

July 2006

SKYWATCH

The Newsletter of The Westchester Amateur Astronomers, Inc.



An image of the Sunflower Galaxy, M63, taken at the Round Hill Observatory by Ted Schimenti and Rick Bria. It is a stack of 12, 6-minute exposures. With only an hour and 12 minutes of total exposure it was a real test to control the noise in such an underexposed image. Although certainly not of display quality, it was a good lesson on noise control. Rick tested three different deconvolution routines: MaximDL, AIP4Win2, and CCDSharp. Deconvolution means un-blurring, and can sharpen images almost like magic if used properly. CCDSharp won out in the end as being the fastest and easiest routine to get good results.

M63 (NGC 5055) is a magnitude 8.6 galaxy in the constellation of Canes Venatici (near the Big Dipper). It has a clumpy, knotty look to its spiral arms, and is how it got the name the "Sunflower." It is approximately 37 million light-years from Earth and is about 60,000 light-years across. It also has a large dust lane toward the bottom edge, but Rick could not bring it out of the background noise level, so it will have to wait for more data. That's the good thing about shooting digital; the data can be added to future exposures.

Events for July

Call 1-877-456-5778 (toll free) for last-minute changes, announcements, weather cancellations, or questions.

► Saturday, July 1

Starway to Heaven

Meadow Picnic Area, Ward Pound Ridge Reservation,
9:00 – 11:00 p.m. (Rain date: July 22.)

Celebrate the 4th of July a few days early by seeing some spectacular views of Jupiter – high on the Meridian – and a beautiful Moon above the western horizon. Free and open to the public.

► Friday, July 7

“Astronomers with an Attitude”

Hudson River Museum, Yonkers, 8:00 p.m.

Sam Storch will take a light-hearted look at the quirks and odd behaviors of a few well-known astronomers. Sam is the current director of the Hubble Planetarium in Brooklyn. The lecture is free and open to the public. Join us at 7 p.m. for our social hour or a free planetarium show before the meeting.

► Thursday, July 20

“Camp Astronomy”

Camp Ramah, Ramah Road, Wingdale, NY, 8:00 – 11:00 p.m. (Rain date: July 27.)

You will find dark skies and enthusiastic campers eager to view the celestial sights at this beautiful summer camp in Dutchess County.

Directions: Routes 684 and 22 North towards Wingdale. Pass Harlem Valley State Hospital, take Route 55 East. At bottom of hill (past cemetery and church on right) bear left (away from Route 55 East) to Dutchess County Route 6. Travel 3/10 mile, bear right onto Old Post Road. Go 4/10 mile, turn right at Reagans Mill Road (concrete bridge). Continue 8/10 mile, bear left onto Berkshire Road. In 1/2 mile, turn right onto Weil Road. Go 2/10 mile, bear left at fork to Ramah Road. Keep to the right and continue to camp entrance. Camp Phone: (845) 832-6622.

► July 28 – 29

Annual Stellafane Convention

Springfield, VT.

Club Bits

Welcome new members: Cynthia Cheney, New Rochelle; John Cook, Stamford, CT; Dan and Monica Logue, Bedford; Theodore Plotkin, Somers, Chris Pieretti, White Plains; Walter Bryant, Brooklyn. **Renewing members:** Erik and Eva Andersen, Croton-on-Hudson; James Barnett, Scarsdale; Mike and Ann Cefola, Scarsdale; Frank Jones, New Rochelle; Glen and Patricia Lalli, White Plains; Arthur Linker, Scarsdale; Patricia Mahon, Yonkers; Arumugam Manoharan, Yonkers; Anthony Monaco, Bronx; Bill Newell, Mt. Vernon; Charles Schulster, Crompond; Joe Sestito, Hawthorne; Ihor Szkolar, White Plains; Dante Torrese, Arsdley; Jack Ullman, Bronx; Jay Yee, Dobbs Ferry; Lori Wood, Bethel, CT; Susan and Serge Lazarev, New Rochelle; Gustav Forssell, Whitestone; Dave Braham, Yonkers. **Notify the Secretary if your name should be on this list.**



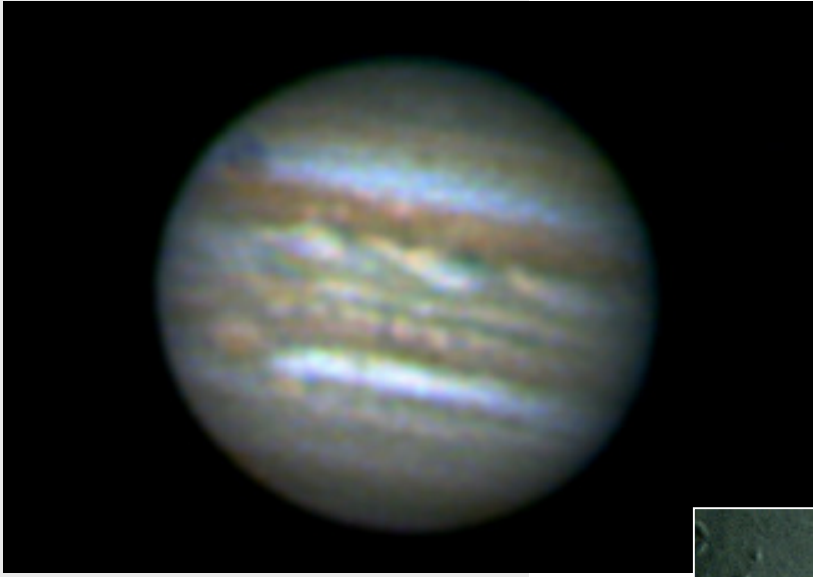
George Klaus (left) chatting with News 12's meteorologist Joe Rao at one of our social hours.

WE ARE SAD TO REPORT that George Klaus, Vice President of Field Events, passed away on June 13. George was a kindhearted and endearing person who was always willing to go out of his way to bring new members into the club. He was especially fond of setting up our monthly observing nights at Ward Pound Ridge, and just recently, a Space Carnival for the Kensico School and telescope viewing at The Leukemia & Lymphoma Society's Light The Night Walk.

George also served as secretary for three years organizing the club's myriad documents, keeping the roster up to date, checking the P.O. Box for mail, and ordering our yearly consignment of WAA sweatshirts and T-shirts. And through his contacts, George was instrumental in obtaining the WAA's 501(c)(3) tax status, a major milestone enabling us to accept equipment donations and to enhance our presence as a tax exempt, not-for-profit organization.

We will all miss George's helping hand.

Photos and Reports



◀ A recent shot of Jupiter taken by John Paladini through a Celestron 9.25-inch telescope. This image is from 50 stacked exposures. Notice how the two storms (The Red Spot and “Junior”) are right near each other at the bottom-left of the planet’s disk.

▼ John’s image of crater Copernicus — a relatively young crater, about 58 miles in diameter, was formed by a massive impact about a billion years ago. The image was taken with a Meade Lunar-Planetary Imager, 2x Barlow and IR filter (750-850nm).



Observing Jupiter

Club member Dave Butler sent in the following ...

I had planned to view Jupiter, Saturn, Mars, M44, Vesta and Comet 41P and a few galaxies, but plans changed after seeing Jupiter’s Red Spot right in the center of its lower band. A few residents from my neighborhood were invited to view.

All had to refocus to see the Red Spot and most found “Red Spot Junior” as well. The Red Spot rotated to the left towards the nearest moon. (Left and right are reversed on Schmidt-Cassegrain telescopes but North/South are in normal position.) The diagonal was tilted 45 degrees to give a nice sitting position for adults while the kids stood up. All were able to achieve a sharp focus and a good view.

A lot of band patterns and faint bands could be seen. The red spots are not very red and Junior is lower and last to rotate out of sight. Not too far away is the big Red Spot, which is completely in the “purple” lower band. As the spots get near the edge of the planet they are increasingly hard to see. Sharp focus is required.

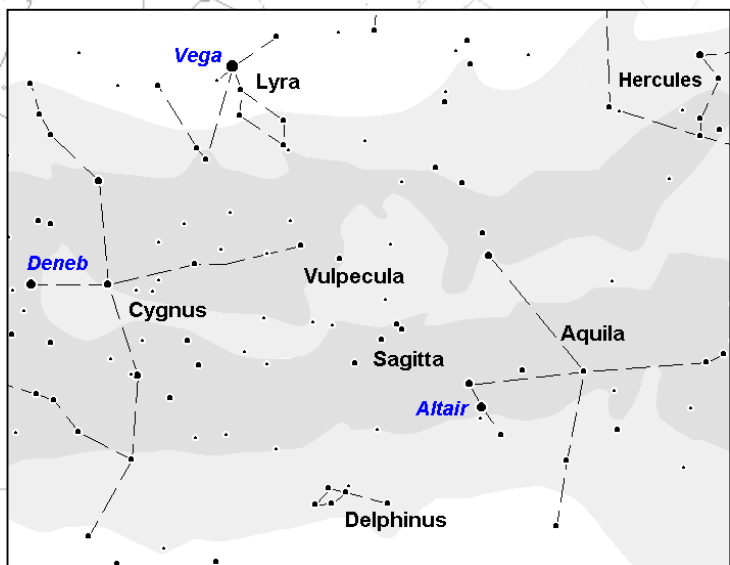
Editor’s note: The two red spots should slide by each other on the evening of July 4. Will they merge or intensify? Keep observing to find out.

Westchester Amateur Astronomers, Inc., a 501(c)(3) organization open to people of all ages with the desire to learn more about astronomy. Mailing address: 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: Meadow Picnic Area, Ward Pound Ridge Reservation, Routes 121 and 35, Cross River.

Annual Membership: \$25.00 per family and includes discounts on subscriptions to *Sky & Telescope* and *Astronomy* magazines. Officers: Mike Cefola, President; Robert Davidson, Senior Vice Pres.; Michael Virsinger, Treasurer; Karen Seiter, Secretary; Charles Gibson, Vice Pres. Programs; Barbara Moroch, Vice Pres. Communications. Newsletter: Dick Shaw (with Robert Davidson and Mario Palmieri). Webmaster: Robert Davidson.

CONSTELLATION CORNER

By Matt Ganis



I THOUGHT I'D GET TO BACK to looking at some constellations and the stories that go along with them for this column. Of course, I'll throw in some tidbits about distances and oddly behaving stars, just to make it a bit more interesting.

As we move into July the asterism known as the Summer Triangle rises into our nighttime sky. This asterism is a useful point of reference for navigating the summer sky but also proves very interesting in its own right. The pattern is made up of three prominent stars from the constellations of Aquila, Cygnus and Lyra.

Altair is in the constellation Aquila, the Eagle. In fact, the word Altair comes from an Arabic phrase meaning the "the flying eagle." This constellation lies in middle of the northern Milky Way and contains a number of dim planetary nebulae. Altair is the farthest south of the three "Summer Triangle" stars and at a magnitude of 0.77 is the 2nd brightest of the three stars. Although classified as a white star, like the other two stars of the Summer Triangle, Altair appears blue to the naked eye. It's the coolest and least luminous of the Triangle, but in absolute terms shines 10.6 times brighter than our own Sun. At 16.8 light years away, it's the 12th brightest star in our sky.

The easternmost star of the Summer Triangle is Deneb (Arabic word meaning tail) in the constellation Cygnus the Swan. It's easier to visualize this flying swan, with the bright Deneb at its tail, than the eagle in Aquila. In late autumn when the swan starts to set toward the western horizon, this asterism is better recognized as The Northern Cross – with Deneb at the head of the cross. As a class A2 star it is a true super giant. Deneb's luminosity is over 70,000 times greater than the Sun

and is estimated to be 25 times more massive. Even though this massive star is over 1600 light years away, astronomers have been able to measure its diameter through interferometry, and determined its true diameter to be 180 times that of our sun (if Deneb were placed at the location of our sun the Earth would be inside of it).

Despite its great size and brilliance, Deneb's total life expectancy is only a few million years, as compared to our Sun which is already 4.5 billion years old and is expected to burn for another 5 billion. This is one of the facts of stellar astronomy: The more mass that a star has when it ignites, the brighter and faster it will burn. It has already used up much of its hydrogen and is now burning Helium and other elements. In just a few million years Deneb is expected to explode into a brilliant supernova. If more than three solar masses of matter in Deneb's core remain after the explosion, it will then collapse under the inescapable force of its own gravity into a black hole.

The third star of the Summer Triangle is formed by the star Vega in the constellation Lyra. Vega is another star that is relatively close to Earth, at a distance of "only" 25 light years. At magnitude zero (0.04), Vega is the fifth-brightest star in our sky and is the star around which the scale of magnitudes was originally determined. Remember, magnitude is defined as a scale on which 5 magnitudes indicate a difference in brightness of 100 times, and the difference between each magnitude is about 2.5 times. Another interesting fact about Vega is that it, was and will again be our North Star. The Earth's North Pole slowly traces a circle in the sky once every 26,000 years. This motion, known as precession, will bring Vega back into the Pole position in another 14,000 years.

In researching this article, I came across this wonderful myth about these stars. In Chinese mythology, a young cowherd (represented by the star Altair) happens to come across seven fairy sisters bathing in a lake. Encouraged by his mischievous companion the ox, he steals their clothes and waits to see what will happen next. The fairy sisters elect the youngest and most beautiful sister known as "the weaver girl" (the star Vega) to retrieve their clothing. She does so, but since the cowherd sees her naked she must agree to his request for marriage. She proves to be a wonderful wife, and he a good husband, and they are very happy together. The Goddess of Heaven finds out that a mere mortal has married one of the fairy girls and becomes furious. Taking out her hairpin, the Goddess scratches a wide river in the sky to separate the two lovers forever (thus forming the Milky Way separating Altair and Vega). The weaver girl must sit forever on one side of the river, sadly weaving on her loom, while the cowherd watches her from afar and takes care of their two children (his flanking stars β and γ Aquilae). But once a year all the magpies in the world take pity on them and fly up into heaven to form a bridge over the star Deneb so the lovers may be together for a single night, the seventh night of the seventh moon. I just thought that was a great story, hopefully you all do too.



From Thunderstorms to Solar Storms...

by Patrick L. Barry

WHEN SEVERE WEATHER occurs, there's a world of difference for people on the ground between a storm that's overhead and one that's several kilometers away. Yet current geostationary weather satellites can be as much as 3 km off in pinpointing the true locations of storms.

A new generation of weather satellites will boost this accuracy by 2 to 4 times. The first in this new installment of NOAA's Geostationary Operational Environmental Satellites series, called GOES-N, was launched May 24 by NASA and Boeing for NOAA (National Oceanic and Atmospheric Administration). (A new polar-orbiting weather satellite, NOAA-18, was launched May 2005.)

Along with better accuracy at pinpointing storms, GOES-N sports a raft of improvements that will enhance our ability to monitor the weather—both normal, atmospheric weather and “space weather.”

“Satellites eventually wear out or get low on fuel, so we've got to launch new weather satellites every few years if we want to keep up the continuous eye on weather that NOAA has maintained for more than 30 years now,” says Thomas Wrublewski, liaison officer for NOAA at NASA's Goddard Space Flight Center.

Currently, GOES-N is in a “parking” orbit at 90° west longitude over the equator. For the next 6 months it will remain there while NASA thoroughly tests all its systems. If all goes well, it will someday replace one of the two active GOES satellites—either the eastern satellite (75°W) or the western one (135°W), depending on the condition of those satellites at the time.

Unlike all previous GOES satellites, GOES-N carries star trackers aboard to precisely determine its orientation in space. Also for the first time, the storm-tracking instruments have been mounted to an “optical bench,” which is a very stable platform that resists thermal warping. These two improvements will let scientists say with 2 to 4 times greater accuracy exactly where storms are located.

Also, X-ray images of the Sun taken by GOES-N will be about twice as sharp as before. The new Solar X-ray Imager (SXI) will also automatically identify solar flares as they happen, instead of waiting for a scientist on the ground to analyze the images. Flares affect space weather, triggering geomagnetic storms that can damage communications satellites and even knock out city power grids. The improved imaging and detection of solar flares by GOES-N will allow for earlier warnings.

So for thunderstorms and solar storms alike, GOES-N will be an even sharper eye in the sky.

Find out more about GOES-N at:
goespoes.gsfc.nasa.gov/goes

Also, for young people, the SciJinks Weather Laboratory at scijinks.nasa.gov now includes a printable booklet titled “How Do You Make a Weather Satellite?” Just click on Technology.

This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with NASA.

Observing Alert

WAA member Mike Gondek reminds us that a spectacular flyby of the near-Earth Apollo Asteroid 2004 XP14 should be visible in our area on July 3, starting around 1:30 a.m. Mike plotted the path of the asteroid using *Starry Night* and reports that it should be traveling from just east of Perseus to just below Cassiopeia.

The 600-meter diameter “rock” will be a tad farther than the distance to the Moon. According to Association of Lunar & Planetary Observers, at close approach, the asteroid will peak at magnitude 11, allowing observers using an 8-inch or larger telescope to watch it race along the background stars at 8.4 degrees per hour.

See:
neo.jpl.nasa.gov/cgi-bin/db?name=2004+XP14
www.lpl.arizona.edu/~Erhill/alpo/minplan/flyby.html

And Look for further information on the WAA website.

New GOES-N satellite launches, carrying an imaging radiometer, an atmospheric sounder, and a collection of other space environment monitoring instruments.

WAA Annual Picnic and Bar-B-Que



Group Portrait. Photo: Mike Virsinger

The members of the WAA were treated to a beautiful June day at the Trailside Museum for the club's Annual Picnic. Thanks to all the members who brought along homemade goodies. And special thanks to the staff of Ward Pound Ridge Reservation for letting us picnic under the shade near the Sugar House.



From left to right: Vivian & Doug Towers, Ann Cefola and Pat Mahon under the shade of the maple tree.



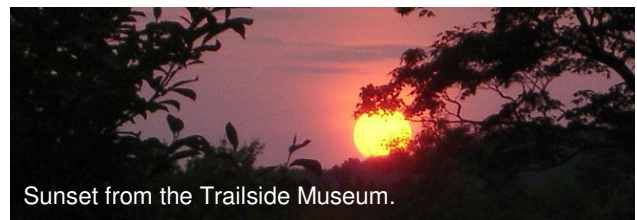
Darryl Ciucci (left) and Mario Palmieri reflect on the events of the day.



A discussion about astronomy perhaps? Naaah! Just waiting for hamburgers. Left to right: Paul Renken, Harry Butcher, Bob Davidson, John Paladini and Monica Logue. Photo: Mike Virsinger



An "extraterrestrial craft" investigates the strange life forms gathered around the charcoal grill.



Sunset from the Trailside Museum.

DEEP PURPLE, DEEP PIPES, DEEP SKY

By Mike Cefola

I INHERITED MY LOVE of music from my parents: My Mom's side was steeped in opera. In fact, her first cousin was stage director of the NY Metropolitan Opera House for years. My Dad's family, including his seven brothers and sisters, were all musical. I remember him singing opera or playing the mandolin. What really got me was his proficiency at playing classical music on his chromatic harmonica.

As a young kid, I listened to the WMCA Good Guys and Murray the K on AM radio. The first 45s I bought were Purple People Eater and The Martian Hop (precursor of things to come). I tried woodwind instruments in elementary school such as clarinet and saxophone but knew it was not meant to be when, after practicing, the neighborhood dogs would gather on our front steps.

I bought my first guitar, a cheap acoustic with redeemable green stamps. I soon moved up to a better one and learned songs by the folk legends such as Peter, Paul and Mary and the Kingston Trio. By ninth grade, I had the rock n' roll bug and got one of those cheap Japanese electric guitars with 90 knobs that, no matter how you set them, the sound came out always the same.

Seeing that my interest in the guitar was not just a phase, my Dad bought me my first real guitar, a 1962 Gibson SG Special which I have to this day. It's a bit beat up now but is still my dearest guitar. I can't even count the number of bands I was in and gigs I did playing the SG for everything from folk and rockabilly to hard rock and blues. By high school, I was a music freak and went to every concert I could. In college I lived at the Fillmore East to see the likes of The

Yardbirds, Kinks, Eric Clapton with Cream, the Stones and Deep Purple (yes, I saw them too) etc. I did manage to hear the Beatles from Shea Stadium's parking lot. After college, as assistant manager of a record store owned by CBS Records, I got free tickets for every performance in the area.

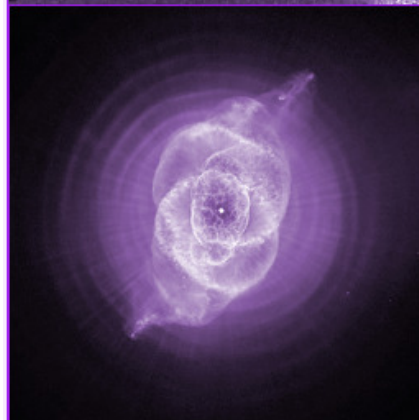
Around 1980 my rebel phase moved to another passion, motorcycles. My first bike was a Honda Nighthawk which rode so smoothly it felt like being in a convertible with the top down. I soon realized that smoothness was not for me and sought the deep rumbling sound of a

Harley-Davidson. I bought a Sportster that was chain driven and had four gears and shook so hard I felt like I was in a rinse cycle. I then moved to an '89 Superglide, which I still ride today. I did, for a while, own a Heritage Softail, a classic 50's looking bike, but keeping two cycles was impractical and I unloaded it.

Dad, who bought me that wonderful Gibson guitar, also bought me something else that would be the roots of my deep sky passion: One of those 60mm white Atco refractors so popular in the department stores in the early 60s. The mount was shaky but the optics surprisingly good. And my first views of the Moon and Saturn blew my mind. My first deep-sky object, M42, the Great Orion Nebula, I recorded with my dad's help in a little black marble log book that I still have. Most of you who know me know deep sky objects are still my passion although I see them now through a 457mm Dobsonian.

What would my life have been like without these wonderful passions and the joys I've derived from them? I'm glad I'll never know.

**A toast to Deep
Purple, deep pipes
and deep sky.**



July 2006 Almanac by Matt Ganis



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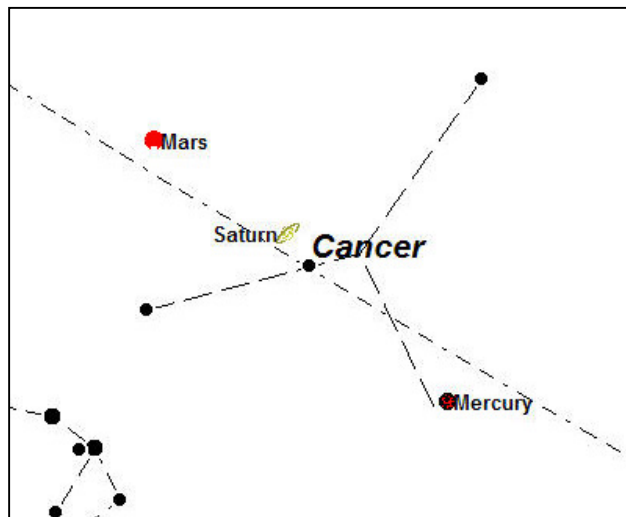
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HOPEFULLY THE SUMMER is treating you well. With all of the rain and humidity lately, I haven't had a chance to get my 'scope out – hopefully you have! There isn't a whole lot happening in our skies this month. A few interesting planetary alignments and some major storm activity on or about the 4th of July (luckily it won't interrupt any 4th of July picnics, unless you plan on having a party on Jupiter).

Our July evenings open with Jupiter high in our southern skies. The behemoth of our Solar System is blaring at a magnitude of -2.2 and is situated right between the constellations of Libra and Virgo. It's been in our skies for some time now, rising around 2:30pm and setting quite early at 1am, so hurry.

Don't forget to check out the two red spots on the planet. The two biggest storms in the solar system are about to go bump in the night, in plain view of our telescopes. Storm number one is the Great Red Spot, twice as wide as Earth, with winds blowing up to 350 mph. The storm has been spinning around Jupiter for hundreds of years. Storm number two is Oval BA, also known as "Red Jr.," a youngster, only six years old. Compared to the Great Red Spot, Red Jr. is half-sized, able to swallow Earth merely once, but it blows just as hard as its older cousin. According to Amy Simon-Miller of the Goddard Space Flight Center, who has been monitoring the storms using the Hubble Space Telescope, the two storms will reach their closest approach on or about the 4th of July. Scientists aren't sure what's going to happen when the two meet up, but it should make for some fun observing, both during the collision and after.

Observations of Saturn and Mars are going to become more and more difficult as we move from June into July. The two planets are still visible, though low on the western horizon. Saturn for example sets by 10pm at the beginning of the month, and is well below the horizon by 8:30pm at month's end. If you can catch a glimpse of the planet, you'll find it a fairly bright 0.1 in magnitude. Mars will be a little easier since it sets around 11pm on July 1st and by 9:30pm on the 31st.



If you get out early enough this month, you may be able to catch Mercury to the west of Cancer, leading the charge to the horizon. It's leaving the skies not with a bang, but a whimper, shining at only magnitude 2.6 – so it may be a difficult target as it races to the horizon.

If you're interested in observing some of the more distant planets, this may be the month for you. Normally these planets are tough to find since they are so dim, but ironically the moon passes by both Uranus and Neptune and may help you locate these distant worlds. On the evening of July 12th (into the morning of the 13th) the Moon passes within 4 degrees to the South of Neptune. While the pair will be above the eastern horizon by 10:30pm you might want to wait until at least midnight for a better view.

On the evening of July 14th into the 15th, the moon then passes about 3 degrees to the east of the planet Uranus. Again, it looks like the best observing time would be anywhere after midnight (on the morning of the 15th).

Reminder: No monthly meeting in August. However, get ready for our Annual Telescope Workshop on Saturday, August 19.