The Shoreline Observer

The Shoreline Amateur Astronomical Association Newsletter January 2007 VOL. 1, No. 1

Upcoming SAAA Events…

Club Meeting: Thursday, January 18 @ 7:00 PM

- *Macatawa Bay School Planetarium*
- *Presentation on meteor impacts by Peter Burkey*
- *Membership dues collected*
- *Refreshments: George Miller*

Observing Session: Friday, January 19 @ 6:00 PM

- *Vivekananda Monastery, 6723 122nd Ave, in Fennville*
- *Weather Permitting*
- *Sunset at 5:40 PM*

Board Meeting: Thursday, February 1 @ 5:30 PM

- *84 East, 84 8th , in Holland*

Celestial Highlights:

Jan. 3
Full Moon

Jan. 11
Last-quarter Moon

Jan. 15
Look for crescent moon, Antares and Jupiter in SE 90 minutes before dawn.

Jan. 18
New Moon

Jan. 20
Use binoculars to see Venus, two stars and a crescent Moon in WSW one hour after sunset

Jan. 25
First quarter Moon

Inside this Newsletter

Northern lights over West Michigan - Dec. 14, 2006

December meeting minutes

The general meeting of the Shoreline Amateur Astronomical Association was brought to order by Jim Reier on Thursday, December 21, 2006 at 7:15 p.m. Fifteen members and guests attended the meeting which took place at Macatawa Bay School Planetarium. All members contributed refreshments for the Christmas party.

The meeting opened with old and new Club business.

Old Business

- Mark Logsdon confirmed we have a guest speaker for February. Dr. Cole is an expert on meteorites and has fieldwork experience. Dr. Cole will bring a 3D-projector and an 8' wide silver screen with him in February.
- Jim Reier shared upcoming meeting topics for SAAA meetings through June 2007.
- Members were encouraged to attend a field trip to the Krasl Art Center in St Joseph Michigan on Saturday, January 6th at 10a.m. The Krasl is hosting a Hubble Space Telescope exhibit through January 7th.
- George Miller volunteered to bring refreshments in January.

New Business

- Robin Hudson will email the correct refreshment schedule to Jim Reier so that the web page listing is up-to-date.
- Membership dues will be collected at the January SAAA meeting.
- Jim Reier volunteered to host web-site training at his home sometime in February. This will be hands-on training to get members familiar with WordPress™ and the SAAA forum.

Ian Hudson presented Auriga as the constellation this month. Auriga was projected on the planetarium dome and positioned near the zenith. Ian guided members on a tour of Auriga, pointing out M36, M37 and M38. Hardcopies of Ian's presentation were distributed to all members present.

Jim Reier read aloud to a presentation titled, "What was the Star of Bethlehem?" This presentation was created by Clay Frost of MSNBC and is based on "The Christmas Star" by John Mosley. It attempts to reveal astronomical evidence for the object known as the star of Bethlehem.

Jim Reier's intermission PowerPoint containing astronomical facts for 2007 sparked member interest and discussion. Members discussed upcoming NASA/ESA space missions, 2007 celestial events, planetary locations, and solar and lunar eclipses.

The meeting concluded at 8:50 PM.

Board meeting minutes

SAAA officers and at-large members assembled for a board meeting on January 4, 2007 at the Beechwood Inn restaurant in Holland. President Jim Reier brought the meeting to order at 5:30 p.m.

In attendance were Jim Reier, Mark Logsdon, Robin Hudson and Peter Burkey.

Mark Logsdon indicated the club has $608.96 in the treasury.

Peter Burkey received confirmation of his membership to the Great Lakes Planetarium Association (GLPA). Peter received a CD containing meeting minutes from the 2006 GPLA Conference in Merrillville, Indiana. As a member of the GLPA, Peter has access to their audiovisual library of planetarium presentations.

Peter Burkey donated a copy of the Astronomical Calendar 2007, by Guy Ottewell to the club library. The calendar will be useful to members who present constellations. The book contains astronomical facts for 2007 highlighting positions of the Sun, Moon, the constellations and planets.

Peter Burkey suggested that the club purchase a copy of Robert Burnham's classic three volume Burnham's Celestial Handbook for the library. Robin is researching the availability of that title at Reader's World, were she is entitled to a member discount.

Reminder to all members that membership dues will be collected in January. Membership is $20. Senior citizen and student discounts are available. Members are encouraged to attend our January 18th meeting to pay dues and receive membership cards.

Peter Burkey will present a slide show on meteor crater impacts at the January 18th SAAA meeting.

George Miller will provide refreshments for the January meeting.

The next scheduled star party is January 19th at Vivekananda Monastery, weather permitting.

The SAAA owns two telescopes that club members may borrow. We have a 4.5" and a 6" Dobsonian reflector. Please notify a board member if you would like to borrow one of these two instruments.

In April, we host Park Township. The topic is the solar system with emphasis on lunar and planetary motion. We will discuss Earth's axis of rotation and the reason behind the four seasons. We will explain the spring and fall equinoxes, and the summer and winter solstices.

What's up in the sky?

January, 2007
By Peter Burkey

Except for the weather, this is the start of a great observing season, mainly because there are so many bright stars and constellations visible.

Many folks have a favorite constellation and often it is Orion. The Hunter can be found high in the southeast in the early night sky. He is easily distinguished by the three stars in a line that form his belt and three smaller stars in his sword. The middle "star" is actually the Great Orion Nebula, a giant cloud of gas and dust out of which new stars are forming. Also known as M42, it is an interesting object for a small telescope.

Surrounding the sword and belt is a rectangle of stars representing Orion's shoulders and knees. Compare the upper left and lower right stars. The former, Betelgeuse, is a red giant and the latter, Rigel, is a blue-white giant.

Follow the line of stars in the belt to the left and you can't miss Sirius, the brightest star visible in our night sky all year.

Above and to the right of Orion look for a small V of stars (Taurus, the Bull) and farther over find the Pleiades - the Seven Sisters. It looks like a tiny dipper - not to be confused with the real Little Dipper on the opposite side of the sky.

Above Orion and close to the star that represents the tip of one of the Bull's horns lies a very interesting object indeed. It is called M1 or the Crab Nebula. Unfortunately, it is not easily visible unless you are at a dark site with a decent telescope, but it is famous nonetheless.

First discovered in 1731, it was found independently by Charles Messier 27 years later when he was searching for a comet. Since it appeared as a faint, fuzzy blur in his telescope (just like a distant comet), Messier decided to make a list of such objects so other comet hunters would not be similarly fooled, hence the designation M1, the first on his list.

The crab nebula is actually a supernova remnant, the remaining cloud of rapidly expanding gasses left over from a star that exploded. In fact, records from medieval China contain an intriguing account of a "guest star" in Taurus that was visible in the daytime for 23 days. Most astronomers believe this was the supernova explosion whose remnant we now can observe.

This month in history:

Jan. 1: Aasteroid Ceres discovered by Giuseppe Piazzi - 1801
Jan. 7: Galileo discovers Callisto, Europa, and Io, moons of Jupiter - 1610
Jan. 13: First women astronauts selected by NASA - 1978
Jan. 24: Voyager 2 flies past Uranus - 1986
Jan. 27: Apollo 1 astronauts Chaffee, White and Grissom die in fire in capsule-1967
Jan 28: Seven astronauts killed when Space Shuttle Challenger explodes during launch - 1986
Jan 31: Explorer 1, first US satellite, launched - 1958

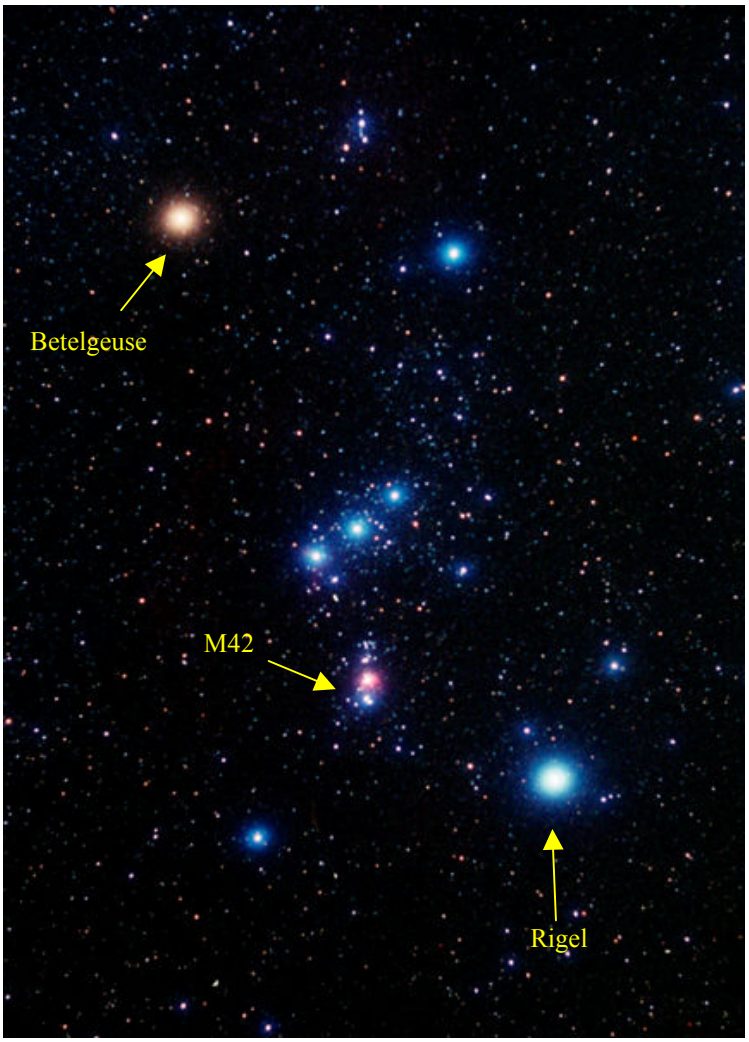


Image 1: Orion, The Hunter (Ground-Based Photograph)

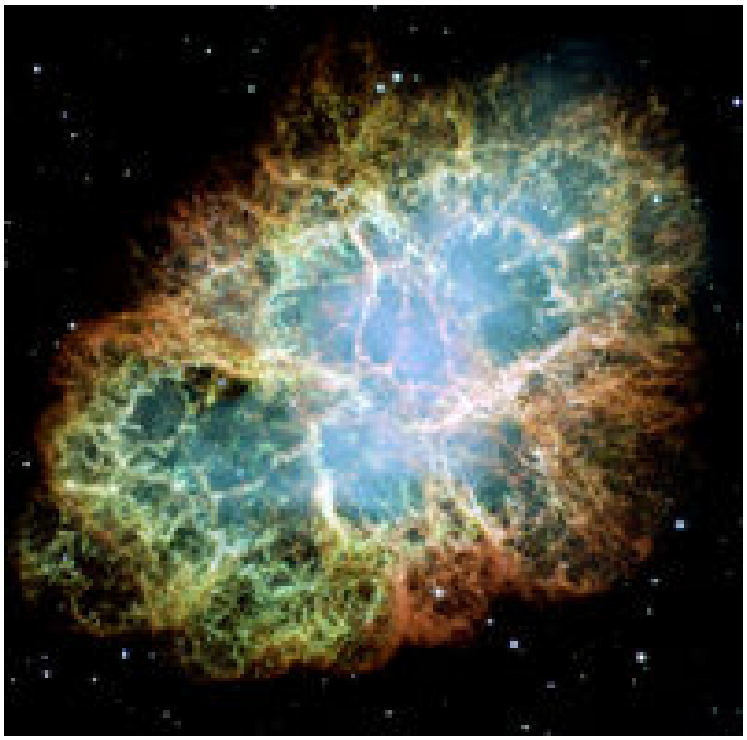


Image 2: Crab Nebula (Hubble Space Telescope Image)

Geminid meteors seen striking the Moon

January 5, 2007
By Kelly Young , NewScientist.com news service

Two small NASA telescopes with their lenses trained on the Moon spied five, and possibly six, Geminid meteoroids striking the lunar surface early on the morning of 14 December. The observations will help NASA design safe shelters for its future Moon base.

On Earth, most meteors burn up as they crash through the atmosphere. The Moon's atmosphere is negligible, however, so the largest of the space rocks crash into its surface with the force of 8-tonne bombs.

"We hope to learn how often big rocks crash into the Moon since we're sending astronauts back," says Bill Cooke, of the Meteoroid Environment Office at NASA's Marshall Space Flight Center in Huntsville, Alabama, US.

A crewed lunar base would have to be well shielded, given that meteoroids could be travelling at about 35 kilometres per second (see *Preventing the sky falling in on Moon bases*).

The concern is not really for the softball-sized projectiles hitting the astronauts directly, Cooke says, but rather from the material scattered from the resulting crater. Because of the Moon's lower gravity and thin atmosphere, material could fly for hundreds of metres. Cooke likens the ejecta to shrapnel from a bomb.

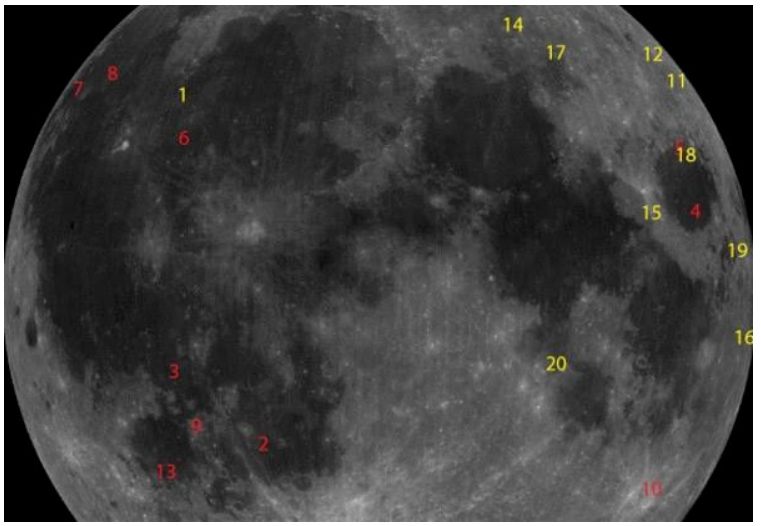
Ideal conditions

To find the impacts, NASA's twin 36-centimetre-wide telescopes, located at the Automated Lunar and Meteor Observatory (ALaMO) at Marshall, look for flashes of light on the unlit part of the Moon. Observing is ideal when the Moon appears as a thin crescent, giving observers plenty of dark space to gaze upon. Such ideal conditions occur about 10 to 12 nights per month.

Early models of lunar impacts indicate that the Moon could be hit by meteoroids larger than 1 kilogram (2 pounds) more than 260 times annually, but these models are highly uncertain. More observations should help to refine the estimate.

Since NASA scientists started observing lunar meteoroid impacts over a year ago, it has seen a total of 20 events. Half are from 'sporadic' meteoroids, meaning they are not associated with a specific meteor shower.

To date, the Geminid shower in December has been the most bountiful in terms of lunar impacts, but the team has also seen impacts from the Taurid and Leonid meteor showers in November 2005 and November 2006, respectively.



Lunar impacts numbered 14, 15, 16, 19 and 20 all came from the Geminid meteor shower in December 2006 (Image: NASA Meteoroid Environment Group)

BRINGING ASTRONOMY TO THE PEOPLE

ASTRONOMY DAY

April 21, 2007 and September 15, 2007

As an experiment, we are trying both a fall and spring date to see which works better. Feel free to host events on either or both. Events held on the September date are eligible for entry into the 2008 Astronomy Day Awards. For the latest information, current application forms for the Astronomy Day Award or to download the latest version of the Astronomy Day Handbook go to the Astronomy Day homepage.

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www.astroleague.org/astroday.html

NASA Space Place

Space Weather for Air Travelers

By Dr. Tony Phillips

At a time when much of the airline industry is struggling, one type of air travel is doing remarkably well: polar flights. In 1999, United Airlines made just twelve trips over the Arctic. By 2005, the number of flights had grown to 1,402. Other airlines report similar growth.

The reason for the increase is commerce. Business is booming along Asia's Pacific Rim, and business travel is booming with it. On our spherical Earth, the shortest distance from Chicago to Beijing or New York to Tokyo is over the North Pole. Suddenly, business travelers are spending a lot of time in the Arctic.

With these new routes, however, comes a new concern: space weather.

"Solar storms have a big effect on polar regions of our planet," explains Steve Hill of NOAA's Space Weather Prediction Center in Boulder, Colorado. Everyone knows about the Northern Lights, but there's more to it than that: "When airplanes fly over the poles during solar storms, they can experience radio blackouts, navigation errors and computer reboots—all caused by space radiation."

In 2005, United Airlines reported dozens of flights diverted from polar routes by nasty space weather. Delays ranged from 8 minutes to nearly 4 hours, and each unplanned detour burned expensive fuel. Money isn't the only concern: Pilots and flight attendants who fly too often over the poles could absorb more radiation than is healthy. "This is an area of active research—figuring out how much exposure is safe for flight crews," says Hill. "Clearly, less is better."

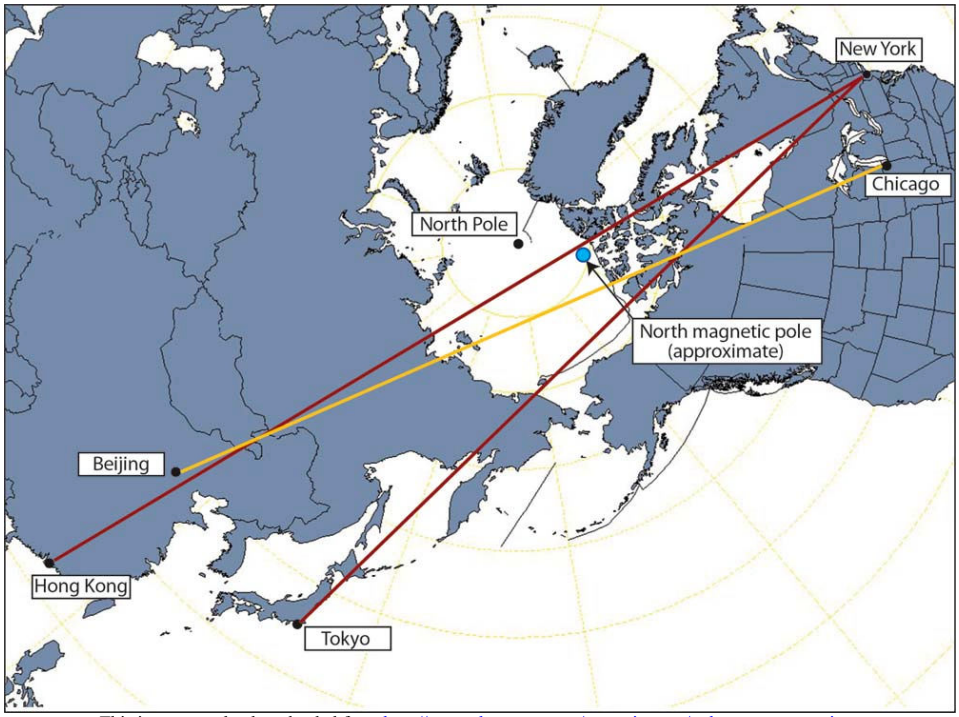
To help airlines avoid bad space weather, NOAA has begun equipping its GOES weather satellites with improved instruments to monitor the Sun. Recent additions to the fleet, GOES 12 and 13, carry X-ray telescopes that take spectacular pictures of sunspots, solar flares, and coronal holes spewing streams of solar wind in our direction. Other GOES sensors detect solar protons swarming around our planet, raising alarms when radiation levels become dangerous.

"Our next-generation satellite will be even better," says Hill. Slated for launch in 2014, GOES-R will be able to photograph the Sun through several different X-ray and ultra-violet filters. Each filter reveals a somewhat different layer of the Sun's explosive atmosphere—a boon to forecasters. Also, advanced sensors will alert ground controllers to a variety of dangerous particles near Earth, including solar protons, heavy ions and galactic cosmic rays.

"GOES-R should substantially improve our space weather forecasts," says Hill. That means friendlier skies on your future trips to Tokyo.

For the latest space weather report, visit the website of the Space Weather Prediction Center at http://www.sec.noaa.gov/ . For more about the GOES-R series spacecraft, see http://goespoes.gsfc.nasa.gov/goes/spacecraft/r_spacecraft.html . For help in explaining geostationary orbits to kids—or anyone else—visit The Space Place at http://spaceplace.nasa.gov/en/kids/goes/goes_poes_orbits.shtml .

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



This image may be downloaded from http://spaceplace.nasa.gov/news_images/polar_routes_map.jpg

Caption: *The shortest airline routes from the Eastern U.S. to popular destinations in Asia go very near the magnetic North Pole, where space weather is of greatest concern.*

For Sale

Meade DS-114 Telstar Reflector

Mr. George Moorman, a friend of the SAAA, is selling his Meade DS-114 Telstar reflector. The primary is a 114mm aperture (4.5") mirror with a focal length of 910mm, resulting in a focal ratio of f/8. The telescope includes a Meade Telstar electronic controller on an alt-azimuth tripod for push button tracking. George indicates that all parts including original packaging, eyepieces and user manuals are intact. It has been used sparingly and is in very good condition.

If you are interested, please email George Moorman at: gmoorman@chartermi.net

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The 4th Annual

Astronomy Show & Swap Meet

Hosted by Ford Amateur Astronomy Club (FAAC) & Rider's Hobby - Livonia

Saturday, Feb 03, 2007 *9:00 am - 3:00 pm*

Holy Cross Church Gymnasium, 30650 Six Mile, Livonia, 48152

Included: **ASTRONOMY PRESENTATIONS**

10:00 a.m.:	**Al Rothenberg,**	"ECLIPSES: SHORT BUT OH SO SWEET";
11:00 a.m.:	**Clay Kessler**	"GETTING STARTED IN ASTRONOMICAL IMAGING"
12:00 p.m.:	**Jim Frisbie**	"BINOCULAR OBSERVING"
1:00 p.m.:	**John Kirchhoff,**	"ASTRONOMICAL HARDWARE AND EQUIPMENT"

Planetarium Lectures @ 10am, 11am, 1pm, 2pm

Earn Cash By Selling Your Extra:
Telescopes - Eyepieces - Cameras - Binoculars - Mounts
Tripods - Software - Publications - Accessories, etc.

Or, locate that special bargain you might not otherwise find!

Admission: $5.00 in advance or $6.00 at the door
(children 15 and younger – Free)

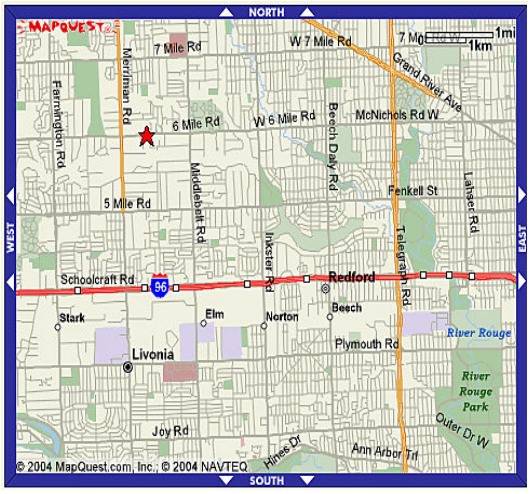
Sales Table: $15 in advance, or as available at the Door, $20
(one admission ticket included).

Advanced Registration ends January 21, 2007.

Doors Open: 8:00am for setup.
Complimentary Coffee & Donuts provided by Rider's Hobby.

Make Checks Payable: to FAAC for advance admission or table registrations. Send payment to Ford Amateur Astronomy Club, P.O. Box 7527, Dearborn, MI 48121-7527 - by Jan. 19, 2007.

Location: Holy Cross Lutheran Church Gymnasium
30650 Six Mile, Livonia, 48152
north side of Six Mile,
½ mile east of Merriman. *See STAR on map.*



For More Information: **Contact Tom via email: key_string_guy@yahoo.com or call (313) 516-5978, or John Kirchhoff via email: riderslivonia@aol.com or call (734) 425-9720**

Shoreline Amateur Astronomical Association
HOLLAND, MICHIGAN
www.holland-saaa.org

2007 Star Party Schedule

The monthly star party occurs on the Friday at or near a new moon. Saturday serves as a backup, in case of bad weather. Members are encouraged to arrive at Vivekananda before sundown. A typical observing session ends around 1am, but you may stay as late as you want.

Guests are welcome to join us for a night of star viewing. If you have friends or colleagues who are interested in astronomy, feel free to bring them along.

Dates and times for monthly observing sessions:

January 19, 2007	6:00pm	January observing session
February 16, 2007	6:00pm	February observing session
March 16, 2007	8:00pm	March observing session / Messier Marathon
April 13, 2007	8:30pm	April observing session – Last qtr Moon
April 20, 2007	8:30pm	April observing session
May 18, 2007	9:00pm	May observing session
June 15, 2007	9:30pm	June observing session
July 13, 2007	9:00pm	July observing session
August 10, 2007	8:30pm	Additional observing session for August
September 7, 2007	7:30pm	September observing session – Last qtr Moon
September 14, 2007	7:30pm	September observing session
October 12, 2007	7:00pm	October observing session
November 9, 2007	6:30pm	November observing session
December 7, 2007	6:00pm	December observing session

The Vivekananda Clear Sky Clock predicts night sky conditions up to 48 hours in advance. Members may consult AccuWeather forecasts and NOAA National Weather Service forecasts as each provides a 10-day outlook with night sky conditions.

On the day of a Star Party, the WELCOME page at www.holland-saaa.org will identify whether the observing session will occur or if it is being postponed due to bad weather. Posts can occur as early as two days prior but no later than 4pm on the day of a Star Party.

Thank-You.

Jim Reier, 2007 Observing Chairman