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The Monthly Publication of the Westchester Amateur Astronomers

April 2010



Winter Rose Redux

Doug Baum captured the above image of the Rosette nebula in Monoceros (NGC 7635), which can be compared to the black and white image featured in the January issue. This month's image employs a tri-color narrowband in the Hubble (HST) Palette. H-alpha mapped to green, Sulfur II mapped to red and ionized OIII mapped to blue. Doug took 30 minute sub-exposures; a total exposure of 1½ hours. The scope and camera were a Takahashi FSQ 106EDXII refractor and a QSI532wsg CCD camera.

The Rosette (designated NGC 2237-2239 and 2246) is a large H-II region associated with the open cluster NGC 2244. Such regions of ionized hydrogen coincide with areas of active star formation. The Rosette is over one-degree in diameter and is about 2500 light years away.

Events for April 2010

➤ WAA Lectures

"The Wrong Stuff"

Friday April 2nd, 8:00pm

Miller Lecture Hall, Pace University

Pleasantville, NY

Linda Zimmerman's talk will examine the mistakes and lack of foresight in the history of space flight. A former research chemist turned author, Linda has published in *Sky&Telescope* and *Astronomy* magazines as well as delivered talks at NEAF and taught astronomy in adult education courses. Free and open to the public.

Upcoming Lectures

Our May 7th speaker is Alan Witzgall. He will be giving a behind the scenes look at NASA.

➤ Starway to Heaven

Saturday April 10th, 8:00-10:00PM

Meadow Picnic Area, Ward Pound Ridge Reservation, Cross River

This is our scheduled Starway to Heaven observing date for April, weather permitting. Free and open to the public. The scheduled rain/cloud date is April 17th.

DIRECTIONS TO PACE

The best way is to enter the Campus is through Entrance 2, and follow the road around to Miller Hall. The meeting will be held on the ground floor in the Miller Lecture Hall. For directions and a campus map go to:

<http://www.pace.edu/pace/about-us/all-about-pace/directions-to-all-campus/pleasantville-campus/>

New Members. . .

Cody Greenberg - Tarrytown

Renewing Members. . .

Karen Seiter - Larchmont

Everett Dickson - White Plains

Brenda Cohen - Yorktown Heights



The North East Astronomy Forum will be held April 17th and 18th at Rockland Community College in Suffern, New York. NEAF is the nation's largest Space and Astronomy show. It features more than 120 exhibitors as well as workshops and solar observing.

The WAA will have a booth; so look for club members at the event. For more information, go to:

<http://www.rocklandastronomy.com/neaf.htm>

Call: 1-877-456-5778 (toll free) for announcements, weather cancellations, or questions. Also, don't forget to periodically visit the WAA website at:

<http://www.westchesterastronomers.org/>.

Westchester Amateur Astronomers, Inc., a 501(c)(3) organization, is open to people of all ages with the desire to learn more about astronomy. The Mailing address is: P.O. Box 44, Valhalla, New York 10595. Phone: 1-877-456-5778. Observing at Ward Pound Ridge Reservation, Routes 35 and 121 South, Cross River. Annual membership is \$25 per family, and includes discounts on *Sky & Telescope* and *Astronomy* magazine subscriptions. Officers: President: Mike Virsinger; Vice President: Charlie Gibson; Vice President Programs (lectures): Pat Mahon; Treasurer: Doug Baum; Vice President Membership: Paul Alimena; Vice President Field Events: David Butler; Newsletter: Tom Boustead.

Articles and Photos

Some Tips for Observing the Moon

by Larry Faltz

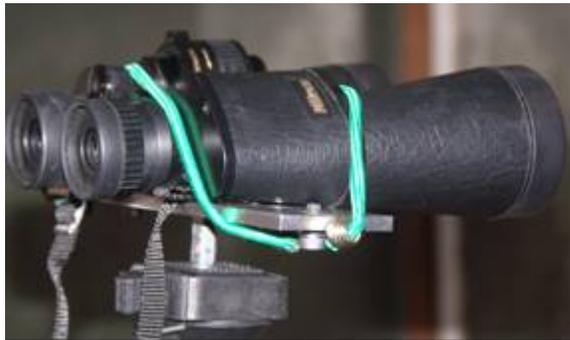
Most amateur astronomers start observing, as they should, with the moon. It's the largest and brightest object in the night sky and it's there periodically throughout the year. Even the smallest telescope will show sufficient detail on the lunar surface to capture your interest. You can even start with binoculars. The image through a pair of 7x or 10x binos can be fascinating.

When using binoculars, it's a good idea to stabilize them in some way. Just holding a pair up to your eyes results in fatigue and shaking. It helps a bit to lie in a reclining chair, but even then it's not easy to keep the binoculars steady. Standard binocular tripod mounts, useful for terrestrial observing, usually can't be comfortably angled to sight the moon, at least not without wrecking your neck. Special binocular mounts using counterweighted swing-arms are not terribly expensive, but there's a cheaper, easier solution if you have a monopod. Just mount the binocular on top of the monopod, lie back and view. The stabilizing effect of the monopod, which you can squeeze between your legs for added support, will allow much longer viewing times. There are a variety of inexpensive commercial mounts, but I use an aluminum plate left over from an old telescope mounting application and some small bungees to hold the instrument. My monopod has a quick-release ball head, which simplifies attachment, but that really isn't required to make it work. You could even adapt a broom handle to do the job.

When using a telescope, you may find that there's too much light transmission, especially when the moon is near full. An inexpensive neutral density or "moon" filter will reduce light transmission to acceptable levels. As you go to higher powers, the amount of light will drop to

more acceptable levels and you can remove the filter.

For telescope users, a binoviewer is the real key to endless enjoyment of the moon. By using both eyes, fatigue is reduced and the image takes on an almost 3-dimensional quality, even in a small scope. I've used binos with my 3", 5" and 8" scopes and once had the opportunity to view the moon through the 10" f/10 binocular telescope at Custer Institute in Southold, Long Island. It seemed as if I was orbiting just a few hundred miles up in space.



Binoviewers can be used with almost any telescope. You need a good bit of back-focus to mount a binoviewer, and in a refractor or Newtonian that may require a Barlow lens to push the image plane out far enough. As a consequence the

magnification will increase and you have to take that into account when choosing your eyepieces. Schmidt-Cassegrains and Maksutovs usually have enough back-focus. Although premium binoviewers can cost well over \$1,000, reasonably good units are available for less than \$200 and one dealer sells a nicely made unit with a pair of 20mm Plossl eyepieces and a Barlow for less than \$250. Because they split the light, binoviewers generally don't need filtering.

Needless to say, sidereal tracking makes observing at high powers much easier. If you're using an SCT or Mak, make sure the scope is cooled for at least an hour before observing to minimize image turbulence. You will always see some, because there's so much heat rising from the surrounding environment.

What should you look at on the moon? The view is better along the terminator, the line between day and night. Sunlight there is coming at an acute angle and enhances the contrast and definition. That's why even lunar observers generally aren't interested in viewing during the full moon when the sun is

essentially overhead. After that, the possibilities are endless. Craters, rilles, seas, lava flows, mountains...an endless supply of fascinating detail and subtle contrast. As the days go by, different features are highlighted because of the shifting of the solar angle. It's a good idea to have a lunar map with you. Sky Publishing sells a laminated one with hundreds of features, and there are many print and on-line atlases. You can study the moon systematically, using one of the many excellent observing guides, or just scan the surface until

you can find something beautiful to concentrate on.

It's easy to learn the lunar cycle so you can plan your observing. Many calendars show the lunar phases, *Sky & Telescope* and *Astronomy* magazines feature lunar calendars, the *New York Times* carries sky maps every week, there are computer sites and downloadable programs, Palm pilot and iPhone applications and even lunar phase watches. Obviously evening viewing during the first quarter is easiest for most people's schedules.

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← **M81**

Olivier Prache took this image of M81 from Pleasantville on February 21st. Scope was a Borg 101ED mounted on a G11-Gemini mount. The camera was ST8-XME, guided internally with CCDSoft. Exposure: 13 x 5-minute + 65 min total. Processing with CCDStack and CS4.



← **ISS Crossing**

Dave Parmet caught this image of the International Space Station at the March Starway to Heaven at Ward Pound Ridge. Dave used a Nikon D80 on a tripod - ASA800 about 5 seconds at f2.8. The bright star up on the right is Sirius.

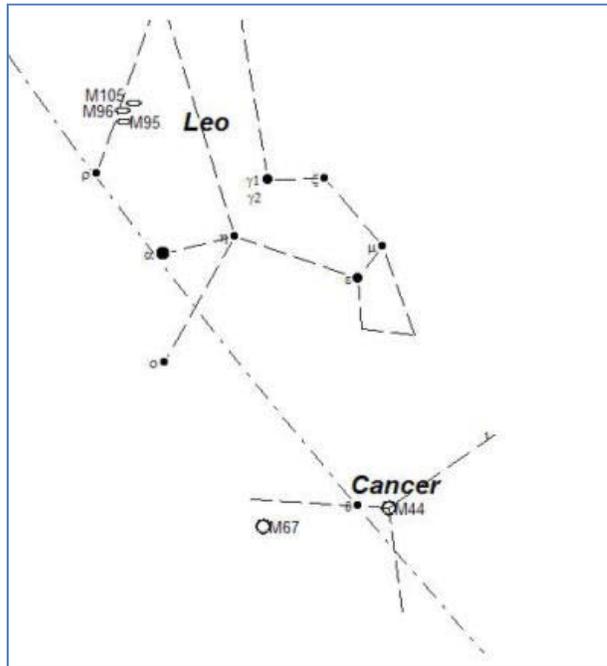
Constellation Corner

By Matt Ganis

Since we're spending a little bit of time this month in the Almanac column talking about Mars (located in the constellation of Cancer), I thought I'd dive a bit deeper into this constellation. There's not an over abundance of "interesting" items within the constellation, but some of the mythology is kind of fun.

How did Zeus get away with it? He's had more affairs and tricked more woman than any popular athlete or public figure in our headlines today. The story of Cancer the crab, begins with Zeus having yet another affair, this time with a Queen named with Alcmena. The result of this affair was the birth of a son, who I'm sure we're all familiar with, Hercules. Of course Zeus' wife, Hera, was not too pleased when

she heard the news of child. In her jealous state Hera swore to kill young Hercules. She attempted to have Hercules killed many times throughout his life, but his imposing strength and intelligence allowed him to overcome each and every attempt. In one instance Hera sent the ferocious water-serpent, Hydra, to kill Hercules. A terrible fight between the two ensued and Hydra was finding it very difficult to kill the great warrior. In her fury Hera sent the giant crab, Cancer, to distract Hercules and thus help Hydra in the battle. Cancer abided, and went to the battlefield where it started nipping at Hercules' feet. Hercules, being so mighty in strength, killed the crab by simply smashing its shell with his foot. Distraught over yet another failed attempt at taking the life of this illegitimate child, Hera then placed the crab's image in the night sky as a reward for it's faithful (but unsuccessful) service.



Messier 44, in the center of the constellation, is so bright that it easily appears to the naked eye as a nebulous patch in the "heart" of the crab. According to ancient legend, this group of stars (which goes by the name of "The Praesepe") foretold a coming storm if it was not visible in otherwise clear skies.

Hipparchus called it the "Little Cloud," but not until the early 1600s was its stellar nature revealed. This wonderful cluster is thought to be the nearest open cluster of its type to our Solar System at a distance of about 550 light-years away, and consist of hundreds of members. M44's age is similar to that of the Pleiades, and it is believed that both clusters have a common origin.

The other messier object in the constellation of Cancer is the open cluster of M67, estimated to be about 2,700 light years from our Solar

System. Astronomers have discovered that Messier 67 is one of the oldest known star clusters in our Milky Way galaxy.

Estimates of the age of the stars forming this open cluster range from 3.2 billion years to 4 billion years (making the stars of this cluster slightly younger than our own Sun). M67 is an important laboratory for studying stellar evolution since all its stars are at the same distance and age.

So when you are out under the stars this spring, enjoy your glimpse at the "Y" shaped constellation, and pity the poor crab that gave its life for his queen, in a vain attempt to distract the mighty warrior.

Almanac

For April 2010 by Matt Ganis

Welcome to the month of April. Hopefully you all made the adjustment to Daylight Saving time. I know I had a tough time with it. It definitely puts a cramp in my schedule by getting darker one hour later, but what can you do ?

If you're into such things, this is your last chance to view the zodiacal lights in our evening skies. This strange light appears after evening twilight from about April to September. The Zodiacal light is visible as a triangular-shaped cone of light rising from the horizon. The light is thought to be reflections of fine particles of dust in orbit around the sun and is visible because of scattered sunlight from the particles. The glow is brightest toward the sun from particles with diameters between a couple of micrometers and a few millimeters.

Let's start in our Western skies as we open this month's column. Just after sunset look toward your western horizon and you'll find two of the inner planets in close proximity to each other. On April 1st Mercury and Venus will be separated by about 3°. They'll stay relatively close to one another until about the 9th or 10th of the month when Venus will begin rising faster into the sky while Mercury falls behind and recedes to the western horizon, out of our view by around the 25th. Mercury is fairly bright, shining at around +1.0 while Venus by far outshines the planet blaring at an impressive apparent magnitude of about -3.9. Venus is quickly rising up toward the M45, the Pleiades, where the two will make a fine pairing in low power binoculars or telescope.



Apr 6



Apr 14

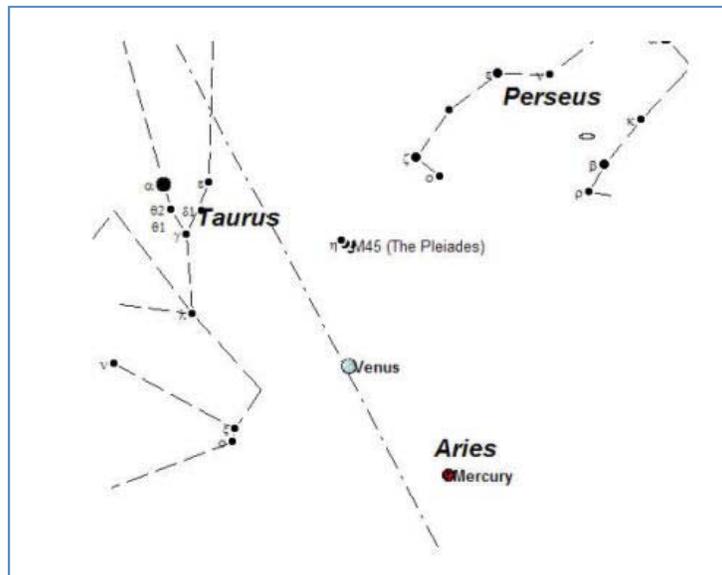


Apr 21



Apr 28

As we move across the sky from the west to the south, we come across Mars, poised just on the border of the constellation Cancer. The bright red planet is fairly bright, sporting a fairly impressive magnitude of about +0.5 throughout the month. Around the 15th/16th of the month, Mars will come into a close conjunction with the open star cluster M44 (the Beehive cluster) passing less than a degree from it. By month's end, Mars fades a bit, reaching a magnitude +0.7 by the end of the month.



Saturn is still the gem of the April skies. The ringed planet is located by the rear foot of Leo the Lion, just inside Virgo. The planet should look wonderfully bright shining at a magnitude of +0.70. It won't be very high in the sky early in the evening. Give it some time, and have a look around 11pm or midnight when it gets a

chance to climb a little higher into the sky. You won't be disappointed!

The Lyrid meteor shower occurs between April 19 and 24, with the peak of activity expected on April 22 (Earth Day). If you trace the Lyrid meteors backward, they appear to come from the constellation Lyra, the Lyre. Lyra rises in the northeast a couple hours after sunset. Comet Thatcher is the parent body of the Lyrid meteor shower. At its peak, an observer can expect about 12 meteors per hour.