

Sky **WAA** tch

The Monthly Publication of the Westchester Amateur Astronomers

December 2006



M13

Rick Bria and Ted Schimenti took this photo of M13, the great globular star cluster in the constellation Hercules. The photo is a LRGB (luminance, red, green, blue) color image, assembled from 10 stacks of 2-minute sub-exposures (blue was a 20 stack). Each color pane was calibrated in MaximDL-CCD, and then processed in Photoshop using Zone System techniques.

Some M13 facts... At a distance of 26,000 light-yrs, this jewel of the northern skies contains nearly half a million stars in an area about 150 light-yrs across. M13 is one of about 250 globular star clusters in our Milky Way Galaxy. Oddly, the stars of globular clusters all seem to be very old, from 10 to 12 billion years of age. The stars in these clusters are thought to be the first to form when our galaxy condensed out of the Big Bang.

Serving the Amateur Community Since 1983

Events for December 2006

➤ Choose a Telescope

Friday, December 1, 6:00-7:00PM.
Hudson River Museum, Yonkers

Need to choose a telescope for the holidays? Museum staff and WAA members will show you different types of telescopes, how to avoid department store rip-offs, and which telescope is best for an adult or child who is starting out in astronomy. Al Nagler, president of Tele Vue, will be on hand to answer questions and show a few of his company's instruments. After the clinic Al Nagler will give a presentation.

➤ Monthly Meeting

"Giant Eyepieces That Swallow Spacecraft"
Friday, December 1, 8:00PM
Hudson River Museum, Yonkers

Al Nagler, the creator of the coveted Tele-Vue eyepieces, will talk about his early days designing optics for NASA's L.E.M. simulator and demonstrate the DIOPTRX™ astigmatism corrector and super-portable Imaging System telescopes.

➤ "Starway to Heaven"

Saturday, December 16, 7-10:00PM
Meadow Picnic Area, Ward Pound Ridge
Reservation, Cross River

This is our scheduled observing date for December, weather permitting. Free and open to the public.

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.westcheasterastronomers.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. 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: Mike Cefola, President; Robert Davidson, Senior Vice Pres.; Mike Virsinger, Treasurer; Karen Seiter, Secretary; Charles Gibson; Vice Pres. Programs; Barbara Moroch, Vice Pres. Communications; Newsletter: Tom Boustead; Webmaster: Robert Davidson.

Club Bits

New Members...

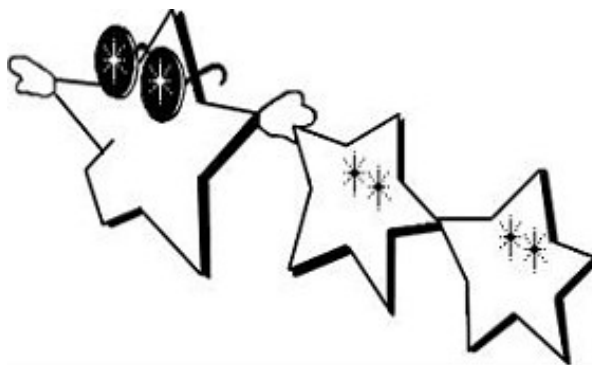
Graeme Hutton, Ossining, NY
Olivier Prache, Pleasantville, NY

Renewing Members...

James Heller, Bronxville, NY
Joseph Julian, Rye, NY
Daniel Poccia, Cortlandt Manor, NY
Doug and Vivian Towers, Yonkers, NY
Paul Wieland, Yonkers, NY

Classified...

Pick up a never-used Celestron Nexstar for the holidays. The telescope is the 8i/Starbright XLT and comes with a GPS Module, eyepiece promo kit, Power Tank portable power source, 8-inch dew shield, Lumicon 2-inch enhanced diagonal, 1.25-inch adapter and Parks 10mm G.S. Plossl. Call or e-mail the club and we will put you in contact with the seller.



Articles

Martian Devils

By Dr. Tony Phillips

Admit it. Whenever you see a new picture of Mars beamed back by Spirit or Opportunity, you scan the rocks to check for things peeking out of the shadows. A pair of quivering green antennas, perhaps, or a little furry creature crouched on five legs...? Looking for Martians is such a guilty pleasure.

Well, you can imagine the thrill in 2004 when scientists were checking some of those pictures and they *did* see something leap out. It skittered across the rocky floor of Gusev Crater and quickly disappeared. But it wasn't a Martian; Spirit had photographed a dust devil!

Dust devils are tornadoes of dust. On a planet like Mars, which is literally covered with dust, and where it never rains, dust devils are an important form of weather. Some Martian dust devils grow almost as tall as Mt. Everest, and researchers suspect they're crackling with static electricity—a form of “Martian lightning.”

NASA is keen to learn more. How strong are the winds? Do dust devils carry a charge? When does “devil season” begin—and end? Astronauts are going to want to know the answers before they set foot on the red planet.

The problem is, these dusty twisters can be devilishly difficult to catch. Most images of Martian dust devils have been taken by accident, while the rovers were looking for other things. This catch-as-catch-can approach limits what researchers can learn.

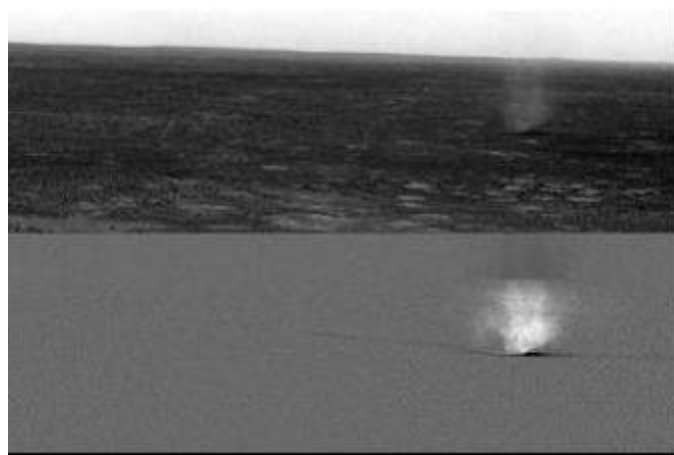
No more! The two rovers have just gotten a boost of artificial intelligence to help them recognize and photograph dust devils. It comes in the form of new software, uploaded in July and activated in September 2006.

“This software is based on techniques developed and tested as part of the NASA New Millennium Program's Space Technology 6 project. Testing was done in Earth orbit onboard the EO-1 (Earth Observing-1) satellite,” says Steve Chien, supervisor of JPL's Artificial Intelligence Group.

Scientists using EO-1 data were especially interested in dynamic events such as volcanoes erupting or sea ice breaking apart. So Chien and colleagues programmed the satellite to notice change. It worked beautifully: “We measured a 100-fold increase in science results for transient events.”

Now that the techniques have been tested in Earth orbit, they are ready to help Spirit and Opportunity catch dust devils—or anything else that moves—on Mars. “If we saw Martians, that would be great,” laughs Chien. Even scientists have their guilty pleasures.

The Jet Propulsion Laboratory, California Institute of Technology provided this article, under a contract with the National Aeronautics and Space Administration.



The top half of this image is part of a series of images of a passing dust devil on Mars caught by Spirit. In the bottom half, the image has been filtered to remove everything that did not change from one image to the other. Notice the faint track left by the dust devil. Credit NASA/JPL/Mark T. Lemmon, Univ. of Arizona Lunar and Planetary Laboratory.

Find out more about the Space Technology 6 “Autonomous Sciencecraft” technology experiment at: http://nmp.jpl.nasa.gov/st6/TECHNOLOGY/sciencecraft_tech.html, and the use of the technology on the Mars Rovers at <http://nmp.jpl.nasa.gov/TECHNOLOGY/infusion.html>

Roman Pilgrimage

(Part 2)

By Pat Mahon

A haven for jetsetters, a heaven for shoppers, and the playground for a few naughty Roman emperors; the island of Capri rises out of the sea, reminding all who come to her shores of the old Roman adage which implores that the time to live your life is now. Spurred on by such advice I hiked the steep, winding incline to view the remains of a villa built for Tiberius in the early first century. Known as the Villa Jovis, its isolated northeast position relative to the rest of the island made it an ideal setting for certain imperial activities. Tiberius was adept in the disappearing arts when it came to his political enemies.

Tiberius was also a patron of things astrological. The astrologer Trasillus was employed to oversee an observatory built just west of the premises. Unfortunately, only a grid work row of bricks remains of what was known to the Romans as a specularium. Are there any WAA'ers up to a restoration project? A great view is guaranteed, providing you don't overstep yourself.

My return walk proved to be a feast for the eyes as well as the palate. The Bar Jovis gave its patrons a most beautiful view overlooking Capri's northeast mountains as they cast a partial afternoon shadow



Capri Sunset

over the valley town encompassed by the Mar Tirreno.

Small winding alleyways gave a rare opportunity to glimpse into a lifestyle reminiscent of the less hectic pace once enjoyed by many in our own country. Gates of iron grillwork marked the entrance of each passing villa, inviting admiration of long avenues of

trellises bedecked with vintage fruit—an ideal setting for a WAA board meeting!

Night comes softly here. The hues of terra cotta pink gently blots the stark light of day and diminishes dark Vesuvius to but a shadow of its former self. You watch and realize, that you have been sitting in a dream whose beauty may lie not as much in its landscapes, as it is in their approach towards life itself.

Prior to heading north, I was fortunate to spend two days at a place overlooking the town of Positano nearby to the famous Amalfie coast. Walking out onto the evening terrace, I reveled in the svelte



Temple of Castor

dark of the night in contrast to the milk-black skies back home. Two shooting stars overhead signaled on the parade of constellations, while the moon in her veiled form bids me still to speak to you of a story true. Whereas men have walked upon her cratered plains, there was but yet another who used the occasion of her total eclipse to underscore a warning. It was during the course of such a night

that Julius Caesar bore a message to one discerning citizen, of which it's contents would be fully realized in three days pre-empting the selection of public leaders. In it, he advised against choosing those of a questionable character, as they will inevitably bring a people down.

Interesting enough, Caesar came not in the priestly robes of a Pontifex Maximus, but rather in the garment, which defined him best. A full dress cuirass, from behind which a cape swept over the back shoulders, served well in highlighting his 30-like features. Then he, whose eyes were driven as if by a single purpose, departed in the same manner which he came.

It is Summer's last day on the overlook of the Forum Romanum from the Palatine as it runs parallel to the Via Sacra. If stones could talk, imagine the plethora of insight we would have into the lives of all who ever walked, marched, laughed and loved, plotted and died here. Round about is the temple shroud of Julius Caesar, Rome's compensation for his having been murdered. Ah Caesar—they killed your body, but your soul they could not. Then a rose softly caressing a smile was laid gently down.

Vesta's cold hearth complements the hovels of stone and braced columns as I survey the shells of Rome's perceptions of the Universe -- most notably those temples of Castor, Jupiter and Saturn. This day would have been the eve of their festival of Apollo, the Roman god of light and prophecy as well as the namesake of our former moon program. What fanfare must have filled these streets? The NASA/political hype forecasts a return to the moon's surface within the next decade or so as a prelude to a manned landing on Mars. Will actuality override theory in terms of it being another 20 to 30 years? Perhaps they too would do well to heed an old Roman adage, lest upon her cratered plains we forget how to walk.

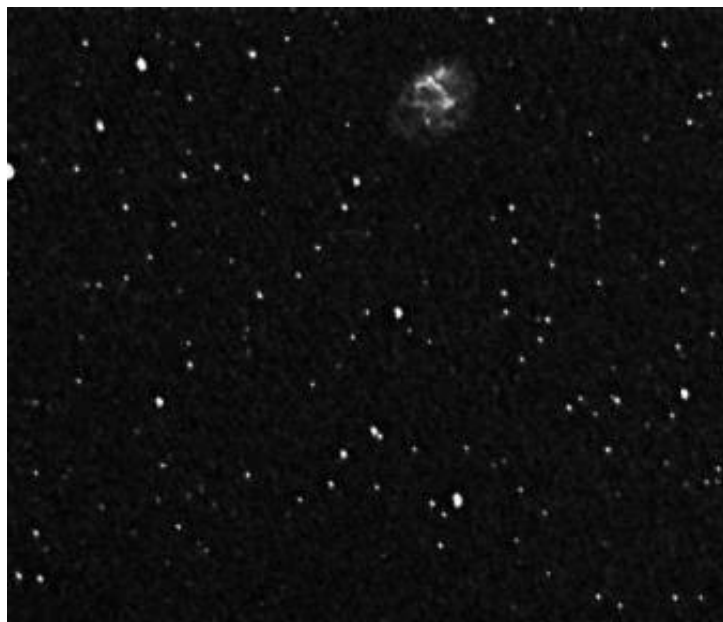


Temple of Saturn

Photo Gallery

[Crab Nebula](#) ▶

John Paladini took this photo of M1, the crab nebula in Taurus, using 30 seconds exposures with a Meade DSI Pro II with narrow band h-alpha filter (10nm) through a 4.5" f/4 Tasco reflector. The crab nebula is the remnant a star that went supernova in 1054 AD.





◀ California Here I Come

John Paladini took this shot of the California nebula in Perseus using a Meade Deep Sky Imager Pro II and stacking 10 30-second images.

Also known as NGC 1499, the California nebula spans about 100 light-yrs and lies at a distance from Earth of 1500 light-yrs.

NGC 660 ▶

Rick Bria and Ted Schimenti took this photo of NGC 660 at the Round Hill Observatory; it is a 38 stack of 4-minute images through the IDAS filter.

NGC 660 is really two galaxies in collision, and that explains its rather strange shape, and the 'X' shaped double dust lanes. It is 35 million light years away in the constellation Pisces.



◀ Peekskill Meteorite

While meteor showers can be fun viewing, if the weather cooperates, they occasionally have their downside. This photo shows the Peekskill meteor, which waxed a car in 1992. For details, see:

<http://antwrrp.gsfc.nasa.gov/apod/ap061119.html>



Constellation Corner:

By Matt Ganis

Since it's the holiday season, I thought I'd change the topic of the column this month. One question I invariably get when people find out I'm an astronomer (or typically my students will ask around the holiday season) is: "What kind of telescope should I buy? What's the best kind?" Let's look at this question.

Two questions typically come up when discussing this issue. First, what do they want to do with this telescope, what is it they think they want to look at? and, the all important question: How much money do they want to spend?

One of the first suggestions I usually give people is: "If you do not have much money (say not more than \$250) you may be happiest with a good pair of binoculars." Most people don't like this answer, I guess to them it's a "cop out" thinking a pair of binoculars is a poor-man's solution to astronomy. On the contrary, Binoculars, even inexpensive ones, will typically amaze people with how much they can see in the night sky. One look at the Milky Way with a pair of binoculars typically "WOWS" even the most stubborn individual. Also, if the answer to the question about what they want to see with a telescope is to look at things on the Earth, this is a perfect option. To this day, I still observe first with my binoculars before pulling out the telescope. In fact, some nights I don't even use the 'scope.'

So after I've failed to convince them that a pair of binoculars is a good investment, I get into the question of "what do I look for in a **good** telescope?". The first thing I try to make painfully clear to beginners is: DO NOT BUY A TELESCOPE BASED ON POWER!!! This has got to be the most frustrating marketing myth to dispel. If a telescope has "650x" (or any other reference to power) prominently displayed on the side of the box, walk away - No RUN AWAY. Even the best telescopes are limited to about 50x-75x per inch (25.4mm) of aperture. For an inexpensive 60mm refractor this equals 120x. So "650x" is just a marketing ploy to get you buy their inexpensive scope. Although this practice is not as common as it once was, I'm sure the manufacturers still sell a lot of scopes this way.

So if they need one piece of advice when buying a telescope, I tell them to at least look at the diameter of the lens or mirror – it's generally the most important attribute (but not the only one) to

consider in a telescope. Generally one will be happiest if they buy as much aperture that they can in their price range. Large aperture refractors (lens based) can be very expensive, so that means that most of us will be looking at a mirror-based telescope. Most people don't realize that the more aperture they have, the brighter the object appears in the telescope. Remember, a telescope is nothing more than a light collector. It collects as much light as it can, and focuses (or combines it) into a single point. The brighter the point, the more it **can** be magnified, and therefore the bigger things appear.

Once they understand that "bigger is better", I try to then explain that you can have the best optics in the world, but if the mount is wobbly, shaky, hard to use, or hard to track the sky with, you will NOT be happy. I've seen too many telescopes go un-used because when someone goes to look through the eyepiece, a slight "bump" will cause the telescope to jump off the target – making for a frustrating experience. Remember, it's cold and dark outside – a mount that moves around on you while you're trying to view a very dim object in the sky will make for a experience you will WANT to forget. For beginners, I typically recommend a Dobsonian, which has a good combination of aperture and solid, easy to use mount. Those department store telescopes almost always have poor mounts.

The answer I always give (and is often met with skeptical eyes) is: The "BEST" telescope is one that you will continue to use and enjoy, NOT a device that will frustrate you to the point of never wanting to use it again. A large aperture telescope on a big sturdy (heavy) mount, is not nearly as "good" as a small aperture scope on a light-weight (but sturdy) mount – IF you don't use it more. With a big telescope you may find yourself saying "I don't want to spend 30-45 minutes to lug that thing outside, only to use it for 20 minutes and have to lug it back in". The "best" telescope is the one you will actually USE. Simple, but true

If you're thinking about a telescope this holiday season, I hope this helped. There are many (many) things to consider when choosing a telescope (notice I stayed away from the "religious" debate of a reflector vs. a refractor?). But one this is for sure: if you have that "giving" feeling this holiday season, I'll take a 16" Celestron, you can keep the bow ;-)

Almanac

For December 2006 by Matt Ganis



Dec 4



Dec 12



Dec 20

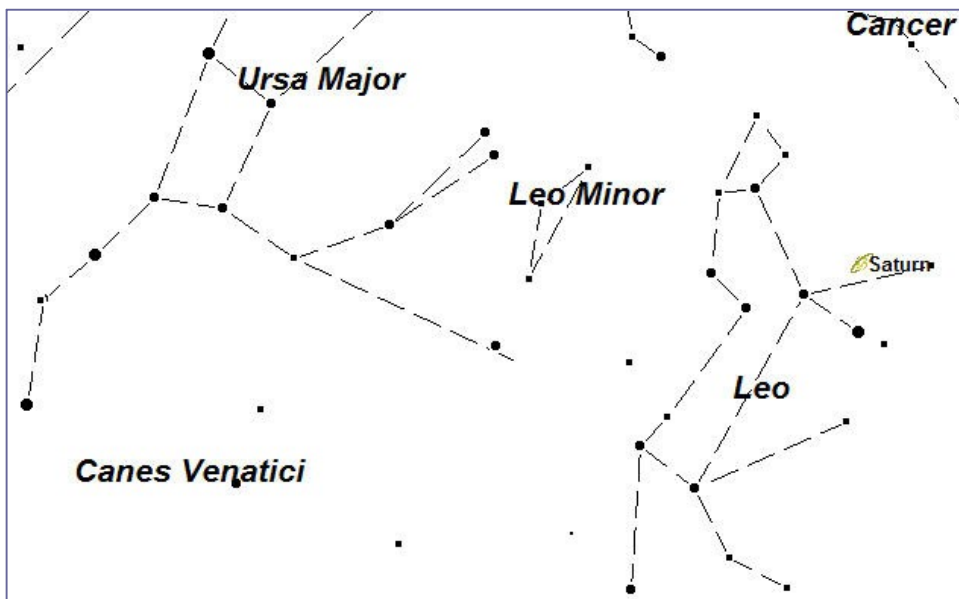


Dec 27

Ah, the cool winter nights. The Crisp evening skies. I love winter. Not only do the dark skies come sooner, but when I walk the dog at 9pm I get to look up and see Orion climbing over the Eastern horizon to greet me. It's like an old friend coming to visit for the holidays.

The Geminid meteor shower activity is usually between the 7th and 16th of December. This year they are predicted to peak on the 14th of December. The waning crescent moon will rise about an hour after midnight but the moonlight shouldn't be so overpowering as to ruin the show.

So there still isn't a tremendous amount of planetary action this month. We see the return of Saturn in our nighttime skies, which is a Welcomed sight. The ringed planet rises in the constellation of Leo about 10pm at the start of the month. By month's end, the planet will rise by 8pm; making it a perfect target for all those newly received telescopes this holiday season. The planet starts off the month shining at a magnitude of +0.66 and steadily brightens through the month reaching magnitude +0.11 by month's end. Look for the planet just 5 degrees to the West of Regulus in the constellation Leo.



As I said earlier, I mark the beginning of Winter with the rising of Orion, but preceding "the great hunter" into the winter months is my favorite open cluster, the Pleiades. On the night of December 3rd, look for the (nearly full) Moon to graze the famous open cluster. This isn't the most ideal time to observe the moon occulting stars in the Pleiades, but if you take a look, you may be able to catch a glimpse of a star "winking" out behind the limb of the moon.

One last bit of trivia: the December solstice will occur on 7:22pm on December 21st. This is the day when the Sun is farthest south and begins its six month journey northward. On this, the longest night of the year, Winter officially begins in the northern hemisphere. Stay warm.

Lately we've had to observe the other planets in the early morning hours. On the mornings of the 8th-10th December just before dawn, there will be a spectacular triple conjunction of Mars, Mercury and Jupiter in the East/Southeastern sky. On this morning, just before Sunrise, look for the three planets to be tightly bunched together in a circle of less than 1 degree. This should really be an interesting event. You'll need a location with an obstruction-free view of the Eastern horizon, since the planets will only be a few degrees above the horizon. If you happen to be up on the morning of December, check out the conjunction of the Moon and Saturn when they are less than 1/2 of a degree apart.