

# SKYLIGHTS

Newsletter of the Astronomical Society of Northern New England



APR. 2008



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 April

By Bernie Reim

**T**his month is named for the Latin word aperture, which means to open. That is what this part of the Northern Hemisphere will be doing this month as blossoms will open as the earth awakens once more after a record long, cold, and snowy winter.

The major celestial highlight will be the slender crescent moon passing directly in front of and occulting several of the Pleiades starting just before 10 p.m. on Tuesday evening, April 8. The moon will be just 3 days old that evening, which means that the earthshine faintly illuminating the rest of the moon will be at its best. This is caused by the sunlight bouncing off the earth and then back onto the moon. That phenomenon is only visible for a few days during the crescent phases when the moon is still close enough to the sun to intercept the earthshine.

This ghostly twice-reflected light transforms the whole evening sky and is always worth looking for, especially when the moon passes near a bright planet. This evening will be much more dramatic as there will be six bright lights near the moon, half of which will be covered up that evening. The moon moves its own width, half a degree, eastward against the fixed background of stars each hour.

You can see about 50 stars in the Pleiades with binoculars and there are actually about 500 stars in this open cluster. They are only about 100 million years old, which is very young as far as stars go. Our own sun is 47 times older than the 7 Sisters, also known as Subaru in Japanese.

When you watch that memorable occultation that evening, be aware that the photons of light your eyes will be catching left the Pleiades just when Galileo looked at the heavens with his telescope for the first time. We have come a long way since then. The Pleiades are 400 light years away, and Galileo used the first telescope in 1609. To celebrate that important event, next year will be The International Year of Astronomy. "The vision

of the International Year of Astronomy 2009 is to help the citizens of the world rediscover their place in the Universe through the day and night-time sky, and thereby engage a personal sense of wonder and discovery. All humans should realize the impact of astronomy and basic sciences on our daily lives, and understand better how scientific knowledge can contribute to a more equitable and peaceful society."

Saturn will rule the evening sky this month. Even though the ringed jewel of our solar system is past opposition and getting a little fainter, its rings are still opening up, reaching an angle of nearly 10 degrees by the end of April, and it drifts one degree closer to Regulus, the brightest star in Leo.

Mars is the other evening planet, marching quickly through Gemini even as the red planet fades by another half a magnitude as the faster moving earth leaves it farther and farther behind. Notice that Saturn and Mars are slowly approaching each other, closing in on a close conjunction on July 9, the same day that Jupiter will reach opposition.

Jupiter continues to rise a little earlier each morning, as the King of the Planets gets brighter in Sagittarius. Venus will get too low

*"Continued on page 2"*

## Inside This Issue

Club Contact List	pg 2
Meteorites in Maine... Moon Data	pg 3
Club Items For Sale Meteor Showers in 2008	pg 5
World Wide Telescope... Gummy Greenhouse Gases	pg 6
Tracking Wildlife From Space	pg 7
Meeting & Star Party Dates Directions ASNNE Locations	pg 8
Become a Member	pg 9

## Club Contacts

### Officers:

President:  
Tim Brown  
zawijava@maine.rr.com

Vice President:  
Joan Chamberlin  
starladyjoan@yahoo.com

Secretary:  
Sara Dinyari  
scarterdin@hotmail.com

Treasurer:  
Wes Brann  
wbrann@maine.rr.com

### Board of Directors:

David Bianchi  
dbianchi@verizon.net

Scott Kearney  
scottydog1@verizon.net

Joyce Brann  
wbrann@maine.rr.com

### Star Party Co-ordinator:

TBD

### Skylights Editor:

Paul Kursewicz  
pkursewicz@verizon.net

### Website Manager:

Jim Hatch  
nerdfulthing@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"

in the morning sky after the first few days this month. Our sister planet will then remain hidden in the sun's glare for an unusually long time, not showing up again until late July in the evening sky.

Mercury will begin its best evening apparition for the year late this month. Look for the first planet 30 minutes after sunset low in the west-northwest just below the Pleiades.

Another highlight for April is usually the Lyrid Meteor Shower. However, this April the moon will be just one day past full on Monday the 21st, when this shower peaks. So instead of the usual 15 to 20 meteors per hour, you will not even see half that many this year. Caused by Comet Thatcher, the Lyrids are the oldest recorded meteor shower, first recorded 2600 years ago. This comet has a longer period than the other ones causing our major meteor showers, orbiting only once every 415 years. The showers are created as the earth plows through dust and debris left in the trails of these comets at the same time each year. Most of these particles are smaller than a grain of sand, but they create such a brilliant streak of light because they are moving upwards of 30 miles per second.

April 1. Comet Hale-Bopp's closest approach to the sun happened on this day in 1997.

April 2. The first photograph of the sun was taken on this day in 1845.

April 4. A very thin crescent moon will be just above Venus very low in the eastern sky 20 minutes before sunrise.

April 5. New moon is at 11:55 p.m. EDT.

April 7. The Compton Gamma Ray Observatory was deployed on this day in 1991; one year after the Hubble Space Telescope was launched. It ended its mission in a spectacular controlled crash where most of it was vaporized as it reentered our atmosphere just 9 years later. However, it was extremely successful in opening a new window on the extremely high energy aspects of the universe, as it detected over 2500 powerful gamma ray bursts from way beyond our home galaxy.

April 8. The moon will occult the Pleiades star cluster tonight beginning about 10 p.m.

April 12. First quarter moon is at 2:32 p.m. The moon passes near Mars tonight.

April 14. The moon is near Saturn and Regulus tonight.

April 15. Wilbur Wright was born on this day in 1867. We traveled all the way to the moon just 66 years after the Wright Brothers first tentative flight in 1903.

April 20. Full moon is at 6:25 a.m. This is also called the Pink, Fish, Grass, or Egg Moon.

April 21. The Lyrid Meteor Shower peaks this morning and the next.

April 23. Max Planck was born on this day in 1858. He was one of the physicists that began the quantum revolution around 1900 when we discovered the true and counterintuitive nature of the subatomic world. All atoms are mostly empty space. If you could enlarge the protons in the nucleus of an atom to the size of a bowling ball, then the electrons would be orbiting 21 miles away! Only the invisible electromagnetic force between these protons and electrons keep us from walking through a wall or falling to the center of the earth. He determined the Planck length, 10 to the minus 33 cm. That is the size that the strings in superstring theory must be which are also 17 orders of magnitude smaller than a proton. The quantum fluctuations in the fabric of space-time become so enormous beyond that length as to have no meaning. He also found the Planck time to be 10 to the minus 43 second to go along with the smallest unit of space that is possible in this universe.

April 26. Mars is near Pollux in Gemini and is now nearly the same color and brightness.

April 27. Jupiter shines a few degrees above the moon this morning.

April 28. Last quarter moon is at 10:12 a.m.

## Moon Phases

**Apr 5**  
New

**Apr 12**  
First Quarter

**Apr 20**  
Full

**Apr 28**  
Last Quarter

## Moon Data

**Apr 2**  
Neptune 0.002°  
south of Moon

**Apr 4**  
Venus 5° south  
of Moon

Uranus 3° south  
of Moon

**Apr 7**  
Moon at perigee

**Apr 12**  
Mars 1.2° south  
of Moon

**Apr 15**  
Saturn 3° north  
of Moon

**Apr 23**  
Moon at apogee

Antares 0.3° north  
of Moon

**Apr 27**  
Jupiter 3° north  
of Moon

## Meteorites in Maine: Is the sky falling???

(From the Maine Geological Survey)

<http://www.maine.gov/doc/nrimc/mgs/explore/minerals/sites/mar99.htm>

*Permission by Robert D. Tucker  
Director, Earth Resources Information  
Maine Geological Survey*

At one time or another, almost everyone in Maine has glimpsed a swift little streak of light dashing across the night sky. These sudden celestial visitors are meteors, commonly called falling or shooting stars. Because they arrive at very high speeds - anywhere from 7 to 46 miles per second - they vaporize by air friction in a white-hot streak. Occasionally a larger object will survive its descent through the atmosphere and fall to Earth. At that point it is called a meteorite. So what about meteorites and have any ever landed in Maine??

### What is a meteorite?

A meteorite is a chunk of metallic or stony material from space that strikes the surface of the Earth. These rocks originated in the asteroid belt, on the Moon, and from other planets. Rocks blasted off any such parent bodies, by impact or collision, will orbit the Sun just as the planets do. A small fraction of these orbiting rocks cross the Earth's orbit, and coming under the influence of Earth's gravity, may fall into our atmosphere. If they survive this fiery descent to Earth, they become meteorites.

There are three kinds of meteorites: stony, iron, and stony-iron. Stony meteorites consist of minerals rich in silicon and oxygen, with smaller amounts of iron, magnesium, and other elements. One group of stony meteorites, called chondrites, are pieces of the same material from which the planets formed. Another group of stony meteorites, the achondrites, were once part of a parent body, such as an asteroid, that was large enough to have melted and separated into an iron-rich core and a stony crust. Achondrites come from the outer crust; stony-iron meteorites, from the inner crust; and iron meteorites, from the metallic core. Iron meteorites consist mostly of iron and nickel.

The size of meteorites varies greatly. Most of them are relatively small. The largest meteorite ever found weighs about 60 metric tons. This meteorite, discovered in 1920, fell at Hoba West, a farm near Grootfontein, Namibia. However, much larger bodies, such as asteroids and comets, can also strike the earth and become meteorites.

Meteorites reach the Earth's surface because they are the right size to travel through the atmosphere. If objects from space are too small, they will dis-

integrate in the atmosphere. If they are too large, they may explode before reaching Earth's surface. These are called bolides. One such bolide exploded 6 miles above the Tunguska River in Siberia in 1908, leaving a 20-mile area of devastation, consisting of felled and scorched trees.

### Maine Meteorites

Though many meteorites probably have landed in Maine, only 5 have been found and authenticated and described in the scientific literature, and portions of each are preserved in museum collections. Four of these were actually observed falling from the sky, and were collected shortly thereafter. These types of meteorites are termed "falls" to distinguish them from meteorites found later than their impact, which are called "finds."

Meteorites are named for geographic features near the sites where they are found. So each of the 5 Maine meteorites has been given an appropriate name to distinguish its geographical site of discovery. The Maine meteorite falls and finds are listed and described below in chronological order of their discovery.

### Nobleboro Meteorite

Maine's first recorded meteorite (and the second recorded in the United States) arrived shortly after statehood, between 4 and 5 PM on August 7, 1823 at Nobleboro in Lincoln County by a Mr. A. Dinsmore. Mr. Dinsmore thought he heard musket fire and saw a small whitish cloud spiraling earthward which made a noise "like a whirlwind stirring leaves." Something struck the ground nearby, startling a flock of sheep. Mr. Dinsmore dug down half a foot and found 5 or 6 pounds of a sulphurous-smelling material.

Almost 100 grams of the original mass is preserved in museum collections worldwide. The Nobleboro meteorite is of the achondrite type. Though it is the most common type of achondrite, these account for only 3% of all meteorites recovered. The relative rarity of achondrites compared to chondrites makes the Nobleboro specimen the most interesting of Maine meteorites to scientists.

### Castine meteorite

The second Maine meteorite fell at about 4:15 AM on Saturday May 20, 1848 near the village of Castine in Hancock County. A single stone, reported as "not larger than a hen's egg" weighing 42 grams was found by Mr. Charles Blaisdell. An account of this meteorite was published by Shepard (1848) in the American Journal of Science. Pieces of this meteorite have been distributed to museums all over

*"Continued on page 4"*

### Meteorites in Maine: Is the sky falling???

*"Continued from page 3"*

the world including London, Paris, and Budapest. The total weight of all of these specimens is 87 grams, twice the originally stated weight.

The Castine meteorite is a chondrite, and the overall chemical composition of this specimen classifies it as an ordinary chondrite, made up primarily of olivine, pyroxene, and nickel-iron.

### Searsmont meteorite

At about 8:15 AM on Sunday May 21, 1871 a third Maine meteorite fell at Searsmont in Waldo County. The following is a description of the event reported to a local paper which is quoted by Shepard (1871).

*"There was first heard an explosion, like the report of a heavy gun, followed by a rushing sound resembling the escape of steam from a boiler. The sound seemed to come from the south, and to move northwardly. The stone fell in the field of Mr. Bean, the flying earth being seen by Mrs. Buck, who lives near. The hole that it made was soon found and the stone dug out. It was quite hot and so much broken as to be removed only in pieces. The outside shows plainly the effect of melting heat. It struck with such force as to penetrate the hard soil to a depth of two feet."*

The total weight of the known specimens of the Searsmont meteorite is about 2 pounds. The largest single piece is an 803.4 g specimen at Arizona State University. A chemical analysis was performed by J. Lawrence Smith, a prominent American meteorite expert of the 19th century. He separated the metal with a magnet and found it to contain 90.02% iron, 9.05% nickel and 0.43% cobalt. This places the Searsmont meteorite in the high iron or H-group of chondrites.

### Andover meteorite



The fourth Maine meteorite "fall," landed at Andover on August 5, 1898. The meteorite fell on the farm of Lincoln Dresser who said of the event "It came from the north west and it was accompanied by a loud noise resembling a buzz saw, and had a following of smoke..... I secured, by digging, a large piece weighing 7+ lbs., and two or three small ones which were broken by its striking the rock fence."(Ward,1903)

The main mass of the Andover meteorite, now weighing 2791 grams is housed in the collection of the [Smithsonian Institution](#). Despite the fact that a greater percentage of it is preserved than any other Maine meteorite, the Andover specimen has been little studied except for the purpose of classification. It, like the Castine meteorite, is a low-iron or L-chondrite.

### Walnut Hill meteorite



Meteorites fall continuously, but their rate of recovery depends on many factors. During the nineteenth century, a meteorite was recovered in Maine about once every twenty-five years. This pattern did not continue into the twentieth century despite an increase in population that should favor an increased rate of recovery. Only one practically unknown meteorite has been recovered in Maine in this century.

A newspaper report in 1978 described a discovery of a meteorite in the town of North Yarmouth. While repairing the roof of a brooding shed on his father's poultry farm, Mark L. Smith noticed a hole near the eaves. He found a small black stone lying a few inches below the top of the plate. The Smiths took it to the University of Southern Maine where it was identified as a meteorite by tests performed by Professor David S. Westerman.

The Walnut Hill meteorite is an ordinary chondrite, and is completely covered by a thin black fusion crust formed by melting of the outer layer as it fell through the atmosphere. It weighs 218 g. The Walnut Hill meteorite, a "find," is retained by its finder.

### Conclusion

Probably fewer than a thousand meteorites survive their fall to Earth in a year. Undoubtedly, many more than five have fallen into Maine, unobserved, unrecovered, or at least unsubstantiated. Maine's five meteorites represent a small but scientifically important sampling of rocks from at least three different parent bodies. The Castine and Andover meteorites are from the L-group parent body. The Searsmont specimen is from the H-group parent body and the Nobleboro meteorite is from the eucrite parent body. This last meteorite is believed to be so distinctive by some meteoritists, that they believe that it came specifically from the asteroid Vesta.

So keep looking to the stars and you may be the one to discover the "sixth" Maine meteorite.

### Fascinating facts about meteorites:

- The single largest meteorite ever found is the Hoba Meteorite, discovered in 1920 in the southwest African country of Namibia. It weighs an estimated 60 metric tons.
- The largest known impact crater is the Sudbury Crater in Ontario, Canada. It is about 120 miles in diameter. Scientists believe it was created 1.85 billion years ago by a meteorite with an estimated diameter of 6 miles.
- The only person in the United States known to have been struck by a meteorite was Mrs. Hewlett Hodges of Sylacauga, Ala. She was resting on a sofa in 1954 when a meteorite weighing about 10 pounds crashed through the roof, bounced off a radio, and bruised her thigh.
- Although meteorites land all over the world, [Antarctica](#) is one of the best places to find them. One reason is that after impact, the meteorites are entrained in the ice, and when the ice melts or is eroded, the meteorites become exposed. Meteorites landing in Antarctica are also less likely than meteorites falling elsewhere to have been damaged by such geologic processes as weathering or to have been contaminated by human beings or other organisms.

**Principal  
Meteor  
Showers in  
2008**

**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



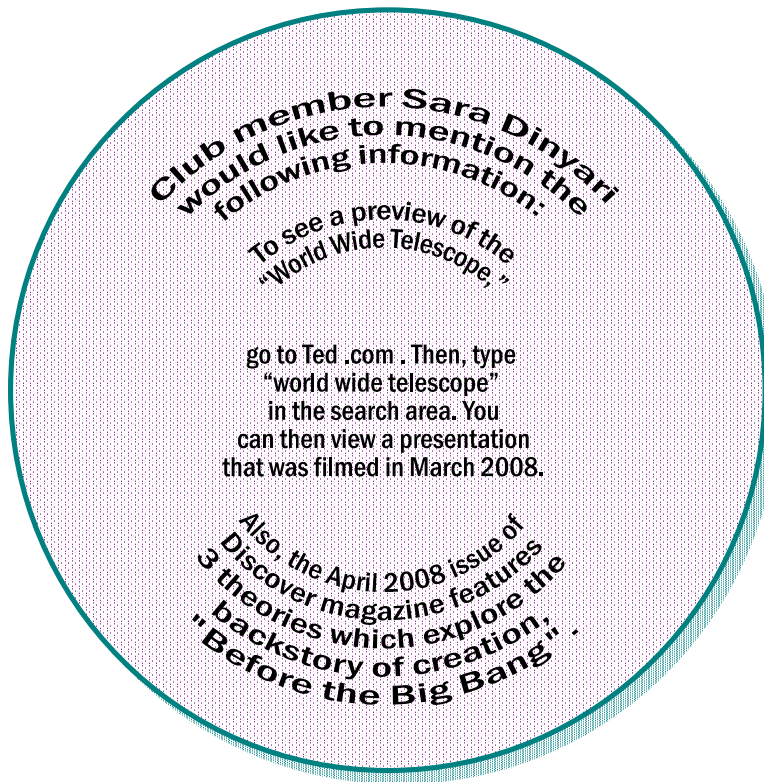
Our club has merchandise for sale at:  
[www.cafepress.com/asne](http://www.cafepress.com/asne)

*All money raised goes to our operating fund.*

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

### SHOP CATEGORIES

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



## Get Your Gummy Greenhouse Gases!

Making science edible--and sweet--is a reliable way to attracts kids' interest. The new "Gummy Greenhouse Gases" activity on The Space Place web site makes it fun and easy to learn a bit of chemistry and to find out why too many of these kinds of molecules in the air are likely to cause Earth to get warmer. At <http://spaceplace.nasa.gov/en/kids/tes/gumdrops>, kids use gumdrops and toothpicks to make simple molecules of ozone, nitrous oxide, carbon dioxide, water vapor, and methane. The curious can go on to <http://spaceplace.nasa.gov/en/kids/tes/gases> to learn more about the greenhouse effect and about the "good and bad" roles of ozone. A short video shows how new space technology can literally paint a 3-D picture of these gases all around the globe. Afterwards, the ghasly gases can be consumed (mind the toothpicks!), thus helping the environment.

\*\*\*\*\*

Nancy Leon  
Education and Public Outreach Lead  
NASA New Millennium Program/Space Place



## Tracking Wildlife from Space

by Patrick Barry

It's 10 o'clock, and do you know where your Oriental Honey Buzzard is?

Tracking the whereabouts of birds and other migrating wildlife across thousands of miles of land, air, and sea is no easy feat. Yet to protect the habitats of endangered species, scientists need to know where these roving animals go during their seasonal travels.

Rather than chasing these animals around the globe, a growing number of scientists are leveraging the bird's-eye view of orbiting satellites to easily monitor animals' movements anywhere in the world.

The system piggybacks on weather satellites called Polar Operational Environmental Satellites, which are operated by the National Oceanic and Atmospheric Administration (NOAA), as well as a European satellite called MetOp. Sensors aboard these satellites pick up signals beamed from portable transmitters on the Earth's surface, 850 kilometers below. NOAA began the project—called Argos—in cooperation with NASA and the French space agency (CNES) in 1974. At that time, scientists placed these transmitters primarily on buoys and balloons to study the oceans and atmosphere. As electronics shrank and new satellites' sensors became more sensitive, the transmitters became small and light enough by the 1990s that scientists could mount them safely on animals. Yes, even on birds like the Oriental Honey Buzzard.

“Scientists just never had the capability of doing this before,” says Christopher O’Connors, Program Manager for Argos at NOAA.

Today, transmitters weigh as little as 1/20th of a pound and require a fraction of a watt of power. The satellites can detect these feeble signals in part because the transmitters broadcast at frequencies between 401 and 403 MHz, a part of the spectrum reserved for environmental uses. That way there's very little interference from other sources of radio noise.

“Argos is being used more and more for animal tracking,” O’Connors says. More than 17,000 transmitters are currently being tracked by Argos, and almost 4,000 of them are on wildlife. “The animal research has been the most interesting area in terms of innovative science.”

For example, researchers in Japan used Argos to track endangered Grey-faced Buzzards and Oriental Honey Buzzards for thousands of kilometers along the birds' migrations through Japan and Southeast Asia. Scientists have also mapped the movements of loggerhead sea turtles off the west coast of Africa. Other studies have documented migrations of wood storks, Malaysian elephants, porcupine caribou, right whales, and walrus, to name a few.

Argos data is available online at [www.argos-system.org](http://www.argos-system.org), so every evening, scientists can check the whereabouts of all their herds, schools, and flocks. Kids can learn about some of these endangered species and play a memory game with them at [spaceplace.nasa.gov/en/kids/poes\\_tracking](http://spaceplace.nasa.gov/en/kids/poes_tracking).

*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 ARGOS program tracks the whereabouts of endangered migrating animals via miniature transmitters on the animals and the POES satellites in orbit.*

## Club Meeting & Star Party Dates

Date	Subject	Location
April, 4	5:00PM to 6:20 PM Business Meeting.  6:30PM to 7:15PM Beginner Classes.  7:30PM Club Meeting Begins: Topic: <b>Dr. David Batuski</b> , Dept. Chairperson and Professor of Physics at the University of Maine-Orono will talk about, "The Age of Precision Cosmology": The Universe gets more curiouser and curiouser.  (Possible observing after the meeting).	Masonic Hall West Kennebunk, Me.
April 11, Dusk	Open Observing Session with rain/cloud date of Apr. 12. New Moon 4/5	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

**2008 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 \_\_\_\_\_

