

Upcoming SAAA Events...

Club Meeting: Thursday, February 15 @ 7:00 PM

- *Macatawa Bay School Planetarium*
- *Guest Speaker: Dr. Kevin Cole of GVSU*
- *Refreshments: Terry Amante*

Observing Session: Friday, February 16 @ 6:00 PM

- *Vivekananda Monastery, 6723 122nd Ave, in Fennville*
- *Weather Permitting*
- *Sunset at 6:17 PM*

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

- *Beechwood Inn, 380 Douglas Avenue, Holland*

Celestial Highlights:

Feb. 2
Full Moon

Feb. 10
Last-quarter Moon

Feb. 11-12
View crescent moon, Antares and Jupiter in SSE 1-hour before dawn.

Feb. 17
New Moon

Feb. 19
Venus close to crescent Moon in WSW 40 minutes after sunset

Feb. 24
First quarter Moon

Inside this Newsletter

January meeting minutes..... 2

Board meeting minutes 2

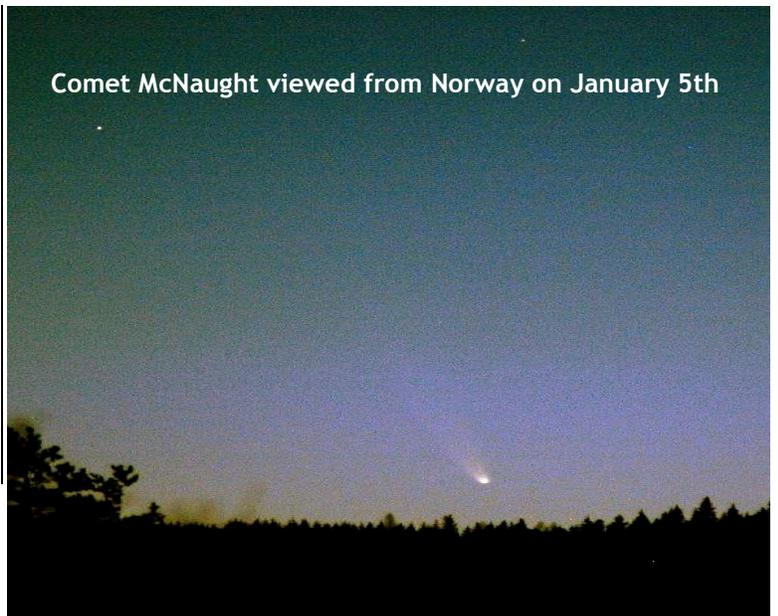
What's up in the sky? 3

Comet McNaught in STEREO..... 4

Hubble Illuminates Cluster of Galaxies 4

NASA Space Place..... 5

Comet McNaught viewed from Norway on January 5th



January meeting minutes

The general meeting of the Shoreline Amateur Astronomical Association was brought to order by Jim Reier on Thursday, January 18, 2006 at 7:15 p.m. Eleven members and guests attended the meeting which took place at Macatawa Bay School Planetarium. George Miller provided refreshments.

The meeting opened with old and new Club business.

Old Business

- Collected membership dues and distributed membership cards.
- Reminder in February, that we have a guest speaker, Dr. Kevin Cole from GVSU.
- Jim Reier recounted his experience of the Hubble Space Telescope travelling exhibit at the Krasl Art Museum in St. Joseph, Michigan. To anyone who missed the exhibit, it will return to the Muskegon Museum of Art on August 25th and will be open through October 21st.
- Reminder to members who were unable to attend the January meeting. Please have dues ready for Mark Logsdon in February.
- Terry Amante to bring refreshments in February.

New Business

- The Executive Board will decide which restaurant to take Dr. Cole to upon his visit in February. Jim Reier will issue an open invitation to members to join us for dinner.
- Jim Reier contacted Nancy J Leon from NASA's Education and Public Outreach Department to reply to her inquiry on NASA Space Place articles. Jim provided Nancy with a copy of our newsletter and links to the Holland SAAA web site.
- 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. Jim will send an email to all members soon with a date and time. .
- We welcome new members, Raj Hemanth and his son Aabharan and wife Jayashree to the SAAA.

Peter Burkey presented a fascinating slide show on meteor crater impacts from around the world. The slides depicted impact craters as seen from various elevations and satellite photos. The presentation even covered craters on the Moon.

There was no constellation of the month for January. However, we did take a planetarium tour and identified constellations and locations of objects of interest.

The meeting concluded at 8:50 PM.

Board meeting minutes

SAAA officers and at-large members assembled for a board meeting on February 1, 2007 at the 84 East restaurant in Holland. President Jim Reier brought the meeting to order at 5:30 p.m.

In attendance were Jim Reier and Peter Burkey.

Mark Logsdon emailed a club Treasury report in advance. The SAAA has \$759.44 in the treasury. The treasury increased \$150 in January because dues contribution from 8 members.

We are in process of acquiring Robert Burnham's classic three volume Burnham's Celestial Handbook for the library. Robin is asked to provide an update at the February meeting.

MESSIER MARATHON – March 16, 2007

Mark your calendars and hope for clear skies. We will prepare an observing plan for six telescopes to collectively hunt down all 110 Messier objects this year. Members in possession of club scopes are encouraged to bring them to this event.

Jim Reier will contact Mark Perkins to inquire about the planetarium sync motor and planet locations. Our goal is to have the system up-and-running for the Park Township presentation in April (see below).

In March, Russ Hills and Jim Reier will review planetarium software for your personal computer. Popular titles like Starry Night, The Sky, Stellarium and others will be featured.

The next scheduled star party is February 16th 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.

Members who intend to take advantage of the SAAA discount to Sky & Telescope® magazine, be sure to submit your renewal notice with payment to Mark Logsdon at or before the May meeting. Current subscriptions expire in July 2007 and we do not want anyone to miss an issue.

We're looking for ideas for National Astronomy Day on April 21st and September 15th. If you have a suggestion or ideas, please email Jim Reier at jreier@chartermi.net.

What's up in the sky?

February, 2007

By Peter Burkey

I normally do not joke around when people ask me about the stars, especially when they ask about the star Sirius.

Sirius, also known as the "Scorching One" or the "Dog Star", is prominent in the southern sky at this time of year. Just look to the lower left of Orion and you can't miss it shining brighter than any other star. It is so bright that some have even observed it in the daytime through a small telescope.

At 8.6 light years, Sirius is the 5th nearest star known. Among naked-eye stars, only Alpha Centauri is closer. It has more than double the sun's mass and diameter and, if it were as near as the sun, it would shine over 26 times brighter.

Being the most brilliant of the fixed stars throughout history, Sirius has been an object of wonder to all ancient peoples. Similarities in the Greek, Roman, Arabic, and Egyptian names suggest a common origin from an earlier language, possibly Sanskrit.

The ancient Egyptian calendar was based on Sirius' annual first appearance in the predawn sky, announcing the coming rise of the Nile.

References to the star can be found in the writings of Homer, Plutarch, and Virgil as well as in Hindu, Persian, Babylonian, and Chinese records. It is no wonder then that many myths and legends surround the star, some of which are not so old.

In the early 1800's, observations of Sirius indicated it had an unseen companion orbiting every 50 years or so. Lost in the glare of its parent star, the companion, Sirius B, eluded observation until 1862 when it was discovered near its predicted location by Alvan G. Clark. The 18.5-inch refracting telescope he used is still in service at the Dearborn Observatory of Northwestern University.

Despite some "ancient astronaut" legends surrounding the African Dogon tribe's unusual knowledge of this invisible companion, it is an intriguing object to modern astronomers. Sirius B is a white dwarf (the first to be discovered), a star with a mass about equal to that of the sun but a diameter some 40 or 50 times smaller. Thus it is incredibly dense, a cubic inch of its matter weighing over 2 tons! It also attracts material from Sirius which builds up and causes the white dwarf to heat up and eventually collapse. This triggers a new chain of nuclear reactions ending with the star exploding in what is known as a Type I supernova. Such an event, occurring so close and releasing massive amounts of radiation could have dire consequences for us. However, this probably won't happen for a million years.

So enjoy this beautiful beacon of light up in the sky, before it gets serious.

This month in history:

- Feb. 1: Shuttle Columbia breaks apart killing all 7 astronauts - 2003
- Feb. 4: Pluto discoverer Clyde Tombaugh born - 1906
- Feb. 5: Alan Shepard hits golf balls on Moon - 1971 *
- Feb. 15: Galileo Galilei born - 1564
- Feb. 18: Pluto discovered - 1930
- Feb. 19: Nicholas Copernicus born - 1473
- Feb. 20: John Glenn is first American to orbit Earth - 1962
- Feb. 24: Detection of first pulsar (Jocelyn Bell 1967) is announced - 1968

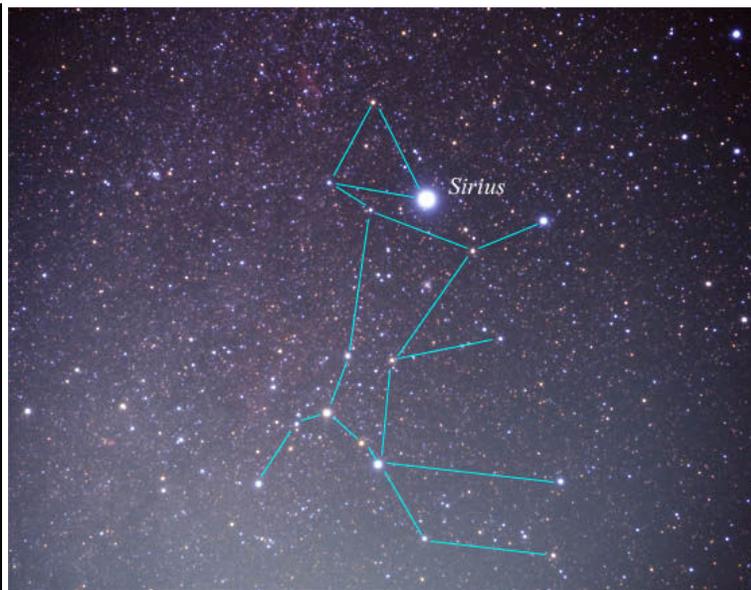


Image 1: Bright Star, Sirius in the Constellation Canis Major

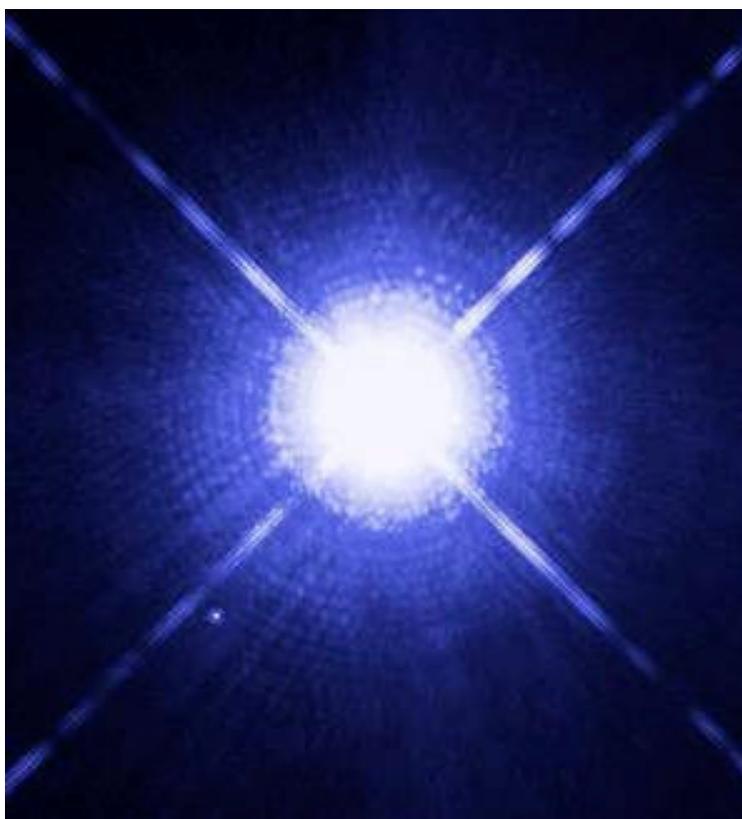


Image 2: This photo shows Sirius A, the brightest star in our nighttime sky, along with its faint, tiny stellar companion, Sirius B

Comet McNaught in STEREO

January 12, 2007

By Rani Gran, Goddard Space Flight Center



This image of Comet McNaught comes from the Heliospheric Imager on one of the STEREO spacecraft, taken Jan. 11, 2007. To the right is the comet nucleus, so bright it saturates the detector creating a bright vertical band in the image. The comet's dynamic tails extend up and to the left.

The lowest of the tails is the ion tail, which points along the direction of the solar wind. Above that is the comet's dust tail pushed out by radiation pressure from the sun. The tail is highly structured, probably the result of dynamic activity in the comet itself.

Although the two STEREO observatories have been turning on their instruments since mid-December, the Heliospheric Imagers on this spacecraft turned on for the first time on Jan. 11 - just in time to see the spectacular Comet McNaught.

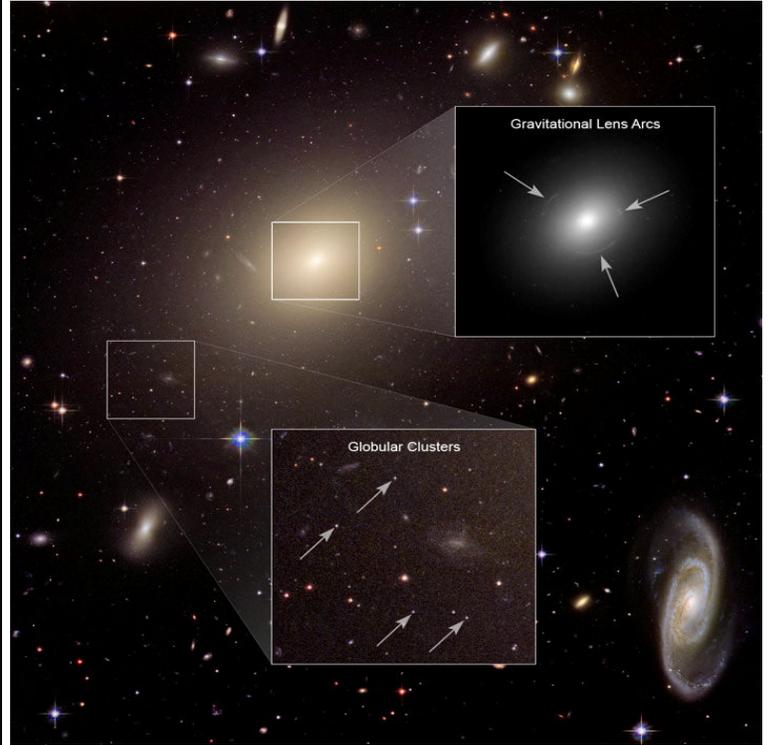
The Heliospheric Imagers are designed to observe the space between the Sun and the Earth in order to watch solar storms as they head our way. But here the Heliospheric Imagers are also able to observe Comet McNaught as it heads towards the sun.

STEREO's SECCHI/HI instrument was built by a consortium led by the Naval Research Laboratory (USA), and includes the University of Birmingham (UK), Rutherford Appleton Laboratory (UK) and Centre Spatiale de Liege (Belgium). Image credit: NASA

Hubble Illuminates Cluster of Galaxies

February 5, 2007

News Release Number: STScI-2007-08



Evident from the Hubble image is the fact that ESO 325-G004 is home to thousands of globular clusters, small compact groups of hundreds of thousands of stars that are gravitationally bound systems. These clusters are dispersed spherically and uniformly in the outer halo of the elliptical and make their way around the center of the galaxy over the course of millions of years. Several foreground stars and background galaxies are also visible within the halo of this bright galaxy.

In the course of analyzing this Hubble image, astronomers discovered that the galaxy ESO325-004 is actually a "gravitational lens." This means that the focusing power of the enormous mass making up the galaxy causes the light from some background object, probably a distant "dwarf" galaxy, to be deflected and magnified. As a result, the more distant galaxy appears brighter, and distorted into the shape of an arc, or ring, known as an "Einstein ring" because the phenomenon was first predicted by Albert Einstein. Although the universe is filled with galaxies, gravitational lensing is a rare occurrence because it requires an almost perfect alignment of a distant galaxy with an intervening one that has enough mass to gravitationally focus the light.

This particular system is unique because it is closest known example of strong gravitational lensing. The galaxy is close enough that the dynamics of its stars can be studied in detail using spectrographs on large ground-based telescopes. The spectrographs reveal how fast the stars in the galaxy are moving, and this allows astronomers to estimate how much mass must be present in the center of the galaxy. This estimate can in turn be compared to the amount of mass needed to produce the observed gravitational lensing effect. In this way, astronomers can build up a detailed, self-consistent picture of the matter distribution and dynamics of this unique nearby lensing system.



A Great Big Wreck

By Dr. Tony Phillips

People worry about asteroids. Being hit by a space rock can really ruin your day. But that's nothing. How would you like to be hit by a whole galaxy?

It could happen. Astronomers have long known that the Andromeda Galaxy is on a collision course with the Milky Way. In about 3 billion years, the two great star systems will crash together. Earth will be in the middle of the biggest wreck in our part of the Universe.

Astronomer John Hibbard isn't worried. "Galaxy collisions aren't so bad," he says. A typical spiral galaxy contains a hundred billion stars, yet when two such behemoths run into each other "very few stars collide. The stars are like pinpricks with lots of space between them. The chance of a direct hit, star vs. star, is very low."

Hibbard knows because he studies colliding galaxies, particularly a nearby pair called the Antennae. "The two galaxies of the Antennae system are about the same size and type as Andromeda and the Milky Way." He believes that the Antennae are giving us a preview of what's going to happen to our own galaxy.

The Antennae get their name from two vast streamers of stars that resemble the feelers on top of an insect's head. These streamers, called "tidal tails," are created by gravitational forces—one galaxy pulling stars from the other. The tails appear to be scenes of incredible violence.

But looks can be deceiving: "Actually, the tails are quiet places," says Hibbard. "They're the peaceful suburbs of the Antennae." He came to this conclusion using data from GALEX, an ultraviolet space telescope launched by NASA in 2003.

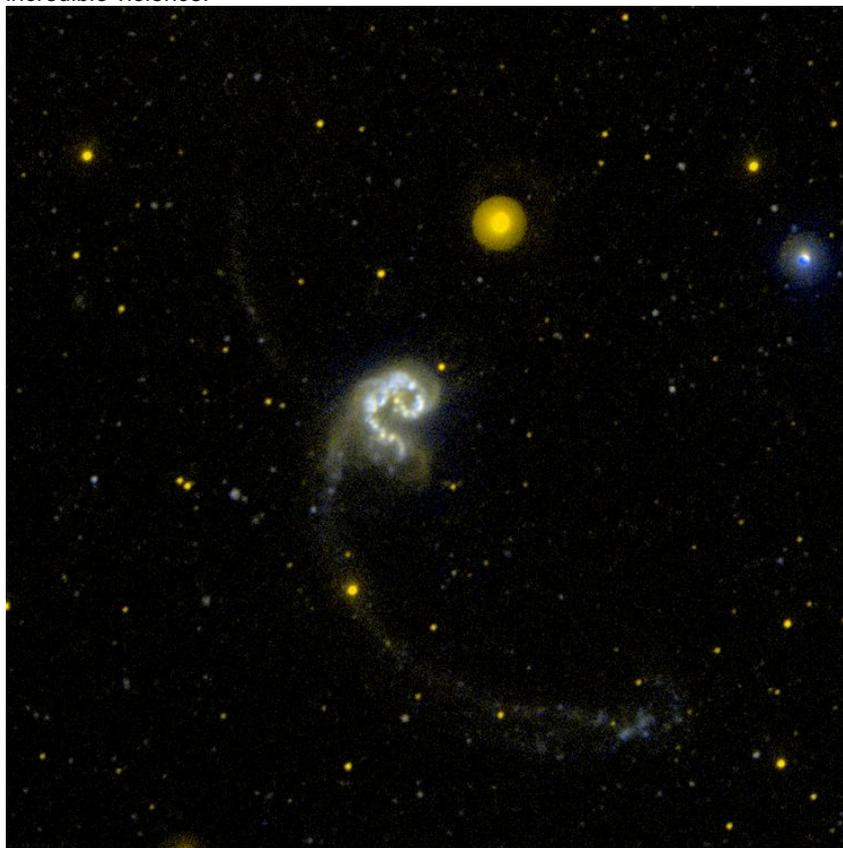
The true violence of colliding galaxies is star formation. While individual stars rarely collide, vast interstellar clouds of gas *do* smash together. These clouds collapse. Gravity pulls the infalling gas into denser knots until, finally, new stars are born. Young stars are difficult to be around. They emit intensely unpleasant radiation and tend to "go supernova."

GALEX can pinpoint hot young stars by the UV radiation they emit and, in combination with other data, measure the rate of star birth. "Surprisingly," Hibbard says, "star formation rates are low in the tidal tails, several times lower than what we experience here in the Milky Way." The merging cores of the Antennae, on the other hand, are sizzling with new stars, ready to explode.

So what should you do when *your* galaxy collides? A tip from GALEX: head for the tails.

To see more GALEX images, visit www.galex.caltech.edu. Kids can read about galaxies and how a telescope can be a time machine at spaceplace.nasa.gov/en/educators/galex_puzzles.pdf.

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



Caption: This GALEX UV image of the colliding Antennae Galaxies shows areas of active star formation, which is not in the tidal tails as one might expect.



**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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