

SKYLIGHTS

Newsletter of the Astronomical Society of Northern New England



APR. 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.



“Space isn't remote at all. It's only an hour's drive away if your car could go straight upwards.” - - Frederick Hoyle (Astronomer)

What's Up In April

By Bernie Reim

The word April comes from aprilis, which means aperture or to open. That is what this area of the Northern Hemisphere will be doing this month as spring once again awakens the earth.

The nights are warmer and shorter now and there will be plenty of interesting celestial events to see, as always. All five of the brightest planets will be well placed for viewing by late April and different phases of the moon will form nice conjunctions with all of these planets both after dusk and before sunrise. There will also be a meteor shower, the Lyrids, on Wednesday morning, April 22.

One of the 11 cornerstone projects of this International Year of Astronomy is named “100 Hours of Astronomy; 400 Years in the Making”. That will start on Thursday, April 2nd and go right through Palm Sunday, April 5. This is a round-the-clock and round-the-globe outreach marathon that will include live web casts from research observatories, public observing events, and many other activities. The final 24 hours will be a global star party that will sweep around the world as darkness descends over each location. Our local astronomy club, the Astronomical Society of Northern New England will host a star party Saturday night April 4 at our Starfield Observatory in Kennebunk. Check out the website at asnne.org for more details. The goal worldwide is to encourage as many people as possible to look through a telescope for the first time.

The two-week long event during the second half of March, called Globe at Night, culminating in the international Earth Hour on March 28 from 8:30 to 9:30 pm during which about 1000 cities and a billion individuals will shut off most of their lights just took place and will be followed by this 100 hours

of astronomy. Millions of people around the world took brightness measurements of the visible stars in Orion, part of the Winter Hexagon. They recorded that data and provided very useful information to see how bad light pollution is getting and become more aware of what we can do about it to help preserve the pristine beauty of a dark night sky for future generations.

Saturn is well placed in the evening sky in the constellation of Leo. It can be seen shortly after dark high in the Southeast. Watch the waxing gibbous moon pass below Regulus, the brightest star in Leo and the 21st brightest star in the sky on April 5 and it will pass just below Saturn the next evening.

Mercury makes a good appearance in the evening sky towards the end of this month. You can see it low in the West-Northwestern sky 45 minutes after sunset, just below the famous Pleiades star cluster in Taurus. Watch as a slender waxing crescent moon joins the pair on the evening of Sunday the 26th.

“Continued on page 2”

Inside This Issue

Club Contact List	pg 2
Moon Data	pg 3
Catalogs & Manuals	
SciJinks Weather Laboratory	
Why Is Earth's Core So Hot?	
Club Items For Sale	pg 4
Meteor Showers in 2009	
Apollo Upgrade	pg 5
Meeting & Star Party Dates	pg 6
Directions ASNNE Locations	
Become a Member	pg 7

Club Contacts

Officers:

President:
Ron Burk
rdavidburk@yahoo.com

Vice President:
Joan Chamberlin
starladyjoan@yahoo.com

Secretary:
Richard Beaulieu
rbeaulieu350@yahoo.com

Treasurer:
Wes Brann
wbrann@maine.rr.com

Board of Directors:

Albert Heinrich
aheinrich42001@yahoo.com.au

David Bianchi
dbianchi@verizon.net

Joyce Brann
wbrann@maine.rr.com

Star Party Co-ordinator:

TBD

Skylights Editor:

Paul Kursewicz
pkursewicz@myfairpoint.net

Website Manager:

Jim Hatch
nerdfulthings@earthlink.net

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"

The remaining 3 bright planets, Mars, Venus, and Jupiter, are all in the morning sky now. The moon will pass just above Jupiter on April 19. Look east about 40 minutes before sunrise on the morning of Wednesday the 22nd, which also happened to be the annual Earth Day to help increase environmental awareness, and you will see the moon and Venus just one degree apart. For most of this country, other than the eastern seaboard, the waning crescent moon will occult Venus for one hour. The moon will be only 9% lit by the sun, and Venus, which is 40 times smaller than the moon from our view on Earth, will be a 17% crescent. It takes fully 30 seconds for the planet to disappear into the bright side of the moon and another 30 seconds for it to re-emerge from behind the dark side of the moon. Look for orange Mars just below this pair.

The first meteor shower of the year after the January Quadrantids will occur on the morning of April 22. Caused by the earth passing through the debris trail of Comet Thatcher, you can expect up to 20 Lyrids per hour that morning before sunrise. These tiny flakes of comet dust will be zipping into our atmosphere at 30 miles per second, harmlessly disintegrating about 70 miles above our surface. The Lyrids will all appear to emanate from one point in the sky in the constellation of Lyra near the bright star Vega. In Carl Sagan's movie, "Contact", alien radio signals were transmitted to Earth from a planet around this star. Vega will also become our North Star in about 13,000 years.

April 2. First quarter moon is at 10:34 a.m. EDT. The first photograph of the sun was taken on this day in 1845. The 100 hours of astronomy starts today.

April 5. Pioneer 11 was launched on this day in 1973. Built as a back up to Pioneer 10, both these spacecraft carry gold plaques with information about Earth including greetings in 40 languages, about 100 pictures, and sample of all kinds of music. They both passed through the asteroid belt and proved it was safe for future more advanced missions to pass through this belt. They lost contact with Pioneer 11 about 14 years ago and they just lost contact with Pioneer 10 about 7 years ago. Pioneer 11 is heading to Aquila the eagle and will pass near one of its stars, about 80 light years away,

in 4 million years. Pioneer 10 is heading towards the orange star in Taurus named Aldebaran, 68 light years away, and will get there in about 2 million years as long as no aliens pick it up first.

April 9. Full moon is at 10:56 a.m. This is also called the Pink, Grass, Egg, or Fish Moon.

April 12. On this day in 1961 Yuri Gagarin became the first human in space. By now well over 1000 astronauts have been in space.

April 15. Wilbur Wright was born on this day in 1867. It is hard to believe that it only took mankind 66 years to get to the moon after the Wright brothers first powered flight in 1903. This International Year of Astronomy 2009 also marks the 40th anniversary of our first lunar landing on July 20 of 1969.

April 19. The crescent moon is near Jupiter this morning.

April 22. The Lyrid meteor shower peaks. Venus is near the moon.

April 23. Max Planck was born on this day in 1858. He helped make many of the great discoveries of quantum mechanics around 1913 that basically make all of the modern computers, TVs, cell phones and other means of communication possible. He also determined the Planck length, which is 10 to the minus 33 cm, which is the smallest size possible without dropping out of the very fabric of the known universe.

April 24. New moon is at 11:23 pm.

April 28. Mercury is near the Pleiades this evening 45 minutes after sunset.



Moon Phases

Apr 2
First Quarter

Apr 9
Full

Apr 17
Last Quarter

Apr 24
New

Moon Data

Apr 1
Moon at perigee

Apr 7
Saturn 6° north
of Moon

Apr 13
Antares .02° south
of Moon

Apr 16
Moon at apogee

Apr 19
Jupiter 2° south
of Moon

Neptune 2° south
of Moon

Apr 22
Uranus 5° south
of Moon

Venus 1.1° south
of Moon

Apr 26
Mercury 1.9° south
of Moon

Catalogs and Manuals

<http://geogdata.csun.edu/~voltaire/classics/>

By Paul Kursewicz

Old timers may enjoy the above site more than newbie's. Do you remember your first telescope? Look at old **catalogs and manuals** of different types of older telescopes. It's like going back in time. All files are done in PDF format.

Our club has a **8" f/15 Zeiss-Jena refractor** in the observatory. Check out the **1920 Carl Zeiss, Jena Catalog** link.

In part 1, I was surprised to see Binocular Telescopes (page 12). On page 21, is a **Triple Photographic Refractor**. The central scope is a 12 inch aperture visual guide scope with a guiding eyepiece head. The two photographic scopes (left and right) are 14-1/4 inches in aperture.

In part 2 are a variety of scopes, instruments, and accessories. Like:

- ◆ Zeiss Parabolic Projectors (78 inches in diameter) used for electric search lights.
- ◆ Monster observation ladders and revolving observation platforms.
- ◆ Observatory Domes from 10 - 33 feet in diameter.
- ◆ Plane Parallel Glasses (objective prism of 25-1/4 inches).
- ◆ Radiomicrometers (instruments for measuring radiant energy).
- ◆ Spectrographs, Photometers, Survey Instruments and much more.

Find answers to hard questions at the SciJinks Weather Laboratory. Now, students can find answers to tidal mysteries on our web site.

What causes the tides? We might remember that it has something to do with the Moon. But then why do we have two high tides each day if the Moon only rises and sets once? And why don't the tides occur at the same time every day? All is revealed in a new "How & Why" page on the middle-school-level NOAA/NASA SciJinks Weather Laboratory website, <http://scijinks.gov>. Click on the "How & Why" button.

Other how and why topics are listed at scijinks.gov/weather/howwhy. Additional weather-related resources for teachers are available at scijinks.gov/en/educators.

*Submitted by: Nancy Leon
(Producer and Manager)*

**Jet Propulsion Laboratory
California Institute of Technology
4800 Oak Grove Drive
Pasadena, California 91109-8099**

JPL

New on the Space Place Web Site

(Earth's core)

Why is Earth's core so hot?

Blistering hot molten rock bursts through weak places in Earth's crust. So what is down there and why is it so hot? Earth's core may seem as mysterious and remote as outer space, but scientists actually have learned a great deal about it. Listen to a scientist explain. Visit <http://spaceplace.jpl.nasa.gov/en/educators/podcast/> to subscribe to these Podcasts. Or listen now to this and the previous Podcasts on your computer or read the transcripts.

Sincerely,

Education Outreach Coordinator
Colleen Barboza
M/S: 606-115E
Ph#: (818) 393-5936
Fax: (818) 354-9068



**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

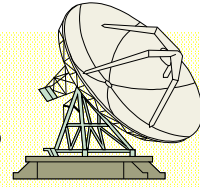
November 18
Leonids

November 26
Andromedids

December 14
Geminids

December 22
Ursids

*Note: Dates are
for maximum*



Got any News? Skylights welcomes your Input.

Here are some suggestions:

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

Club Items For Sale



Our club has merchandise for sale at:
www.cafepress.com/asne

All money raised goes to our operating fund.

Any design can be put on any item.
Just let our Director, David Bianchi, know.

SHOP CATEGORIES

Postage · Apparel · Housewares
Hats & Bags · Stickers, Buttons & Magnets



Apollo Upgrade

The flight computer onboard the Lunar Excursion Module, which landed on the Moon during the Apollo program, had a whopping 4 kilobytes of RAM and a 74-kilobyte “hard drive.” In places, the craft’s outer skin was as thin as two sheets of aluminum foil.

It worked well enough for Apollo. Back then, astronauts needed to stay on the Moon for only a few days at a time. But when NASA once again sends people to the Moon starting around 2020, the plan will be much more ambitious—and the hardware is going to need a major upgrade.

“Doing all the things we want to do using systems from Apollo would be very risky and perhaps not even possible,” says Frank Peri, director of NASA’s Exploration Technology Development Program.

So the program is designing new, more capable hardware and software to meet the demands of NASA’s plan to return humans to the moon. Instead of staying for just a few days, astronauts will be living on the Moon’s surface for months on end. Protecting astronauts from harsh radiation at the Moon’s surface for such a long time will require much better radiation shielding than just a few layers of foil. And rather than relying on food and water brought from Earth and jettisoning urine and other wastes, new life support systems will be needed that can recycle as much water as possible, scrub carbon dioxide from the air without depending on disposable filters, and perhaps grow a steady supply of food—far more than Apollo life-support systems could handle.

Next-generation lunar explorers will perform a much wider variety of scientific research, so they’ll need vehicles that can carry them farther across the lunar surface. ETDP is building a new lunar rover that outclasses the Apollo-era moon buggy by carrying two astronauts in a pressurized cabin. “This vehicle is like our SUV for the Moon,” Peri says.

The Exploration Technology Development Program is also designing robots to help astronauts maintain their lunar outpost and perform science reconnaissance. Making the robots smart enough to take simple verbal orders from the astronauts and carry out their tasks semi-autonomously requires vastly more powerful computer brains than those on Apollo; four kilobytes of RAM just won’t cut it.

The list goes on: New rockets to carry a larger lunar lander, spacesuits that can cope with abrasive moon dust, techniques for converting lunar soil into building materials or breathable oxygen. NASA’s ambitions for the Moon have been upgraded. By tapping into 21st century technology, this program will ensure that astronauts have the tools they need to turn those ambitions into reality.

Learn more about the Exploration Technology Development Program at www.nasa.gov/directorates/esmd/aboutesmd/acd/technology_dev.html. Kids can build their own Moon habitat at spaceplace.nasa.gov/en/kids/exploration/habitat.

This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.



Caption:

The Chariot Lunar Truck is one idea for a vehicle equal to the lunar terrain. Each of the six wheels pivot in any direction, and two turrets allow the astronauts to rotate 360°.

Club Meeting & Star Party Dates

Date	Subject	Location
April 3	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 March Theme: Observing in the Night...and in the Day. Observing Target - Saturn. Meeting Items: *Bernie Reim's "What's Up." *Astro Shorts & Astro News. *NASA Night Sky Network Activity. *Dark Skies: Friendly Lighting Updates. *Special Activity: Logging and review of astronomy books donated by Angel Napolitano .	Masonic Hall West Kennebunk, Me.
April 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 _____

