

SKYLIGHTS

Newsletter of the Astronomical Society of Northern New England



JUL. 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 July

By *Bernie Reim*

Summer is now upon us and this will be a good month to enjoy the sky in spite of the short nights. The bright planets are evenly split this month, with the gas giants Saturn and Jupiter visible in the evening sky and our neighboring terrestrial planets, Venus and Mars, visible in the morning sky.

There will be two more very exciting celestial events taking place this month, but only one of them will be visible for us in New England. The annual Delta Aquarid Meteor Shower will peak during the morning hours of Tuesday, July 28. This shower actually begins around the middle of July and blends right into the famous Perseid Meteor Shower which already starts during the end of July and peaks on August 12.

Caused by Comet Machholz, you can expect around 15 to 20 Delta Aquarids per hour that morning. The moon will be first quarter and will set around midnight. Meteor showers are usually better after midnight anyway since that is when the earth is spinning directly into the meteors, like snowflakes on the front windshield of your car during a snowstorm. The whole earth can be seen as a little spaceship continually orbiting the sun at 18.6 miles per second, or 67,000 miles per hour.

I remember seeing Comet Machholz, the tenth comet discovered by Don Machholz from California, in the morning sky with binoculars near the Pleiades in January of 1996. These meteors will appear to originate from a point in the sky in Aquarius low on the southeastern sky just above the 17th brightest star in the sky named Fomalhaut, located 25 light years from Earth. When you look at that star this summer remember that the very first planet ever seen directly in visible light was just found orbiting this star using the Hubble Space Telescope late last year. It is a Jupiter-sized planet that orbits Fomalhaut at a much greater distance than Jupiter is from our sun, since it takes that planet, called Fomalhaut B,

about 872 years to orbit its parent star. It was found just inside the edge of a huge disk of dust and it was predicted to exist there for a while, since they studied this star for 8 years before they finally found its planet in visible light.

The other major event will be a total eclipse of the sun. That will happen on Wednesday, July 22 over India and China. The narrow shadow cone of the moon will sweep across the earth that day starting just north of Mumbai, India, continuing over Bhutan and across southern China exiting in Shanghai, the biggest city in China with 20 million people. Bhutan, located on the rooftop of the world next to Nepal, is a very interesting country that has successfully balanced modernization with preserving ancient culture and the environment under the guiding philosophy of Gross National Happiness, and is the only country in the world to actually measure this elusive human quality.

At least one member of our astronomy club, The Astronomical Society of Northern New England, will be going to China for this eclipse, so I will update you next month on what they experienced. Try to catch this

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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"

eclipse live on the NASA channel or a live feed on the internet. I remember seeing the last total solar eclipse live on the NASA channel from Mongolia last August 1st at 7 am. Actually being there to experience a total eclipse of the sun and physically standing in the shadow of the moon, our only natural satellite is one of the most exciting and memorable experiences in astronomy anyone could ever have. The next total solar eclipse happens on July 11, 2010 right over Easter Island in the south Pacific and the next one in this country doesn't happen until August 21, 2017.

Saturn is beginning to sink into the western horizon and will be setting by 10 p.m. Through a telescope you will notice that the angle of its rings is getting ever thinner, reaching just 2 degrees from horizontal by the end of the month. Look for a slender waxing crescent moon to glide under Regulus and Saturn about 30 minutes after sunset from July 23 to 25.

Jupiter begins the month rising by 11 pm, and ends the month rising by 9 pm, just after sunset. The King of the Planets will rise at sunset by the middle of August, when it reaches opposition. Jupiter continues to get a little brighter and closer each night until that time. Notice that you can see its four large Galilean moons with just a pair of good binoculars.

The rest of the planetary action takes place in our morning sky about one hour before sunrise. Orange Mars can be seen just below the Pleiades and brilliant Venus is below and to the left of our other neighbor, and just to the left of Aldebaran, an orange star in Taurus. Venus is 100 times brighter than Mars and over 3 times as large in our sky. However, Mars is slowly getting closer and brighter and Venus is getting less bright and farther away, even though it is getting more illuminated by the sun now, similar to a waxing gibbous moon. Watch the drama in the morning sky between the 17th and the 19th as a waning crescent moon drifts through the Pleiades right above Mars and Venus.

July 3. The earth is at aphelion or farthest from the sun at 10 p.m. tonight. Our orbit around the sun traces an elliptical shape, but it is not very different from a circle since we will be just 3.3% farther from the sun now than we are in January. Our seasons are caused by the 23.5

degree tilt of the earth and not our distance from the sun. The waxing gibbous moon will pass very close to Antares tonight. If you were in Hawaii, you would see the moon cover this bright star tonight around midnight. Antares, a red supergiant star, is the 16th brightest star in the sky and one of the largest stars in our whole galaxy of 200 billion stars. Antares is 700 times the diameter of our sun and 10,000 times brighter than our sun. Antares is 600 light years away, but if you could place it were our sun is in the sky, the orbit of Earth and even Mars would be inside the star below the surface.

July 7. Full moon is at 5:21 a.m. EDT. This is also called the Hay or Thunder Moon.

July 9. Jupiter will be near the moon tonight and the next night in the constellation of Capricornus. Through a small telescope you can see Neptune just to the north-northwest.

July 15. Last quarter moon is at 5:53 p.m.

July 16. On this day in 1994 the first fragment of Comet Shoemaker-Levy 9 hit Jupiter. After that 20 more mile-wide fragments plowed into Jupiter's gas surface over the next 6 days, one hitting about every 6 hours. I watched through a telescope as 5 of those 21 fragments hit Jupiter, but since they actually hit on the far side of Jupiter, I could not see them until about half an hour later as they rotated into view. One of many surprises that these impacts created were the large and easily visible (even in a small telescope) earth-sized black spots that remained visible for many months after the original impacts.

July 21. New moon is at 10:35 p.m.

July 28. First quarter moon is at 6:00 p.m. and the Delta Aquarid meteor shower peaks.

Moon Phases

Jul 7
Full

Jul 15
Last Quarter

Jul 21
New

Jul 28
First Quarter

Moon Data

Jul 4
Antares 0.5° south
of Moon

Jul 7
Moon at apogee

Jul 10
Jupiter 4° south
of Moon

Neptune 3° south
of Moon

Jul 13
Uranus 6° south
of Moon

Jul 18
Mars 5° south
of Moon

Jul 19
Venus 6° south
of Moon

Jul 21
Moon at perigee

Jul 25
Saturn 7° north
of Moon

Astronomical Society Of Northern New England

Business Meeting

June 5, 2009

Present:

Richard Beaulieu (secretary), Barbara Bianchi, David Bianchi, Ron Burk (president), Joan Chamberlin, Jim Hatch, Bro. Albert Heinrich.

Minutes:

The minutes from the April meeting were accepted.

Membership:

Our new members are Budd and Grace Miller.

Starparties:

| | |
|-----------------|--|
| South Hiram | June 12 |
| Star party | June 19; Ron will invite some boy scouts from Berwick. |
| Club star party | June 26 at the observatory, with Shapleigh. |
| Club star party | July 24 |
| Club star party | August 21 |

July 10 - Bro. Albert Heinrich: Where does our calendar come from?

Aug. 7 - Paul Howell from SMA will talk on the history of astronomy.

Oct. 2 - Jerry Lasalla will give a talk on how we know what we know about the sun.

Sept. 18-20 Starfest Dave Bianchi will be ASNNE's Starfest coordination this year due in great part to the Masonic Lodge members who are planning on joining us with facilities and a possible guest speaker.

Next month, our business meeting will be in another room at the Masonic Lodge.

Observatory:

Jim Hatch would like to change the mount on the Mead telescope to an altitude-azimuth one. The set up would be easier.

We will have the capacity to put the image from the telescope on a computer screen. Several people would be able to see it at the same time. This is because of the gift to the club of an imager by an amateur astronomer who died.

It might even be possible to project the image on a big screen.

Galileoscopes:

Joan ordered 25 of these telescopes, that you assemble yourself.

Symposium:

On June 19 there will be a symposium held by the New York Academy of Sciences on the relation between light pollution, disruption of the circadian rhythm and cancer.

Respectfully submitted,
Richard Beaulieu

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

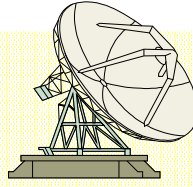
November 26
Andromedids

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/asnne

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

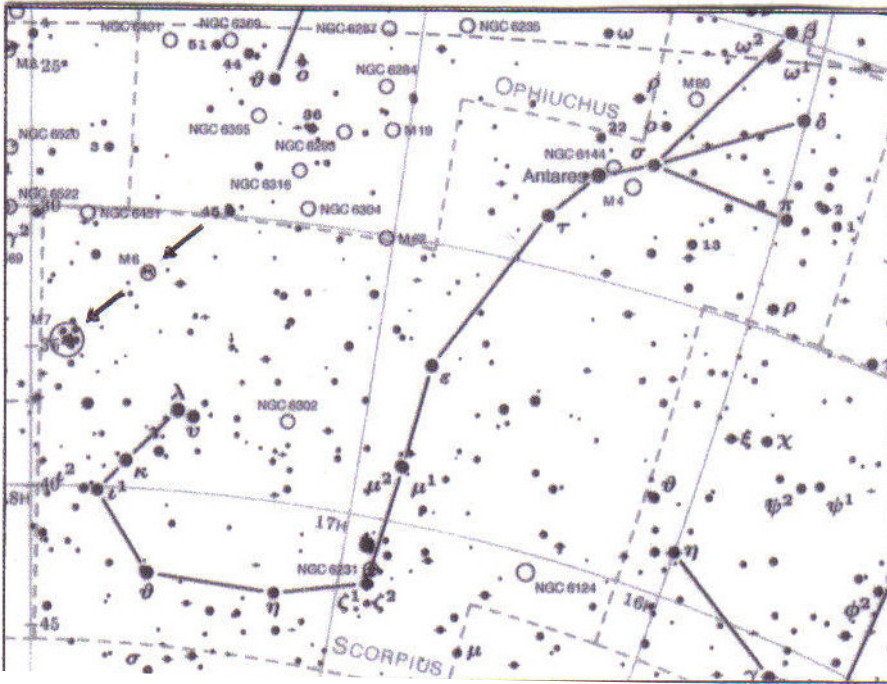
Postage · Apparel · Housewares
Hats & Bags · Stickers, Buttons & Magnets

Sky Object(s) of the Month - July 2009

Messier 6 and Messier 7

By Glenn Chaple

Finder chart for M6 and M7
From Mag-7 Star Atlas
(Copyright Andrew L. Johnson)



The song “Love and Marriage,” contains a line that goes, “you can’t have one without the other.” The words aptly describe the open clusters M6 and M7 in Scorpius. This cosmic “horse and carriage” lies in the southern sky above the Scorpion’s stinger.

M7 is the brighter and larger of the two. With an overall magnitude of 3.3, it spans 80’ – over twice the moon’s apparent diameter. Readily seen with the unaided eye in the absence of bright moonlight or city lights, M7 was first reported by the Greek astronomer Claudius Ptolemy nearly two millennia ago. “Ptolemy’s Cluster” is a dazzling

sight in binoculars and small rich-field scopes – a striking aggregation of some 80 stars between magnitudes 6 and 10, immersed in a sparkling background of Milky Way stars. Because of its large size, M7 appears rather sparse in large-aperture scopes. Current studies indicate that M7 is 800 light-years away and is approximately 200 million years old.

Just five degrees northwest of M7 is its partner M6. This cluster, which is a magnitude fainter than M7 and one-third as large, lies just outside the glow of the Milky Way. Like M7, M6 is visible to the unaided eye and was recorded by Ptolemy. Rather than be saddled with the nick-name “Ptolemy’s Cluster II,” M6 was dubbed the “Butterfly Cluster.” The outline formed by its brightest stars does indeed resemble the outstretched wings of this insect. M6, like M7, is at its visual best when viewed with binoculars or small RFTs. With the latter, you can see about 80 stars brighter than 11th magnitude. The most luminous of the cluster’s member stars is the reddish-orange semiregular variable BM Scorpii, whose magnitude fluctuates from 5.5 to 7.0 in a cycle of roughly two years. M6 is twice as remote as M7 and half its age.

Though the splashier M7 seems to get better reviews, I found M6 to be a more attractive sight when recently observed in the 1.5o field encompassed by my 4-inch f/4 Astroscan at 35X. M6 appeared as a tight little group, while M7 seemed sparse. Oddly enough, I was more impressed by M7 when I first viewed the two clusters with a 3-inch f/10 reflector at 30X back in the summer of 1977. Compare M6 and M7 and see what you think. Now if I can just get that “Love and Marriage” melody out of my head!

Your comments on this column are welcome. E-mail me at gchaple@hotmail.com.

Editor: The following is submitted by *Bob Dyer*.

Bob said: "Our instrumental guy at school takes great photographs - this is not his. He just sent it to me and if it is any significance, others may like it. Due to my limited knowledge I don't know if it would be of interest.

This shot is awesome! The explanation of how it was done its pretty intense as well.

I have included it below.

The first night we shot 4.5 hours of images through red, blue and green filters which are then combined in software. The next night we shot over 3.5 hours of luminance (white light). The b&w images are combined with the previous night's color image to keep the noise down. The camera is cooled 13 degrees Celsius below ambient temperature to lower the noise. A number of dark frame images of the same length are made to subtract from the light images to eliminate more noise. Shots of a white flat sheet are taken to combine with the other images to take out dust spots and other unwanted dirt. Also we take bias exposures to compensate for any problems with electrical artifacts from the CCD sensor. We combine everything in software and use a process called sigma rejection to get rid of cosmic rays, satellites, and airplanes.

The telescope is mounted on a tracking mount that is guided with an internal small ccd.

Not my picture, but one by a guy that goes by "jperonto" on dpreview.com. Here is a link to his thread:

<http://forums.dpreview.com/forums/readflat.asp?forum=1033&message=32054032&q=galaxy&qf=m>

Joe



Club Meeting & Star Party Dates

| Date | Subject | Location |
|--------------|---|--|
| July 10 | 5:30-6:30 PM: Business Meeting 6:40-7:30PM: Social Hour and Joan's Beginner Astronomy Class (Topic TBD). 7:30-9:30PM: Club Meeting: * 2009 NASA NSN Hot Topic: Black Holes - Observing target: The Milky Way. *Bernie Reim's "What's Up." *Astro Shorts & Astro News. *NASA Night Sky Network Activity. *Dark Skies: Friendly Lighting Updates. * Guest Speaker: Brother Albert Heinrich - Topic: Where does our calendar come from? | Masonic Hall West Kennebunk, Me. |
| July 15 & 24 | Club/Public Star Party. 15th: w/Hollis rec group. 24th: w/Berwick Boy Scouts. <i>(Visit website for cancellations and or updates).</i> | 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 _____

