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The Monthly Publication of the Westchester Amateur Astronomers

July 2008



IN MEMORY OF ROBERT J. DAVIDSON

It is with great sadness we report the passing of Robert J. Davidson on June 8th. Bob was the WAA's First President and its current Webmaster. For so many WAA members, Bob leaves a trove of memories--Maybe it was a first club meeting, where Bob's friendliness and enthusiasm helped sell the WAA. Maybe it was a night at Bennigan's after a WAA meeting. Members would catch a late dinner. Bob would talk about the Club's early days or just expound. He had such stories and a knack to entertain. Perhaps it was a night at Pound Ridge. Bob would trundle up the Big Dob and show a bus-load of visitors Saturn or M13. Bob knew the stars and would patiently explain for the umpteenth time that the snowball in the eyepiece was a globular cluster made of hundreds-of-thousands of stars, tens-of-thousands of light years away and nearly as old as the Universe.

The above photo is taken from a viewing held at George Washington Elementary School. It epitomizes Bob—talking astronomy while offering a helping hand. We will miss him.

Events for July 2008

Editors Note: There will be no monthly meeting for July or August at the Andrus Planetarium. Our next meeting will be the Amateur Night in September. See below for details on the Starway to Heaven and our Annual Telescope workshop.

➤ **Monthly Meetings**

WAA Amateur Night.

Friday September 5, 8:00PM

Andrus Planetarium

Hudson River Museum, Yonkers

WAA members will showcase their astrophotos and equipment. Let us know if you have something to show or tell. Please email the club with a brief idea of what you will be presenting.

➤ **Starway to Heaven**

Saturday, July 5th, 8:30-11:00PM

Meadow Picnic Area, Ward Pound Ridge Reservation, Cross River

This is our scheduled observing date for July, weather permitting. Free and open to the public. The scheduled rain/cloud date is July 26th.

➤ **“Telescope Workshop”**

Saturday, August 2nd, 7:00-11pm

Meadow Picnic Area, Ward Pound Ridge Reservation, Cross River

This is our annual workshop for members and the public who might need help in setting up, collimating and using their telescopes.

➤ **“Camp Astronomy”**

Thursday, July 10th, 8:00-11:00 pm

Camp Ramah, Ramah Road, Wingdale, NY.

You will find dark skies and enthusiastic campers eager to view the celestial sights at this beautiful

summer camp in Dutchess County. **Directions:** From Cross Rivers (almost 33 miles from 35 / I-684 crossing). 1) Merge onto I-684 North toward BREWSTER. 11.0 mi, 2) I-684 N becomes NY-22 N. 18.3 mi 3) 22 forks left, Stay right to go onto NY-55 0.9 mi, 4) 55 turns right Stay STRAIGHT to go onto OLD ROUTE 22/CR-6. 0.6 mi, 5) Turn RIGHT onto REAGANS MILL RD. 0.7 mi, 6) Turn SLIGHT LEFT onto BERKSHIRE RD. 0.5 mi, 7) Turn RIGHT onto WEIL RD (Portions unpaved). 0.2 mi, 8) Stay STRAIGHT to go onto RAMAH RD (Portions unpaved). 0.1 mi, 9) Turn RIGHT to stay on RAMAH RD (Portions unpaved). 0.1 mi Camp Phone: (845)832-6622.

➤ **“Camp Morty”**

July 8th, July 24th, July 31st and August 8th

8:00 11:00 pm

Camp Morty, Hawley Rd, North Salem

Come help show some young campers the stars.

Directions: From Cross Rivers (6+ miles from Ward Pound Reservation). Go past 121 south (Route to Ward Pound Reservation) 0.6 miles. Take 121 north 4.5 miles. Turn right on Hawley Rd 0.9 miles. Address: Hawley Road, NY 10560

New Members. . .

Tom Crayns, Brooklyn, NY; Steve Petersen, White Plains, NY.

Renewing Members. . .

James Barnett, Ridgefield, CT; Jose Castillo, Pelham Manor, NY; Charles & Darlene Ekholm, Lake Peekskill, NY; Joe Geller, Hartsdale, NY; Charlie Gibson, Scarsdale, NY; Frank Jones, New Rochelle, NY; Tony Kim, South Salem, NY; Glen Lalli, White Plains, NY; Arthur Linker, Scarsdale, NY; Pat Mahon, Yonkers, NY; Anthony Monaco, Bronx, NY; Bill Newell, Mt. Vernon, NY; Mario Palmieri, Cortlandt Manor, NY; Joe Sestito, Hawthorne, NY; Jack Ullman, Bronx, NY; Mike & Angela Virsinger, Seaford, NY; John Paladini, Mahopac, NY.

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 Gallery

Summer Solstice Viewing at Lasdon Park by Dave Butler

As usual Ted Kozlowski was a great host; he expressed his sorrow at Bob Davidson's passing. The club was well represented by Doug Towers, Bill Newell, John Paladini and Doug Baum. We were blessed with clear skies. Seeing was excellent although transparency was poor. Doug Towers was the first to bag Saturn and maybe the only one to cover Mars. He also covered the most number of doubles. Everyone covered Saturn several guest saw the split in the rings and three moons. All scopes displayed M13. On my scope the globular cluster could be resolved but was dimmer than usual—more like M56 on a clear night. Bill tried it a little later and it was brighter.

Best in show went to Doug Baum and John Paladini for their high tech camera amplifier. You could stand a foot away and see a near photographic view of the great globular cluster. Moving your head around gave you a wider field of view. They also showed the Ring Nebula, which was a bright Ring of Gas, very well defined. The faint background stars that you see in a normal telescope didn't show up. But the image was so much brighter and sharper especially considering the humid conditions of the night. This image was similar to Bob's image with the 20 inch Dob, that we saw at Camp Ramah two years ago under clear skies. I showed the Ring Nebular on my scope so people could see the vast difference in brightness and definition. My only plus was I could see hundreds of faint background stars. Other objects included Yellow and Blue Alberio seen by everyone. Also shown was the open cluster M39, the Cats Eye Nebula, and Galaxy M81. Bill pointed out the location of many objects in the sky with his bright laser and gave a talk on the Summer Solstice as only he can with diagrams that any engineer would be proud of. Charlie provided all of us with bug repellent and his knowledge of the night sky. Near the end I showed a few pictures: one by Bob Davidson of the ISS while moving the big Dob. Another fine by image by John of the Horse-head Nebula and a great one by Polish astronomer Grzegorz Tuszy of the Shuttle approaching the ISS as seen on the *Sky & Telescope* Web site. The event ended around 11pm, we and the guests all had a great time.



← Horse-head and ↑ North America Nebulas

John Paladini provided this image of the Horse-head nebula (Barnard 33) in Orion. Doug Baum imaged the North America nebula in Cygnus (IC 7000) with his new FSQ-106 EDX2 using a Canon 450 Xsi DSLR. It is a single 5-minute exposure without any filters.

LUNAR READINGS

by Bob Kelly

Books

This July 20th marks the 39th anniversary of the first men on the Moon. Here are some books [and other media] I've used to relive the landing (I was 13 then). The classic book is [A Man on the Moon](#) by Andrew Chaikin, 670 pages, which details the Apollo program, focusing on the astronauts. Another great book tells stories from the people who made the flights happen: [Apollo](#) by Charles Murray and Catherine Bly Cox, 470 pages.

If you want a shorter book to get the feel for the Moon landing missions, I recommend [Apollo: The Epic Journey to the Moon](#) by David West Reynolds. Don't let its 260 page size throw you. Much of the book is the really useful illustrations that make it worthwhile. I especially like the drawings used to show the landing sites so you can see the landing areas better than the maps made from grainy Lunar Orbiter photos. Need something for the beach or pool? Try a good paperback: [Carrying the Fire](#) by Apollo 11 Command Module Pilot Michael Collins is a very readable account of an astronaut's journey into space. All of the books are available from the Westchester Library System, if you want to try before you buy.

Other media

HBO recreated the Moon landings in the 12-part series [From the Earth to the Moon](#). The movie [Apollo 13](#) is still a well done film for rent-a-movie night. The new series, [When We Left the Earth](#) on the Discovery Channel is said to be an exciting whirlwind tour of the American space program. If you get a chance, see the IMAX 3D show [Magnificent Desolation](#). It uses real and recreated scenes to tell the story. I like how after we see a recreated landing of the Lunar Module, we pull back from the landing site and you realize how tiny the LM is compared to the vast emptiness of that dusty lunar plain. It really shows the audaciousness of landing on the Moon with 20th Century technology.

Want your Moon landings in as-it-happened detail? Then go on-line to the [Apollo Lunar Surface Journal](#), which has transcribed every word spoken on the Moon and includes most, if not all, of the photos and movies taken. One of my favorite items is the [Apollo 11 Box](#). The Smithsonian Institution made copies of maps, photos and checklists from their collection of items from the Moon landing mission. In addition, as a government employee, I especially liked the copy of Neil Armstrong's travel voucher, from Houston to Cape Canaveral to the Moon to the Pacific Ocean and return, noting that lodging and meals were provided.

Observing Report; Pound Ridge; June 21st

By Bob Kelley

The late sunset made it a late evening. But for the 6 or so members with telescopes, it allowed more time for setting up in the extended twilight. This was my first time out of Ardsley with my 8-inch Dobsonian. We had (I think 15 or 20 guests; I had about 8 or 10 near my scope most of the night). There was a wide range of ages from young kids to adults and they bounced back and forth to the 6-inch equatorially mounted Newtonian next to me.

Skies stayed mostly clear during the evening. We spotted Arcturus first, straight overhead so far from the Sun's glare. Then we picked Saturn out of the twilight, a great sight. First we had our guests check out the rings, then look for detail, and as the night got darker, Titan just above the planet's rings. Then we took a glance at tiny Mars. Albireo, a double star with two distinct colors was so good, people started running out of superlatives for what they were seeing. The Ring Nebula was a fuzzy dot to me, but the sharper eyes among us saw a ring, unprompted. (Ok, it's the RING Nebula, but they say I didn't bias them!) M13 was a large fuzball at 70x. Then Jupiter rose. It was just above the distant tree tops, but it had a vivid orange hue and our observers could see two darker bands plainly. We had all four of the bright moons of Jupiter. Clusters near the southern horizon were not found in the hazy sky. We also did some work with binoculars along the Swan (or Northern Cross or the Baseball Game) following the bands of stars in the Milky Way. My IS 8x25 are small, but people commented that the image stabilizing system steadied the view to get fine details. The Moon came up on the way home, too late for us! Did I mention at least two satellites were spotted by our group as well as two boldly bright meteors low in the southeastern sky early in the evening!

Constellation Corner:

by Matt Ganis

So as July rolls around, I tried to think of a good theme for this month's column. Given it's the 4th of July, I thought I'd get into comets, and the nearest thing I can think of to a celestial "fireworks" display: a meteor shower.

Comets are small, fragile, irregularly shaped bodies composed of a mixture of non-volatile grains of dust and frozen gases. They tend to be divided into two types, determined by the period of their orbit: short period comets complete their orbit in 200 or less years and long period comets take more than 200 years to orbit the Sun. Of the two types, short period comets have less elliptical orbits and, like asteroids and meteoroids, are left over bits of material that were never incorporated into a planet during planetary formation.



These short period comets originate in the Kuiper Belt, which is about 30-100 Astronomical Units from the Sun. During the formation of the Solar System, the Kuiper belt was on the outer part of the pre-planetary disk and since the outer part of the disk was less dense than the inner part, only small comets could be formed, not large planets.

Long period comets, which have very elliptical orbits, usually originate from the Oort Cloud. The Oort Cloud is located 3,000 - 50,000 Astronomical Units from the Sun and is thought to contain as many as 100 billion comets. Occasionally, a star passes by the Oort Cloud and disturbs the orbits of the comets within it and as a result, some of these comets change course and enter the Solar System.

The structure of comets are diverse and dynamic, but they all develop a surrounding cloud of diffuse material, called a coma, that usually grows in size and brightness as the comet approaches the Sun. Usually a small, bright nucleus (less than 10 km in diameter) is visible in the middle of the coma. When a comet is heated by the Sun, some of the ice on the comet's surface turns into gas directly without melting. The gas and dust freed from the ice can create a cloud (coma) around the body of the comet. High-energy charged particles emitted by the Sun, called the solar wind, can carry the gas and dust away from the comet as a long tail that streams into space. When that happens, gas in the tail becomes ionized and glows as bluish plasma, while dust in the tail is lit by sunlight and looks yellowish. This distinctive visible tail is the origin of the word comet, which comes from Greek words meaning "long-haired star."

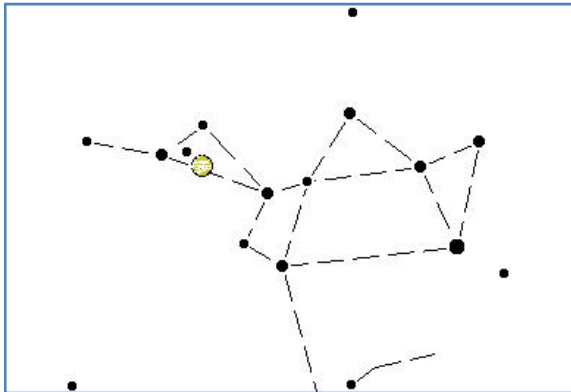
Meteoroids are tiny particles, (about the size of a grain of sand), that are usually the residue from comets. If a meteoroid encounters the Earth's upper atmosphere, it vaporizes in an event called a meteor. If the object is large enough and survives to hit the ground, then it is referred to as a meteorite. Comets as I said, are little more than "dirty ice-balls" which orbit the Sun. As the Sun heats a comet, the ices vaporize into gas leaving a residue of dust and small dirt particles that will remain in nearly the same orbit as the parent comet for years. Meteor showers are produced when the Earth's orbit intersects streams of these very small particles, sometimes in spectacular fashion. If the dust trail is small and dense enough, then the resulting meteor shower may result in hundreds, or perhaps even thousands of meteors burning up in just minutes. If this occurs, then the meteor shower is referred to as a "meteor storm". Which is why I thought of "fireworks" and a meteor shower.

Because of the effects of perspective, the meteors from meteor showers appear to radiate from one point in the sky. Therefore, most showers are named for the constellation in which the meteors appear to originate from. For July, the meteor shower is the Delta Aquarids which covers the period of July 14 to August 18. The stream normally produces about 5-10 meteors/hour, with overall activity of about 30/hour under really good conditions – so ironically, it's not much of a "fireworks" display in July skies.

Almanac

For July 2008 by Matt Ganis

Planetary observing this month is a little sparse, so it might be a good time to start brushing up on your observing skills for hunting down those long sought after Messier objects. Before we get to those, let's see what's available in our Solar System first.



At the start of the month, if you have a look in your western skies, you'll be able to catch a last glimpse of Saturn as it sinks into the horizon. Do your observing early, by the end of the month the planet will set by 9:30pm, so it will become lost in the glare of the Sunset. Saturn is joined in the sky by Mars (located in the constellation of Leo at the rear foot of the Lion). Both planets are a little dim, with Mars shining at a magnitude of +1.68 and Saturn, a little brighter, shining at a magnitude of +0.75.

On July 1st, the two planets will be separated by only 4-degrees. However, the two planets are approaching each other and will be separated by less than ½-deg by July 10th. They will continue to move away from each other as Saturn races toward the western horizon and Mars moves away from it. By month end (the 30th), the two planets will be separated by a gap of a bit more than 10-deg.

Looking toward the eastern horizon we find the bright planet Jupiter, looming low in the sky (just above the horizon) inside the constellation of Sagittarius. Jupiter reaches opposition on July 9th, where it appears opposite the Sun in the sky. This tends to be the best time to observe a planet and in turn helps Jupiter to reach a magnitude of -2.70. The planet remains in our skies all night, setting in the wee hours of the morning (around 4am) – so you may want to wait until around midnight when it will be well placed very high in the sky giving an even more impressive view.



July 2



July 9



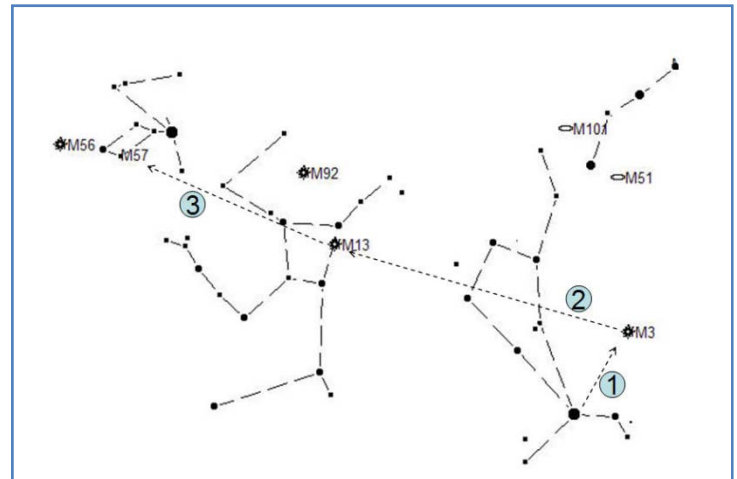
July 18



July 25

So I did say earlier that maybe it's time to break out the star maps and see what Messier objects you can find. So let's take a quick tour in the Zenith of our July skies.

During the month of July, if you look up in your zenith skies, you'll find the bright star Arcturus, in the constellation of Bootes. Let's use that "landmark" as a starting place for some fairly bright Messier objects. If you use your finder scope and scan a bit to the East (circle 1), you'll be pleasantly surprised to come across M3, one of the most outstanding globular clusters in our skies, which contains an estimated half million stars.



Moving to the Southeast (circle 2) through the constellation Bootes crossing into Hercules (and the keystone) we come across yet another very interesting globular cluster, M13. Arguably the "The Great Globular Cluster in Hercules" is the most observed and most beautiful object that can be seen in the Northern skies. Even in the smaller telescopes, it will show as a blazing ball of stars.

Continuing the path from M3, through M13 we "move" into the constellation of Lyra, (circle 3) and the famous "Ring Nebula". Much of its popularity rests on the fact that it can be seen in most telescopes, and appears as a tiny ring of smoke in a dark sky. The Ring belongs to a class of objects known as "planetary nebulae" which have nothing whatever to do with planets. They were called that back in the days of crude telescopes because their small disk shapes resembled planets and the name has stuck. So that's it for this month – a little different take on this month's almanac. Enjoy the warm weather and (hopefully) clear skies !