

SKYLIGHTS

Newsletter of the Astronomical Society of Northern New England



March 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 March

by *Bernie Reim*

Spring returns to the Northern Hemisphere this month after an unusual winter for us in New England. The vernal equinox will happen at 1:26 p.m. on Monday, March 20. That point is defined by the sun's path along the ecliptic crossing over the celestial equator in an upward trajectory at exactly that moment. That day, along with the autumnal equinox around September 21, are two special days since they are the only two days each year when the sun rises due east and sets due west everywhere on earth except at the poles. As summer approaches, notice that the sun will continue to rise a little further north of east each morning and set a little further north of west each evening. Within a few days of those dates, the days and nights will also be exactly 12 hours long everywhere on earth except at the poles.

The eclipse season has also returned. They occur about six months apart and are not related to our other four seasons. Solar and lunar eclipses can only happen when the plane on which the moon orbits the earth is exactly aligned with the plane on which we orbit the sun. The moon can orbit the earth up to five degrees above this plane and down to five degrees below this plane. However, twice a year as we both orbit the sun together, these planes line up precisely. This year that happens to be in March and September, but that time drifts forward about one month per year. Last year the eclipse seasons were April and October.

A solar or lunar eclipse is also a special version of a syzygy, which is simply defined as the alignment of three celestial bodies. Every full moon and new moon is actually a syzygy, but the three bodies are not perfectly aligned, so you will not see an eclipse every month. Planetary conjunctions and oppositions are also syzygys. What is even more unique with a total solar eclipse is that you, as a human, become the fourth body in perfect alignment with the sun, moon, and Earth.

Then you can experience one of nature's most spectacular and memorable events.

That will happen on March 29. However, you will have to do a little traveling to be precisely in the narrow, 100-mile-wide path on Earth that the shadow cone of the moon will create that day. That total solar eclipse will start over eastern Brazil at sunrise, travel across the Atlantic, proceed over Africa from Benin and Ghana out to Libya, continue over Turkey, the southeastern Black Sea, the northwestern Caspian Sea, and end over Russia and Mongolia as the moon's shadow cone lifts off the earth again at sunset. The shadow will have traversed nearly half the earth at about 1,000 mph that day.

All of Europe, most of Africa, and much of western and southern Asia will experience at least a partial solar eclipse that Wednesday. London will have a 20% partial solar eclipse that day, 60% over Italy, 80% over the pyramids in Cairo, and about 70% over Baghdad. The next good total solar eclipse will happen on July 22, 2009 over India and China.

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Solar days
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.

Why Astronomy?

by Joan Chamberlin

[Editor]: Club member Joan Chamberlin wrote an article on, "Why Astronomy?" She sent it to the [Night Sky Network](#) and it got published onto their website. The following excerpt — and her entry — was taken from the website:

What is it about astronomy that so captures the imagination? For some it is the idea of someday traveling to a distant star, for others it means an evening spent under the Milky Way with a telescope, star chart and ancient photons (particles of light from stars).

We asked our Night Sky Network astronomers to tell us what draws them to astronomy and here are some of their thoughtful (and sometimes even poetic!) answers:

Joan Chamberlin of the Astronomical Society of Northern New England explains why she is so obsessed with astronomy:

"Astronomy is simple yet complex Serene yet explosive Lucid but nebulous Romantic yet scientific Expansive yet precise Astronomy is an 8 minute solar trip or a journey into light years.

Astronomy is enriched with my heroes-- Galileo, Kepler, Newton, Einstein, Hale, Hubble, and Steven Szyres It's populated with children, rich folks, poor folks, passionate amateurs, And approachable scientists

Astronomy makes me feel like I'm on a rocket-ship of discovery. Nothing else quite makes it!"

How about you?

Would you like to submit an article to "Skylights" and answer the question: "Why Astronomy?"

Or

Maybe you would like to tell us what got you interested in astronomy in the first place.

Moon Phases

Mar. 6
First Quarter

Mar. 14
Full

Mar. 22
Last Quarter

Mar. 29
New

Moon Data

Mar. 6
Mars 3° south of
Moon

Mar. 10
Saturn 4° south
of Moon

Mar. 12
Moon at apogee

Mar. 17
Spica 0.3° south
of Moon

Mar. 19
Jupiter 5° north
of Moon

Mar. 25
Venus 6° north of
Moon

Mar. 27
Uranus 1.4° north
of Moon

Mercury 2° north
of Moon

Mar. 28
Moon at perigee

CONVERSE WITH SCIENTISTS ON THE NASA NIGHT SKY TELECONS

by Joan Chamberlin

Have you ever wished you could ask questions of a real scientist working on NASA missions, the Hubble Space Telescope, or the Spitzer Space Telescope? Are you interested in learning the latest science on black holes or getting the most current information about the Cassini Mission or the Mars Rover Mission? Of course you can go to a website and get reports and images, but it's just not nearly as exciting as hearing it from the people who are doing the science. NASA Night Sky Network Telecons provide an opportunity to hear about these events up close and personal. If you think the Mars Rover website is exciting, you would have been blown away listening to Dr. Steven Squyres relating his personal experiences from working on the Mars Rovers, particularly when it is directed to amateur astronomers. The website can't convey the passion and excitement in his voice and some of the more personal experiences he shared. Imagine my excitement when I got to ask him a question directly and to hear his response. It was like having a conversation with a friend.

The Night Sky Network has had the following telecons since April 2004:

Dr. Debra Fischer – Searching for Planets Around Other Stars
Dr. Stephen Gillam – Cassini Mission, discussing Saturn's Moon, Titan
Dr. Neil Tyson – NOVA Origins Program
Dr. Massimo Stiavelli – The Hubble Ultra Deep Field
Dr. Lucy McFadden – Deep Impact Mission
Dr. Mario Livio – The Hubble Top 10
Dr. Ned Wright – Black Holes
Dr. Michelle Thaller – Spitzer Space Telescope, The Infrared Universe
Dr. Steven Squyres – Mars Rovers
Dr. Janice Voss – Astronaut
Dr. Jeffrey Rosendahl – How Different Telescopes and Wavelengths are giving us more information about the universe

This is an impressive list of outstanding scientists, who have provided amateur astronomers a deeper understanding of the universe and the ways that we are learning about it.

All of the Night Sky Network Telecons are free to members of ASNNE. They typically last for one hour. When there is an upcoming telecon, I send the information via the ASNNE list serve and announce it at the club meeting. All you have to do to participate is follow the simple directions. Usually a power point is available to accompany the presentation; however, you can participate just by telephone, if you have no computer available.

The next Night Sky Network Telecon features Dr. Bryan Mendez of the Stardust Mission. He will discuss the recent findings of dust recovered from the recent Stardust Mission and the upcoming release of the data for the Stardust@Home project. The telecon will take place on March 28 at 9:00 PM Eastern Time. Mark your calendars and stay tuned for directions for connecting with the telecon on the ASNNE list serve. Find out how you can get involved in real scientific research!

Canis Major

by: Robert Frost
Submitted by Tim Brown

The great Overdog
That heavenly beast
With a star in one eye
Gives a leap in the east.

He dances upright
All the way to the west
And never once drops
On his forefeet to rest.

I'm a poor underdog,
But to-night I will bark
With the great Overdog
That romps through the dark.

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*

What's Up "Continued from page 1"

There will be an annular solar eclipse over the South Atlantic this September 22. Annular means ring-shaped. There will be a brilliant ring of sunlight visible around the moon that day since the moon won't be quite close enough to Earth to completely cover the sun. About half of our solar eclipses are annular and half are total. We had a wonderful and dramatic annular solar eclipse right here over New England on May 10, 1994. I remember that the whole landscape took on a very strange, gray-silver, dull metallic sheen for the few minutes that the ring lasted, almost as if we were on an alien planet.

Total or partial lunar eclipses precede solar eclipses by two weeks. We will have a penumbral lunar eclipse on the night of March 14 right here over New England and eastern North America at dusk, but it will be hard to even notice it because the full moon will not enter the umbra, or darker part of Earth's shadow.

Saturn continues to creep higher in our southeastern sky, rising a little earlier before sunset each evening. Still in retrograde, or westward motion towards Castor and Pollux in Gemini, Saturn will return to its normal motion on April 5. By June it will swing right through the Beehive Star Cluster in Cancer again, where it was on at the beginning of February. Through a telescope you will notice that its rings are quite open at 20 degrees, their best angle for the rest of this decade.

Jupiter starts the month rising around 11 pm, but will be rising by 9pm by the end of March. The King of the Planets will be at its best and brightest on May 4, when it reaches opposition and rises at sunset. It will begin its retrograde motion on March 4 and end its westward loop on July 6.

Mars continues to fade, losing another half a magnitude this month. The Red Planet is rapidly moving to the left, or east, of the Pleiades star cluster in Taurus as Earth leaves Mars further and further behind in our orbits around the sun.

As you look into the Winter Hexagon of the brightest stars in our winter sky, notice that there are three reddish objects among the other white stars. Going from east to west, these are 0.5 magnitude Betelgeuse in Orion, the tenth brightest star in the whole sky, then 0.9 magnitude Aldebaran in Taurus, the 13th brightest

star, about 20 degrees to the west, and then Mars, a little further west and above Aldebaran towards the Pleiades. Aldebaran means "follower" in Arabic, as it always seems to follow the Pleiades across the sky.

Notice that Mars will change in brightness from 0.7 magnitude, or brighter than Aldebaran starting March, down to 1.2 magnitude, or about the brightness of Pollux, the 16th brightest star in our sky, and the lower and brighter star in Gemini just below his brother, the mortal twin of Castor.

Carefully compare their brightness and their hues of golden-orange. Notice that Mars is creating an ever-changing triangle with Aldebaran and Betelgeuse now. They were in a straight line just a few weeks ago.

If you look way off to the east, you will notice a bright, very slightly orange star. That is Arcturus, the fourth brightest star in our sky. It is always a sure sign of spring when Arcturus starts to rise shortly after sunset.

Brilliant Venus continues to shine low in our morning sky. Our sister planet will reach greatest western elongation on March 25, when it will be exactly half-lit by the sun.

March 4 & 5. The waxing crescent moon passes near the Pleiades on the 4th and will pass between Mars and the Pleiades the next evening.

March 6. First quarter moon is at 3:16 p.m. EST.

March 9&10. The waxing gibbous moon passes between Saturn and Castor and Pollux on the 9th, and continues past Saturn towards Regulus in Leo the next couple of nights.

March 14. Einstein was born on this day in 1879. The full Sap, Worm, Crow, or Lenten Moon is at 6:35 p.m.

March 22. Last quarter moon is at 2:11p.m.

March 29. New moon is at 5:15 a.m.

Got any news?

Skylights welcomes
your input.

Did You Know

► Comets generate the annual meteor showers we enjoy on Earth. As orbiting comets pass near our Sun, intense heat strips off a layer of dust and ice. These tiny fragments remain in a trail along the path of the comet's orbit. Earth regularly passes through some of these orbits at the same time each year. When it does, the debris particles enter Earth's atmosphere creating a meteor shower.

► A comet's tail can stretch to 62 million miles in length. That's about two-thirds of the distance between the Sun and the Earth.

► Comets visible to the unaided eye appear in the sky about once every 5 years. Distinctive, bright comets with long tails appear every 10 to 12 years.

H y a k u t a k e (1996), and Hale-Bopp (1997), were the last two bright comets with long tails. We are do for a big one!

Comets

by Paul Kursewicz

Last month I talked about using a pair of binoculars to find the *Messier Objects*. For many, binoculars are often the tool of choice for observing comets and their beautiful tails. That's because binoculars have wide fields of view (as opposed to most telescopes which have narrow fields of view). I bet Messier would of loved having a good pair of binoculars for his searches of comets. Many comet discoveries have been made using a pair of binoculars.

Observing comets with binoculars

Comets do not sprint across the night sky like meteors; theirs are unhurried strolls. Because they constantly change as they move about our skies, comets provide us with opportunities to observe changes on short time scales. As you observe comets, consider the following:

✓ *Does the comet have a tail?* When a comet is at a great distance from our Sun, it does not have a tail. Instead, it will look like a fuzzy blob. As the comet travels closer to the Sun, a tail will form. So, if you can see a tail -- what is its length and width? And, has the tail changed since your last observation?

✓ *Can you see two tails?* If so, are there color or shape differences between the two. A broad white tail indicates dust. Smoke-sized dust particles are being driven off the nucleus (solid part of the head of the comet) by escaping gases. The dust tail is the most prominent part of a comet to the unaided eye. A narrow blue tail, is composed of plasma (gas) and laced with rays and streamers caused by interactions with the solar wind.

✓ *Has the color or shape of the coma changed?* As a comet nears the Sun, solar radiation heats up the surface of the comet causing evaporated gas to form a cloud around the nucleus, called the coma. This is the head of the comet. The solar wind along with radiation pressure from the sun pushes the gas (and dust) away from the coma forming the tail(s).

✓ *How does the brightness of the comet compare to nearby deep-sky objects?* This is a way to see whether the brightness has changed.



Comet Hyakutake: I took this photo on March 26, 1996. Using 200 speed slide film, a 50mm lens, and an exposure time of 4 min.

History's Greatest Comet Hunter

No, it's not Messier. It's SOHO (the Solar and Heliospheric Observatory). On August 5, 2005, the spacecraft achieved an incredible milestone, the discovery of its 1000th comet! Almost half of all officially recorded comets in history are attributed to SOHO.

Although SOHO was originally planned as a solar and heliospheric mission, it was hoped that the spacecraft might observe at least a handful of "sungrazer" comets.

In 2000, SOHO images became available over the internet. Amateur astronomer Mike Oates started to search the images. He soon revealed just how much potential SOHO had to quickly spotting comets. Soon after, many comet discoveries have been made by amateurs using SOHO images via the internet.

SOHO website:

<http://sohowww.nascom.nasa.gov/>

Club Meeting & Star Party Dates

Date	Subject	Location
Mar. 03, 7:30 PM	The monthly Club Meeting. Club member Jim Hatch will be the main speaker. His topic will be on Light Pollution...Dark Skies, and "Friendly Lighting."	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. Topic TBD.	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.

**Rivers Camera Shop
presents
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Free Seminars • Demonstrations
Specials • Manuf. Reps. In Store
See website or call for details

GUEST SPEAKERS:

- **AL NAGLER** (*Topic to be announced*)
Founder of Televue Optic, Known for his work with NASA during the Apollo lunar missions and as optic design innovator.
- George Clark, George is currently perusing a physics major at the University of New Hampshire. He is a leading member of the UNH Observatory team and is present at many public viewing events. George is also author of many Rivers camera and Telescope's "Eye on The Sky" newsletters. George's future plans are to become a theoretical physicist in the field of cosmology.
- Ed McDonough "Every one can now be an astronomer" Ed will be introducing the Celestron's new award-winning SkyScout portable sky navigator. (Ed will discuss its use and benefits to Astronomers from novice to expert.) He will also discuss other Celestron products and innovations as well as Celestron accessories. The SkyScout was the buzz at this year's CES Show and featured on *CNN* and *USA Today*, and won the prestigious Popular Mechanics Award.
- John Gianforte (*Topic to be announced*) Explore the scientific contribution that can be made by the modern amateur astronomer. By day, John is the Director of Installations for Goss International. By night, he is a serious amateur astronomer. John writes a monthly column for the *Fosters Daily Democrat* "Scanning the Heavens", has taught astronomy at various institutions, contributed to both public radio and public television, and conducts public observing at the UNH Observatory.
- Mike Fowler, Meade's regional sales manager, has been an amateur astronomer for 25 years and in the telescope industry for 16 years. Mike specializes in large aperture telescopes including Meade's new RCX400. Mike will give a lecture on Meade's newest line-up of 13 telescopes including the ED80 and ED127 and next generation DSL imagers.

Schedule

10:00-11:00 George Clark
11:15-12:15 Ed McDonough
Break
1:00-2:00 John Gianforte
2:15-3:15 Al Nagler
3:30-4:15 Meade Rep

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- Look Through a Coronado Solar Scope
- Observing Session - following at the UNH Observatory Weather permitting

* There is no charge for attending Astroday activities. However, we do request that you email at sales@riverscamera.com or call us if you plan to attend as so we can plan seating in the lecture room. (Visit our website for details www.riverscamera.com)


See the NEW! Celestron SkyScout

Personal Planetarium!

Revolutionary handheld device with GPS technology. Point and click to instantly identify stars & planets visible to naked eye. Includes audio/text facts & trivia about our most popular celestial objects.

**DOOR PRIZES
TO BE ANNOUNCED**

Hours:
M-W 8:30-6
Th. 8:30-7
Fri. 8:30-6
Sat. 9:30-5



Skymaps

Club member Gerry McAuliffe subscribes to a **free** monthly skymap. He even receives an e-mail each month telling him when the next map is available. The map can be printed out on a 8 1/2" x 11" sheet. Interested! Go to www.skymaps.com/index.html
From there select "**Downloads.**"

Olympics Showcase Saturn
by Paul Kursewicz

On the second day of the Olympics, during prime-time, I turned the TV on. And there was Saturn, (with a good image of the rings). The TV camera began to zoom out, and to the left of Saturn (now a point of light) was the Moon. The TV camera kept zooming out until the viewer was on the downhill racing course. I've seen many sporting events that turn the TV camera on the Moon, but never on a planet. What a surprise!

Now that deserves a gold medal.

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.

★ For more details, please visit our website: <http://www.asnne.org>

★ To join, go to our website or fill out the membership form on the following page.

★ *Checks should be made payable to the Astronomical Society of Northern New England (A.S.N.N.E) and mailed to the address on the membership form.*

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 _____