

Skylights

Newsletter of the Astronomical Society of Northern New England



MAR 2019



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.

What's Up in March

By Bernie Reim

The month of March used to be the first month of the year as recently as 153 BCE. March is named for Mars, the Roman god of war, but it is also known as the guardian of agriculture. For us in the northern hemisphere March always marks the beginning of spring.

This year that will happen at 5:58 p.m. on Wednesday the 20th. This is a unique moment for everyone on Earth because on this day and only one other day, the fall equinox, are the only two days each year that the sun rises exactly due east and sets exactly due west. The days will also be 12 hours long within a few days of the spring and fall equinoxes for everyone on Earth, except for the North and South Poles.

This moment in time is farther defined by the sun on the ecliptic crossing over the celestial equator in an upward motion. Then the days continue to get longer until the summer solstice on June 21st, when they will already be starting to get shorter again every day for the next 6 months until the winter solstice rolls around one more time.

This winter hasn't been particularly harsh, but it is always nice to welcome spring back to Maine again. That will mean warmer and shorter nights to enjoy the late winter and early spring skies. The good meteor showers will not start until next month and no new comets have been discovered, thereby breaking our string of 5 or 6 good comets in recent months, but there will be 3 bright planets in the morning sky playing celestial tag with the moon, and you get a great chance to spot the elusive zodiacal light for several weeks this month without even having to get up early, even though it is well worth getting up early to catch this subtle light, which is what is required to see it in November well before sunrise.

There will be quite a celestial dance going on in the morning sky all this month. Now that Saturn has caught up with and passed Venus, notice that both Saturn and Jupiter will just continue to climb higher into our morning sky

and rise a little earlier each morning, even while Venus will sink a little lower and set a little earlier each morning. Mercury will make a short appearance very low in the morning sky towards the end of March.

Jupiter is the first planet to rise in the morning sky. That will happen by 2 am starting this month and by 1 am by the end of March. The king of the planets will cross the midnight threshold next month on its way to opposition by early June just before summer starts. Notice that it is also getting larger and brighter each morning in the process as we continue to catch up with it in the sky. Remember that we have the very successful Juno mission orbiting the planet every 53 days in a highly elliptical orbit to avoid its powerful radiation fields. Juno is about half way through its mission now, which should end sometime in 2021. Many great and unexpected pictures of Jupiter have been taken over the last couple of years, including some new pictures of volcanoes on Io. Look for the 4 largest Galilean moons of Jupiter's 79 moons with just a pair of binoculars.

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What's Up "Continued from page 1"

Then Saturn rises about 2 hours after Jupiter. Notice that Jupiter shines about 10 times brighter than Saturn and that it is located just to the right or west of Sagittarius, and that Saturn is just to the left, or east of the teapot asterism in Sagittarius the Archer. Jupiter is ever so slowly catching up with Saturn. They will finally catch up low in the evening sky in December of 2020. That is a fairly rare event because Jupiter takes 12 years to orbit the sun while Saturn takes 29 years, so they are seldom seen in the same constellation in our sky.

The moon will pass very close to Saturn twice this month. The slender waning crescent moon will be just above and to the right of Saturn on the first morning of this month. Then it will pass just above and to the right of Venus the very next morning. Then the last quarter moon will once again pass very close to Saturn on the mornings of the 28th and 29th.

The last morning planet to rise is also the brightest by far, Venus. It is another 6 times brighter than Jupiter, or about 60 times brighter than Saturn. Our sister planet rises about 2 hours before the sun to start the month, but it will rise only an hour before the sun by the end of the month as it slowly sinks into the morning twilight. We will not completely lose it in the morning sky until late July. Through a telescope you can tell that Venus is slowly getting more illuminated by the sun even as it is getting a little dimmer and farther away from Earth. It will be 81% full, similar to a waxing gibbous moon, by the end of March.

Mars will be the only evening planet for most of the month except when Mercury puts in a brief appearance during the first week of March. Mars continues to set around the same time each night, around 11pm. That will shift to midnight after Daylight Saving Time starts on the 10th. Notice that the red planet is getting a little fainter and smaller each night as we pull farther ahead of it in our orbits.

Mars is entering a very beautiful part of the sky in the Winter Hexagon now in Taurus. It will be passing just below the Pleiades star cluster when spring starts. The Pleiades, also called the 7 Sisters, are an open star cluster than contains about 500 young stars located about 400 light years away. Remember that Galileo first improved the telescope and used it for astronomy in 1609. That marked a huge leap for mankind, because we could

now actually see distant celestial objects as if they were right in front of us. That changed a lot of incorrect beliefs and really pushed our knowledge forward on many fronts. So the next time you look at this lovely star cluster, remember that the very photons entering your eyes in that instant left their source, this distinct and unique little star cluster, about the time that Galileo first turned the first telescope in human history up to the heavens to see what he and all humans could discover and learn about the true nature of our universe.

The zodiacal light is best seen only twice each year, about an hour after sunset in March in the western sky or about an hour before sunrise in the east in fall. That is because the angle of the ecliptic to the horizon is at its steepest those two times of each year.

The zodiacal light can take on many shapes, but it is usually seen as a faintly glowing pyramid or haystack of subtle light stretching upward along the ecliptic. It is usually much brighter and easier to see the farther south you go nearer the equator. I have only seen it 3 times in all my years of stargazing. It is created by sunlight bouncing off grains of dust and ice forming a torus in the ecliptic plane. These grains range from a micron up to a meter. They are the 4.6 billion year old primordial matter that is now leftover from the original dynamic and chaotic formation of the inner planets in our solar system.

March 1. Venus, Saturn, and Jupiter arc across the morning sky with the waning crescent moon for several mornings. The moon will actually occult Saturn in some places on Earth.

March 6. New moon is at 11:05 a.m. EST.

March 10. Daylight Saving Time starts at 2 am.

March 11. The moon will pass close to Mars tonight.

March 13. William Herschel discovered the planet Uranus on this day in 1781.

March 14. Albert Einstein was born on this day in 1879. He thought of General Relativity in 1915. First quarter moon is at 6:28 a.m. EDT.

March 16. Caroline Herschel was born on this day in 1750. She worked closely with her brother William and they were both accomplished musicians.

March 19. Margaret Harwood was born on this day in 1885. She was an American astronomer and the first director of the Maria Mitchell Observatory on Nantucket.

March 20. Full moon is at 9:44 p.m. This is also called the Worm, Sap, Lenten, or Crow Moon. Spring starts at 5:58 p.m. EDT.

March 28. Last quarter moon is at 12:11 a.m.

March 29. The moon passes close to Saturn again this morning.

Moon Phases**Mar 6**

New

Mar 14

First Quarter

Mar 20

Full

Mar 28

Last Quarter

Moon Data**Mar 1**Saturn 0.3° south
of MoonPluto 0.5° south of
Moon**Mar 2**Venus 1.2° north of
Moon**Mar 4**

Moon at apogee

Mar 9Uranus 5° north
of Moon**Mar 11**Mars 6° north
of Moon**Mar 19**

Moon at perigee

Mar 26Jupiter 1.9° south
of Moon

Sky Object of the Month – March 2019

Variable Star R Leonis

by Glenn Chaple

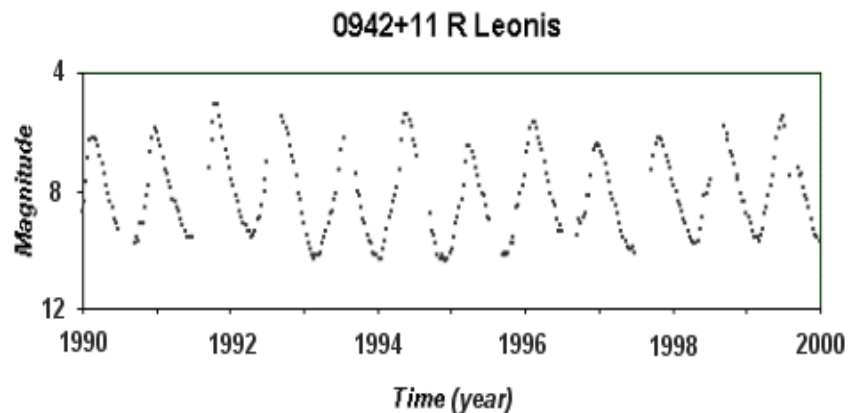
(Re-printed from March 2012)

On the evening of March 1, 1918, a young Ohio farm boy trained a small refracting telescope towards the variable star R Leonis. He estimated its brightness, later forwarding the information to the American Association of Variable Star Observers. It was the first of over 132,000 variable star observations the legendary Leslie Peltier would submit to the AAVSO.

Since Peltier's time, R Leo has introduced dozens of amateur astronomers to the rewarding pastime of variable star observing. R Leo is tailor-made for the novice for two reasons – it's easy to find and easy to observe. You'll find R Leo by directing your telescope slightly north of a spot one-third of the way from omicron (ο) Leonis to Regulus (the circled area on the accompanying map of Leo). An expanded view of that circle shows R Leonis and the magnitudes of nearby comparison stars, decimals omitted. R Leonis is bright enough (its average magnitude range is 5.8 to 10.0) to be seen in binoculars when near maximum and with a small-aperture telescope throughout its 312-day cycle.

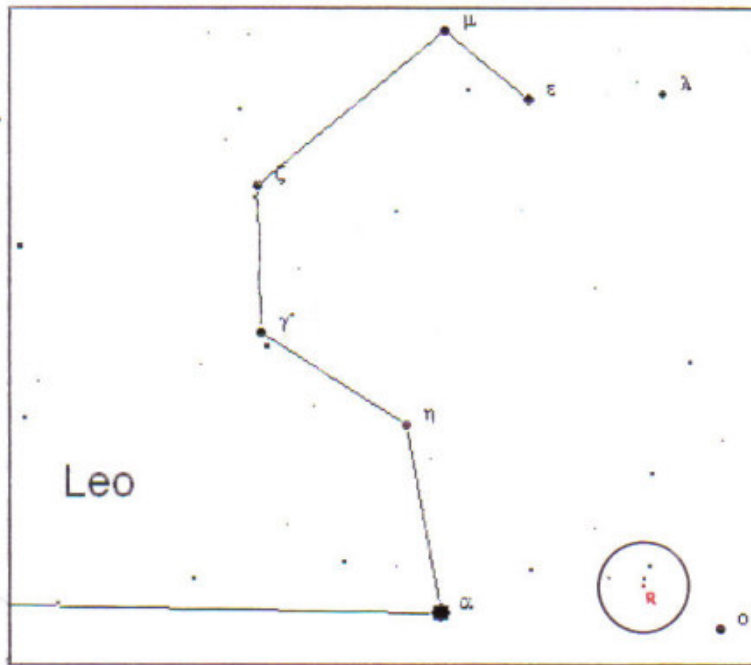
The magnitude range and period attributed to R Leonis are typical of a class of variable stars known as Mira-type, or Long-Period Variables (LPVs). Like its kindred LPVs, R Leonis is a cool red giant – a dying star whose brightness changes result from internal pulsations.

Based on recent observations, R Leonis has a magnitude in the mid-8 area and is rising to a predicted maximum later this month. The time is ripe for you to jump in and become acquainted with the variable star that launched Leslie Peltier's stellar career.



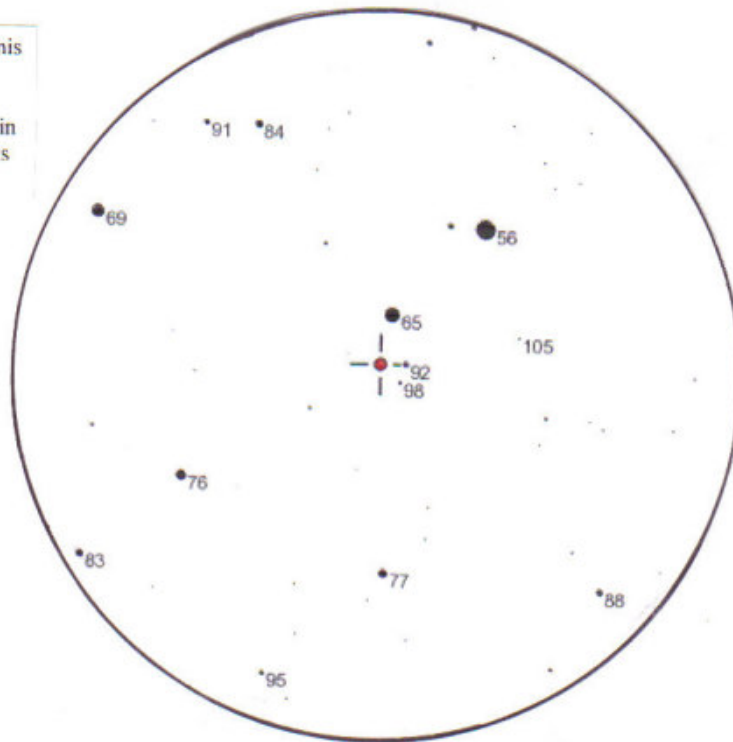
R Leonis over a ten-year period (courtesy AAVSO)

“Continued on page 4”



Above Finder chart for R Leonis
(From Cartes du Ciel)

Right Comparison stars within
one degree of R Leonis
(courtesy of AAVSO)



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

Principal Meteor Showers in 2019

January 4
Quadrantids

April 22
Lyrids

May 6
Eta Aquarids

July 30
Delta Aquarids

August 12
Perseids

October 9
Draconid

October 21
Orionids

November 9
Taurids

November 18
Leonids

November 26
Andromedids

December 14
Geminids

December 22
Ursids

Note: Dates are for maximum

Got any News? Skylights Welcomes Your Input.



Here are some suggestions:

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



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.

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!

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



**ALL money raised goes to our operating fund.
Any design can be put on any item.
Just let our club member, David Bianchi, know.**



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!

Springtime Planet Party

By David Prosper

March brings longer days for Northern Hemisphere observers, especially by the time of the equinox. Early risers are treated to the majority of the bright planets dancing in the morning skies, with the Moon passing between them at the beginning and end of the month.

The **vernal equinox** occurs on **March 20**, marking the official beginning of spring for the Northern Hemisphere. Our Sun shines equally on the Northern and Southern Hemispheres during the moment of equinox, which is why the March and September equinoxes are the only times of the year when the Earth's north and south poles are simultaneously lit by sunlight. Exacting astronomers will note that the length of day and night on the equinox are not *precisely* equal; the date when they are closest to equal depends on your latitude, and may occur a few days earlier or later than the equinox itself. One complicating factor is that the Sun isn't a point light source, but a disc. Its edge is refracted by our atmosphere as it rises and sets, which adds several minutes of light to every day. The Sun doesn't neatly wink on and off at sunrise and sunset like a light bulb, and so there isn't a perfect split of day and night on the equinox - but it's very close!

Ruddy **Mars** still shines in the west after sunset. Mars scoots across the early evening skies from Aries towards Taurus and meets the sparkling Pleiades star cluster by month's end.

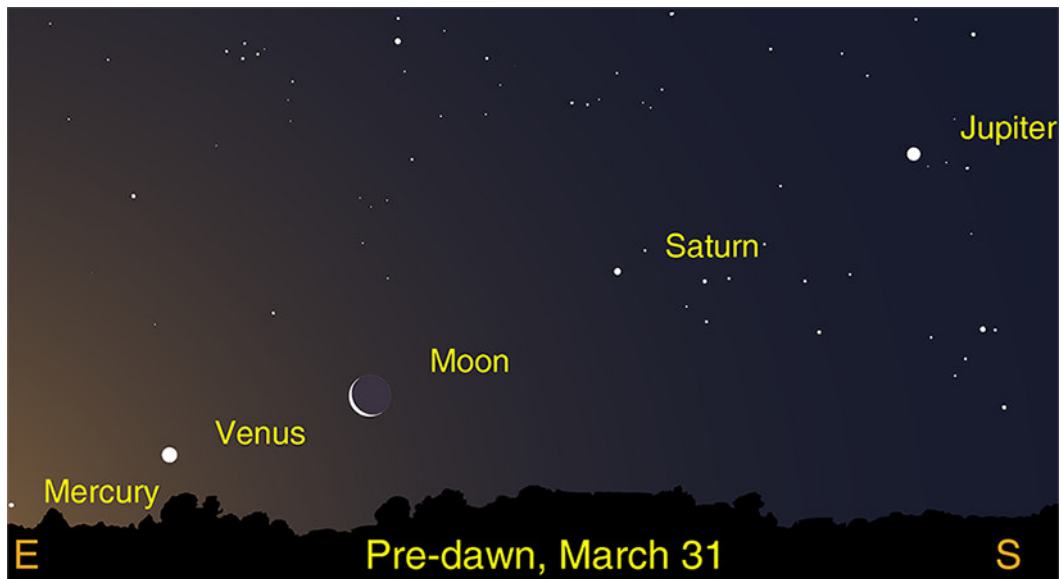
March opens with the morning planets of **Jupiter**, **Saturn**, and **Venus** spread out over the southeastern horizon before sunrise. A crescent **Moon** comes very close to Saturn on the 1st and occults the ringed planet during the daytime. Lucky observers may be able to spot **Mercury** by the end of the month. March 31 opens with a beautiful set of planets and a crescent Moon strung diagonally across the early morning sky. Start with bright Jupiter, almost due south shortly before dawn. Then slide down and east towards Saturn, prominent but not nearly as bright as Jupiter. Continue east to the Moon, and then towards the beacon that is Venus, its gleam piercing through the early morning light. End with a challenge: can you find elusive Mercury above the eastern horizon? Binoculars may be needed to spot the closest planet to the Sun as it will be low and obscured by dawn's encroaching glow. What a way to close out March!

Discover all of NASA's current and future missions at nasa.gov

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Caption: Earth from orbit on the March equinox, as viewed by EUMETSAT. Notice how the terminator – the line between day and night - touches both the north and south poles. Additional information can be found at <http://bit.ly/earthequinox> Image credit: NASA/Robert Simmon



Caption: The morning planets on March 31. Image created with assistance from Stellarium.

Point and Shoot Camera Astroimaging

Canon Powershot SX50 HS

Image & write-up submitted by Paul Kursewicz

Caroline's Rose (NGC 7789) Specs: RAW mode, FL 1200mm, 26 x 1 min, ISO 800, 11-10-18



Caroline's Rose is an open cluster in Cassiopeia. It was discovered by Caroline Herschel in 1783. Her brother William Herschel included it in his catalog as H VI.30. It lies about 8,000 ly away and is over 50 light-years across. The cluster spans about half a degree in the sky (the angular size of the moon). Caroline's Rose is also known as "The White Rose" because when seen visually, the loops of stars and dark lanes look like the swirling pattern of rose petals. Since Caroline's Rose lies inside the Milky Way and its *faint stars* are densely packed, an ordinary pair of binoculars will not be able to see the individual stars. For example, when I look at this cluster using my 12 x 36 IS binoculars, all that I can see is a dark brown nebulous patch in the sky that is somewhat circular in size. A much larger pair of binoculars or a telescope will be needed to see "The White Rose."

In Memoriam -- Peter Talmage

Long time club member *Peter Talmage* passed on the morning of February 8, 2019 from a sudden stroke.



Peter sitting on his trike at last years Starfest.
(Photo submitted by Sara Carter)

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Photo and write-ups submitted by Sara Carter

The info is from one of my "after the star party" emails.

After Gary asked for reassessment, Ron cleared the first of 2016 Tides Beach Club star parties.

The crew, Bern, Dana, Eric, Gary, Larry, Ron and I were getting set up when, **Peter Talmage** walked up from the ocean and into the Tides front yard. Shouts, Hugs, Tears and Laughter filled the space as we all marveled to witness PT's recovery.



A few notes from my files that still make me cry, Sara

To record: **Sunday morning, was cleaning up after Starfest when a car** drove up. The lanky guy with a braid told Ron, Bern, Peter G and me about The fall that sent Peter Talmage to the hospital in Rochester NY. Bike trip with family and friends. Stopped to star gaze after dinner. Fell over embankment 8 ft. severe head trauma. Med-evac to hospital induced coma after skull surgery to reduce pressure.

From Chris: Great day for PT. He opened his eyes and tracked. He also followed some simple commands. My sister Suzy and I are celebrating by drinking expensive mixed drinks and eating ice cream. Happy happy day. We will keep you posted. Lots of work to do. Chris

“Continued on page 11”

Remembering Peter Talmage submitted by Ron Burk

Laying in the grass on the newly gifted portion of Days Meadow, Peter hands me an O3 filter he had and says. 'hold that in front of one of your eyepieces of your binoculars and look at that east wing of Cygnus the Swan to find the Veil Nebulae. "No way!, you mean you can see the Veil with binoculars" I said. So I took it and held it in place and started to look. "Do you see it? he asks. No, I replied. "Ok, try this" he said. "First, make sure you can see that star that's out in front of the east wing. That's where one side of the Veil is.

"Now.... blink your eye that is not filtered", he instructs. At first all I see is black with perhaps the bright stars showing through the filter then...amazed... with every blink the wispy filaments of the Veil got brighter and brighter until I could make out both the East and West sides. Breathless

Just one of the many, wonderful "composite" images that Peter introduced to me and to countless others.

The story of Days Meadow and Starfield Observatory was inspired and directed by Peter, I will continue to share this love story every chance I get.

Pat Aichele's History of ASNNE is a wonderful tribute.

[About Us - Astronomical Society of Northern New England](#)

www.asnne.org

YORK COUNTY COAST STAR

ONLINE  EDITION



Peter Talmage of the Astronomical Society of Northern New England uses a hand drill to roll back the roof of the new Starfield Observatory located off Route 35. The facility will officially open Saturday.

York County Coast Star Staff Photo by Kevin A. Byron

Twinkle, twinkle ... many stars

"Continued on page 12"

Remembering Peter Talmage submitted by Paul Kursewicz

Reading Ron's write-up in reference to the Veil Nebula, I also have a story. A few of us were over Peter's house (also known then as East Sky Observatory) in Kennebunkport, Maine doing some stargazing. Peter had pulled out the club's 20-inch Dobsonian and centered the Veil Nebula in its field of view. Spectacular sight! I had my 10-inch Schmidt Cassergrain set-up also. I tried for about an hour to see the Veil through my scope. I finally had to give up and ask Peter to give it a try. In about a minute he had it centered in my scope. Peter knew his night sky very well.

I've known Peter since 1986 and will harbor many fond memories of him. Such as, experiencing two total solar eclipses with him (Hawaii and Aruba). Connecting at star parties, club meetings and events. Helping him with the construction of our observatory. Being involved in moving his barn 30 feet to give him a better viewing area of the night sky. Cutting down trees with him on a plot of land that he purchased up north with the intent of using it as a very dark sky site. Connecting at the annual Stellafane convention in Spring, Vermont. There is so much more.....



Peter waiting his turn to look through Brad's solar scope at last years Starfest.

Peter was also a good steward of the Earth. Below is a link that showcases his conservation efforts:
<https://www.nrcs.usda.gov/wps/portal/nrcs/detail/ma/newsroom/stories/?cid=stelprdb1143411>



Peter riding his ELF. He was all about going Green. I remember how amazed I was the very first time I walked into his house located in Kennebunkport, Maine. As I recall, almost everything ran on Green Technology (off the Grid). He was also an advocate for proper lighting and dark skies.

Club Meeting & Star Party Dates

Date	Subject	Location
<u>Last Month</u>	Bernie Reim did his What's UP. And Ian Durham gave a presentation of his top five physics stories of 2018.	<u>The New School, Kennebunk, Me.</u>
<u>Mar 1</u>	<p><u>ASNNE Club Meeting:</u></p> <p>Business Meeting 6:00 PM Regular Meeting 7:30-9:30 PM</p> <p>Guest speaker/topic - Our guest speaker will be UNH Professor Fabian Kislak. Professor Kislak's research focuses on the understanding of neutron stars, black holes, and supernova explosions, and to that end he develops new detector technologies for X-ray and gamma-ray polarization and spectroscopy. Dr. Kislak is just back from Antarctica, where he was a Co-Investigator of the hard X-ray polarimeter "X-Calibur". This X-ray telescope was flown on a long-duration balloon flight there. Professor Kislak's talk at ASNNE will be about the science of this project, as well as the fascinating details of launching the X-ray telescope in Antarctica.</p> <p>Bernie Reim - What's UP Astro Shorts: (news, stories, reports, questions, photos)</p>	<u>The New School, Kennebunk, Me.</u>
<u>Mar 1</u>	Club/Public Star Party: If skies are clear members may go to Starfield observatory for an observing session.	Starfield Observatory, 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 Starfield Observatory [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.

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

2019 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 _____

