Skylights

Newsletter of the Astronomical Society of Northern New England

NOV 2017

Member of NASA's

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.

NOTICE: Club Dues are Due (pg 5)

What's Up In November

By Bernie Reim

We are half way into fall now at the beginning of this month. Our beautiful fall foliage is starting to fade out as this is a transition month towards winter. The sky above is also transitioning now as the Winter Hexagon is appearing four minutes earlier each evening in the east and the Summer Triangle is sinking lower into the west. The earlier that Orion rises out of the ocean in the evening, the closer we are getting to winter. This month Orion will only be half way up by 10 pm to start the month, but it will be completely above the horizon along with the brightest star in our sky, Sirius in Canis Major, at the same time by the end of this month.

There are several interesting highlights this month as there are every month. Some are just more interesting than others. There will be two close planetary conjunctions, an extremely spectacular one and a less spectacular one, another comet in Orion, an asteroid in Aries the Ram, another occultation of Aldebaran by the moon, and a good meteor shower, the Leonids on the 17th.

Venus has been our morning planet for most of this year and it is sinking lower into the morning sky as it gets closer to superior conjunction with the sun when it will be fully illuminated but at its smallest and faintest. After that it will reappear in our evening sky once again. Last month Venus had a dance with Mars as they switched positions. Now Mars continues to climb higher as Venus sinks lower.

This month Jupiter will join Venus in a stunning conjunction in the morning sky just half an hour before sunrise. As you recall, Jupiter was an evening planet for most of this year. Now it is reappearing in our morning sky in a most spectacular fashion. This will be the best planetary conjunction for the entire year of 2017.

They will be closest together on Monday morning the 13th. They will both rise about one hour before the sun and will climb to 5 degrees high half an hour later. Venus will be just to the left of Jupiter and about 8 times brighter. Even though Venus is much closer, it is three times smaller than Jupiter in our sky. They will be so close together that you can see both of our two brightest planets in the same field of view in a telescope for several mornings this month.

Then keep watching as a slender waning crescent moon joins the pair on the morning of Thursday the 16th. The moon will pass within just 6 degrees of Jupiter, which will be 3 degrees above Venus by this morning. Try to get some pictures of this great conjunction, the best one of the whole year. This marks a spectacular way for Venus to exit our morning sky. It will be consumed by the sun's glare by the end of this month.

The other conjunction is not nearly as dramatic, but still well worth looking for and trying to photograph. Saturn was the lone evening planet for over a month now that we lost Jupiter in the evening sky a while ago, but now it will get some company in the form

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Inside This Issue

Club Contacts

Officers:

President:
Ron Burk
rdavidburk@yahoo.com

Vice President:
Joan Chamberlin
starladyjoan@yahoo.com

Secretary:
Carl Gurtman
carlgurt@msn.com

Treasurer:
Ian Durham
idurham@anselm.edu

Board of Directors:

Gary Asperschlager
gasperschlager@gmail.com

Larry Burkett
larrybu32@yahoo.com

Star Party Co-ordinator:

TBD

Skylights Editor:

Paul Kursewicz
pkursewicz@myfairpoint.net

Website Manager:

Nan Musgrave
mzgrvz@outlook.com

NASA Night Sky Network Co-ordinator:

Joan Chamberlin
starladyjoan@yahoo.com

JPL Solar System Ambassador:

Joan Chamberlin
starladyjoan@yahoo.com

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

of the planet Mercury. Of course, keep in mind that all of these planets and the moon are always there orbiting the sun exactly the way that mathematics and gravitational laws predict, but due to our continually changing perspectives on a rotating and revolving sphere zipping through space around the sun at 18.6 miles per second, exactly 10,000 times slower than the speed of light, they appear to get closer at different times and even cover each other up at other times.

Our first planet will reemerge into our evening sky by the middle of this month. If you look low in the southwestern sky about half an hour after sunset on the 23rd, you will see Mercury just 5 degrees below Saturn. Mercury will be about twice as bright as Saturn, even though it is about 25 times smaller if you could place them right next to each other. Notice that both of these planets will then sink lower in our western sky. Saturn will be out of sight by early December and Mercury just keeps switching from an evening planet to a morning planet every few weeks because it is so close to the sun, never getting more than 27 degrees away from it. Then keep watching the pair as a very thin waxing crescent moon joins them on the 19th and the 20th.

Comet PanSTARRS will pass through Orion between its belt and its shield all this month. You will need at least a small telescope to see this comet, since it will only glow at 10 or 11th magnitude, or 100 times fainter than what you could see without any optical aid. This comet was found a couple years ago with the panoramic survey and rapid response system telescope located on the summit of Haleakala in Maui, Hawaii. This comet began its journey to our neighborhood over 30,000 years ago from the Oort cloud, a full light year away and 1,000 times farther away than Pluto. It is only one of many comets discovered by this telescope.

An asteroid named 7 Iris will reach its opposition at about 7th magnitude in Aries the Ram this month. You could see it in a pair of binoculars. It is about 100 miles in diameter, but it is the 5th brightest of all the asteroids in the belt between Mars and Jupiter.

The Leonid meteor shower will peak on Friday morning the 17th at around 3 am. Caused by Comet Temple-Tuttle, you can only expect about 10 to 15 meteors per hour this year, even though there is no moon to interfere. They will smash into our upper atmosphere at 44 miles per second, the fastest of all of our showers, which will produce more fireballs than any of the other showers. The last really tremendous outburst from this shower occurred November 18 of 2001. I saw nearly 1,000 meteors per hour for several hours on that unforgettable morning. I also saw the zodiacal light before twilight that morning. That is a faint cone or pyramid of light extending above the southern horizon caused by all the tiny dust particles trapped in a torus along the ecliptic plane of the solar system. Look for that this month before sunrise.

Nov. 3. Sputnik 2 was launched on this day in 1957. It carried the first creature into space, a dog named Laika.

Nov. 4. Full moon is at 1:23 a.m. EDT. This is also called the Frosty or Beaver Moon.

Nov. 5. The moon will occult Aldebaran again tonight. Standard time starts this morning.

Nov. 6. On this day in 1572 Tycho Brahe discovered a supernova in Cassiopeia before there were any telescopes.

Nov. 8. Edmund Halley was born on this day in 1656. I first saw his comet on this day in 1985.

Nov. 9. Carl Sagan was born on this day in 1934.

Nov. 10 Last quarter moon is at 3:36 p.m. EST.

Nov. 11. The moon will pass just north of Regulus in Leo tonight. That is where the sun was in August when it was being eclipsed by the moon.

Nov. 13. Venus passes very close to Jupiter this morning.

Nov. 16. A waning crescent moon passes near Jupiter and Venus this morning.

Nov. 17. The Leonid meteor shower peaks this morning in Leo the Lion.

Nov.18 New moon is at 6:42 a.m.

Nov. 20. The moon passes near Saturn this evening. Edwin Hubble, for whom the Hubble Space e telescope is named, was born on this day in 1889.

Nov. 26. First quarter moon is at 12:03 p.m. EST.

Nov. 27. Mars passes just north of Spica in Virgo this morning.

Nov. 28. Mercury passes just south of Saturn tonight.

Moon Phases

Nov 4
Full

Nov 10
Last Quarter

Nov 18
New

Nov 26
First Quarter

Moon Data

Nov 2
Uranus 4° north of Moon

Nov 5
Moon at perigee

Aldebaran 0.8° south of Moon

Nov 14
Mars 3° south of Moon

Nov 16
Jupiter 4° south of Moon

Nov 17
Venus 4° south of Moon

Nov 20
Saturn 3° south of Moon

Nov 21
Moon at apogee

Nov 26
Neptune 1.2° north of Moon

Submitted by Paul Kursewicz

Las Vegas Astronomical Society
www.lvastronomy.org

Sky Object of the Month – November 2017

(Courtesy LVAS Observer's Challenge*)

Messier 31 (Spiral Galaxy) in Andromeda (Mag. 3.4; Diam. 178x63')

NGC-206 Bright Star Cloud in M31 (Mag. +12.8; Diam. 1.8'x36")

I thought I would use NGC-206, a bright star cloud in Andromeda, for this months Observer's Challenge. And utilize some pictures taken by ASNNE members.

The November 2016 LVAS webpage says that: "NGC-206 is the brightest patch, or lump in the great Andromeda Galaxy, M31. It's located in one of the spiral arms of the galaxy. It contains over 300 stars bright enough to be detected with earth-based telescopes, the brighter ones through larger amateur instruments, and was actually mistaken for a star cluster by Edwin Hubble back in the day. It was identified as a separate object by William Herschel and given the designation H-036-5. The region contains several H-II regions and lies approximately 2.2 million light-years away."

Roger Ivester (member of LVAS) said: "NGC-206 can be visually observed with a 10-inch reflector and I feel certain it can also be seen with an 8-incher, and probably a 6-inch."

To find NGC-206, first find the Andromeda Galaxy. Begin with the constellation Cassiopeia which has a distinct "W" shape. Use the right side of the "W" and project an arrow, which will point to a fuzzy spot; this is M31 (see the below picture). Page 4 shows NGC-206's location in M31.

Ron Burk (ASNNE)
Canon PowerShot SX50 HS

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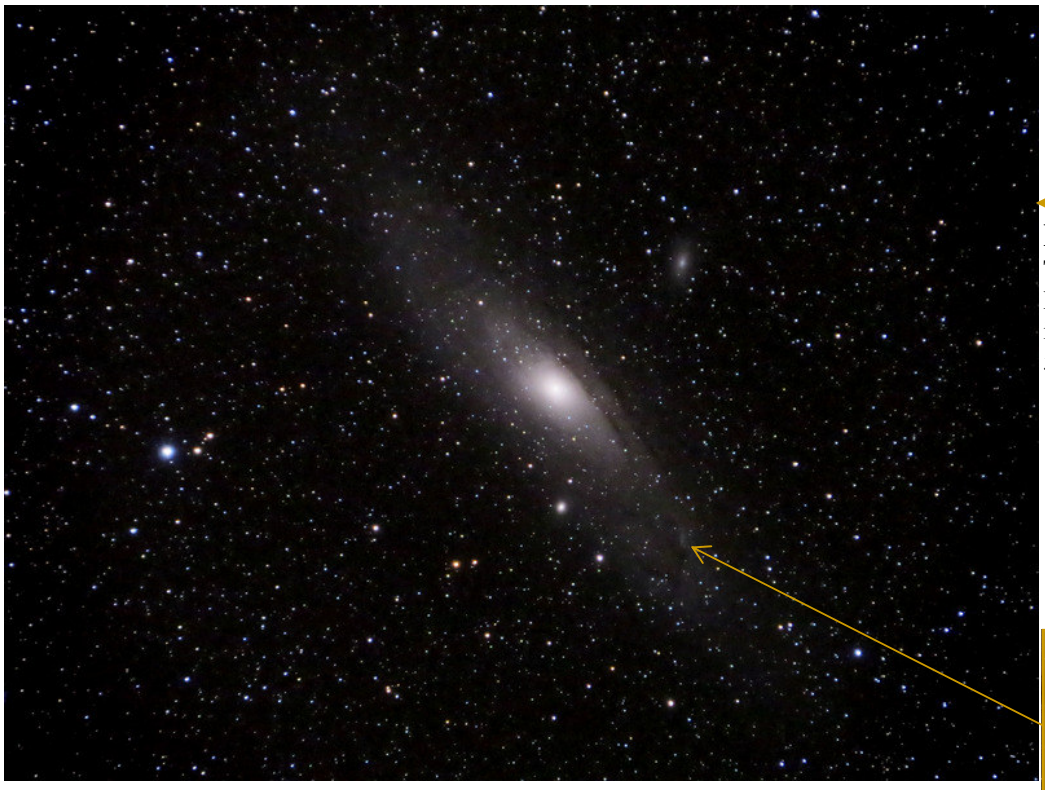
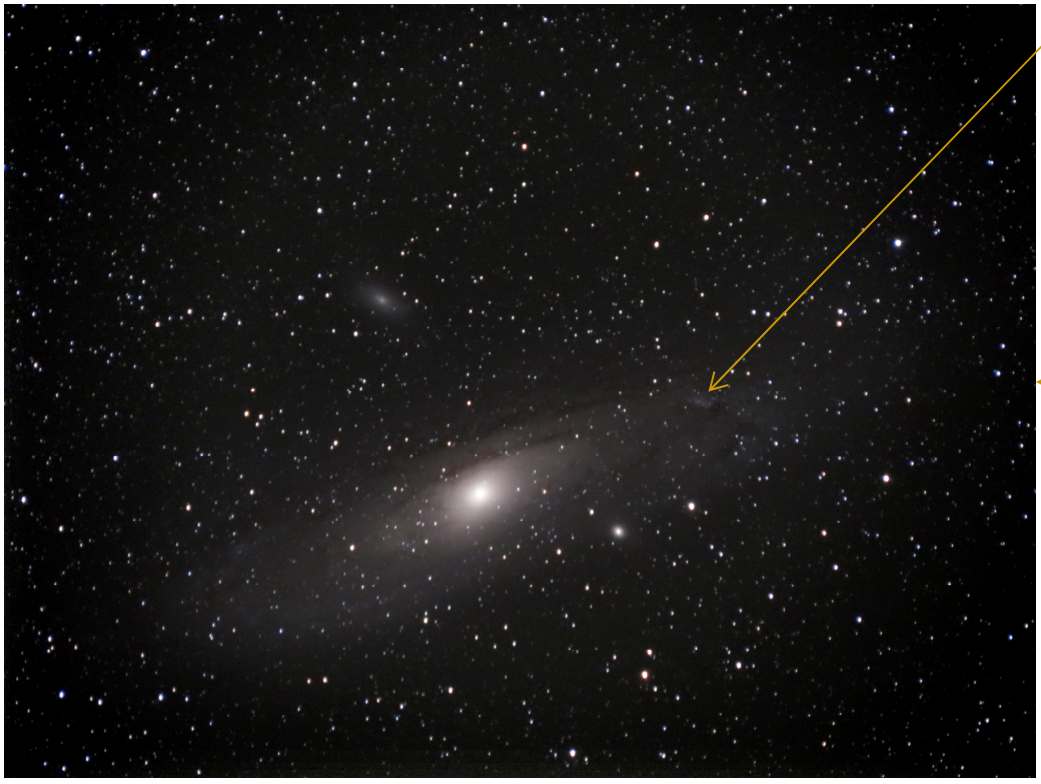


Peter Gillette (ASNNE)
Taken on 10/17 with a Canon PowerShot SX50 HS. 4 stacked images, 4min each, ISO 1250, 550mm focal length.

Close-up of Star Cloud

Dr. James Dire
LVAS Contributor



Paul Kursewicz (ASNNE)
Taken on 10-18-17 with a Canon PowerShot SX50 HS. 18 stacked images, 3min each, ISO 1200, 900mm focal length.

***The purpose of the LVAS Observer's Challenge is to encourage the pursuit of visual observing. It is open to everyone that is interested, and if you are able to contribute notes, drawings, or photographs, the LVAS will be happy to include them in our monthly summary. If you would like to contribute material, submit your observing notes, sketches, and/or images to either Roger Ivester (rogerivester@me.com) or Fred Rayworth (fred@fredrayworth.com). To find out more about the LVAS Observer's Challenge or access past reports, log on to lvastronomy.com/observing-challenge.**

Principal Meteor Showers in 2017

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

RED ALERT — Downward Pointing Lasers

NASA is planning to use (or is already using) downward pointing lasers which are mounted on their spacecrafts. For those of us who look at the night sky through a telescope, or a pair of binoculars, this is a potential hazard. If a laser beam enters our instrument at the very time we are viewing, eye injury or blindness could occur. Contact physicist, Dr. Jennifer Inman, jennifer.a.inman@nasa.gov and tell her your concerns about this perilous issue. Why should we have to live in fear each time we look into a telescope or a pair of binoculars? This is unacceptable!

The latest issue of the Space Place Newsletter: News and Notes for Formal and Informal Educators can be found at: http://spaceplace.nasa.gov/en/educators .

Space Place is a NASA website for elementary school-aged kids, their teachers, and their parents.

Check out our great sites for kids:

The Space Place website (http://spaceplace.nasa.gov)

The *SciJinks Weather Laboratory* at http://**scijinks.gov**

NASA Climate Kids at http://**climate.nasa.gov/kids**

MEMBERSHIP DUES

Membership fees are for the calendar year beginning in January and ending in December. Dues (see page 10 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 10.

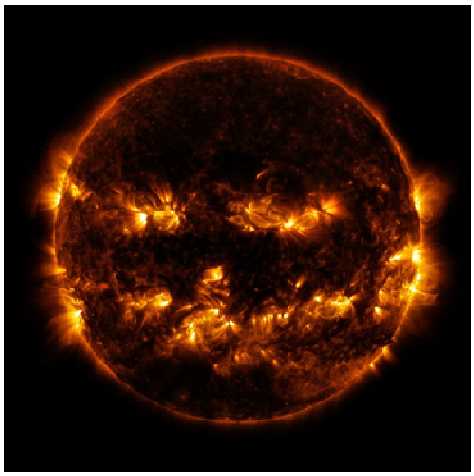
A Member who has not paid current dues by the January meeting will be dropped from membership, (essentially a two-month grace period.) Notice of this action shall be given to the Member by the Treasurer. Reinstatement shall be by payment of currently due dues.

This article is provided by NASA Space Place.
With articles, activities, crafts, games, and lesson plans, NASA Space Place encourages everyone to get excited about science and technology. Visit **spaceplace.nasa.gov** to explore space and Earth science!

Spooky in Space: NASA Images for Halloween

By Linda Hermans-Killiam

Have you ever seen a cloud that looks sort of like a rabbit? Or maybe a rock formation that looks a bit like an elephant? Although you know that a cloud isn't *really* a giant rabbit in the sky, it's still fun to look for patterns in images from nature. Can you spot some familiar spooky sites in the space images below?



Credit: NASA/GSFC/SDO

This might look like the grinning face of a jack-o'-lantern, but it's actually a picture of our Sun! In this image, taken by NASA's Solar Dynamics Observatory, the glowing eyes, nose and mouth are some of the Sun's active regions. These regions give off lots of light and energy. This causes them to appear brighter against the rest of the Sun. Active regions are constantly changing locations on the Sun. On the day this image was captured, they just happened to look like a face!

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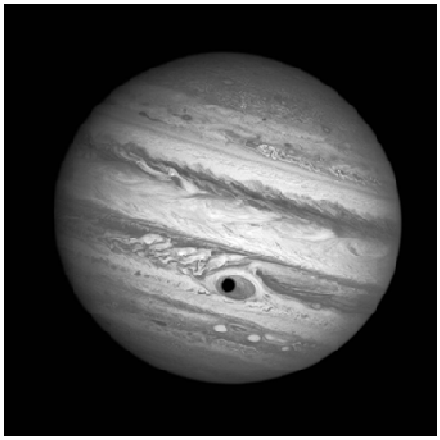
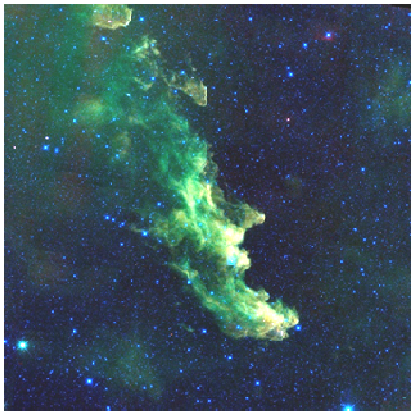


Credit: NASA/ESA/A. Simon (Goddard Space Flight Center)

This is a Hubble Space Telescope image of Jupiter. Do you notice something that looks like a big eye peeking back at you? That's actually the shadow of Jupiter's moon Ganymede as it passed in front of the planet's Great Red Spot. Jupiter's Great Red Spot is a gigantic, oval shaped storm that is larger than Earth and is shrinking. It has been on Jupiter for several hundred years, and its winds can swirl up to 400 miles per hour!



Credit: NASA/JPL-Caltech

Can you see the profile of a witch in this image? This image, from NASA's Wide-Field Infrared Survey Explorer, shows the Witch Head nebula. The nebula is made up of clouds of dust heated by starlight. These dust clouds are where new stars are born. Here, the dust clouds happen to be in the shape of an open mouth, long nose and pointy chin.

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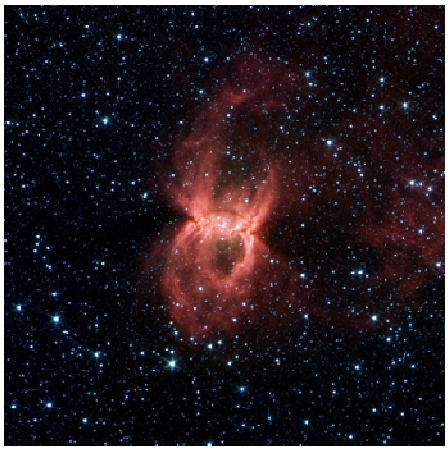

Credit: NASA/JPL-Caltech/Univ. of Wisc.

The Black Widow Nebula looks like a giant spider in space. It is a huge cloud of gas and dust containing massive young stars. Radiation and winds from these stars push the dust and gas around, creating a spider-like shape. This image is from NASA's Spitzer Space Telescope.

Credit: NASA/JPL-CALTECH/MSSS

Did a skeleton lose one of its leg bones on Mars? Nope! It's just an image of a Martian rock. NASA's Curiosity rover captured this image. The rock was probably shaped to look this way over time by wind or water. If life ever existed on Mars, scientists expect that it would be small organisms called microbes. So, it isn't likely that we'll ever find a large fossil on Mars!

To learn some fun planet facts and make a planet mask, check out NASA Space Place: https://spaceplace.nasa.gov/planet-masks

Club Meeting & Star Party Dates

Date	Subject	Location
Nov 3	**ASNNE Club Meeting** **Beginner Class: 6:30PM - 7:15PM** Starlady **Joan Chamberlin** conducts a beginners class in astronomy. All are welcome. **Club Meeting 7:30PM - 9:30PM** Regular meeting - Please join us for a visit to our cosmos as we share our interests and learn more about our Planets our Solar system our Galaxy and our Universe. **Guest Speaker/Topic:** TBD **Bernie Reim** - What's UP Astro Shorts - (news, stories, jokes, reports, questions, photos, observations etc.)	The New School, Kennebunk, Me.
Nov 24	Club/Public Star Party (*Check List-serve / website for updates or cancellations*)	Starfield Observatory, 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 Starfield Observatory [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.

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

2018 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_____