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The Monthly Publication of the Westchester Amateur Astronomers

April 2009



The Soul Nebula

Doug Baum captured the above image of IC 1848 with his Takahashi FSQ-106 EDX refractor on a Takahashi EM-200 Temma 2 mount. Doug took 10 x 5 minute unguided subs in each channel H α / SII / OIII for a total of 150 minutes and then did 8 x 5 minutes of dark frames. The post processing was done in Maxim DL using the Hubble Palette that assigns color to chemical and molecular composition. The Hydrogen H-alpha is represented in green, the sulfur (SII) in red and ionized OIII gas in blue. Doug used a QSI 532ws camera which has a very sensitive Kodak KAF 3200me chip with micro lenses and up to 83% quantum efficiency. It is a full frame non anti blooming scientific CCD camera.

IC 1848 is referred to as the "Soul Nebula" or "Embryo Nebula", due to its resemblance to a baby. The same field of view also contains Collinder 33 and Collinder 34 star clusters as well as faint nebulae IC1871 and Sh2-198. Sh2-198 appears as a faint bubble in the lower right corner, off the lower back of the baby. The nebula lies an estimated 6000 light years away.

Events for April 2009

➤ *Monthly Meetings*

“Energy Technologies for Earth and Other Planets”

Friday, April 3rd, 8:00 PM

Andrus Planetarium

Hudson River Museum, Yonkers

Join us as Prof. Steve Greenbaum gives an updated lecture on Energy Technologies for Earth and Other Planets. Free and open to the public.

Upcoming Speakers

Andrus Planetarium

Hudson River Museum, Yonkers

For our May meeting (May 1st) science fiction writer Michael Falk will be speaking; More details will follow in the May Newsletter. For our June meeting (June 5th) Joe Rao will speak on “The Great Comets of the Last 400 Years.” Free and open to the public.

➤ *Starway to Heaven*

Saturday, April 18th, 7:00-9:00PM

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 25th.

➤ *Upcoming Events*

Northeast Astronomy Forum,

April 18th and 19th

Rockland Community College

Suffern, NY

Sponsored by the Rockland Astronomy Club and *Sky and Telescope* magazine, NEAF offers a wealth of speakers, workshops and shows. Numerous vendors will highlight their wares. While the WAA will not have a booth this year, club members will be attending. For more info, see:

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

NOTE: The WAA election for officers has been postponed while the slate is completed. Volunteers for President and VP Membership are needed. Those interested should contact the Club.

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/>.



Bob Kelly captured the above image of Orion with his Canon A40 camera, a 15 second exposure with the contrast increased using Photoshop Elements. The streak is the International Space Station.

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. Meetings: Andrus Planetarium, Hudson River Museum of Westchester, 511 Warburton Ave., Yonkers. 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: Charlie Gibson; Vice President: Michael Virsinger Vice President Programs (lectures): Pat Mahon; Treasurer: Doug Baum; Vice President Membership: Karen Seiter; Vice President Field Events: David Butler; Newsletter: Tom Boustead.

Articles and Photos

Observing Report; March 21st

Ward Pound Ridge

By Dave Butler

We had a number of guests plus six telescopes as well as a number of kids, all well behaved. The Dob next to me was lit with little red night lights, a good idea. Lawrence had a red colored piece of plastic covering his laptop screen. One fellow was looking to see what kind of telescope to buy; we tried to help. All told, the Meadow Picnic area that night entertained one refractor, two Dobs and three Cassegrains.

After a clear day it was getting cloudy as we started our viewing. Venus was soon spotted about 6 degrees above the horizon by a keen-eyed Dob user. Venus looked almost 10% lit but some of that was the bleeding of light into its thick atmosphere. The thin crescent was facing the sun. Venus shined through the clouds. Dr. Faltz had his full gear and took a number of live pictures of Orion and many galaxies as the evening progressed. Pat had the best view through an eyepiece that I saw of the Orion Nebula.

Mizar was one of double stars shown. Saturn is always a crowd pleaser. Currently, its rings are almost edge-on: bright and thin. Several of its moons showed but there were hundreds or thousands of faint background stars so it was hard to tell. Later when Saturn was higher in the sky, some faint bands could be seen. All scopes covered Saturn.

Targets dipped into and out of clouds. I used the BIPH to show the Orion Nebula which showed the dark dust clouds, the large area of white gas clouds and the individual stars of Trapezium. The BIPH also brighten M82 through the clouds so we could see the dark area dividing the galaxy into two parts. In wide angle lens both M81 and M82 could be seen, but were faint though the clouds. The Wide angle lens was also used to view the Seven Sisters (Pleiades) although more was shown through the view finder. I wanted to show the double cluster but all of Cassiopeia was covered with clouds. Several guests showed up. There were times when the lines we long and we all had a good time. The guests left around 9PM. Unfortunately, the skies then became clearer.



← *Starway to Heaven*

Bob Kelly used his Canon A40 camera to capture one astronomer setting up his telescope. The



← Space Shuttle

En route to the Bahamas on a recent cruise, Karen Seiter caught the launch of the Space Shuttle.



← Last Quarter Moon

Bob Kelly imaged the last quarter Moon on March 18th using his Canon A40 camera. This view goes from Tycho, to the upper left with its central peak to Copernicus, bright in the harsh light of the Sun on the right. The large crater in the center with only its outer wall and central peak in sunshine is Albategnius.



← Something Homemade

John Paladini used a homemade 2400 mm Hires Spectrograph to capture this solar spectrum. The fat line is hydrogen while the other lines are metals such as iron.

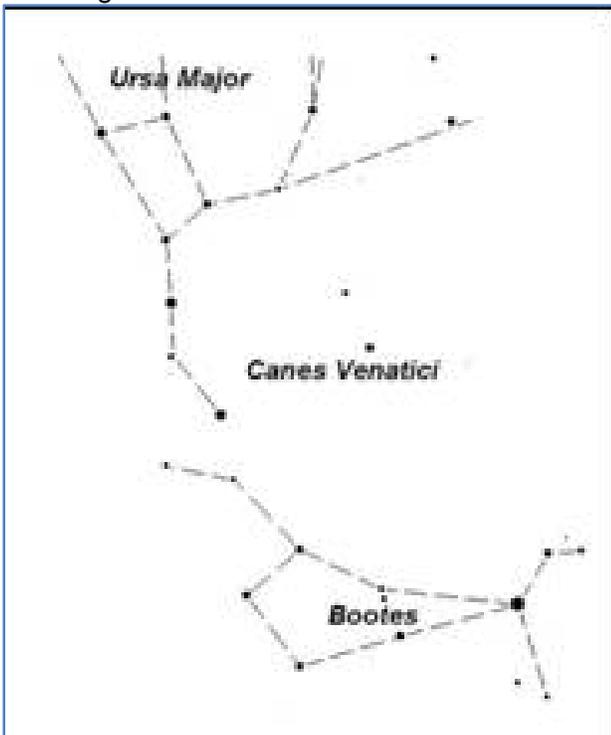
Constellation Corner

By Matt Ganis

The constellations in our evening skies depict a wide variety of objects ranging from animals to heroes, to royalty. This month, I thought it might be fun to have a look at one of the “regular guys” of the sky, the constellation of Boötes, the herdsman.

The constellation Boötes, is probably the oldest known constellation but not nearly as well known as other constellations like Orion or Cassiopeia. The name Boötes means “the herdsman,” which is appropriate since it appears the Giant is circling other constellations which just so happened to be named after animals.

Because of its age there are several stories surrounding the origin of Boötes. The Egyptians believed that the north circumpolar stars (the stars that never set over the horizon) were evil. The most evil of these was thought to be in the constellation of the Great Bear. The Egyptians believed that Boötes was placed in the sky to guard the Great Bear, ensuring that she did no harm.



The Greeks also called Boötes the “Bear Watcher” or “Bear Guard” because he seems to be chasing Ursa Major and Ursa Minor

across the sky. We know Boötes as the “Herdsman” as it appears that he is holding the leashes of the Hunting Dogs represented by the constellation of Canes Venatici.

One of the most prominent features within the constellation is the star Arcturus, which literally means “guardian of the bear”. The star Arcturus is the third brightest in the night sky, with only Sirius and Canopus being brighter. Because of its prominent appearance in the sky it is thought to be the first star that was named by the ancients and was the first to be observed in the sky with a telescope during the day. For this reason the star has been worshipped by people of some cultures.

Arcturus is a K-type red giant star with a “peculiar emission.” This means that the spectrum of light given off by the star is unusual and typically full of emission lines (which are bright lines in the spectrum of a luminous object caused by the emission of light at a particular wavelength). A red giant star is a luminous giant star of low or intermediate mass that is in the later phase of its evolution. The outer atmosphere is inflated making the radius immense and therefore the surface temperature low. As a result, Arcturus is at least 110 times visually more luminous than the Sun, but much of the radiation it gives off is in the infrared so the total power output is actually about 180 times that of the Sun!

As a closing thought, Boötes was once considered to be Atlas according to some ancient Greek legends, since it takes an appropriate position in the sky (its arms near the pole star, but its body standing on the ecliptic). As a result, together with earlier interpretations of other constellations in the zodiac sign of (such as Draco, Ursa Major and Ursa Minor) it may have formed the origin of the myth of the apples of the Hesperides, which forms part of The Twelve Labors of Hercules. Oh, maybe more about HIM next time.

Almanac

For April 2009 by Matt Ganis

Well it looks like our April skies will have a few interesting sights this month. It seems that most of these events are equally spread out between the evening and early morning hours. So regardless if you are a night owl or an early riser, there's something for you.

In the early morning hours, Jupiter will be rising approximately 2 hours before the Sun, giving you a splendid view of this magnitude - 2.1 planet. If you've read these columns over the years, you know I love planetary



Apr 2



Apr 9



Apr 17



Apr 24

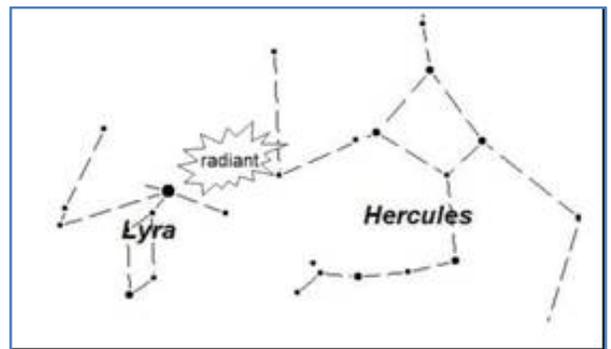
a very impressive -1.0 magnitude, visible about 45 minutes after sunset. By the end of the month, the planet will have dimmed to about +0.2 as it rises higher in the sky. On the 27th, look for a close conjunction between Mercury and the Pleiades; they will be separated by a mere 2 degrees. With a decent telescope, you can track the phases of Mercury, from about April 15th (when it's wide gibbous globe) through the 30th where it will reveal a crescent shape. You may have some problems when the planet is near the horizon, but it should make for an interesting set of observations.



conjunctions or interesting configurations. If you do get a chance to view Jupiter in the morning hours, you'll get to see the planets Jupiter, Neptune, Mars and Venus – tracing out a path along the ecliptic (the great circle representing the apparent annual path of the Sun).

Our evening skies are dominated but the beautiful planet Saturn, looming high in our evening skies just beneath the rear “paws” of Leo the Lion. Saturn isn't overly bright, shining at a respectable +0.7 magnitude. The planetary rings however are tipped about 3.8 degrees toward us and will continue to “open” a bit more (about 4.1 degrees by month's end). Early in the month (around the 6th of April) a nearly full moon can be found about 5 degrees south of Saturn. However, the bright moon may provide for a suboptimal view of the planet.

Mercury is well placed this month as well. Around mid-month the planet will be shining at



The Lyrid meteor shower reaches a peak on April 22nd. These meteors tend to be bright often leaving trails across the sky. Typical peaks range from about 10-20 meteors per hour (on a good year) although surges can sometimes bring the rate up to 100 per hour. That's one of the reasons why this shower is so tantalizing and worth watching.

The radiant is near the constellation of Lyra, which rises in the northeast at about 10 p.m. Fortunately for us this year, a waning crescent moon on the 22nd shouldn't interfere with this year's shower. Remember, the Lyrids typically produce the most meteors in the early hours before dawn, so plan accordingly. The best viewing night should be between midnight and dawn on Wednesday, April 22nd. But a day or two before and after the peak date may offer a decent set of meteors as well.