



# RVAS

Roanoke Valley Astronomical Society



News About Amateur Astronomy  
In Southwestern Virginia  
<http://www.roavas.org>

Vol. 22 - No. 9

September 2005

## ***THE PRICE OF ILLUMINATION***

*By Isaac Campbell*

Throughout human history, people have been mesmerized by the stars. No matter what religion, race, or social status, the sensation of serenity and timelessness in a star filled sky brings a calmness and peace to all who view it. The stars have been the inspiration of countless poems, songs, and paintings throughout history. The heavens above spark something within the human soul that makes people strive to be better than before. As the ancient Greek scientist Ptolemy once said, "Mortal as I am, I know I am born for a day. But when I follow at my pleasure the serried multitude of stars in their circular course, my feet no longer touch the earth." Sadly, if Ptolemy lived today and gazed at the stars of tonight, he would not have been able to use the words "serried" and "multitude" to describe the heavens. Light pollution has blasphemed the sacred views of the night sky near any city or town. Tonight, over any typical suburban neighborhood, the sky is ten times brighter that it should be; in city centers the number could be as high as thirty times the natural level. Light pollution does not affect only people near cities, a recent report has shown that ninety-nine percent of US and European populations suffer from some degree of light pollution.

Only one in ten Americans can see over 2500 stars in the sky, a sky filled with a countless number. As astronomers, we are well aware of the growing problem of light pollution. However, aside from simply making it harder for us to see faint fuzzies, light pollution is physically affecting the world in ways much more harmful than disrupting our simple hobby. "So what," most other people say when we gripe about increasing light pollution. Who really cares if astronomers are upset? When you next find yourself trying to convince a non-astronomer about the problem of light pollution, take the following information with you. Some people think that the problems associated with light pollution have nothing to do with everyday people. However, light pollution uses up valuable energy resources and is polluting the world with much more than just stray light, and that is an issue that affects everyone. Electricity is required to generate artificial light. In the United States over fifty percent of our electricity generation comes from coal-fired power plants. Coal is one of the dirtiest forms of energy generation in the world. Burning coal pollutes the atmosphere with many different types of greenhouse gasses that contribute to global warming. These gasses in turn cause

smog and acid rain. Coal-fired power plants also release more particulate matter, a major cause of light pollution, than any other form of power generation. A great deal of that electricity is created for nothing. Bob Gent, president of the Astronomical League and European Liaison Officer for the International Dark Sky Association says that, "Typically, over one-third of light generated at night is wasted." he goes on, "We're basically lighting up the bellies of birds [...] it's complete energy waste" The resources required to generate this wasted light adds up to a very large volume of fossil fuels. According to Gent and the IDA, "[...] eight million tons of coal and thirty million barrels of oil [are used every year]" All of that fuel is not cheap. A conservative estimate by the IDA says that wasted light costs the United States over one billion dollars each year. Unfortunately, there are other affects of light pollution on which no price tag can be placed, no matter how high.

Since the beginning of life on earth, animals have evolved accustomed to two parts to a day: night and day, darkness and light. In the late eighteen hundreds, Thomas Edison changed the way the higher animals live when he

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## MYSTERY OBJECT

You might want to call this the "small emerald" nebula. You would be wrong, but close. Can you name it?

Send your best guess to Dave Thomas, our Mystery Object Columnist, at

thomasde-ka8inl@worldnet.att.net

# AUGUST 2005 RVAS MEETING NOTES

By Mark Hodges, RVAS Secretary

This month there were 28 members present.

Katherine opened the meeting and Lynn gave us a Treasurers report.

He also let everyone know that Astronomy Magazine subscription rates will be going up to \$34.95 per year and that Sky and Telescope will probably go up as well in the future.

Several of the club members met at the Cahas overlook to observe the Perseids on Thur. 8/11 and Fri. 8/12. Because it was during the work week most everybody left around 1 AM with not a very high meteor count, but Frank Baratta and Donny Grisso stayed to watch the sunrise and reported that the Perseids picked up quite

a bit around 3am.

Katherine reminded everyone that Jupiter and Venus will be very close to each other on Sept. 1st. She also reminded everyone that our annual picnic and monthly meeting will be on Saturday, September 24th at Franklin Co. Recreational Park.

Mike Overacker presented the Constellation of the month. For Aug. it was Triangulum (the triangle)

Katherine then introduced our guest speaker, Dr. Frank Munley. Dr. Munley, a fellow RVAS member, spoke on Einstein and his works in General Relativity and its effects on a wide assortment of sciences.

## ASTRO-QUIZ

Of the 88 currently-accepted constellations, 50 originate with the ancient astronomer Ptolemy. Besides Ptolemy, who has had the most proposed constellations accepted?

Answer to Last Month's Astro-Quiz: What's the least expensive enhancement you can make to your telescope to improve its performance? Simple. Make it a practice to collimate your telescope every time you observe. Even the best telescope will provide a degraded image, if misaligned. And determining whether collimation is required needn't cost you a penny. General alignment of your scope's optical components can be checked after it has settled to the outside temperature. The initial test can be done by aiming at Polaris with a medium power eyepiece and slightly defocusing the star until a series of concentric circles becomes visible. If the circles seem skewed to one side, you need to collimate. This is the most basic "star test" of a telescope. Try entering those key words in a Google search to learn more about this important observer's skill.

The Roanoke Valley Astronomical Society is a membership organization of amateur astronomers dedicated to the pursuit of 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:** Katherine Hix, President (334-2443); Mike Overacker, Vice President and Newsletter Editor (776-3092); Mark Hodges, Secretary (774-5039); Lynn Slonaker, Treasurer (774-5695); Bruce Jones, Executive Committee Member-At-Large (774-3844); Paul Caffrey, Immediate Past President (345-2847); Dave Godman, Past President / New Member Coordinator (774-3337); John Goss and Genevieve Goss, Outreach Coordinators (966-4606); Frank Baratta, Membership and Public Viewing Coordinator (774-5651); Mahesh Tailor, Web Master (776-5472)

# THE LOCAL GROUP

By Genevieve Goss

Building and maintaining a club web site is an increasingly important communications tool. RVAS is fortunate to have our very own internet guru, Mahesh Tailor, who wades through the complexities of the online world! Having a well-designed web site not only improves communication among the club's membership, but it can also serve as an effective way to promote our club in the community. A club's web site should be constructed with visitors in mind, providing ample information about the club, giving

the meeting time and location and inviting guests to come to a meeting.

More importantly, a website can provide up-to-date information for club members, greatly reducing the role of the hardcopy newsletter. Every hobby, from junior lacrosse to collecting salt & pepper shakers, has a website. Most astronomy clubs have a website and there are some nifty ones out there. A fellow-MERAL (Mid-East Region of the Astronomical League) club, the Chester County (PA) Astronomical Society just won the 2005 WEBMASTER OF THE YEAR award for the work done by John Hepler. RVAS member, John Goss, Chair of MERAL, accepted the award for John Hepler at ALCon. You can see their website at <http://www.ccas.us/> You might enjoy looking at the websites for NOVAC <http://www.novac.com/> and Charlottesville Astronomical

Society <http://www.cvilleastro.org/>. Those sites feature member log-in for more privacy, dues paying, members-only observing sessions, announcements, etc. Perhaps it's time for RVAS to consider increasing the role of the website in our club's communications.

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RVAS members John and Genevieve Goss attended ALCon Expo from August 11-14 in Kansas City (Overland Park), where John was elected Secretary of the Astronomical League. Start planning for next year's ALCon, August 3-5 in Dallas, TX!

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RVAS is still looking for more involvement in the Night Sky Network from club members. More information will be provided at the September picnic or contact John or Genevieve Goss.

## LAST MONTH'S MYSTERY OBJECT

The mystery object for August is a diffuse emission nebula in Sagittarius. M8 is at a distance of about 5,000 light years. The nebula shines at magnitude 6 and is visible in binoculars.

Known as the Lagoon Nebula, it is located at RA 18h,3m and Declination -24 deg, 23 min. The nebula shares the Sagittarius neighborhood with the Trifid Nebula, M20.



## EXECUTIVE COMMITTEE MEETING NOTES AUGUST 7, 2005

Most of the meeting was devoted to discussion on how to handle club dues notices and late payment of dues. There will be more on this later.

Also discussed making changes to the clubs website, including having a password protected members only area.

Plans for the September picnic and assignments were made as to who was bringing supplies for the cookout.

John Goss is to check if club logos can be placed on shirts and or jackets on an individual basis or if they need to be done all at once.

We discussed the possibility of having workshops for club members (new or otherwise) that want to learn about a particular aspect of astronomy.

Along with that, having club members help students with astronomy projects.

## **ANNUAL METEOR SHOWER - BRIEF PERSIED REPORT**

*By Frank Baratta*

Donnie Grisso and I traveled to Cahas Thursday night, August 11/12. There were several members and friends who made it—Mike Overacker, Richard Zue, Isaac Campbell, Mark Hodges, Bob Young, and others—though only Donnie and I stayed till dawn Friday morning. It wiped me out pretty well, so I didn't go back up Friday night. I might have, if the sky had been less hazy Friday evening. But when I stepped out around 10:30 to check, I couldn't even see Polaris from my house.

On Thursday night, Donnie and I arrived at Cahas about 11:10. It was hazy. Mike and Richard were already there. I estimated only mag. 4.8 stars were visible. It alternated between clearing and deteriorating over the next 2-3 hours, and then gradually improved after 2 a.m.

We saw quite a few meteors, but, except for one period, it wasn't a world-class Perseid show overall. But we probably missed a lot of the dimmer ones, given the sky conditions. (Of course, the two

great Leonid shows a few years back have spoiled me.) Donnie was keeping a loose count, which totaled 80-some by about 4:30 or so. About two-thirds of these came during the 3 - 4 a.m. period, so that was pretty good. Over the entire time we had seen some nice fireballs, but no persistent trains.

I think the peak was supposed to be 12 or 13 UT on the 12th, or 7 a.m. EDT, which would have favored the west coast. I haven't checked to see what happened there.

## **RVAS ANNUAL PICNIC - PARTY TIME**

*By Michael Overacker, RVAS Vice President*

It's Party Time!!!! That's right, smack-nasty, the RVAS Picnic is fast approaching. This year, the heralded RVAS Picnic will be held on Saturday, September 24, 2005.

Good times, laughter, and frivolity will reside in abundance at the Franklin County Recreational Park, just south of Rocky Mount. This is one event this year that you DO NOT want to miss. Good food, good company, door prizes, and naked people everywhere.

The event will start at 4:00 PM and the snarfing of food will start at 5:30 PM. Be sure to arrive early to acquire a premium food-snarfing position.

Door prizes will be awarded after the intake of nutrients, and the "gazing upon the heavens" will take place as the sun sets, weather permitting.

Sunset is at 7:13 PM and twilight ends at 8:40 PM. The moon is a

waning gibbous, rising at 11:30 PM. Remember, the RVAS is providing the burgers and dogs, but we ask

every attending member or family to bring at least one dish or dessert to the event. Be there, if you dare. ✦



*RVAS members and their families relax amongst the debris of the "Food Snarfing" that occurred at the 2004 RVAS Picnic.*

## **ILLUMINATION**

*Continued from Page 1*

created the first artificial light. Edison, with his romantic ideals, gave humans a chance to defy nature and create daytime at night. For years, humans have abused this power without regard for other animals, other animals that might need the dark night to survive. Turn on a porch light in July, and the classic example will show up, bugs. Moths in particular often die from exhaustion from flying around a light. However, they are not really attracted to the light says Steve Marshall, professor of entomology at the University of Guelph, "This is not a fatal attraction, more of a fatal confusion." Naturally, moths used fixed points of light as navigational tools. These fixed points are usually celestial, the stars and the moon for example. "If the light source is a point close to earth, one that they can reach, like a porch light, they will spiral into it" says Marshall. Some species of insects that were once abundant around towns are now completely gone because of lights at night. A newly opened and brightly lit gas station near Algonquin Park, Canada showed what damage lights can do to wildlife in a very short time. In one night, workers had to remove the decimation of millions of mayfly carcasses by the shovel load. There were enough flies to fill an entire dumpster. Mayflies only emerge to mate for less than a week, and very few mayflies in the area around that bright gas station survived, significantly reducing their numbers. Sadly, insects are not the only animals affected by lights at night.

"Many animals are very sensitive to light," says Meredith West, an Indiana University professor

specializing in avian development, "lighting is a very powerful stimulus on behavior. If there is enough of it, it can make them [birds] act in ways they wouldn't normally." Birds, like moths, use the heavens as a guide at night, so when people create enough artificial light, the birds pay. In one night at Warner Robins Air Force Base in Georgia, fifty-thousand migrating birds were killed when they followed a high powered guide light straight into the ground. Michael Measure, president of Fatal Light Awareness Program (FLAP) says that birds are not naturally attracted to light. Some migrating birds must fly through a lit area, or city on their migratory path and they become confused and trapped when they fly into the city. For some reason they will not fly out of the city back onto their path, instead they fly around and become exhausted, collide with buildings, or one another. Mills states that, "one hundred million nocturnal collisions per year across North America is a very conservative estimate." Countless sea turtles have also been killed because of light pollution. Many species of sea turtles go to the beaches of the south eastern United States to reproduce every year. The female turtles waddle onto the beach, dig a hole, and then lay their eggs. Several weeks later, little turtles hatch. The turtles are instinctively attracted to light. Under natural conditions, the combination of reflected starlight and bioluminescence from the ocean guides the little turtles to their new home. But if the light pollution near the beaches is brighter than the sea, the turtles head inland. Blair Witherington, a Florida Marine Research Institute

scientist says of baby sea turtles, "Their reliance on light is so strong that they'll continue heading toward a light source, even if it's an abandoned fire that burns them alive." Once the turtles start heading inland they generally die from exhaustion, dehydration, or cars, unless they are lucky enough to be rescued by a compassionate citizen.

The fact that most people cannot see the stars in all of their glory is indeed a tragedy. The night sky is a natural wonder; it is something that should be viewable to all on earth. Why has nothing been done to preserve and protect the beauty of the sky? Because most, unlike us astronomers, do not realize that it is a problem. That the sky should be filled with stars, not a gray smog. Many towns around the world have realized the economic and environmental issues of wasted light and have acted on them, reducing light pollution. Research on the environmental aspects of light pollution has only been going on for the last decade, and already the results are disturbing. As more in-depth studies are done, the case against light pollution will only grow stronger, and more towns will act against it. Should all humankind live in complete darkness at night? No, but one must be responsible with the technology available, and remember that animals are not so lucky as human; they cannot adapt to change so quick. So, keep these thoughts in mind the next time you find yourself in a debate about light pollution, and next time you look around you in the city, notice how lights have altered the natural world.

# VAAS 2005 IS FAST APPROACHING

*By Michael Overacker, RVAS Vice President*

November 5, 2005 is the day. The Virginia Association of Astronomical Societies (VAAS) is coming to Roanoke, and the Roanoke Valley Astronomical Society (RVAS) is responsible for its success. The planning has been coming along well, but as the final 2 months approach, things will start happening very fast. It will take the effort of a large number of RVAS members to help this event run smoothly, and a fair number have already signed on to help. What do we have going for us so far? Our speakers this year are:

**John Davis** from Rochester, NY. John was the AL 2004 Young Astronomer winner for his work in making his own German Equatorial Mount.

**Johnny Horne** from Wilmington, NC. Johnny will be speaking on astrophotography and astronomy.

**Dr. Dwight Holland** from Roanoke, VA. Dwight will be speaking on Human Factors and Group Dynamics Issues for Long-Duration Spaceflight on the Moon and on to Mars.

**Mike Good** from Roanoke, VA. Mike will be speaking on "Of shoes and ships and galaxies, photometry and AGN".

We will be having several other speakers presenting and talking about building their own telescopes.

We have over \$2000 in door

prizes so far this year, and I hope to add to that number before the event. Having a shot at some of the great prizes we are giving away is worth the admission.

Donating companies so far are:  
**Yankee Robotics**  
**Hardin Optical**  
**Software Bisque**  
**StarGPS (Canada)**  
**Sky:Lab Astronomy (Australia)**  
**Images Plus**  
**Astrostack**  
**Astrozap**  
**JMI Telescopes**  
**Maxfactory (Italy)**  
**Lumicon.**

We hope to have two observing sites for attendees that wish to gaze at the stars after the event. If we get the necessary permissions, we will have Devils Backbone on the Blue Ridge Parkway south (Milepost 144) and Sunset Fields (Milepost 79) on the Blue Ridge Parkway north for our viewing pleasure.

The lunches will be catered by Chanticleer Catering. The cost for a box lunch is \$8.00 which is a really good deal. Breakfast goodies will be available to attendees in the morning.

The RVAS members that have offered to help so far listed in the accompanying box. We can use more assistance, so feel free to join in and help out in this event. One of the most important things that our membership can do is to promote this event. This is an excellent opportunity to get your friends and neighbors to

attend an astronomical event. Even though this is a gathering of Virginia astronomical clubs does not mean that only members of those clubs can attend. This gathering is open to the general public, and the general public attendance will make this event a truly memorable one and a great benefit to astronomy in this area. It is a great way to let the people in this area have a glimpse into what we do and the joy we get from looking at the night sky. As we face the encroachment of stray illumination into our heavens, this is a way to introduce our friends and neighbors to the knowledge necessary to help our elected officials to make informed decisions in curbing light pollution.

Will VAAS 2005 be a success? I certainly hope so. Can it be a huge success? Yes, with the help of our membership. I would like to see every RVAS member attend this event. It would be great if every RVAS member promoted at least one non-member to attend this event. I plan on getting at least 5 non members to attend. I challenge each RVAS member to meet my goal. I am sure every member knows at least 5 people who are interested in astronomy, but not a member of any club. Get them to register and join in on the fun, camaraderie, and knowledge that will be flowing at VAAS 2005.

The publicity committee will be contacting the media outlets and sending invitations to our fellow clubs. This will fill the base of the attendance, but it will be up to the members of this club to top it off.

## **UPCOMING EVENTS**

### **VAAS 2005 - VIRGINIA WESTERN COMMUNITY COLLEGE - ROANOKE, VA - NOVEMBER 5, 2005**

RVAS is happy to announce that Roanoke is the host city for the Annual Convention of the Virginia Association of Astronomical Societies (VAAS). This years convention will be held at Virginia Western Community College on Saturday, November 5th, 2005. Speakers are John Davis from Rochester, NY; Johnny Horne from Wilmington, NC; Dr. Dwight Holland from Roanoke, VA; and Michael Good from Roanoke, VA.. We already have a wide selection of door prizes to be given away at the event, plus more are coming in. This is a "Must Attend" event for any astronomy enthusiast.

For more information, please visit the website at: <http://www.vaas2005.com>

### **ENCHANTED EVE - VINTON WAR MEMORIAL - VINTON, VA - DECEMBER 31, 2005**

RVAS has been invited back to help Vinton ring in the New Year with Vinton's Enchanted Eve. Last year, the weather was warm, but the clouds were abundant. RVAS members were able to give a good number of interested viewers a glimpse at the heavens through the "sucker holes" in the night sky. Enchanted Eve last year was the first outreach program for the StarGazer II ( <http://www.stargazer2.com> ).

I believe everyone that attended had a good time, and I think we will this year as well. It is an excellent opportunity for RVAS families to go out on New Years Eve. While the astronomy-minded members of the family do their thing, other members can take advantage of the multitude of other activities at the event. Please let either Katherine Hix or Mike Overacker know if you wish to attend.

## **VAAS COMMITTEES AND EVENT VOLUNTEERS**

Registration Committee	Mike Overacker	Carol Mesimer
Presenters Committee	Katherine Hix	William Dillon
Prizes Committee	Mark Hodges	Steve Manuel
Refreshments Committee	John Goss	Tom Skelly
Budget Committee	Genevieve Goss	Jeff Suhr
Attendee Committee	Clark Thomas	Rand Bowden
Publicity Committee	Paul Caffery	Jeff Wood
Observing Committee	Dave Godman	Liana Arias
Vendor Committee	Bruce Jones	Chris Tschappatt
	Lynn Slonaker	Harry Montoro
	Candy Andrzejewski	Ellen Holtman

**RVAS needs your help in making the VAAS 2005 event a success. Please consider volunteering to help make this event a great success and relieve some of the burden on your fellow members. You can contact Mike Overacker at [vaas2005@cox.net](mailto:vaas2005@cox.net) to sign up to assist us.**

# ***Society Events and Activities for September 2005***

**MONTHLY MEETING:** RVAS Annual Picnic and Star Party, Saturday, September 24th, 4:00 p.m. Franklin County Recreational Park, south of Rocky Mount. Takes the place of the regular monthly meeting. Join us for an afternoon and evening of food, friends and fun!

**“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, September 2nd and 3rd. Sunset is at 7:47 p.m. Astronomical twilight ends at 9:17 p.m. The Moon sets at 7:35 and 7:59 p.m., respectively.

Friday and Saturday, September 23rd and 24th. Sunset is at 7:15 p.m. Astronomical twilight ends at 8:42 p.m. The Moon rises at 10:40 and 11:30 p.m., respectively. (Note: The September 24th session is the Annual RVAS Picnic and Star Party, which is held at the Franklin County Recreational Park.)

Friday and Saturday, September 30th and (Oct.) 1st. Sunset is at 7:04 p.m. Astronomical twilight ends at 8:31 p.m. The Moon rises at 6:03 and 6:25 p.m., respectively.

October Sessions: 1st; 22nd; 28th and 29th.

**FRANKLIN CO. PARKS DEPT./RVAS PUBLIC STARGAZE:** Next session: November 26th, 6:00 p.m.

**ROANOKE CITY PARKS DEPT./RVAS PUBLIC STARGAZE:** Saturday, September 3rd, 8:15 p.m., Cahas Overlook, milepost 139, Blue Ridge Parkway. For City, County and other area residents; RVAS members welcome to participate. Call the RVAS Message Line, 540-774-5651, for information. (Next session: October 1st, 7:30 p.m., Cahas Overlook.)

Roanoke Valley Astronomical Society  
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