



The Star

Newsletter of the
Mount Cuba Astronomy Group

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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.

April 9

"Quito National Observatory"

Carolyn Stankiewicz - presenter

"Telescope Mounts"

Dave Groski - presenter

April 18 (Thursday)

"Light and Stars"

Joint Meeting,

MCAG and Univ. of DE. PHYS 139 class

Gore Hall, Univ. of DE, Newark Campus

The joint UDel/MCAG meeting is April 18 in Sharp Lab 131, which is on the first floor in the hallway between the double doors and the rear exit. It also has a distinctive time: 8 - 8:50 p.m. Parking should not be a problem, though Newark's parking meters are ravenous into the night. They take quarters. I generally travel on S. College Ave. heading north. There are lights at Kent Way (just past the Honors bldg) and Amstel Ave. on turning left, and both generally have street parking, though Amstel's signage makes things tricky. Sharp Lab is the last building on the right before Delaware Avenue. The rear door, facing College and Smith Hall, is the most convenient entrance.

Observatorio Astronomico de Quito

Carolyn Stankiewicz

I had the pleasure of visiting the The Quito Astronomical Observatory in the middle of La Alameda Park in Quito Ecuador in March 2013. This observatory is the second oldest in South America. Enrique, the young guide, who showed me around the museum and

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took me up to the dome was very enthusiastic and proud of this still working observatory along with the exhibits.

The observatory was founded in 1873 by a priest, Father Juan Bautista Menten, a German astronomer, who was part of a European teachers' team. A diorama of him was prominently displayed.

Quito geographical position is strategic for the sky viewing because the skies in both hemispheres could be observed. In fact, the refracting Merz equatorial telescope (photo below), was made in Germany, shipped to Ecuador and has not stopped working since it was installed in 1875. The building was finished in 1878 and was modeled on the Observatory in Bonn, Germany.

The instruments on display included many nineteenth century scientific instruments, such as sextants, barometers, thermometers and in the basement several seismographs. These seismographs are working and the scrolls inside are removed every 28 days for storage. The national institute of Meteorology and Hydrology have instruments outside on the grounds of the Observatory (photo below). These instruments are still in working order and are used to calculate official amounts of rain and wind speed.

As with most cities, the scientific observation of the sky dome from the Quito Observatory has been difficult due to light pollution. The Merz telescope is available to the general public on clear nights and by appointment.

I bought a couple of souvenirs (pen and keychain) but most memorable moment was seeing the intense dedication to astronomy of the young guide. From the deck surrounding the dome I could see the many hills of Quito including the area where the ancient Inca civilization was located.

March Meeting

Sara Pfefer shared an app she has been using on her tablet. The uses for some of these apps has gone way beyond “neat little curiosities” and can be very useful as a readily accessible field aid. Several folks used their phone and tablet apps while searching for Comet Panstarrs. Speaking of Panstarrs, Dave Groski helped folks find the comet before the meeting as it played hide and seek amongst the branches of the trees. While not the most spectacular comet, spying these visitors is always special. After the comet viewing, Sara shared her app with us and was followed at the podium by Hank Bouchelle with a talk on Astronomy vs Astrology. One could spend ages looking at these two topics often mixed up by non-astronomers so he just touched the surface. Clearly there is some issue with trying to take the astrology that was created over 2000 years ago and applying to a sky that is quite changed today do to precession.

A Word...

Hank Bouchelle

This month marks the first of what I hope will become a continuing series of Mt. Cuba Astronomy Group-sponsored public events.

Our regular MCAG meeting is on April 9, the second Tuesday of the month, at 7:30 pm at the Mt. Cuba Astronomical Observatory. I am sure I am not the only one interested in what Carolyn and Dave might have to say about their activities!

Current and potential MCAG members are *also* cordially invited to a second event this month, described elsewhere in this issue of *The STAR*. Its topic is the nature of light and the information that it can provide about stars. In fact, this is a regular class meeting of *PHYS 139, Star and Constellation Identification* (<http://web.physics.udel.edu/undergraduate/courses/phys-139-star-constellation-identification>).

The University of Delaware and its Department of Physics and Astronomy are committed to public education and outreach, as is the MCAG. This program may also provide individuals with information about courses offered by the Department and suggest useful resources. An invitation to attend has been extended to members of the Department. It may present an opportunity to increase one's circle of acquaintances interested in astronomy. (Of course, as accomplished physicists and astronomers, these faculty members are unlikely to hear breaking news.)

Please note: This joint meeting is scheduled for **8:00 pm** (*please be prompt*) to 8:50 in Lecture Hall 131 in the **Sharp Lab building**. (Those who have questions are invited to stay and chat.) The lecture hall is easily accessible from the front or rear doors of the building. Please let me know (hbouchelle@live.com or 983-7830) if you have any questions. Directions and information about parking appear elsewhere in *The Star*.

As I noted, this is the first MCAG joint program. The Brandywine Library and the Newark Library have scheduled programs in June dealing with the relationship between comets and meteor showers. Further information will appear in future issues of *The STAR*.

I want to extend special thanks to Ms. Patty Welch, Assistant to the Department of Physics and Astronomy Chair, for her useful advice and generous assistance.

Programs of Interest

Saturday, Apr. 13 - 7:30 p.m. Brandywine Creek State Park

Saturday April 20 is the Philadelphia Science Festival. 11 a. to 4 p. Location Logan Circle in front of the Franklin Institute. Rain or shine.

Friday, April 26, members of the Rittenhouse Astronomical Society will go out to 12 locations in and around Philadelphia. One of the sites is Tinicum Marsh Park (I think that is what it is called). where Wayne and Lynn along with another member will be. Check out Rittenhouse Astronomical Society's web site for more information.

A Peak at PanStarrs !

Taken by Robert Stack - see last page of *The STAR*



THROUGH THE TELESCOPE----

APRIL OBSERVATIONS

(Adapted from Astronomy Made Simple, 1955)

LEO, is one of the constellations of the zodiac, lying between Cancer to the west and Virgo to the east. Leo is easy to locate; following the pointer stars of the Big Dipper south approximates the location of the bright blue-white star Regulus in Leo's chest. In Greek mythology, Leo was identified as the Nemean Lion which was killed by Hercules during one of his twelve labours, and next put into the sky. According to myth, the Nemean lion had an impenetrable skin. Hercules got around this potentially serious obstacle by wrestling the lion and strangling it to death. He then removed one of its claws, and used it to skin the animal. From then on, Hercules wore the skin of the Nemean Lion as protection.

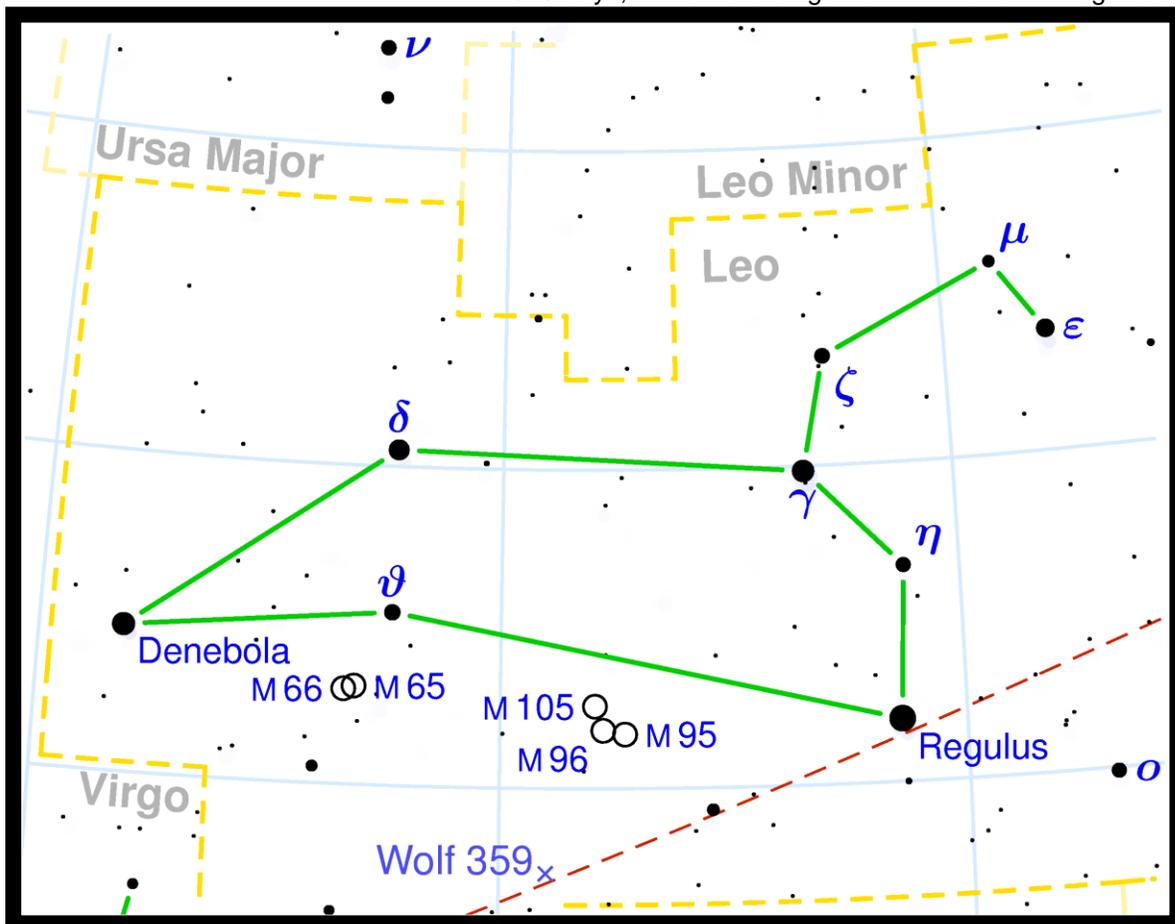
The bright star Regulus is a double designated Alpha Leonis, and is a blue-white main-sequence star of magnitude 1.4, approximately 77.5 light-years from Earth. Its companion is a faint 8th magnitude star. It is quite possible that Regulus is an "optical" and not a true double star. An Optical Double consists of two stars that appear close because they are in line of sight of the terrestrial observer but are actually at a great distance from one another, along that line. The stars in an optical double do not, of course, rotate about any common center of gravity as true double stars do.

Algieba, Gamma-Leonis is a true double star. It is universally acclaimed as the finest double star in the heavens, best observed when not quite dark, or in moonlight. The bright star of this binary system (apparent magnitude 2.6) has a golden tint; the fainter star (apparent magnitude 3.6) is greenish in color. The

companions rotate fairly slowly about their center of gravity, a complete revolution lasting more than a thousand years.

In addition, a well-known variable star is of interest in this constellation—the long period variable, R-Leonis. At its maximum brightness, visible then to the naked eye, it is a red magnitude 5 star. At its minimum light intensity, when it is observable only with a good telescope, it is a tenth magnitude star.

The variations in brightness of R-Leonis can easily be observed with a small telescope. A complete period lasts 310 days, while the change from fifth to tenth magnitude

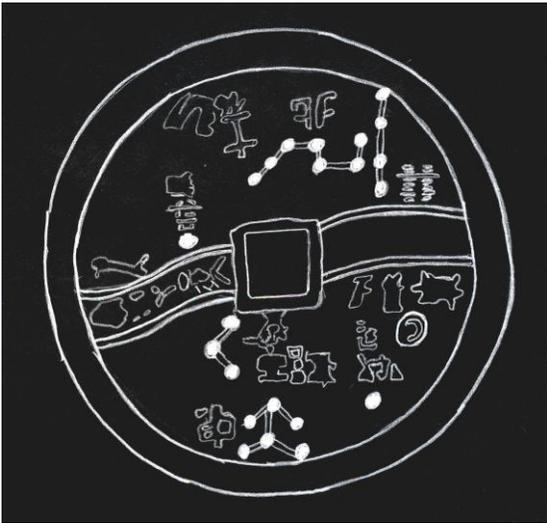


alone takes 144 days.

Also, R-Leonis forms an equilateral triangle with two nearby stars of apparent magnitudes 9.0 and 9.6. The changing brightness of the variable can be estimated in relation to its two neighbors.

Furthermore, the Leonid meteor shower occurs in November, peaking on November 14–15, and have a radiant close to Gamma Leonis. Its parent body is Comet Tempel-Tuttle, which causes significant outbursts every 35 years. The normal peak rate is approximately 10 meteors per hour.

In conclusion, Leo contains many bright galaxies; Messier 65, Messier 66, Messier 95, Messier 96, Messier 105, and NGC 3628 are the most famous, the first two being part of the Leo Triplet.



Starry Eyed Challenge

Something a little different this month. The image to the left is from a “charm” made circa 1400 AD in China. It is called The Heavenly Star Map. The Milky Way and one of the Dippers are easy features, but what are the other constellations and stars on the image. There are some Chinese words and what appear to be animal shapes. The object with the “C” appears to be the moon on the charm. The stars of the milky way are worn too much to show some of those famous constellations. Any suggestions as to what the other constellations and stars might be would be appreciated. Sorry, no answer to this month’s Starry-eyed Challenge. It’s just as big a mystery to me. Perhaps some of you can match the items up on a star chart !!!

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 images comes from Robert Stack. Attached are some images of Comet PanStarrs shot from the driveway here in early March. 3 to 5 second 100ASA, tripod mounted Sony H7 digital camera. Amazing how much light is reflected off such a sliver of the moon.



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.