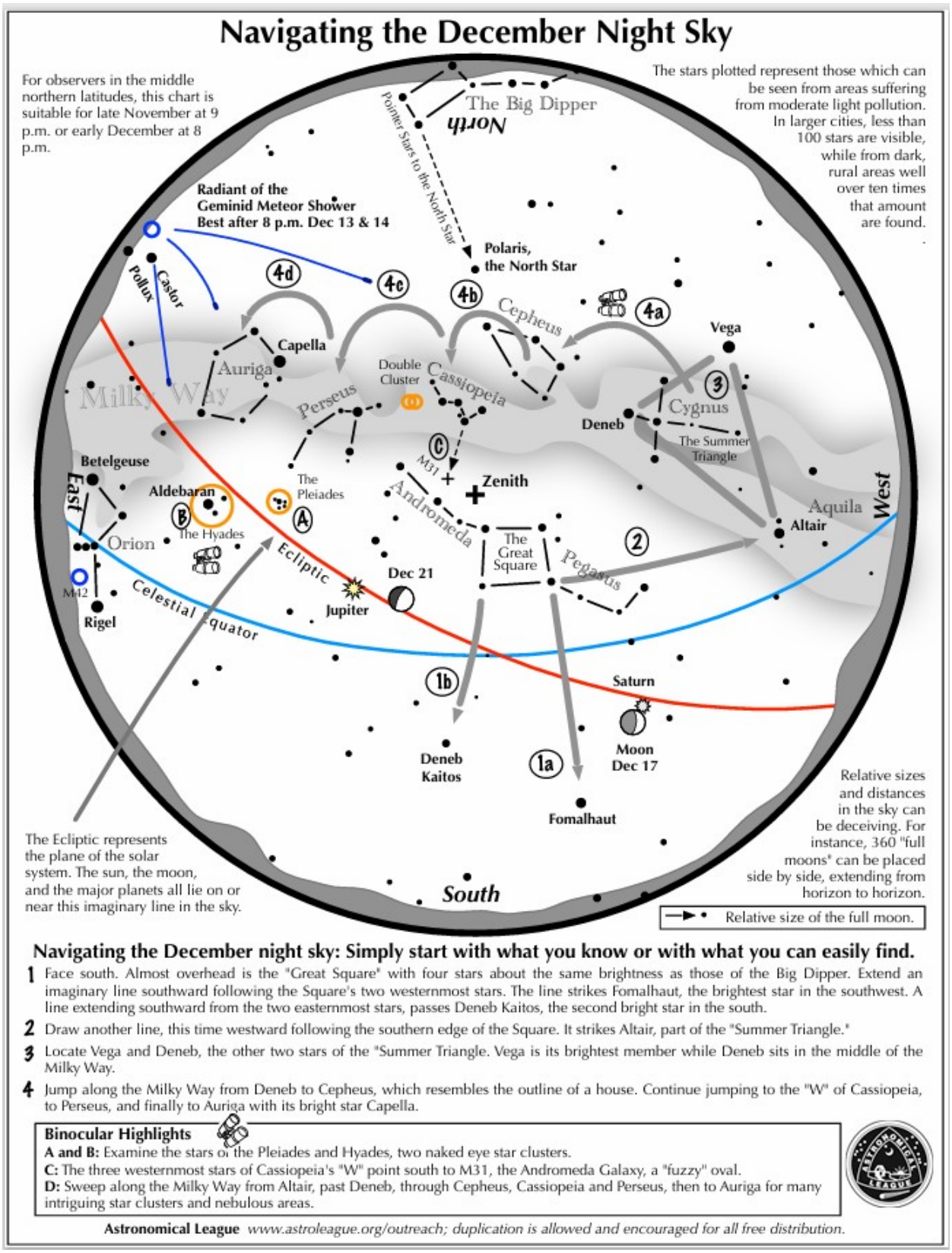


Navigating the December night sky: Simply start with what you know or with what you can easily find.

1. Face south. Almost overhead is the "Great Square" with four stars about the same brightness as those of the Big Dipper. Extend an imaginary line southward following the Square's two westernmost stars. The line strikes Fomalhaut, the brightest star in the southwest. A line extending southward from the two easternmost stars, passes Deneb Kaitos, the second bright star in the south.
2. Draw another line, this time westward following the southern edge of the Square. It strikes Altair, part of the "Summer Triangle."
3. Locate Vega and Deneb, the other two stars of the "Summer Triangle. Vega is its brightest member while Deneb sits in the middle of the Milky Way.
4. Jump along the Milky Way from Deneb to Cepheus, which resembles the outline of a house. Continue jumping to the "W" of Cassiopeia, to Perseus, and finally to Auriga with its bright star Capella.

Binocular Highlights
A and B: Examine the stars of the Pleiades and Hyades, two naked eye star clusters.
C: The three westernmost stars of Cassiopeia's "W" point south to M31, the Andromeda Galaxy, a "fuzzy" oval.
D: Sweep along the Milky Way from Altair, past Deneb, through Cepheus, Cassiopeia and Perseus, then to Auriga for many intriguing star clusters and nebulous areas.

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

Principal Meteor Showers in 2025

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

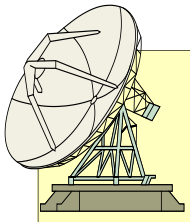
December 22
Ursids

Note: Dates are for maximum

MEMBERSHIP DUES

Membership fees are for the calendar year beginning in January and ending in December. Dues (see page 17 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 17. 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.



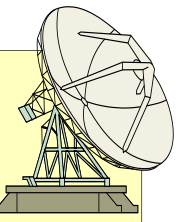
Got any News?

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: https://www.cafepress.com/shop/ASNNE/products

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.

**NOTE: The Dec 2025 Sky Object of the Month was previously featured as the Dec 2009 issue.
Some simple edits were made to make it current.**

Sky Object of the Month - December 2025
Ursid Meteor Shower
By Glenn Chaple

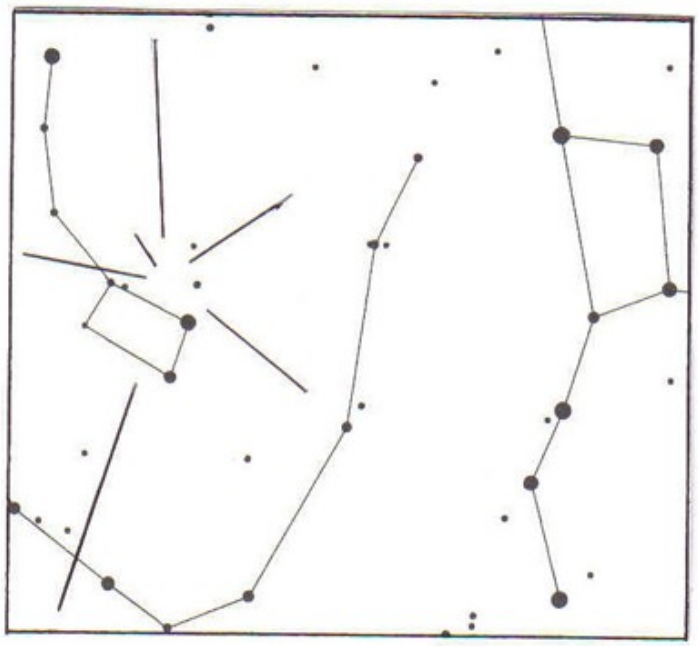
You're quite likely familiar with the Geminid meteor shower. One of the year's most prolific, with hourly rates often exceeding 100 meteors, the Geminids reach peak activity on the evening of December 13-14. With the moon close to 30% phase, the 2025 Geminid display should be spectacular.

Less known is a meteor shower that occurs about a week later - the Ursids. Discovered a little over a century ago, the Ursids are associated with the comet P8/Tuttle. There are two reasons why this meteor shower is so little observed. For one thing, it's rather sparse. Although there have been reports of short outbursts of 100 Ursids per hour, the hourly rate rarely reaches double figures. Couple that with the fact that the Ursids climax near the peak of the Holiday season (predicted maximum activity is scheduled for the evening of December 21-22), and you have a meteor shower few backyard astronomers have ever observed.

That includes me. In years when I've made plans to view the Ursids, either clouds or a bright moon got in the way. Other times, I got so wrapped up in Holiday hysteria, I either forgot or was too tired to bother. On the one clear, moonless evening I did give the Ursids a try, I saw virtually nothing for 15 minutes, got bored, and went back inside – behavior NOT worthy of a so-called avid amateur astronomer!

Here's my game plan for Ursids 2009 – one that I encourage you to try. Some time towards the middle of the night when the waxing crescent moon has set, I'll bundle up and go outside with a thermos of hot chocolate. Since the Ursids appear to radiate from the vicinity of the star Kochab (â Ursae Minoris) I'll set up a lawn chair in a part of my back yard that affords a clear view of the northern sky. Then I'll sit and wait. No copping out after a quarter hour! I'll watch for at least an hour, or until I've spotted 5 or 6 Ursids, which ever comes first. Who knows – I might be fortunate enough to catch one of those rare Ursid outbursts. It's the uncertainty of meteor showers that makes them so fascinating.

Want to know more about the Geminids and Ursids? Check out Gary Kronk's www.meteorshowersonline.com. And don't forget the section on meteor showers in Guy Ottewell's annual publication *Astronomical Calendar*.

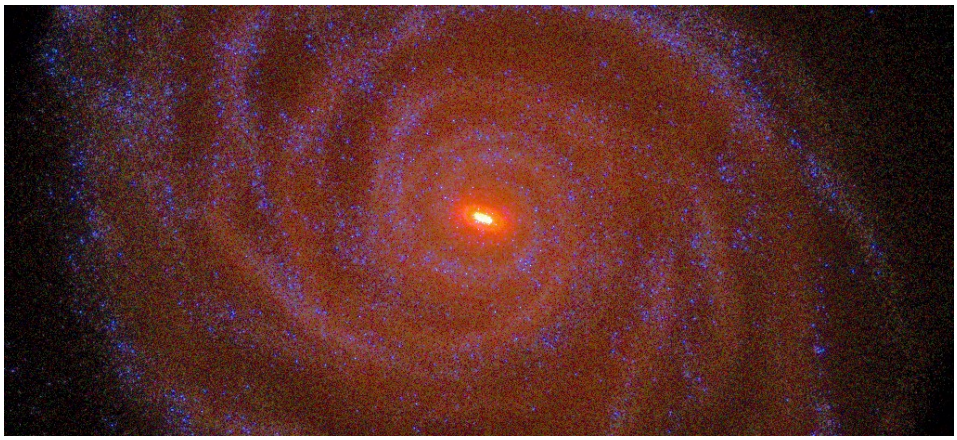


Radiant for Ursid Meteors
From Cartes du Ciel

Universe Today

Why the Milky Way's Dark Heart Might Be Shaped Like a Box

By Andy Tomaswick



Simulated Milky Way with excess energy at the center. Credit - AIP / A. Khalatyan

Back in 2009, astronomers using the Fermi Gamma-ray Space Telescope noticed that there was a lot more gamma-ray light coming from the center of the Milky Way than might otherwise be expected given the objects there. Since then, two theories have appeared to explain this Galactic Center Excess (GCE) as it's become known. One theory posits that the extra gamma rays are created by thousands of unseen milli-second pulsars (MSPs) in the Galactic center, while the other suggests that dark matter annihilating itself could also be the source. A new paper from Moortis Muru and hisco-authors at the Leibniz Institute for Astrophysics Potsdam (AIP) hasn't necessarily solved the conundrum, but does level the playing field between the two theories again.

MSPs are a type of neutron star that rotate thousands of times a second, spraying radiation along their path as they do so. They're useful for everything from astrophysical testing to space navigation, and in many cases are very easy to see. However, the "bulge" at the center of our galaxy is luminous enough to obscure their visible light, making them effectively invisible in the chaos of the galactic center. Theory would say that their gamma rays would make it out, though, and that, if there were sufficient numbers of MSPs in the center, they could be the source of the GCE.

Dark matter, on the other hand, is notoriously invisible no matter where it is. In the theory that explains the GCE, it is comprised of Weakly Interacting Massive Particles (WIMPs), which are drawn together in a cluster by the gravitational pull of the galactic center and then annihilate each other, creating the excess gamma-rays and other standard model particles in the process. It might seem surprising that dark matter can interact with itself, since it so rarely does so with all other types of matter, but our current understanding of it suggests that it can, and relatively frequently as well.

"Continued on page 8 "

Fraser discusses why its so hard to see the center of the Milky Way:
https://youtu.be/HcTMMKS-HZM

A key piece of data collected by Fermi during its original observational run seemed to point towards the MSPs rather than dark matter as the GCE source. It seemed the gamma rays weren't coming from a perfect sphere, as might be expected by dark matter being gravitationally drawn to a spherical center of the galaxy. Rather, it has a "boxy" look to it, with some sides more flat than spherical. This matched up well with models of where the MSPs were expected to be, but not so much with dark matter models.

Enter the new paper - the authors used a simulation suite called the High-Resolution Environment Simulations of The Immediate Area (HESTIA) to model what happened during the formation of the Milky Way. They created a "digital twin" of the galaxy, and watched it form by interacting with, and sometimes absorbing, other nearby galaxies. As a result, their modeled Milky Way doesn't have dark matter collected in its center in a spherical shape - it looks "boxy", just like the pattern expected of the GCE. When they modeled what the gamma rays emitted from annihilation events with that shape, they found it matched the data about as well as the models using MSPs did.

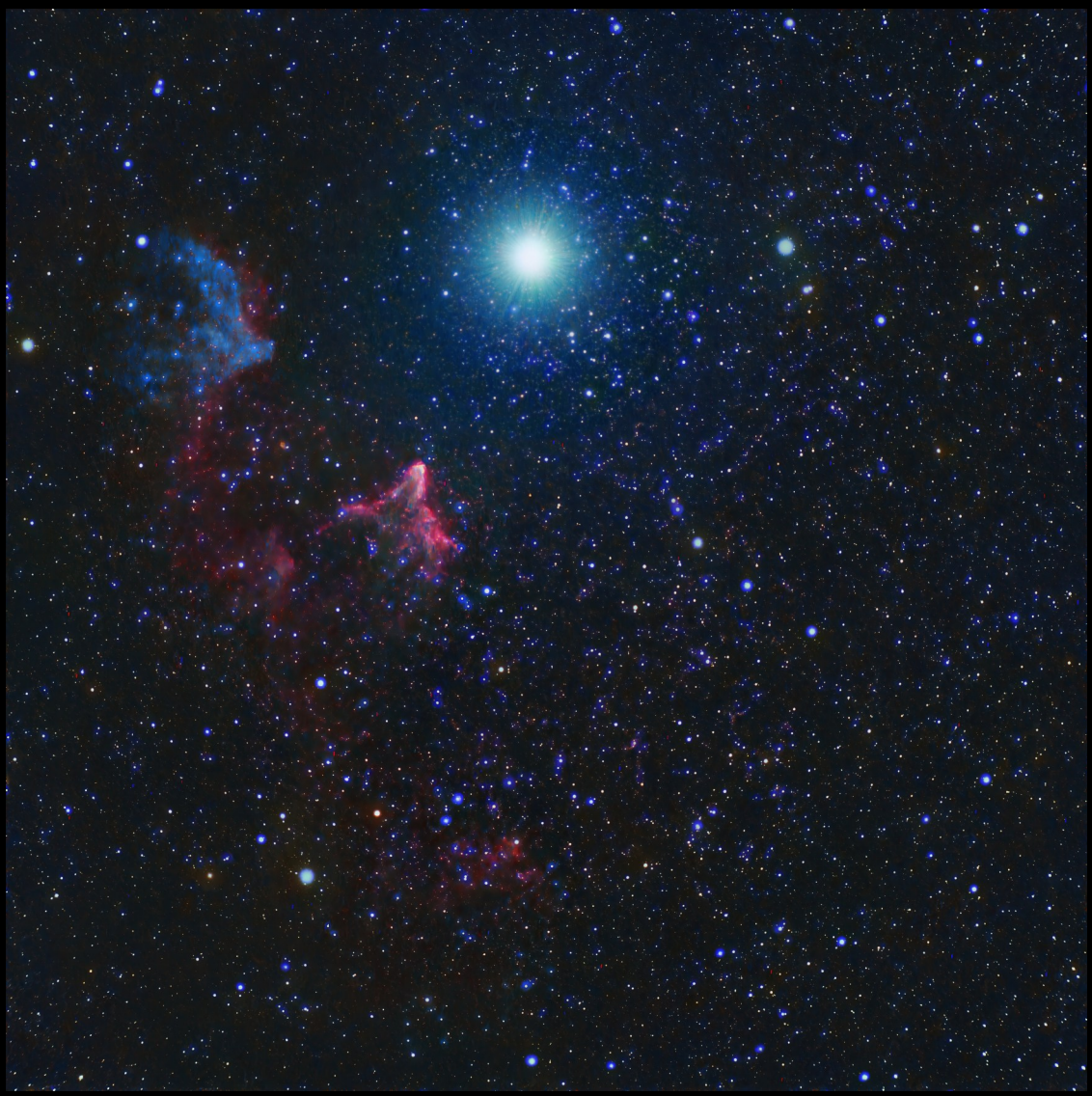
What this means, of course, is that more data is needed. The paper can't definitively say which model is more accurate - it was describing a simulation that simply shows it is possible to match the GCE data with gamma rays from annihilating dark matter. But to truly differentiate between the two theories, astrophysicists will need more data. They hope to receive it when the Cherenkov Telescope Array (CTA) comes fully online in 2028. Models are only as good as the data they're based on, and the scientists will just have to wait for that better data - for now at least.

Astro-Imaging with a SmartEye

Submitted by Paul Kursewicz

Ghost of Cassiopeia (IC 63)

Skywatcher Evostar 72ED 2.8-inch Apo Refractor
IR-cut Filter, 476subs, 20sec, 350 Gain, 10-18-25
Fit Files stacked in Deep Sky Stacker — Total time: 2hr 38min 40sec
Photo Editing Software Used: PixInsight, Photoshop, Siril, AstroSurface



The **Ghost of Cassiopeia** is a nebula located about 550 ly away in the constellation Cassiopeia. It is shaped by radiation from the nearby star Gamma Cassiopeia, which is eroding the cloud of dust and gas that forms the nebula. IC 63 is both an emission and a reflection nebula, with its red color indicating hydrogen alpha emissions and blue/grey hues reflecting light from the bright star. This emission nebula is often noted for its ethereal appearance, resembling ghostly apparitions.

"Continued on page 10"

Astro-Imaging with a Dwarf3

Submitted by Paul Kursewicz

Lobster Claw Nebula (Sh-2-157)

Dwarf PNG file combined with FIT Files
Fit Files Stacked in Deep Sky Stacker
Photo Editing Software Used: PixInsight, Photoshop, Siril, AstroSurface
Total Exposure Time: 2hr 3min

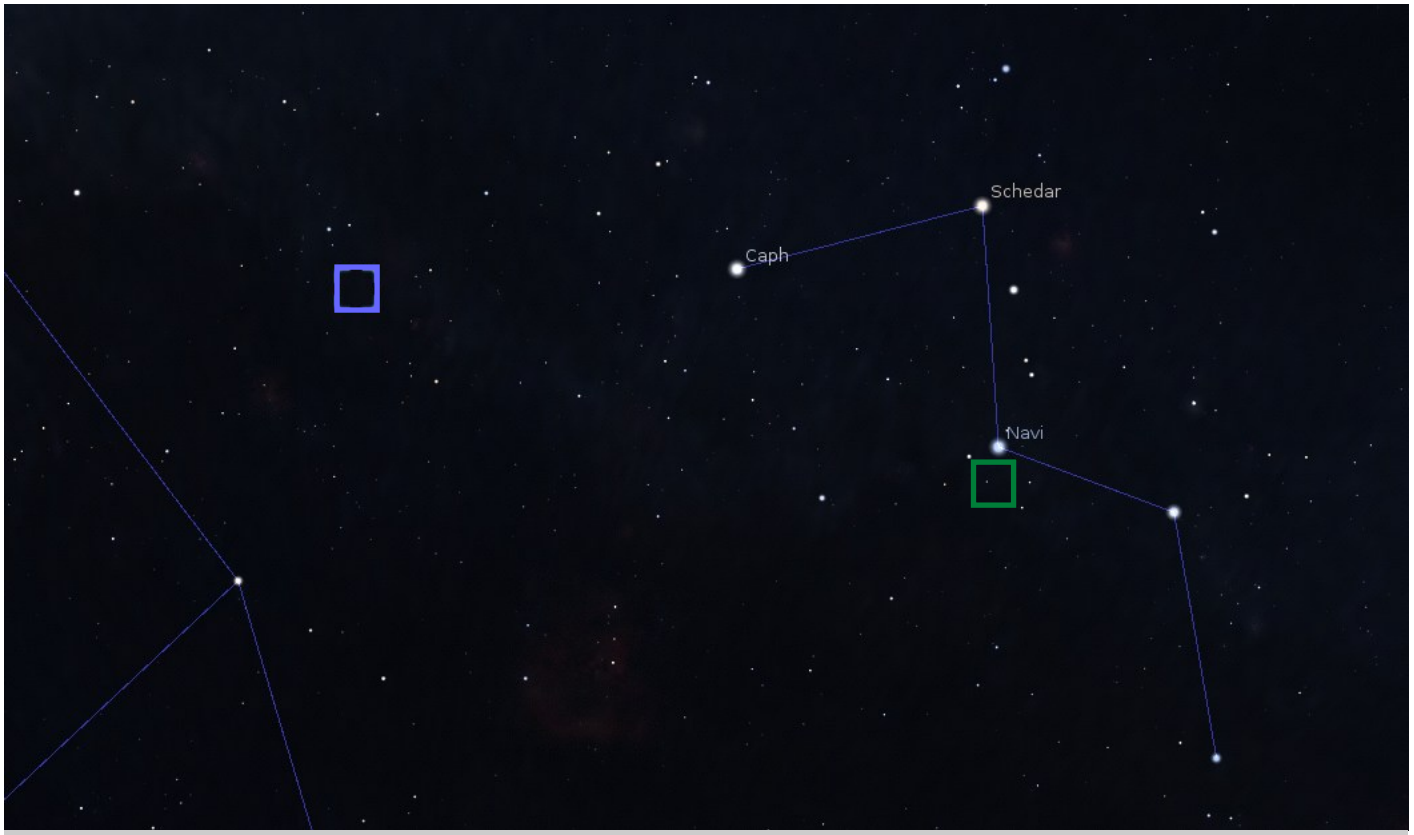
60sec, 60gain, 123subs, Duo-Band Filter 10-24-25

The **Lobster Claw** is very faint, too faint for my SX50 camera to capture it. It's an emission nebula located about 11,000 ly away in the constellation Cassiopeia (not too far away from the Bubble Nebula). Its shape is formed by a region of ionized hydrogen and being illuminated by nearby stars. It's difficult to see through a scope, most people view it through long exposure astrophotography. The small open cluster of stars located in the upper right of the claw is NGC 7510, which is also known as the Arrow Cluster and the Little Jewel Box.

"Continued on page 11

Locating the Ghost of Cassiopeia & Lobster Claw

Screen shot taken with Stellarium



The Ghost of Cassiopeia (not to be confused with the Ghost Nebula in Cepheus) is located within the green square just below the mid point star (Navi) in the constellation Cassiopeia. The Lobster Claw is also located in Cassiopeia but lies in a remote location within the violet square.

"Continued on page 12"

Point and Shoot Camera Astro-Imaging

Canon PowerShot SX50 HS

Submitted By Paul Kursewicz

Night-Scape Scene

RAW Mode, FL 100mm, f/3.5, ISO 1600, Single Image 30sec, 11-18-25

Had the camera mounted piggy-back on my telescope which was tracking. Took the photo at 7:23pm and aimed the camera at the constellation Camelopardalis. Kemble's Cascade (an asterism of a waterfall of stars) can just be seen behind the center grouping of trees.

"Continued on page 13"

Astro-Imaging with a Cell Phone

Submitted by Paul Kursewicz

Northern Lights

On November 12th my sky was all clouds. Around 11:04 pm I started to see stars peeking through the clouds. So, I took this picture with my cell phone and captured the Northern Lights peeking through the almost clear openings in the clouds. Soon after everything got socked in again.

"Continued on page 14"

Club/Public Star Party

Submitted by Paul Kursewicz

Saturn

Taken with my Canon PowerShot SX620 HS (pocket size camera).
Pointed the camera into the eyepiece of the club's Zeiss refractor.

On November 22nd we had the observatory open for club members and guest. We looked at Saturn through the club's 8-inch refractor. On this night Saturn's rings were as thin as they get. If we had looked at Saturn on the following night we probably wouldn't of seen its ring, it would of temporarily disappeared. Why? Because of a phenonium called a *ring-plane-crossing,* where Earth crosses Saturn's ring plane about every 13-15 years. The ring is so thin that during a ring-plane-crossing there is not enough light to reflect off them. We also saw a Starlink satellite train appear overhead. And, I got to see a *Bolide* meteor in the southern sky. It was huge and extremely bright. I mentioned it to Dave when he arrived. He asked, when did I see it? I told him about an hour ago. Dave replied, that was when he saw a bright flash out the window.

Club Meeting & Star Party Dates

Date	Subject	Location
Dec 5	**Christmas/Holiday/Party & Club Meeting** **Pot Luck Supper 7:00 PM** **Bring your Favorite Dish - Salad - Desert - or Drink.** **Club Meeting 7:30 PM** Dave will have a Power Point presentation running show-casing some club members photos. **Bernie Reim** - What's UP **Astro Shorts:** (news, stories, jokes, reports, questions, photos, observations etc.)	**The New School, Kennebunk, Me.**
Last Month	**Last month we met at The New School. We did not have a guest speaker. There was a business meeting before the club meeting started. Astro shorts were given as well as Bernie's What's Up.**	
Dec 19	**Club/Public Star Party: Weather permitting. Rain date Dec 20.**	**Talmage Observatory at Starfield West Kennebunk, Me.**

Directions to ASNNE event locations

Directions to The New School in Kennebunck [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

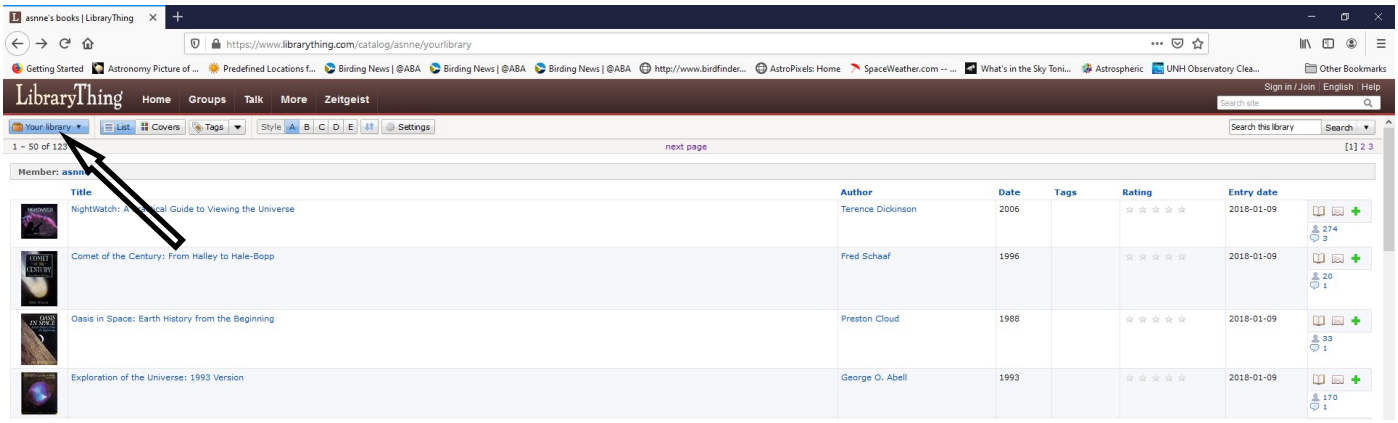
Directions to Talmage Observatory at Starfield [Alewive Road, Kennebunk, ME]

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.

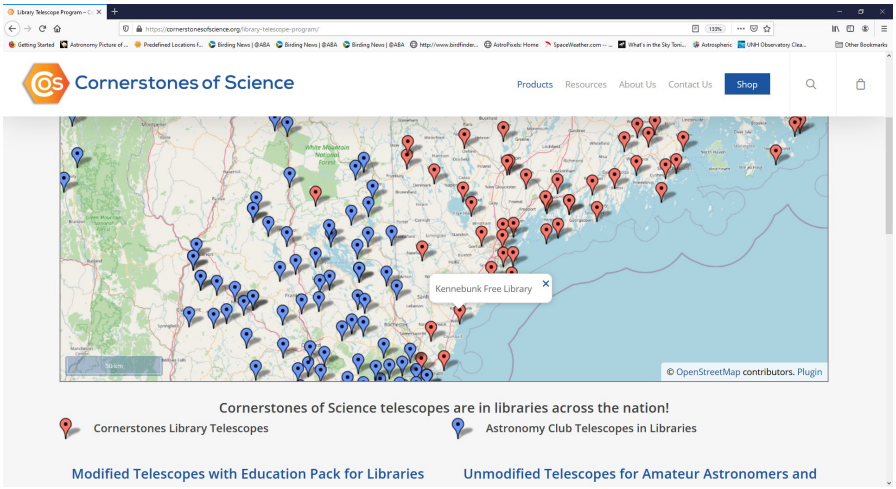
Astronomy Club & Library Resources

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/asnne . 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 201
Kennebunk, ME 04043-1338

2026 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_____