

SKYLIGHTS

Newsletter of the Astronomical Society of Northern New England



January 2006



Member of NASA's
Night Sky Network

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 January

by *Bernie Reim*

Our New England winter is already in full swing. Although January is usually colder than December, at least the days are getting longer again and the sun is rising a little higher into our skies. There will be several interesting celestial events this month to make it worth your while to brave the cold.

The annual Quadrantid Meteor Shower will peak on the morning of Wednesday the 4th. The moon will not interfere this year, but this shower is seldom observed by many people. It has a very brief peak because the angle of intersection of its parent comet, an asteroid named 2003 EH1, which is probably a piece of a comet that broke apart 500 years ago, is nearly perpendicular to our orbit. There are usually 50 to 100 meteors per hour for a short time if you are lucky enough to get good weather and the peak happens over your part of the earth. The shower will be best over the Far East this year. Named after an extinct constellation, Quadrans Muralis, the Quadrantids originate from a point in the sky near the Big Dipper.

All four of the brightest planets are still spread out nearly evenly across our sky. That means the moon will point out and join one of these planets once each week this month. However, we will lose Venus by the middle of the month and Mars continues to fade even as Saturn gets brighter and higher in the sky.

We start with January 1st, when a slender waxing crescent moon will be a few degrees to the left of brilliant Venus one hour after sunset low in the southwestern sky. If you look at Venus in a telescope or binoculars, you will notice that it is now a huge, very thin crescent. It is close to Earth now with just the right sliver of it lit by the sun. It crosses between the earth and the sun on January 14, called inferior conjunction, and then shows up in the morning sky one week later. That happened on June 8, 2004, but that time the Earth-Venus plane was directly aligned with

the ecliptic, so we saw a very rare transit of Venus across the face of the sun. It was shortly after sunrise, and a heavy fog had just cleared so that we could see the best part of this dramatic event. Watching spellbound through a good telescope and solar filter, I could clearly see an extremely thin and ephemeral semicircular silver arc outlining the half of Venus that had cleared the sun. That was the dense and poisonous atmosphere of the 900-degree runaway greenhouse effect on Venus, backlit against the blackness of space.

I was aware that no person alive on Earth had ever seen a Venus transit before that one, since the last one happened December 6, 1882. The next one will be on June 6, 2012, but then you will have to wait 105 years until 12/11/2117.

One week later, on Sunday the 8th, the waxing gibbous moon will catch up with Mars in Aries. The red planet continues to get smaller and dimmer as it picks up speed against the background of stars, moving rapidly eastward towards the Pleiades. This is an indication that the earth is leaving it farther and farther behind in space after our close encounter on Halloween.

Another week later, on the 15th, the nearly full moon will be just a few degrees to the left and

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Club Contacts

Officers:

President:
David Bianchi
dbianchi@verizon.net

Vice President:
Ron Burk
ron.burk@yahoo.com

Secretary:
Joan Chamberlain
starladyjoan@yahoo.com

Treasurer:
Wes Brann
wbrann@maine.rr.com

Board of Directors:

Tim Brown
zawijava@maine.rr.com

Ian Durham
idurham@anselm.edu

Scott Kearney
scottydog@verizon.net

Star Party Co-ordinator:

Ron Burk
ron.burk@yahoo.com

Skylights Editor:

Paul Kursewicz
pkursewicz@tcl.net

Website Managers:

Gerry McAuliffe
caide@maine.rr.com

Jim Hatch
nerdfulthing@earthlink.net

NASA Night Sky Network Co-ordinator:

Joan Chamberlain
starladyjoan@yahoo.com

ASNNE Observing Session Coordinators

Schedule for 2005-2006

David Bianchi
dbianchi@verizon.net.....207-432-7373

Bill Grady
wgrady@adelphia.net.....207-985-8500

Tim Brown
tbrown@zwi.net.....207-646-4675

Mike Dostie
dots@prexar.com.....207-353-2278

Ian Durham
idurham@anselm.edu207-985-1836

Kirk Rogers
krogers1@maine.rr.com.....207-797-4879

Rob Burgess
rburgess@suscom-maine.net207-729-6415

Joan Chamberlain
starladyjoan@yahoo.com207-625-8185

Cal Stanley
maggyandcal@juno.com.....207-892-8215

George Whitney
gwhitney@maine.rr.com.....207-878-3409

Solar days

Dec 18

April 2

We need more volunteers to be Observing
Session coordinators.

E-mail me if you can at dbianchi@verizon.net

Joan Chamberlain and David Bianchi will al-
ternate informing everyone of our open ses-
sions starting with Joan in October.

Star Party Report

by David Bianchi

On the last weekend of summer I took my wife Barbara to the Twelfth Night Faire in NH. I was there to talk about Galileo and show some stars on my scope. It was an interesting day on Renaissance events and then at night a showing of Venus and Jupiter before they set and some globular clusters and the Andromeda Galaxy, all eliciting Ohh's and Ahh's. They want us back next year!



This is the Thank you I received from them.

Dear David,
We want to thank you and your wife for coming and doing a great job at the Renaissance Faire. We appreciate the work you put into our first year. The faire was a success, many a good word from all who attended. Feedback has been awesome. We have already been asked about next year. We apologize for the slow to arrive to your presentation, but all who attended enjoyed it and asked us to do it next year. If you might be interested next year, just let us know. We certainly appreciated your help!!! The gentleman who was the Monk apologizes for not showing up on time, turns out he was having chest pains!! He is doing better now, after completing a bunch of medical tests this week. Thanks again, it was a pleasure meeting you and your wife!!!!

Kelly from the Twelfth Night renaissance
Faire Committee.

Moon Phases

Jan. 6
First Quarter

Jan. 14
Full

Jan. 22
Last Quarter

Jan. 29
New

Moon Data

Jan. 1
Moon at Perigee
Jupiter 4° north
of Moon
Venus 7° north
of Moon

Jan. 2
Neptune 4° north
of Moon

Jan. 8
Mars 1.3° south
of Moon

Jan. 15
Saturn 4° south
of Moon

Jan. 17
Moon at Apogee

Jan. 21
Spica 0.6° south
of Moon

Jan. 25
Antares 0.02°
south of Moon

Jan. 31
Uranus 1.7° north
of Moon

Constellation Stamps and more...

by Paul Kursewicz

Near the end of 2005, the U.S. Postal Service had issued a block of four commemorative postage stamps (see figure below). Last year's theme for National Stamp Collecting Month was "*Be a Stargazer: Let the Stars Guide You into Stamp Collecting!*"



What is a constellation?

A constellation is a group of stars that form a picture or pattern. People made up these images to help them (and us) tell which stars are which. Many are named after their namesake, while others are not. Some of the constellations have changed over time.

Who invented the constellations?

No one is sure. The constellations that we recognize today have grown from a list of 48 constellations published around AD 150 by the Greek scientist Ptolemy. He did not invent the constellations. They are much older than his time (the Old Testament speaks of constellations).

How many constellations are there?

Ptolemy's list of constellations represent the bright patterns. Since then, various astronomers have added another 40 constellations from the faint stars that lie between the ancient figures.

Today, the International Astronomical Union (IAU) recognizes 88. Early in the 20th century, the IAU drew rectangular borders (well sort of) around the acknowledged 88. Why did they do that? See if you can figure it out for yourself. *Hint: might be helpful if you study the four postal stamps.* If you get stuck, the answer can be found on page 6.

Many of the 88 constellations contain informal constellations, or "asterisms," that are often the first to be learned (i.e. the "Big Dipper" in Ursa Major). Other asterisms, like the Winter Triangle, cut across constellation boundaries.

Most of the northern hemisphere constellations are depicted as animals. While most in the southern hemisphere are represented as instruments (sextant, telescope, compass etc.).

A complete table with information about all the 88 Constellations as defined by the I.A.U. <http://www.cosmobrain.com/cosmobrain/res/constellations.html>

Graphics of all Constellations:
<http://www.dibonsmith.com/graphics.htm>

Shows the borders around each constellation:
<http://www.heavens-above.com/constellations.asp?lat=0&lng=0&alt=0&loc=Unspecified&TZ=CET>

Northern Celestial Hemisphere, bright stars in each constellation, and mythology:
<http://domeofthesky.com/clicks/constlist.html>

If you are a *beginner*, I strongly recommend that you first learn some of the bright constellations before using a telescope. When outdoors, a *Planisphere* will make this easy:
<http://www.wwnorton.com/astro21/sandt/planisphere.html>

Use a red flashlight to read the Planisphere (white light ruins night vision).

Next Month: The next step - - finding deep sky objects. And more on constellations.

Principal Meteor Showers in 2006

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

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below Saturn. The ringed jewel of our solar system will be at its best for the year on the 27th, when it reaches opposition. It will rise at sunset right next to the Beehive Star Cluster in Cancer, and remain in the sky all night long. Also called Praesepe, Latin for manger, the Beehive (M44) is a cluster of about 350 stars located around 550 light years away. The light you are now seeing from this fuzzy little cluster left there when Leonardo Da Vinci was born in Italy. The stars themselves are about 750 million years old, and have a common origin with the V-shaped Hyades cluster in Taurus. Both clusters were born out of the same great diffuse nebula. It was the Precambrian period on Earth, when only simple forms of life existed, like bacteria and green algae, 250 million years before the first fish evolved.

The next week, January 23, the waning crescent moon will be just below and to the right of Jupiter. The King of the Planets rises around 2 am in Libra. It will not reach opposition until early May.

Jan 1. On this day in 1801 the first and largest asteroid, 800-mile-wide Ceres, was discovered by Giuseppe Piazzi.

Jan. 4. Earth reaches perihelion, or closest approach to the sun today at 91,204,245 miles. The seasons are caused by the tilt of the earth, and not our distance from the sun. The northern hemisphere is now tilted away from the sun, giving us our winter.

Jan. 6. First quarter moon is at 1:56 p.m. EST.

Jan. 7. On this day in 1610, Galileo discovered Callisto, Io, and Europa. He would discover Ganymede, the largest moon in our solar system at 3200 miles in diameter, one week later. Watching these 4 large moons orbit Jupiter provided the first evidence to support the Copernican heliocentric system that says Earth is not the center of the solar system. You can watch this for yourself with just a pair of binoculars.

Jan.8. Stephen Hawking was born on this day in 1942.

Jan. 14. Full moon is at 4:48 a.m. This is also called the Old, Wolf, Ice, or Moon after Yule.

Jan. 15. The Stardust spacecraft is scheduled to return to Earth after more than 7 years and billions of miles of space travel, with the first ever samples of comet dust and interstellar

granules. Two years earlier, Stardust flew very close to Comet Wild, surviving the impact of millions of dust particles and small rocks up to half a centimeter across. It gathered some of this dust with its tennis-racket-shaped collector and preserved it in a special substance called aerogel. Soon scientists will know exactly what carbon compounds are in this dust and it will help them determine the origin of life in our solar system.

Jan. 22. Last quarter moon is at 10:14 a.m. Pioneer 10's last signal to Earth was heard on this day in 2003.

Jan. 25. On this day in 2004, the Opportunity Rover landed on Mars. It is still working.

Jan. 27. Saturn is at opposition.

Jan. 28. On this day in 1986, the Space Shuttle Challenger exploded, killing all 7 astronauts.

Jan. 29. New moon is at 9:15 a.m.

Jan. 30. The moon is at perigee, or closest to Earth at 357,777 km.

Got any news?

Skylights welcomes
your input.

Club Meeting & Star Party Dates

Date	Subject	Location
Jan. 06, 7:30 PM	The monthly Club Meeting. Club member Jim Hatch will be presenting his tapes of the old Voyager journeys.	Masonic Hall, West Kennebunk, Me.
Jan. 27, 7:00 PM	Open Observing Session with rain/cloud date of Jan. 28th. New Moon 1/29.	Starfield Observatory, West Kennebunk, Me.
Feb. 03, 7:30 PM	The monthly Club Meeting.	Masonic Hall West Kennebunk, Me.
Feb. 24, 7:00 PM	Open Observing Session with rain/cloud date of Feb. 25th. New Moon 2/27.	Starfield Observatory, West Kennebunk, Me.
Mar. 03, 7:30 PM	The monthly Club Meeting.	Masonic Hall West Kennebunk, Me.
Mar. 24, 7:00 PM	Open Observing Session with rain/cloud date of Mar. 25th. New Moon 3/29.	Starfield Observatory, West Kennebunk, Me.
Apr. 07, 7:30 PM	The monthly Club Meeting.	Masonic Hall West Kennebunk, Me.
Apr. 21, 7:00 PM	Open Observing Session with rain/cloud date of Apr. 22nd. New Moon 4/27.	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.

★ Why are there borders around constellations? Answer: This allows astronomers to divide the sky into segments in which they can locate stars, planets, comets, deep sky objects, etc.



Are you a ASNNE member?

★ ASNNE is a member of Astronomical League (a federation of astronomical societies); the International Dark Sky Association (IDA); and NASA's Night Sky Network.

★ Meetings are held the first Friday of each month, at 7:30 PM at the Masonic Hall, located in West Kennebunk, Maine. Meetings generally consist of lectures and discussion by members or guest speakers on a variety of interesting astronomical topics.

★ Here is a summary of the benefits of membership:

- ★ -Our monthly newsletter Skylights.
- ★ -Discounts on Sky & Telescope and Astronomy magazine subscriptions.
- ★ -Automatic subscription to the Astronomical League's quarterly newsletter, The Reflector.
- ★ -10% discount on selected equipment and merchandise from Rivers Camera in Dover, NH.
- ★ -With proper training, access to Club equipment at the Starfield Observatory
- ★ -By special arrangement, free admission to the Southworth Planetarium at USM in Portland.
- ★ - Enjoy camaraderie and fun in learning and sharing your interest in Astronomy!

★ *Membership fees are for the calendar year beginning in January and ending in December. Dues are payable to the treasurer during the last quarter of each year (October-December) for the upcoming year. Checks should be made payable to the Astronomical Society of Northern New England (A.S.N.N.E) and mailed to the address above.*

★ To join fill out the membership form on the following page.

★ Or visit our website at <http://www.asnne.org>



In Memory of John Philbrick

John was one of the co-founders of our astronomy club. He passed away several years ago. His wife Clara, sent me a Christmas letter. I would like to share an excerpt from that letter:

A highlight of the year was attending the dedication of the new Berwick Library with Kathleen and Bob. It was a happy occasion for our family and a thrill to be there to see years of work and waiting come to completion. We saw lots of old friends that day, too. There is a large star set into the tile floor in John's memory. He would be so thrilled to have seen the project finished.

Paul Kursewicz

Astronomical Society of Northern New England
 P.O. Box 1338
 Kennebunk, ME 04043-1338

2006 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 _____