



The Star

Newsletter of the
Mount Cuba Astronomy Group

Vol. 1 Num. 7 March 2013

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Program Schedule:

Programs are at 7:30 at
Mt. Cuba Astronomical Observatory 1610 Hillside Mill
Road, Greenville, DE unless indicated otherwise.

March 12

Mini talk month !

“Astronomy APPS for your cell phone”

Sara Pferer - presenter

Astronomy student Sara Pferer will share her expertise
with selected astronomical applications.

“When Astrology Became Astronomy”

Hank Bouchelle - presenter

A look into the divergence away from astrology into the
science of astronomy.

April 9

Stars and Constellations of Spring

April 18 (Thursday)- Tentative!

Joint Meeting,

MCAG and Univ. of DE. PHYS 139 class
Gore Hall, Univ. of DE, Newark Campus

Topic: *Light and Stars*

May 14

The Moon: Its Origin and Phases

June 11

Stars and Constellations of Summer

Contributions to “The Star” may be sent to Ralph
Denlinger denlinger108@zoominternet.net

January Meeting

Lynn King and Dave Groski provided insight on the use
and care of binoculars in astronomy. Clearly, an
individual new to astronomy should go eyes, binoculars
and then telescope. Specifics on power vs lens
diameter, exit pupil considerations and binocular
mounts were very useful. Dave provided information on
collimating binoculars which can take a bad set of
binoculars and correct the image issues. The talk was
followed by evening of viewing. Sometimes we forget
the magnificent star fields available in a wide field,
lower power image.



Lynn King demonstrates a binocular mount.

Telescope-Making Meeting

The second MCAG telescope-making meeting was held at the Mt. Cuba Astronomical Observatory, and hosted by Dave Groski. Among the projects receiving attention was Hank Bouchelle's MoonScope which had formerly belonged to Rene VanCanegham, the adjustment of a vintage Criterion RV-6 which was donated to the group, as well as an optical evaluation of a 6" Maksutov Cassegrain built by Bob Stack. The optics and many of the components were spares from when Bob worked at OTI Corporation, who manufactured the legendary Quantum series telescopes. We checked the performance of Bob's scope by using Double Pass Autocollimation. The test involves using a large optical flat. Light is passed thru the telescope starting were the eyepiece normal is placed and is reflected off the flat and then back into the telescope. Any errors in the optical system are doubled making this a very sensitive test. At the end of the evening the group checked the performance of the Criterion RV-6 but there was insufficient time for the telescope cool to the cold ambient temperature outdoors. We will do a critical test, at a future meeting.

Plans for next month meeting include collimation of binoculars, discussion of binoviewer and if the sky is clear viewing thru Dave's vintage C-8 with a Baader Binoviewers, work on Hank's Moonscope and comparing it to an example that Dave owns.

Attending the meeting were Bob Stock, Lynn King, Paul Sutton, Dave Groski and Hank Bouchelle.

A few photos of the telescope makers meeting in January.



THROUGH THE TELESCOPE--- MARCH OBSERVATIONS

(Adapted from Astronomy Made Simple, 1955)

GEMINI, is sometimes called The TWINS who were the twin brothers [Castor and Pollux](#) in Greek mythology. Pollux was the son of [Zeus](#), who seduced Leda, while Castor was the son of [Tyndareus](#), king of Sparta and Leda's husband. The easiest way to locate the constellation is to find its two brightest stars [Castor](#) and [Pollux](#) eastward from the familiar "V" shaped asterism of [Taurus](#) and the three stars of [Orion](#)'s belt.

M35 is one of the objects to observe in this constellation. It is a cluster of extraordinary design. **Messier 35** (also known as **M 35**, or **NGC 2168**) is an [open cluster](#) in the constellation [Gemini](#). It was discovered by [Philippe Loys de Chéseaux](#) in 1745 and independently discovered by [John Bevis](#) before 1750. The cluster is scattered over an area of the sky almost the size of the [full moon](#) and is located 850 [parsecs](#) (2,800 [light-years](#)) from Earth. Two streams of small stars run parallel on each side of the cluster. M35 can be seen, under excellent weather conditions, by the naked eye. Even a small telescope can bring out the extreme beauty of this cluster.

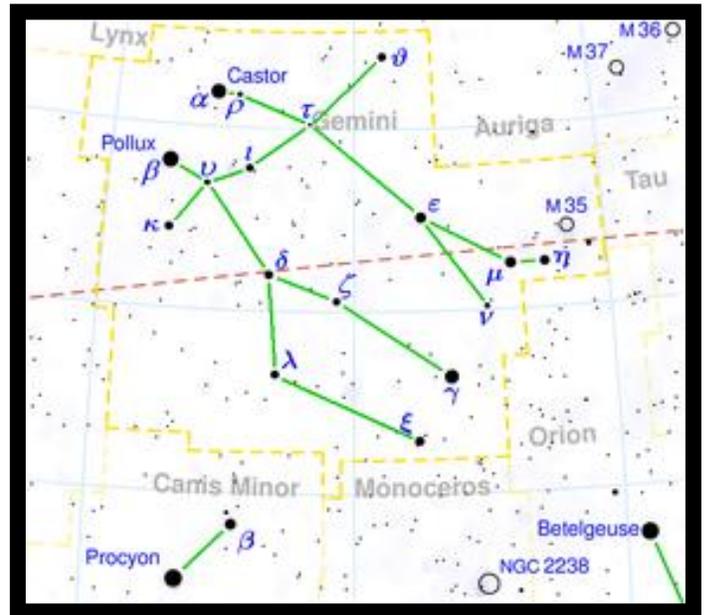
The star Castor ([α Geminorum](#)), is a three component star. It is a second magnitude star and represents Castor's head. Two of the components form a binary system with a period of revolution of 300 years. The three known components constituting the star have apparent magnitudes of 2.7, 3.7, and 9.5. It is quite possible that each of the three stars is in itself a double. The third component completes one revolution in about 10,000 years. Castor is thus probably a unit consisting of six stars.

The star Pollux ([β Geminorum](#)) appears now to be in number one place as far as apparent brightness is concerned and represents Pollux's head. It is of the first magnitude and is an [evolved giant star](#) with an orange hue. The detection of a suspected [extrasolar planet](#), [Pollux b](#), was announced on June 16, 2006. Pollux b is calculated to have a mass at least 2.3 times that of [Jupiter](#) and orbits the star with a period of about 590 days.

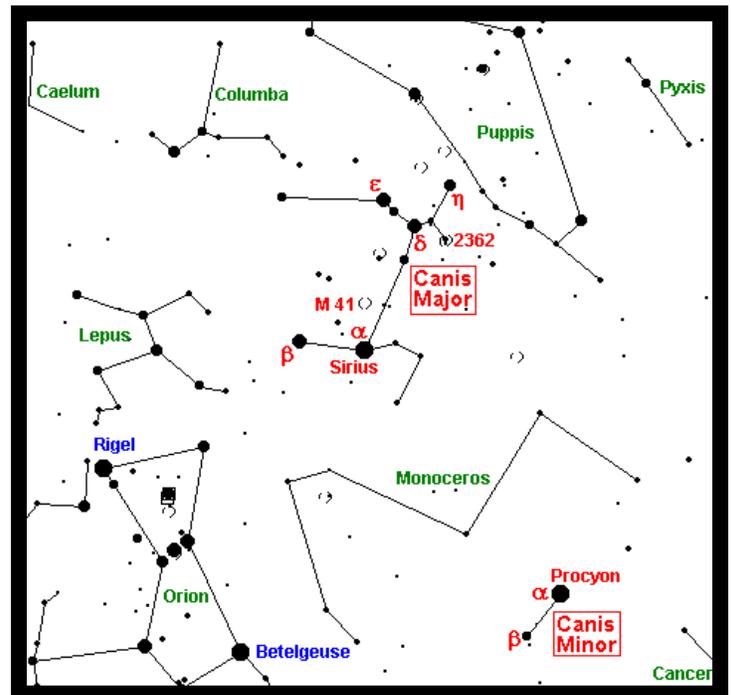
[Canis Major](#), its name is [Latin](#) for [Greater Dog](#) and is commonly represented as one of the dogs following the constellation, [Orion](#) the hunter. Canis Major seems to cross the sky in pursuit of the hare, represented by the constellation [Lepus](#) under Orion's feet.

Canis Major contains [Sirius](#), [magnitude](#) -1.44, the [brightest star](#) in the night sky, known as the 'dog star'. It is bright because of its proximity to our Solar System, 8.6 [light-years](#). Sirius is also a [double star](#); its companion is called [Sirius B](#), which has a magnitude of 8.4. The two [orbit](#) each other every 50 years. Their closest approach last occurred in 1993 and they will be at their greatest separation between 2020 and 2025. Sirius is a white main-sequence star in the constellation Canis Major. At 8.6 light years away, it is the brightest

star in the Earth's sky, where it shines at an apparent visual magnitude of -1.44. The iron abundance of Sirius is +0.36 (229.1% of the Sun). It is moving through the Galaxy at a speed of 17.6 km/s relative to the Sun. Its



projected Galactic orbit carries it between 22,900 and 33,200 light years from the center of the Galaxy.



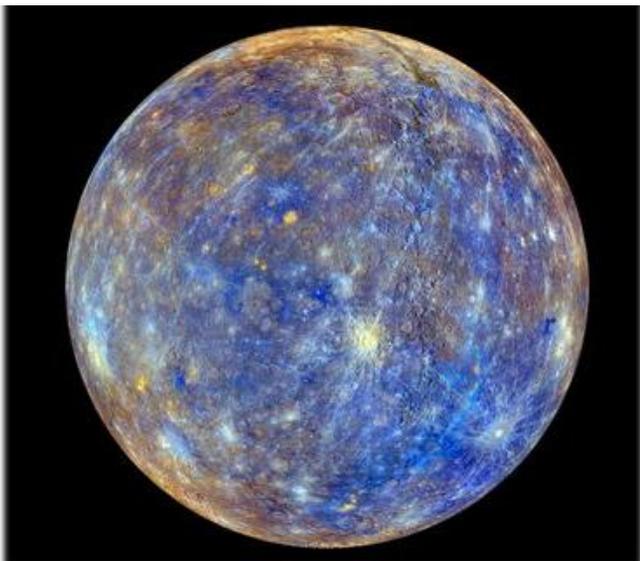
Not far from Sirius is the scattered star cluster M41 (or NGC 2287), which can be seen by the unaided eye. It is an [open cluster](#) of [visual magnitude](#) 4.5, 2100 light-years from Earth. It is noted for being particularly large and bright—it contains approximately 80 stars in an area of 0.5 square degrees, the size of the [full Moon](#), and is visible to the naked eye—M41 was mapped by the [ancient Greeks](#). Fairly good detail can be obtained with a 3-inch telescope. The stars form two distinct groups, joined by a red star in the center.

Canis Minor, its name is Latin for Lesser Dog in contrast to Canis Major, the "Greater Dog". Both figures are commonly represented as following the constellation of Orion the hunter. Canis Minor contains only two stars brighter than fourth magnitude, Procyon (Alpha Canis Minoris), with a magnitude of 0.34, and Gomeisa (Beta Canis Minoris), with a magnitude of 2.9.

Procyon is a white subgiant star in the constellation Canis Minor. At 11.4 light years away, it is the 8th brightest star in the Earth's sky, where it shines at an apparent visual magnitude of 0.40. Procyon is a multiple-star system. The star's age is estimated to be 1.7 billion years but is certainly no less than 1.6 billion years and no greater than 1.8 billion years. The iron abundance of Procyon is -0.02 (95.5% of the Sun). It is moving through the Galaxy at a speed of 21 km/s relative to the Sun. Its projected Galactic orbit carries it between 23,100 and 28,400 light years from the center of the Galaxy.

Gomeisa is a blue main-sequence star in the constellation Canis Minor. At 162 light years away, it is the 154th brightest star in the Earth's sky, where it shines at an apparent visual magnitude of 2.89. Gomeisa is a multiple-star system. It is moving through the Galaxy at a speed of 26.7 km/s relative to the Sun. Its projected Galactic orbit carries it between 23,800 and 25,100 light years from the center of the Galaxy. It came closest to the Sun 1.5 million years ago when it had brightened to magnitude 1.66 from a distance of 92 light years.

On a final note, we take notice that there are no constellations for the domesticated cat. In other words, the sky has completely gone to the dogs.



Color view of Mercury, see article for details !

Colorful Map of Mercury Snapped by NASA Spacecraft

This colorful view of Mercury was produced by using images from the color base map imaging campaign during MESSENGER's primary mission. These colors are not what Mercury would look like to the human eye, but rather the colors enhance the chemical, mineralogical, and physical differences between the rocks that make up Mercury's surface. Image released Feb 18, 2013.

CREDIT: NASA/Johns Hopkins University Applied Physics Laboratory/Carnegie Institution of Washington

<http://spacewatchtower.blogspot.com/2013/02/video-colorful-map-of-mercury-snapped.html>

Brandywine Creek State Park has scheduled the following star events:

Saturday, Mar. 23 - 7:30 p.m.
Saturday, Apr. 13 - 7:30 p.m.

Special Program

"Comets and Meteor Showers"

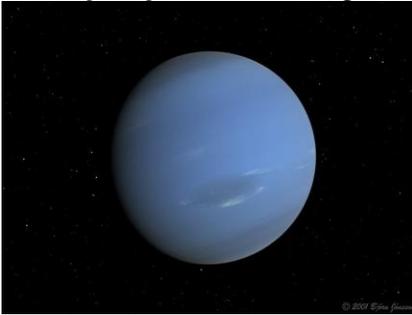
Dr. Hank Bouchelle
**Assistant Professor, University of
Delaware**

Time: 7:30 pm
Date: Friday, June 28
Place: Newark Public Library
750 Library Avenue
Newark, DE 18711

The Solar System has two main sources for the meteors that appear from time to time in our night sky. If we are patient and have a little luck, we may observe several meteors in the course of an hour. However, "meteor showers" can present as many as hundreds of meteors in a single hour! This program provides information about the timing and source of these objects, and along the way we will discuss their intimate connection to comets.

Dr. Hank Bouchelle is an Adj. Assistant Professor in the Department of Physics and Astronomy at the University of Delaware. He is also Co-Lead of the Mt. Cuba Astronomy Group in Greenville, Delaware.

Starry Eyed Challenge



Light travels extremely fast, and so within the solar system it can get from one place to another very quickly. For instance it takes only 1 second from the Earth to the Moon and 8 minutes from the sun to the Earth. Can you tell me roughly how long it takes light to travel from the sun to Neptune, the outermost planet of our solar system?

- 24 hours
- 4 hours
- 30 minutes
- A week

Answer below

Mt. Cuba Astronomy Group Membership Form

The Mt. Cuba Astronomy Group is a tax-exempt organization dedicated to astronomy education and public outreach. Benefits of membership include:

- Monthly newsletter that includes details about the Group's activities and much astronomical information
- Monthly programs on subjects and topics of astronomical interest
- Free or discounted subscriptions to astronomy-related publications
- Free registration for MCAG workshops and classes
- Mention Mt. Cuba Astronomy Group and receive a 5% discount at Manor Books in New Castle (<http://www.yelp.com/biz/manor-used-books-New Castle>)



Mail to:

Ms. Carolyn Stankiewicz
1001 Woodstream Dr.
Wilmington, DE 19810

Name _____

Name(s) (children, if any, and age): _____

E-mail address: _____

Home address: _____

Phone (optional): _____

This month's image comes from Chris Myers. Wonder how far back we'd have to go to see skies like this over Mount Cuba ???

Taken with a Nikon d7000, exposure was 16.8s, ASA 4000, f/3.5, focal length 18mm, taken Zion National Park, Utah, March 27, 2012 . Orion can be seen in the top right hand corner of the image, and Sirius is the bright star in the center.



Have an astronomy related image you would like to share? It doesn't matter when it was taken as long as it was taken by you or a friend. Please send the photographer's name and the specifics of the image.