

# SKYLIGHTS

Newsletter of the Astronomical Society of Northern New England



**MAY 2010**



**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 May

*By Bernie Reim*

**T**he month of May is named after the goddess Maia, which represents growth. That is what this hemisphere of the earth is now experiencing as spring continues to unfold and the landscape slowly and steadily transforms itself into the deeper greens of summer.

The sky above us also continues to change, with each week and month offering new vistas into the space we all share just beyond Earth. Three of the five brightest planets will be nearly evenly lined up along the ecliptic in the evening sky in May, with the fourth one, Jupiter, rising around 3 a.m.

We are finally losing the Winter Hexagon and Orion in May, but not before Venus and the waxing crescent moon glide past some nice star clusters in Gemini. There will even be another meteor shower caused by the most famous of all comets, Halley's.

Looking west-northwest 45 minutes after sunset, you will see brilliant Venus hovering in Taurus and Gemini. Our sister planet will pass very close to M35 in Gemini on May 21, but you will need binoculars to really see this nice open star cluster. Start looking for the very slender waxing crescent moon on Friday the 14th. The moon will glide 12 degrees closer to Venus along the ecliptic the next evening, and it will be passed Venus on the 16th and 17th.

Mars continues to fade in our sky as it rapidly glides eastward into Leo. It is already well past the Beehive Star Cluster in Cancer, which you can easily see without binoculars.

Saturn is the next planet in our journey through the sky along the ecliptic. It can be seen in the constellation of Virgo and is also slowly fading as it is getting farther away. Saturn will end its retrograde, or westward motion in the sky on the last day of May. The ringed planet was at its best at opposition on the first day of spring this year on March 21. It started its retrograde motion two months before that. Saturn spends about four months each year in retrograde motion and eight months in direct or prograde, eastward motion.

Jupiter rises around 3 a.m. in Pisces. Watch as a waning crescent moon glides just above Jupiter and just below the Great Square in Pegasus one hour before sunrise during the mornings of the 9th through the 11th.

The meteor shower in May will be the Eta Aquarids, which will peak on May 5 and 6. The moon will be around last quarter, so it will interfere when it rises around midnight. This shower is caused by Halley's Comet. The annual October 21st Orionid meteor shower is also caused by this famous comet.

So if you didn't see Halley's Comet back in 1985 and 1986, you can see tiny sand-grain-sized pieces of this comet twice a year and they rain into our atmosphere 70 miles up at 30 miles a second.

Look for the full moon on May 27 getting very close to the orange supergiant star Antares in the constellation of Scorpius. At 700 times the diameter of our sun, Antares is one of the largest stars in our whole galaxy of over 200 billion stars. If Antares were placed where our sun is in the sky, only 93 million miles away or 8.3 minutes at the speed of light, the orbit of Earth and even Mars would be inside of this giant star.

*"Continued on page 2"*

## *Inside This Issue*

<b>Club Contact List</b> <b>Adria Updike</b>	<b>pg 2</b>
<b>Moon Data</b>	<b>pg 3</b>
<b>Sky Object of the Month</b>	
<b>Meteor Showers in 2010</b>	<b>pg 4</b>
<b>Play Photon Pile-up</b> <b>Club Items For Sale</b>	
<b>A Rock Hound Is Born</b>	<b>pg 5</b>
<b>Club Minutes</b>	<b>pg 6</b>
<b>Some notes from Jim Hatch</b>	<b>pg 7</b>
<b>Club Meeting &amp; Star Party Dates</b>	<b>pg 8</b>
<b>Directions ASNNE Locations</b>	
<b>Become a Member</b>	<b>pg 9</b>

## Club Contacts

### Officers:

President:  
Ron Burk  
rdavidburk@yahoo.com

Vice President:  
Joan Chamberlin  
starladyjoan@yahoo.com

Secretary:  
Alan Goff  
alangoff@computer.org

Treasurer:  
TBD  
See Ron Burk for now

### Board of Directors:

Albert Heinrich  
aheinrich42001@yahoo.com.au

David Bianchi  
dbianchi@verizon.net

Adam Amara  
amara.adam@juno.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"

**May 1.** On this day in 1949, Gerard Kuiper, after whom the Kuiper Belt is named which Pluto is now a part of, discovered Nereid, the second largest moon of Neptune after Triton. Comet Hyakutake also made its closest approach to the sun on this day in 1996. Not as famous or widely seen as Hale-Bopp exactly one year later, Hyakutake was also a fantastic, once-in-a-lifetime comet. I well remember seeing this wonderful comet one night around 3 in the morning stretching nearly halfway across the sky. It actually got within 10 million miles of earth, which is 10 times closer than the approach of Hale-Bopp the next year.

**May 5.** The Eta Aquarid Meteor shower peaks this night and the next.

**May 6.** Last quarter moon is at 12:15 a.m.

**May 9.** The waning crescent moon will pass near Jupiter this morning and the next one hour before sunrise.

**May 13.** New moon is at 9:04 p.m.

**May 14.** On this day in 1973, Skylab was launched. It came back down earlier than expected due to strong solar wind activity causing extra drag on our atmosphere. The ISS has since taken its place and will probably stay up for many more years.

**May 15.** The thin crescent moon is near Venus this evening and the next.

**May 19.** The moon is about 6 degrees below Mars this evening.

**May 20.** First quarter moon is at 7:43 p.m.

**May 27.** Full moon is at 7:07 p.m. This is also called the Milk or Planting Moon.

**May 29.** On this day in 1919, Einstein's Theory of General Relativity passed its first real test during a total solar eclipse. It was proved that the light from a star behind the sun was bent by exactly the amount that his theory predicted. Now we have also seen gravitational lensing, when the gravity of galaxies along our line of sight severely bend the light of galaxies behind the closer galaxies so that multiple images of those galaxies appear.

*Editor's Note:* Adria Updike used to be a former member of ASNNE. Pat Aichele received an email from her not too long ago. Adria's email is shown below.

### Hi Pat!

How are you? I'm glad Mom sent the news release to you; I've been meaning to email you for a while now. I hope everyone in the club is doing well; I got a chance to speak for the Clemson Area Amateur Astronomers a few years ago, and that was a lot of fun, seeing it from the other side after watching so many talks years ago.

If anyone is interested in what I'm doing now, I transferred from Montana State to Clemson in SC back in 2006, and I'm hoping to graduate with my PhD (technically a physics PhD) sometime this year (either August or December, depending on when/if I get a job offer). My field of research has changed a few times since I started my PhD, but my dissertation focuses on using gamma ray bursts as probes of dust and star formation in the early universe. I'm involved in several telescope collaborations; I've been using the SARA and Super-LOTIS telescopes (both at Kitt Peak in Arizona) and the GROND instrument on the 2.2m European Southern Observatory telescope at La Silla Chile. I travel to Chile 3-4 times a year for 3-4 weeks at a time to run the telescope; basically waiting around for a gamma ray burst to be detected by the Swift satellite. It actually sends me a text message when it finds one, and then I have to find a telescope to look at it in a hurry because they fade quickly.

My ASNNE experience definitely helped me in my studies; thanks to my copious experience running small telescopes and identifying constellations, I got a teaching assistant position my first year in college, and I'm helping run the Clemson planetarium and outreach activities with our 'small' telescopes here on campus. I was certainly surprised to learn how many astronomers couldn't find Orion in the sky - I don't know how they got interested in astronomy without looking up once in a while.

Say 'hi' to everyone for me! What are you up to these days?

Great to hear from you,  
Adria

Moon Phases**May 6**

Last Quarter

**May 14**

New

**May 20**

First Quarter

**May 27**

Full

Moon Data**May 6**

Moon at apogee

**May 7**Neptune 4° south  
of Moon**May 9**Jupiter 5.7° south  
of MoonUranus 5.7° south  
of Moon**May 12**Mercury 7.4° south  
of Moon**May 16**Venus 0.09° south  
of Moon  
(occultation)**May 20**Mars 4.8° north  
of Moon

Moon at perigee

**May 22**Saturn 7.4° north  
of Moon

## Sky Object of the Month – May 2010

### M40 – the “Unknown” Messier Object

by Glenn Chaple

What is the most most-observed deep-sky object in the Messier Catalog? Some might suggest the Orion Nebula (M43) or Andromeda Galaxy (M31), both cosmic showpieces. More likely, it's the Pleiades (M45), a striking and easily observed naked eye cluster.

What about the other end of the spectrum – those Messier objects that receive scant attention? The least-observed might well be Messier 40. Arguably the oddest member of the Catalog, M40 isn't a cluster, nebula, or galaxy. It's a double star! We might well label M40 “Messier's Mistake.”

Messier stumbled upon this stellar duo while searching for a nebulous object reported to be in the area. For some reason, perhaps because it might appear nebulous at low power or in an inferior instrument, he added it to his Catalog. A century later, another comet hunter, Friedrich Auguste Theodor Winnecke, rediscovered the object. He correctly catalogued it as a double star, and it bears the alternate identity Winnecke 4.

Finding M40 isn't a problem. Start at delta ( $\delta$ ) Ursae Majoris, then move about a degree northeast to 70 UMa. In the same low-power field a quarter degree further northeastward is M40. As double stars go, M40 isn't a very inspirational sight. Its magnitude 9.7 and 10.1 component stars are separated by over 52 arc-seconds. Quite likely, it's an optical pair. It may not be one of the night sky's spectacles, but the path to observing all of the Messier objects goes through M40.

Your comments on this column are welcome. E-mail me at [gchaple@hotmail.com](mailto:gchaple@hotmail.com)

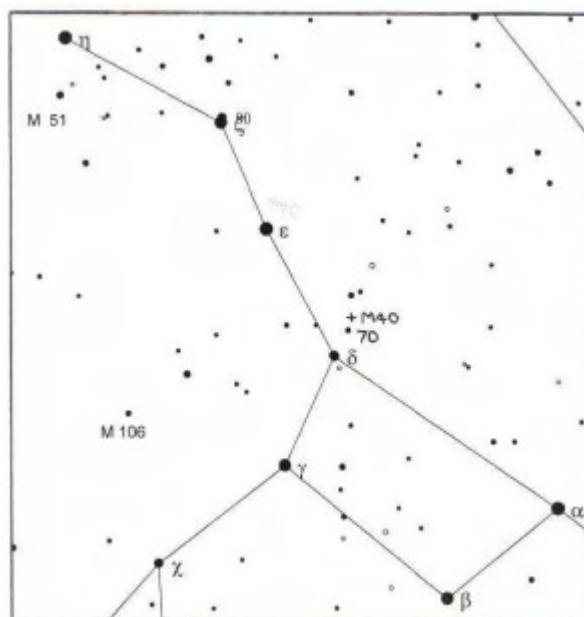


Chart for M40 (Win 4)  
From Cartes du Ciel

## Principal Meteor Showers in 2010

**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*

## The Space Place

In this fast-paced game, multi-colored photons rain in from all directions. They come from old stars, new stars, galaxies, and glowing gas. Spin the Galaxy Evolution Explorer telescope around quickly to collect three photons of the same color and record the beautiful space image one piece at a time. This telescope detects ultraviolet photons best, so those count most. Don't let the sticky non-matching photons pile up too high, or the game will end before your picture is complete.

Play Photon Pile-up at <http://spaceplace.nasa.gov/en/kids/galex/photon>.

And don't get too addicted!



The latest issue of the **Space Place Newsletter: News and Notes for Formal and Informal Educators** can be found at: <http://spaceplace.nasa.gov/en/educators> .

## Club Items For Sale



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



## A Rock Hound is Born

It's tough to be a geologist when you can't tell one rock from another. Is that a meteorite or a chunk of lava? A river rock or an impact fragment? Houston, we have a problem!

It's a problem Spirit and Opportunity have been dealing with for the past six years. The two rovers are on a mission to explore the geology of the Red Planet, yet for the longest time they couldn't recognize interesting rocks without help from humans back on Earth.

Fortunately, it is possible to teach old rovers new tricks. All you have to do is change their programming—and that's just what NASA has done.

"During the winter, we uploaded new software to Opportunity," says Tara Estlin, a rover driver, senior member of JPL's Artificial Intelligence Group, and the lead developer of AEGIS, short for Autonomous Exploration for Gathering Increased Science. "AEGIS allows the rover to make some decisions on its own."

Estlin and her team have been working for several years to develop and upload increasingly sophisticated software to the rovers. As a result, the twins have learned to avoid obstacles, identify dust devils, and calculate the distance to reach their arms to a rock.

With the latest upgrade, a rock hound is born.

Now, Opportunity's computer can examine images that the rover takes using its wide-angle navigation camera (NavCam) and pick out rocks with interesting colors or shapes. It can then center its narrower-angle panoramic camera (PanCam) on targets of interest for close-up shots through various color filters. All this happens without human intervention.

The system was recently put to the test; Opportunity performed splendidly.

At the end of a drive on March 4th, the rover settled in for a bit of rock hunting. Opportunity surveyed the landscape and decided that one particular rock, out of more than 50 in the NavCam photo, best met criteria that researchers had set for a target of interest: large and dark.

"It found exactly the target we would want it to find," Estlin says. "It appears to be one of the rocks tossed outward onto the surface when an impact dug a nearby crater."

The new software doesn't make humans obsolete. On the contrary, humans are very much "in the loop," setting criteria for what's interesting and evaluating Opportunity's discoveries. The main effect of the new software is to strengthen the rover-human partnership and boost their combined exploring prowess.

Mindful that Opportunity was only supposed to last about six months after it landed in 2004, Estlin says "it is amazing to see Opportunity performing a brand new autonomous activity six years later."

What will the rock hounds of Mars be up to six years from now? Stay tuned for future uploads!

Learn more about how the AEGIS software works at <http://scienceandtechnology.jpl.nasa.gov/newsandevents/newsdetails/?NewsID=677>. If you work with middle- or high-school kids, you'll find a fun way to explore another kind of robot software—the kind that enables "fuzzy thinking"—at [http://spaceplace.nasa.gov/en/educators/teachers\\_page2.shtml#fuzzy](http://spaceplace.nasa.gov/en/educators/teachers_page2.shtml#fuzzy).



**Caption:** Opportunity spots a rock with its NavCam that its AEGIS software says meets all the criteria for further investigation.

## ASNNE Business Meeting

April 9, 2010

Present: Dave Bianchi, Ron Burk (president), Bob Conley, Joan Chamberlin,  
Alan Goff(secretary), Jim Hatch, Br. Albert Heinrich, Steve Innes

### Secretary's Report:

March minutes were approved.

### Star Parties: Starfield Observatory - or as noted

#### Club/public:

April 6	Star party to view Venus and Mercury, Ron will confirm location
April 16	new moon 4/14 Public and Odyssey of the Mind school group, Ron will coordinate with school group
April 24	Astronomy day, public star party
May 14	Public, possible Kennebunk Land Trust - not confirmed
June 11	new moon 6/12
July 09	new moon 7/11
August 10	new moon 8/13
September 11-12	Starfest
September 14	Wells Reserve Equinox walk 16 as cloud date

### Meeting programs:

May 7	James Standerfer (several days after meeting James had to reschedule)
May 19-22	Middle Atlantic Planetarium Society meeting at Eastland Hotel in Portland ASNNE is scheduled for a presentation
June 4	Steve Innes
July 2	Jim Hatch - start at monthly meeting site, then continue at observatory
August 6	Member short presentations, Brad Irish, Ron Burk and others

### Observatory/Equipment & Facility

Bernie Reim is going to check on The New School in Kennebunk as a meeting site,  
other possible are also being discussed.  
ASNNE needs to remove materials from the closet and shed at York Lodge meeting site.  
The "Dew Buster" controller from Ekholm donation to be installed on Meade.  
Heat tape needs to be installed on the 80 millimeter finder scope.  
Discussion continues regarding Mallincam video CCD observational system and alternatives.  
ASNNE Library: Book plate design was discussed

### Finance/Legal:

ASNNE has \$2,453. in its bank account.  
Rent paid through June, PO Box payment of \$190.00 due in April  
A PayPal business account will be set up.  
A grant request is being prepared for Kennebunk Savings Bank.  
Various possibilities for fund raising were discussed.

### Web Sites and associated organizations:

Members need to either enter outreach hours or advise Joan Chamberlin  
Jim is updating the ASNNE website to put most information on the NSN website and  
improving links from ASNNE site to NSN site for members and non-members of ASNNE

Respectfully submitted,  
Alan Goff

Some notes from Jim on today's event if i get run over by a truck. Feel free to cut and paste for newsletter, to place blame etc.

I arrived in mid afternoon to some club members and the Zeiss 8" refractor dressed out to compete with the NASA SDO (sun dynamics observatory) space probe activated to much media coverage this week, network tv excepted of course. Our advantage is we 'do it live' and without all the Hollywood sped up animations of the real thing.

During a warm sunny day with our Zeiss, you can see the roiling sun in realtime, and wait hours to see changes in a coronal mass ejection. Meanwhile discussing certain angles of interest.

I as the alleged suspect of observatory director, engineer, chief cook and bottle redeemer, was asked by Ron to check out the white light viewing on the 406,400 micron Meade.

While we were checking out the white light filter, Ron turned on and destroyed the Meade. (His retort: I stirred the cryo tanks as in Apollo 13).

The 7.5A fuse in the twelve volt feed to the Mead 12-18V upconverter power supply showed an internal blast due to a severe overload.

Hoping it was the most likely 18 volt supply being bad, I was dismayed it was ok.

The Meade has a a short in its base between 18v input motor power and ground before the logic regulators.

Either what the cable is connected to or a pinch somewhere.

There is a 16 pin ribbon cable going to the base circuitry from the motherboard, and we need to schedule a Meade repair team to get the scope off the mount and onto some cushions to fix it.

In some ways this is good, as we wanted to correct gear backlash, lubrication improvements and loading balance, and it did not happen during a major star party, or after we had done the improvements and lube.

Joan did some really cool hands on Night Sky Network mooning with us all, and we hope aliens were not watching, thinking we were in an earthling ritual.

Tootsie roll pops might have been easier for her rather than the ones she had to build, and tastier. But they do have a more exaggerated equator from what I remember.

*Submitted By  
Jim Hatch*

## Club Meeting & Star Party Dates

Date	Subject	Location
May 7	<p><b>ASNNE Club Meeting</b></p> <p><b>7:00 -7:30PM:</b> Social Hour and Joan's Beginner Astronomy Class (Public walk-ins welcome).</p> <p><b>7:30-9:30PM:</b> Club Meeting:</p> <ul style="list-style-type: none"> <li>*Bernie Reim's "What's Up."</li> <li>*Astro Shorts &amp; Astro News.</li> <li>*Dark Skies: Friendly Lighting Updates</li> </ul> <p><b>Guest Speaker/Topic</b> to be determined.</p>	Masonic Hall West Kennebunk, Me.
May 14	<p>Club/Public Star Party. Rain date May 15. (<i>Visit website for updates and or cancellations</i>).</p>	Starfield Observatory, West Kennebunk, Me.
<p><b>Postponed</b> June 4 July 2 August 6</p>	<p>James Standerfer PhD.- Physicist and new ASNNE member will give a talk on General Relativity. Steve Innes - Will share his 2009 China Eclipse experience with us. (1 hr later start) Jim Hatch on the Starfield Telescopes and Dark Sky Outreach efforts. We will meet first at our meeting location in case of rain - then travel to Starfield. Club member shorts - a collection of short presentations from interested members who would like to share their interests. Like: -Brad Irish and his solar interest, images &amp; scope. -Ron Burk on Moon Risings. Anyone else have a short to share? We have room for more - let Ron know.</p>	

### 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

**2010 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 \_\_\_\_\_

