

SKYLIGHTS

Newsletter of the Astronomical Society of Northern New England



MAY 2009



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 May

By Bernie Reim

May Day marks the half way point to summer from the vernal equinox. The tender new green leaves will be opening soon on earth as the sky continues to slowly shift above us revealing new constellations that promise warmer weather. The Big Dipper is now standing up a little higher each evening, unveiling more of the spring and summer sky below it the longer you stay out at night.

Follow the arc of the Dipper to Arcturus, one of the brightest stars in the sky, and then speed on to Spica in Virgo. Then continue your stellar journey by dipping below the ecliptic into the nearly square shaped group of stars called Corvus the Crow and on into another odd square of stars with a semicircle above it which is Crater the Cup. Both of these spring constellations are perched just above the longest constellation in the sky, Hydra the Sea Snake. This snake stretches all the way from below Libra, Virgo, and Leo, to Cancer the Crab.

Another sure sign of warmer weather is the emergence of the Summer Triangle before 10 pm over the eastern horizon. The first star to rise will be Vega in Lyra, made famous by Carl Sagan's movie "Contact". The next one up will be Deneb in the constellation of Cygnus the Swan, also known as the Northern Cross. This star is nearly the same brightness as Vega, but it is about 100 times farther away and 100,000 times as luminous as our own sun, making this blue super giant star one of the largest stars in our whole Milky Way galaxy of 200 billion stars. The last member of the Summer triangle to rise will be Altair in Aquila the eagle.

All five of the brightest planets can be seen this month, but not all at the same time. Mercury will fade out of our evening sky after the first few days of May. You can still spot our first planet one hour after sunset looking low in the North Western sky.

Mercury will be just to the left of the Pleiades star cluster in Taurus. Then Saturn becomes the only evening planet, nicely placed high in the Southwestern sky in Leo the Lion shortly after dark. It will end its retrograde or westward motion towards Regulus, the brightest star in Leo, on May 17th. Notice that Saturn glows with a soft golden light. Through a telescope you would see that its rings are now very narrow, only tilted open four degrees. They will disappear completely towards the end of summer. You can also see Titan, the second largest moon in our solar system at 3200 miles in diameter, and several of its other 63 moons.

That leaves Mars, Venus and Jupiter all visible in the morning sky. Look low in the eastern sky one hour before sunrise from May 20 to the 22nd to see a waning crescent moon glide along just above brilliant Venus and orange Mars. Venus is now 160 times brighter than Mars.

Jupiter is in Capricornus and starts May by rising at 3 am, but ends this month by rising at 1 am. The king of the planets continues to get

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a little larger and brighter in our sky as it approaches its August 14 opposition. Through a telescope you would notice that two of its 4 largest Galilean moons, Io and Callisto will both cast their shadows on the planet on May 17, the same day that Saturn ends its retrograde motion.

There will also be a nice meteor shower this month during the mornings of May 5 and 6. Called the Eta Aquarids, they are one of two annual meteor showers caused by that most famous of all comets, Halley's. The other one is called the Orionids, happening every October 21st. You can only expect about 10 meteors per hour from the Eta Aquarid shower. You will be seeing tiny pieces of dust and debris from Halley's Comet, smaller than a grain of sand and less dense, zipping into our upper atmosphere at 30 miles per second.

May 1. First quarter moon is at 4:44 p.m. EDT. On this day in 1996 Comet Hyakutake made its closest approach to the sun.

May 2. Venus is at its greatest illuminated extent today and it is also National Astronomy Day.

May 3. The waxing crescent moon will be between Regulus and Saturn this evening in Leo.

May 5. The Eta Aquarid meteor shower peaks this morning and the next.

May 7. This is National Space Day.

May 9. Full moon is at 12:01 a.m. This is also called the Flower, Corn Planting, or Milk Moon.

May 10. Antares in Scorpius will be near the moon tonight. A huge orange super giant star, Antares is 700 times the size of our sun and about 15 times its mass. It is located 600 light years away, but if you could place it were our sun is, the surface of Antares would extend all the way out between the orbits of Mars and Jupiter. Like Deneb, Antares is one of the largest stars in our entire galaxy. Its name means "rival of Mars" because of its orange color and similar brightness to Mars.

May 11. SMS-1, the first geostationary weather satellite was launched on this day in 1974.

May 13. The moon is at apogee, or farthest from the earth today.

May 14. Skylab, our first space station before the current ISS, was launched on this day in 1973.

May 17. Last quarter moon is at 3:26 a.m. Jupiter and Neptune will be just 3 degrees south of the moon tonight. The shadows of Io and Callisto cross over Jupiter tonight and Saturn ends its retrograde motion.

May 21. Venus and Mars are 7 degrees below the moon this morning.

May 24. New moon is at 8:11 a.m.

May 25. On this day in 2008 the Phoenix mission landed on Mars near its North Pole and discovered water ice just below the surface along with many other exciting discoveries.

May 26 and 27. The picturesque waxing crescent moon will be traveling through Gemini and its bright stars, Castor and Pollux these two evenings one hour after sunset. According to mythology, Castor is the mortal twin and Pollux is the immortal twin.

May 29. On this day in 1919, during a total solar eclipse over Africa and South America, Einstein's 1915 General Theory of Relativity was given its first conclusive test. Based on the curvature of the 4th dimensional space-time continuum, it predicted the exact amount that the light from a star behind our eclipsed sun would be bent or curved. Einstein also proved that the speed of light, which is 186,000 miles per second, or over 7 times around the earth in one second, is the speed limit of the universe. However, you don't need to travel faster than that, because as you approach that speed time itself slows down and mass increases. Photons, which have no rest mass, always travel at the speed of light. Einstein also showed that gravity itself, which is the weakest of the four fundamental forces in the universe, but the most all-pervasive, is simply the curvature or topography of the space-time continuum.

May 30. First quarter moon is at 11:22 pm.

May 31. Saturn is 6 degrees north of the moon tonight.

Moon Phases

May 1
First Quarter

May 9
Full

May 17
Last Quarter

May 24
New

Moon Data

May 4
Saturn 6° north
of Moon

May 10
Antares 0.6° south
of Moon

May 13
Moon at apogee

May 17
Jupiter 3° south
of Moon

Neptune 3° south
of Moon

May 19
Uranus 5° south
of Moon

May 21
Venus 7° south
of Moon

Mars 7° south
of Moon

May 26
Moon at perigee

"As I believe that my mind is too small to reconcile everything that happened that night, I won't even begin to try."...from the memoir of James Napolitano

On a September night in 1994, James Napolitano made a change in flight plans that kept him from dying. US Air's flight 427 from Chicago to Pittsburgh crashed that night with the loss of all 132 passengers and crew. What had started as a routine business trip became an experience that was to resonate through the rest of Napolitano's life.

James Napolitano died in 2004. The following contains quotes from Napolitano's memoir of that night.:

"I always choose a window seat when I fly, just so I can look at something besides a magazine. At 15,000 feet, I looked out the window. It was difficult to see due to the cabin lights and just as difficult to concentrate because of the noisy kids behind me. However, being a determined recreational astronomer, I pressed against the window with my hands cupped around my face, and glanced out periodically. When we reached 35,000 feet, I looked out and was astounded by what I saw. There was Sagittarius in all its glory and the Scorpion to the West gently lying on its side! Their stars sparkled like diamonds against a black backdrop of perfectly smooth velvet! Both constellations were well above the horizon due to our altitude, and presented a view that I could never have imagined being an observer from Pittsburg. The vision will be forever etched in my mind!"

However, when Napolitano reached the Pittsburg airport, the normal bustle and crowds were missing. Disquieted he hurried to his car. "I had a strange feeling because I knew something wasn't right." Napolitano remembers. When he got to his car he tuned the radio to a local news station. It was then he learned that the jet he would normally have flown had crashed.

"I'm not sure there is a moral to this story. I only know that in one evening I managed to observe the unparalleled majesty of a small patch of the Universe, but also managed to witness a tragedy of epic proportions. I will prob-

ably never know why that plane crashed or why I was spared my participation in it. And I believe that none of us will ever know why the Universe "is" as it is. Therefore, I must defer to a higher power, and accept the beauty and splendor of this life, as well as the tragedies; accept the balance of nature that affects us here on Earth and that extends to the farthest reaches of the Universe."

Understanding her father's appreciation of astronomy, Angel Napolitano donated his library of books on the subject to the Astronomical Society of Northern New England (ASNNE). "It was simply the right thing to do!" she acknowledged in an interview.

With deep appreciation for the man, and his daughter's generosity, ASNNE accepts the posthumous donation of 75 astronomy books from the library of Stargazer, James Napolitano.

- - Submitted By Sara Carter



Editor: Some of our club members cataloguing the donated books at the April club meeting.

Principal Meteor Showers in 2009

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

I had the most fantastic time in Flagstaff. Paul Howell is such a sweetheart to have invited me to go with him on his observing run. I learned all about his research and actually got to help him take data. I also learned to open and close the dome, put liquid nitrogen into the tank for the instrument that does the imaging and spectroscopy, run the telescope, and put all the information into the various computers for the imaging and putting in the right slits. It was real science and so much fun. Staying up all night was a little tough the first couple of nights, but by the 3rd night I had adjusted to a night time schedule. We also took a couple of short trips during the day - Meteor Crater and Walnut Canyon National Monument. The Walnut Canyon trip was a hike into the canyon to see the cliff dwellings of the Hopi Indians. It was beautiful, peaceful, and spiritual. I felt like a real astronomer on this trip because Paul was so patient and empowering, teaching me how to do every aspect of what he does. I can't believe how much I learned about telescopes, spectroscopy, galaxies, and much more.

Well, back to reality. I'm home and trying to get back on a daytime schedule.

I will miss the Mimir chirpings in the dark starlit dome, the groan of the moving shutter, the moonlight reflected off the 42" telescope dome, LOIS' chatty numbers, looking at all those gorgeous galaxies and the emission lines of hydrogen alpha, nitrogen, and sulfur II and the absorption line of sodium, the summer Milky Way from the windy cold at the Perkins site, watching the nitrogen smoking as the liquid went into the PRISM tank, and numerous other wonderful things I experienced at the telescope site, the historic telescopes at Lowell, Meteor Crater and the spiritual walk at Walnut Canyon.

Joan



A wooden Percy. Apparently he was much like this in life.



Paul playing with LN2



Joan playing with LN2



Joan fondling a big meteorite from Meteor

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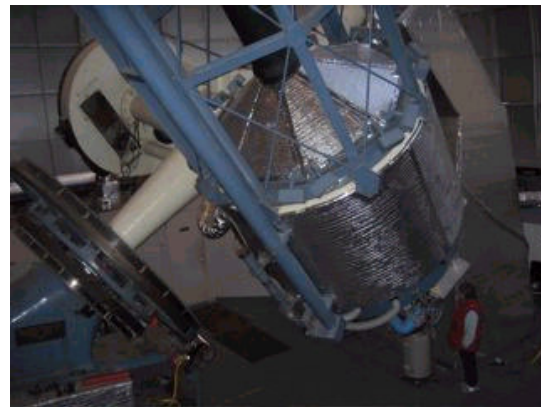
(Part of) Meteor Crater



72" Telescope Dome



Joan expertly opening the dome.



Joan readying the scope for a night of observing. Joan is the little red dot to the lower right of the picture



Joan running the scope. She only came close to breaking it a few times.

Club Meeting & Star Party Dates

Date	Subject	Location
May 1	5:30-6:30 PM: Business Meeting 6:40-7:30PM: Social hour and Joan's Beginner Astronomy Class. 7:30-9:30PM: *Club Meeting. 2009 NASA NSN Theme: Our Sun. Observing Target - Sun. Meeting Items: *Bernie Reim's "What's Up." *Astro Shorts & Astro News. *NASA Night Sky Network Activity: Movie - - 400 years of the telescope. *Dark Skies: Friendly Lighting Updates.	Masonic Hall West Kennebunk, Me.
May Date & time TBD.	Open Observing Session. The public is welcome to join club members and enjoy the night sky.	Starfield Observatory, West Kennebunk, Me.

Directions to ASNNE event locations

Directions to Masonic Hall

From I-95:

If coming southbound, take Exit 25 off of I-95. Come out to Rte. 35. Turn left at stop sign and turn right at next stop sign. Proceed straight ahead and you will see a variety store on the left and the Masonic Hall will be on the right.

If coming northbound, take Exit 25 off of I-95. Turn right at the stop sign and cross over I-95. Proceed straight for about 1/2 mile. There will be a variety store on the left and the Masonic Hall will be on the right.

Directions to Starfield Observatory

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

2009 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 _____

Sky & Telescope (\$32.95) _____ Astronomy (\$34) _____

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 _____

