



# RVAS NEWSLETTER



Vol. 24 No. 9

The Roanoke Valley Astronomical Society

September 2007

## More People than Perseids?

By Mike Overacker

*Photos: Mike Overacker*

The title sounds a little odd, doesn't it? As odd as it may sound, the turnout for the RVAS Perseid Meteor Shower Public Outreach may have made that statement true.

Mark Hodges, RVAS Public Outreach Committee chair, announced that the RVAS would try to have a public outreach on the night of the peak of the Perseids shower, which was Sunday, August 12, 2007. Being an evening of the New Moon, we would have a dark sky for the event, as long as the weather cooperated. The only other variables would be the number of meteors and the attendance. We could not do anything about how much debris would be sucked into the earth's atmosphere, so we concentrated on how many people would know about the outreach.

John Goss, the RVAS Publicity chair contacted the Roanoke Times newspaper and WDBJ television to announce the event. The Roanoke times ran

an article about the upcoming meteor shower and the RVAS outreach a few days before the event. WDBJ was to announce the outreach during their 6 PM newscast, but problems at Cox Cable delayed the broadcast of the news that evening. I am not sure if people saw it on the newscast or not.

I left for the outreach early so I could arrive before most of the public. When I pulled into the Cahas Mountain Overlook on the Blue Ridge Parkway, there were several members of the public already there, as well as RVAS member, Bob Young. I started setting up telescopes and cameras out of the AMOV AstroBus. Bob started setting up his cameras as well.

The public started arriving and



*Perseid Skunk*

*(Perseid Continued on page 2)*

## LC Observa- tory Involves RVAS

By Mike Overacker

*Photos: Mike Overacker*

The Lynchburg College Observatory, which is being built at the Claytor Nature Center in Bedford, is taking shape and moving forward toward a dedication date of October 20, 2007.

This observatory will house a RCOS 20" Ritchey-Chretien telescope, mounted on a Paramount ME german equatorial mount. It will utilize a 100mm (4 Inch) Borg apochromatic finderscope/guidescope. The telescope is mounted on a 24 inch pier, under a 15 foot rotating dome.

The dome is isolated from the control building, which features a large control room, a kitchenette, a storage area, as well as separate men's and women's restrooms.

The observatory also has 12 external piers, six of which are

*(LC Continued on page 7)*

*(Perseid Continued from page 1)*

the parking lot was starting to fill. Then, a skunk decided to visit as well, along with a cou-



*Perseid Opossum*

ple of young opossums.

The evening was starting to get exciting, and it was still daylight.

Club members started to arrive, as requested, for the event. As night fell, the sky was proving to be dark and clear. The several telescopes that were set up were put to use, as club members started showing the crowd many of the wonders in the star-filled canopy. Jupiter, the Ring Nebula (M57), Albireo, Epsilon Lyrae, the Veil Nebula, the Lagoon and Trifid Nebula, the Hercules Cluster (M13), the Andromeda Galaxy, and many other targets were put into the eyepieces of members telescopes to show to the public while we all waited for the late evening entrance of the Perseids.

Even as the Perseids started to appear, many members of the public wanted to continue to view through the telescopes. I finally had to announce that I

*(Perseid Continued on page 6)*

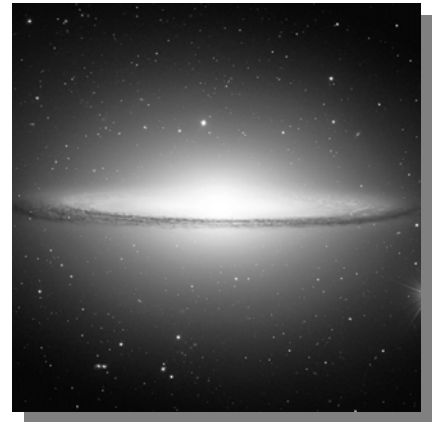
## September Mystery Object



You have to look to the sky at the birds to see this developing object.

*Send your best guess to:  
Dave Thomas at  
ka-8-inl@hotmail.com*

## August Mystery Object



The August mystery object is the Sombrero Galaxy, M104, in Virgo.

The Sombrero, located on the sky at RA 12h 39m 59s, shines at magnitude 9.0

## August 2007 Meeting Notes

By Mark Hodges, Secretary

Mike Overacker opened the meeting and welcomed our visitors and introduced 2 new members.

John Goss presented the Deep Sky Object of the Month, M27 the Dumbell Nebula also reminded us of the Coat Hanger asterism nearby.

The main program for the night was presented by Dr. Neal Sumerlin from Lynchburg College, "Pluto, Planet or Not?" and updated us on the new observatory that the college is building.

Jeff Suhr gave a treasurers report and brought in 2008 calendars for sale, they are \$7.00

each. If you want one get in touch with Jeff they are going fast. Mike Overacker and Mark Hodges reported on the Perseid meteor public observing from Aug. 12. It was a big success with at least 300 participants.

Mike Overacker also reported that there have been some changes to the committee structure Katherine Hicks is the New chair of the Membership comm. with new duties added.

Vivian De LaSantos is the new Hospitality chair.

Matt Fleenor reported on the Scholastic comm. and met with members of his comm. with some new ideas.

# Astro-Quiz

There was a time when many amateurs ground their own mirrors and built their own reflecting telescopes. Most often, these were 6" mirrors that had focal lengths of 48" or more. Why was this so often the case?

**Answer to Last Month's Astro-Quiz:** Last month's quiz question was "From which of the following cities would an observer, over the course of a year, be able to see all 21 first magnitude stars: Cairo, Egypt; Dunedin, New Zealand; Miami, Florida; and Melbourne, Australia?" Capella, the most northerly of the 21 first-magnitude stars, has a declination of +46°, while Acrux, the most southerly, has a declination of -63°. To be able to see these stars, and the 19 other first-magnitude stars in between, an observer's latitude on the Earth could not be farther north than +27° or farther south than -44°. Of the four cities, Miami (+26°) and Melbourne (-38°) are within the limits, while Cairo (+30°) and Dunedin (-46°) are not.

## Deep Sky Object of the Month: M 27, a large, bright planetary nebula

By John Goss

**To find M27:**

1. Locate Cygnus and its star Albireo. It should be nearly overhead after twilight ends in August.
2. Find Vega and the Parallelogram of Lyra.
3. Draw a line from Gamma Lyrae to Albireo.
4. Extend that line the same length. It ends on M27.
5. Through binoculars, M27 resembles a dim smudge.

**M27:**  
**Magnitude:** 8.1  
**Size:** 6 minutes  
**Distance:** 1000 Ly  
**Diameter:** 2 Ly

## Shuttle/Iss Observed

By Roger Pommerenke

*Monday, Aug 20, 21:33EDT,*

Dave Thomas and I were observing under the stars (with no telescopes) on Bent Mountain. I asked Dave, "is that a satellite overhead?" Dave agreed, and soon

remarked that he saw it disappear(?). I disagreed, and told him it's was still visible! But a few seconds later the object I was looking at also disappeared – about 65 degrees above the horizon.

Long story short. **We were looking at two different, but very close, objects.** After I got home and consulted heavens-above.com, I realized I accidentally found the space shuttle. It was -1.5 mag-

nitude, but somehow I missed the -2.5 magnitude ISS in front of it! (The object Dave was following) According to Heavens above the ISS disappeared into the earth's shadow at 61 degrees at 21:32. Endeavor entered into the earth's shadow approx 30 seconds later.

We now believe Dave saw both satellites. I only saw Endeavor. Bummer. But I saw it first!!!!!!!!!!!!!!

The Roanoke Valley Astronomical Society is a membership organization of amateur astronomers dedicated to the pursuit of astronomical observational and photographic activities. Meetings are held at 7:30 p.m. the third Monday of each month at Center in the Square in downtown Roanoke, Virginia. Meetings are open to the public. Observing sessions are held one or two weekends a month at a dark sky site. Yearly individual dues are \$20.00. Family membership is \$25.00: student membership is \$10.00. For information, call the RVAS Message Line at 540-774-5651. Articles, quotes, etc. published in the newsletter do not necessarily reflect the views of the RVAS, its editor, officers, or individual members.

**RVAS web page: <http://www.roavas.org>**

**Officers/Executive Committee:** **Mike Overacker**, President/Webmaster (776-3092) **Vacant**, Vice President (000-0000); **Mark Hodges**, Secretary (774-5039); **Jeff Suhr**, Treasurer (563-0079); **Dave Thomas**, EC Member-At-Large, Newsletter editor (434-237-5135); **Katherine Hix**, Immediate Past President (334-2443); **Paul Caffrey**, Past President (345-2847)

# Weatherman predictions wrong again\*

\*weather on Jupiter  
by K0FYD  
(aka Roger Pommerenke)

Roanoke Valley Astronomical Society member Dave Thomas from Lynchburg recently emailed asking if I could help him erect a temporary radio antenna at the GE astronomical observatory on Bent Mountain. The installation required two, preferably three, people, and the installation had to be complete by 7PM, Monday August 20, to give him time to calibrate his “Jovian” radio before a predicted radio storm at 9PM EDT on the planet Jupiter.

Naturally I was a little skeptical. This was the first time I’d been asked to alter my plans because of weather on another planet! Should I stop at Kroger? Was Dave more qualified than the channel 10 forecasters – who seldom get it right?

To give Dave a break, I knew a little about what he was attempting. Believe it or not, it’s not difficult to construct a radio that can receive signals emanating from the planet Jupiter. These storms, discovered in 1955, are caused by the complex interaction of Jupiter and its moon Io. NASA is conducting an outreach program to teach school children

about this Jovian phenomenon. A complete kit can be purchased from NASA for \$155.

<http://radiojove.gsfc.nasa.gov/>  
(But Dave didn’t spend that much. He built most of it from parts in his garage).

I digress. My wife Mandy and I met Dave on Bent Mountain at 4:30PM August 20. Dave was laying out his 20.1 Mhz dipole antenna and asked us to compute one half of 23 feet 3.5 inches. (Each side of the antenna had to be 1/4 wavelength of a 20.1 MHz radio signal. 20.1 MHz is between WWV on 20 MHz and the 15 meter ham radio band at 21 MHz). You should have seen the three of us. Standing in the



*Dave T. directing his drones*

middle of a bare field, without a pencil and paper – much less a calculator – trying to do that simple calculation. Naturally I asked myself why I should trust this guy to predict weather on another planet. (My wife, who is only a philosophy major, was first to

solve the math problem).



*Mandy P. and Dave T. erect the antenna*

By 6:30PM, according to Dave, we were “receiving 20.1 MHz radio signals from the galactic background caused by electrons spiraling along the galactic magnetic field.” (Not to be confused with the cosmic background radiation around 10,000 MHz caused by the big bang about 15 billion years ago) The galactic background radiation made a hiss in the radio. But we were really waiting for a spike in that noise which would signal the predicted storm on Jupiter.

Alas, there was no spike in the hiss. We listened for hours and never heard the predicted RF storm on Jupiter. **Those weathermen never get it right.** I’m glad I didn’t stop at Kroger.

For info on this project go to:

<http://radiojove.gsfc.nasa.gov/help/Overview.pdf>  
[http://radiojove.gsfc.nasa.gov/class/lesson\\_plans/lesson1.pdf](http://radiojove.gsfc.nasa.gov/class/lesson_plans/lesson1.pdf)  
[http://science.nasa.gov/headlinesy2004/20feb\\_radiostorms.htm](http://science.nasa.gov/headlinesy2004/20feb_radiostorms.htm)

# Flags and Stars

by Clark M. Thomas (2007)

On this planet every surface creature with advanced eyes has looked up at the heavens. Humans have uniquely given the brightest celestial inhabitants names. Some celestial inhabitants seem to move (the planets, the sun, and the moon). Most seem to stay in one place relative to their neighbors, while the celestial dome apparently moves above Earth. The bright stationary objects we call stars.

As nations were formed, flags were sewn to carry into battle or drape over castle walls. Maybe because we humans are so alike we constantly strive to distinguish ourselves from others. It is therefore ironic that the unifying theme of stars is seen in dozens of national flags, and even within many of our American state flags.

Stars are usually depicted with five points, but they can have six points, or many points. Real stars, of course, have no points when viewed through a telescope on a steady night. Mobile planets are not depicted, as they would be hard to "place" on a flag. The highly mobile moon, however, finds its way onto flags in crescent form.

A small minority of stars are representations of actual aster-

isms. Some flag stars have symbolism for individual countries. Other stars seem to reflect states of mind.

Below are a few of the flags I found at flags.net.

## Here are some interesting American flags:

Alaska's state flag is probably the world's most "astronomical" flag, depicting the Big Dipper asterism seemingly pointing at Polaris:

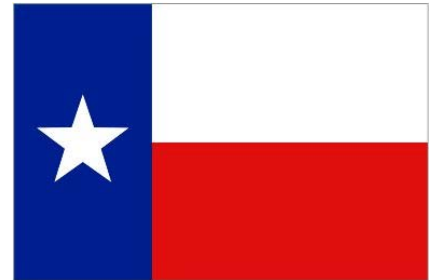


New Mexico's flag has only one star, most likely our own sun with a yellow background. The symbolism ties modern New Mexico to ancient cultures living there:



Texas is known as the Lone Star State. There are other state flags with just one star, but only Texas gets to be

called a star. Typical Texas modesty:



South Carolina has a crescent moon, and it is reasonably astronomically correct, though exaggerated as to curvature. Many other crescent moons float on flags around the world, usually Muslim flags. (South Carolina is known as the Palmetto State, with a palmetto on its flag. Georgia is known as the Peach State. South Carolina grows more peaches than Georgia, and Georgia has more palmettos than South Carolina.)



## Here are some interesting international flags:

America's national flags have featured stars since the 13 colonies banded together. The red and white stripes have

*(Flags Continued on page 6)*

*(Flags Continued from page 5)*

changed in number, but are now standardized at thirteen, while the number of stars has grown to match the number of states. Our stars and stripes may have inspired other flag designers.

Islamic countries typically feature a stylized crescent moon around a central star. The depiction is typically more religious than astronomical. The Malaysian flag is stylized somewhat like America's, but



also has clearly Islamic elements:

The Star of David on Israel's flag is created from two superimposed equilateral triangles,



one pointing up, one pointing down:

There are many depictions of the Southern Cross on Southern Hemisphere flags. Most of these are found near Australia. New Zealand's flag is nearly

identical to Australia's, except that New Zealand has a more abstract Southern Cross (with Australia including the fifth star, epsilon Cru), and Australia has a mysterious star on the left.

There are two brilliant candidate stars in that area of the Australian heavens, Rigel Centaurs (alpha Centauri) and Hadar (beta Centauri). The flag's mystery deepens, because the singular left star is depicted as much brighter than either of Cru's two first-magnitude stars. Both candidate stars are themselves first magnitude beauties, but not that much brighter. My guess is that Australia thinks of itself as the "star" of its region, leaving New Zealand out to sea.

Here first is Australia's flag, and then New Zealand's flag:



*(Perseid Continued from page 2)*

would stop using the telescopes so the people would start watching the sky for the guest of the evening.

Even after the announcement, I had several members of the public that thought that they had a right to try and use my telescopes without my permission. One man grabbed the 15" dobsonian and started pushing it around and tried to look through the non-existent eyepiece (I removed it earlier). Another took the control pad of my Celestron CGE mount and started pushing buttons. When I asked him what he was doing, he told me he wanted to see Neptune, and then insisted that I show it to him. This was the first time that I had encountered members of the public at an outreach that acted this way. It was a bit disappointing, but, fortunately, nothing was damaged.

It was then that I decided to get an idea of the turnout. Just like the outstanding outreach for the lunar eclipse in March 2007, the cars were parked throughout the overlook, as well as north and south on both sides of the Blue Ridge Parkway. It appeared to be an excellent turnout for a Sunday night.

People were out on blankets, standing by the cars, hanging around with their friends, and audibilizing every time they saw a meteor. The "oohs and

*(Perseid Continued on page 7)*

*(Perseid Continued from page 6)*

ahhs” ripped through the night much like the Perseids tore through the starry sky. It made for an interesting evening, especially when the meteors started coming at a faster rate, and the meteors were coming down with surprising regularity. The crowd was also slightly stunned when the barks of some coyotes emanated from the woods next to the overlook.

The late evening broke over into the early morning, as members of the public started to pack it in for the evening. Mark Hodges, Bob Young, and I were

busy trying to catch a picture of a Perseid. It is harder than you might think.

Before long, there were only a few of us left, watching the Perseids streak across the still dark sky. It was nearing 3 AM, so we decided to pack it in for the morning.

It was a great evening. Members showed the wonders in the sky to the public, using the naked eye, binoculars, telescopes, and green laser pointers.

I would like to thank RVAS members **Mary Crouch, Isaac**

**Campbell, Vivian De Los Santos, Matt Fleenor, Paul Gensurosky, Kristen Gillespie, Mark Hodges, Randy Sowden, Jeff Suhr, Bob Young, and Richard Zue** for joining me at this successful outreach. Several people joined the RVAS after the event.

It was a clear night, a warm night, and about 250 Perseids for all to enjoy. But, what about the title to the article. Well, there were about 300 people at the overlook, so I guess there were more people than Perseids.

*(LC Continued from page 1)*

under a rolling removable roof. These 6 piers will house 8 inch SCT's for outreach and other observing. The 6 piers that are outside will be set up for temporary mounting of telescopes. All 12 of the piers are set up for AC power. This is a very nice and comfortable facility.

Dr. Neal Sumerlin, Lynchburg

College Professor, is in charge of the construction and initial implementation of the facility, both with research and its public outreach. Dr. Sumerlin was the guest speaker at the August RVAS meeting. As well as his excellent talk on Pluto, he gave the RVAS members at the meeting a complete update on the progress of the observatory. He also informed us that

he has set up a Docent Program for the facility, and has invited RVAS members to volunteer to help with the public observing at the observatory. Several members have already volunteered for the program. If you are interested in volunteering some of your time to help with the outreach, please contact Dr. Sumerlin by email at [sumerlin@lynchburg.edu](mailto:sumerlin@lynchburg.edu).



*The Observatory, with the dome structure on the right, and the large control facility on the left.*



*Dr. Neal Sumerlin peeks out of the dome structure, demonstrating the dome size.*

**MONTHLY MEETING: (Annual Picnic and Star Party) Saturday, September 15<sup>th</sup>, 4:00 p.m.** Food, friends and fun! Join us at the Franklin County Recreational Park, south of Rocky Mount, for burgers, hot dogs and the trimmings, followed by an evening of observing for members and their families. Bring your favorite side dish or dessert. See you there!

**"MEMBERS ONLY" WEEKEND OBSERVING SESSIONS:** Unless otherwise noted, observing sessions are held at Cahas Mountain Overlook, milepost 139 on the Blue Ridge Parkway.

-- **Friday and Saturday, 7<sup>th</sup> and 8<sup>th</sup>.** Sunset is at 7:40 p.m. Astronomical twilight ends at 9:09 p.m. The Moon sets at 5:49 and 6:22 p.m., respectively.

-- **Friday and Saturday, 14<sup>th</sup> and 15<sup>th</sup>.** Sunset is at 7:29 p.m. Astronomical twilight ends at 8:57 p.m. The Moon sets at 8:44 and 9:11 p.m., respectively. (Note: September 15<sup>th</sup> is the annual RVAS Picnic and Star Party.)

-- **October Sessions:** 5<sup>th</sup> and 6<sup>th</sup>; 12<sup>th</sup> and 13<sup>th</sup>.

**RVAS EXECUTIVE COMMITTEE MEETING:** To be announced.

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**Roanoke Valley Astronomical Society  
3578 Berry Hill Drive  
Roanoke, VA 24018**