



# Roanoke Valley Astronomical Society



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

Vol. 21 - No. 10

October 2004

## Astronomy's Future: Part II Professionals and Amateurs in the 21st Century

By John Goss

In the first part of my inquiry into the future of astronomy I focused on the amateur side of astronomy in the 21st century. We are in a golden age of astronomy, where each decade of discovery eclipses centuries of previous advances. Most, but not all, of these recent advances have been made by professional astronomers commanding very expensive and exotic equipment. We amateurs are major beneficiaries of all this new knowledge and new technology, such as computer drives and CCDs.

On the professional side of astronomy the pace of change is astounding. Not too long ago, it was said that Mt. Palomar's 200-inch Hale telescope would always reign king. How wrong in so short of a time! Today there

are fourteen glass giants that are larger, with more on the way. We have a large orbiting telescope. Given all that, many club members see even larger telescopes.

**Mike Good** noted: "Before

hundredths and thousandths of an arc-second. Work on interferometry will continue, and in ten years we will have the first thirty-meter aperture telescope, with a hundred-meter well into planning."



The Network Nebula as imaged by Mike Good is a classic example of easily seeing with instruments what the eye sees with difficulty.

adaptive optics, I would have seen all professional data gathering as being an above-the-atmosphere venture. Clearly the breakthrough of adaptive optics in mega-scale systems with artificial (lasers ionizing sodium atoms 90 km up) guide stars, producing resolutions measured in

Can you picture an optical telescope the size of a football field? Wow!

Telescope time is hard to get, and large scale professional astronomy is expensive. Noticing that university research using these big ticket telescopes will be costly, **Charles Crush** of Fincastle predicts,

"closer, more integrated efforts between amateurs and professionals, as budget cut backs in public programs force universities and government agencies to rely more on volunteers."

*Continued on Page 5...*

# Wannabees

By Clark M. Thomas

Two weeks ago I got an odd email from a fellow amateur in the Southwest. He had seen my astronomy links web page

([members.cox.net/clarkt7/astronomylinks](http://members.cox.net/clarkt7/astronomylinks)), and wanted some viewing advice.

He is a very eager beginner with an 8" Dob. He tries to use it every clear night, and is a giant sponge for everything astronomical. He is the true definition of amateur, one who loves what he does.

club of which he is a member has dark-sky viewing sessions, nobody will give him a ride! So my correspondent is stuck alone under urban skies, viewing bright objects only.

If such a person were here in Roanoke, he or she would have multiple ride offers to join us on our field events, and at our meetings. We cherish and encourage all of our members. There are no elitist cliques in the RVAS.

If YOU ever need a ride to ANY club function, just let us know.

## Mystery Object

Use your telescope and the IRIS of your eye to find this fine reflection NEBULA in Cepheus.

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

thomasde-ka8inl  
@worldnet.att.net



Problem is, he is disabled and cannot drive. His local club is a bit larger than ours, and they are involved with building a wannabee-professional club observatory. When the

## Astro-Quiz

Joseph Scaliger is not widely remembered. But in 1582, the year the Julian calendar gave way to the Gregorian, Scaliger proposed a measuring system that still receives some attention. What was Scaliger's system?

**Answer to Last Month's Astro-Quiz:** Last month's question was provided by past president John Goss, who asked how long it takes for the Earth to move a distance equal to its own diameter in its orbit around the sun. To a first approximation, consider the Earth's orbit a circle (rather than an ellipse) with a diameter of 8,000 miles and a radius of 93 million miles. For a year of 365 days, it works out that the Earth is traveling nearly 1,112 miles per minute. In other words, it takes Earth about 7.2 minutes to travel its own diameter. This also means that Earth is traveling at 66,700 miles per hour in its yearly trek around the Sun!

The Roanoke Valley Astronomical Society is a membership organization of amateur astronomers dedicated to 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 Roanoke. 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 (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); **Clark M. Thomas**, Newsletter Editor (427-1873, [clarkt7@cox.net](mailto:clarkt7@cox.net)).

# The local Group

By Genevieve Goss

"Dear Club Captain, Here is why I would like to be a member of the Science Explorers Club: I want to learn more about space and Planet X." So reads a letter of application from a 6th-grader at **Lucy Addison Aerospace Magnet Middle School**.

With its location on 5th Street at Melrose, the school's proximity to our club homesite prompts the question of how RVAS could assist in bringing the cosmos to the classroom.

Lucy Addison is more than a launch pad for aspiring astronauts. The school offers an innovative curriculum designed to enhance math and science skills for all students. The building, which reopened in fall of 1999 after a year-long \$10.8 million renovation, is a state-of-the-art facility and has been featured in the national media.

It features a learning environment that includes four computer labs, a technology lab, Space Center and television studio with closed-circuit TV. The school also houses the Challenge program for academically talented students.

RVAS representative for the Night Sky Network, **John Goss**, recently visited Lucy Addison Aerospace Magnet School to discuss how the NSN could benefit teachers and

students. He presented the school with a copy of an outline and DVD for the September NOVA series, *Origins*, and an assortment of posters and booklets from NASA and the Planetary Society.

Judging from the reception at the school, RVAS would be welcomed with open arms to provide NSN hands-on presentations, observing sessions (especially solar), junior astronomy club activities and possibly closed-circuit lectures and/or observations.

Please consider potential partnering projects for RVAS and Lucy Addison. Our club involvement could range from the simple to the sublime, depending on the preferences of our club members. This matter will be brought up for discussion at the October club meeting.

## Last Month's Mystery Object

September's mystery object lies in Aquarius at a distance of about 100 million light-years and on the sky at RA 23h 39' 54", Dec -12d 17' 31".

NGC 7727 shines at magnitude 10.6. The galaxy is visible through a 4 inch telescope under dark skies with between 100x and 200x magnification.



## Inside Black Holes

Speaking of mystery objects, what is more mysterious than black holes?

Your intrepid editor has rushed in where wise men fear to tread. Because astronomers see as much with their minds as with their eyes, I feel this is a legitimate way to verify my crackpot status! If not, then at least I had fun with it.



If you are brave enough to delve into the darkest darkness, then you are

cordially invited to check out the following web address: <http://members.cox.net/clarkt7/InsideBlackHoles.html>

I wish to thank the more than two hundred people who have read my essay, and the few who helped me make it much better. What do you think?

# 2004 VAAS is Coming This Month!

## The 28th annual convention of the Virginia Association of Astronomical Societies (VAAS)

will have fantastic speakers, door prizes, vendors, swap tables and solar observing, followed by a night of observing at the University of Virginia's Fan Mountain Observatory.

**When? Saturday, October 16th, 2004, 9:00AM**

**Where?** St. Anne's - Belfield School, Upper Campus; close to the University of Virginia in Charlottesville.

### This Year's Speakers:

Steven J. Dick, Ph.D., Chief Historian for NASA.

Zolt Levay, Imaging Resource Lead for the Hubble Space Telescope.

Kathryn C. Thornton, UVa Professor and Three-Time Space Shuttle Astronaut.

Edward Murphy, Ph.D., University of Virginia Professor of Astronomy.

Philip A. Ianna, University of Virginia Professor Emeritus. Dr. Ianna will lead a round-table discussion on fighting light pollution in Virginia.

So far door prizes have been generously donated by Celestron, Lumicon and many others.

### Star Party

Daytime observing with solar hydrogen-alpha filters will be available during breaks.

Nighttime observing from the University of Virginia's dark-sky site atop Fan Mountain,

thirty minutes south of Charlottesville, will begin at sunset. Open to conference attendees.

The chief coordinator is CAS and RVAS member, **Mark Klosinski**. Please send comments and questions to Mark at [klosinski@adelphia.net](mailto:klosinski@adelphia.net).

**For full info**, see <http://www.cvilleastro.org/vaas/>

**ON PAGE SEVEN OF THIS NEWSLETTER IS YOUR REGISTRATION FORM. PRINT AND/OR FILL IT OUT, THEN SEND IT IN AS FOLLOWS:**

**Charlottesville  
Astronomical Society  
c/o Bill Phillips  
1048 Tilman Road  
Charlottesville, VA 22901**

**Make your check to "CAS"**

## ***DUES and SUBSCRIPTION NOTICE***

It's renewal time for RVAS memberships, most of which expire on June 30, 2004. Check the club directory emailed to you recently, which shows your expiration date. If you don't have email, and your membership expires at another time, you'll receive a special notice. If you want to know now when your membership expires, call **Frank Baratta at 774-5651**. Membership categories are:

- ★ INDIVIDUAL (\$20.00 per year) -- RVAS and Astronomical League membership for you.
- ★ FAMILY (\$25.00 per year) -- RVAS and Astronomical League membership for you and your family.
- ★ STUDENT (\$10.00 per year) -- RVAS and Astronomical League membership for a full-time student.

Make checks payable to "RVAS," and forward to: **Lynn Slonaker, RVAS Treasurer, 3548 Kenwick Trail, Roanoke, VA 24018.**

**MAGAZINES:** Members may subscribe to *Astronomy* (\$29.00) and/or *Sky & Telescope* (\$32.95) at the indicated substantial club discount rates. Subscriptions are sent to the publishers each April 15th, August 15th and December 15th. Renewal payments should be submitted by whichever of these dates is at least 4 months prior to the expiration of your magazine(s). Orders may be added to dues payments, or submitted separately

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## Pros and Amateurs in the 21st Century

Light pollution is a major concern of the professionals. The Hubble Space Telescope has avoided the problem entirely by placing itself above all city light domes. But it remains a headache for all earthbound scopes, amateur and professional. Bluntly put by **Mike Overacker**, "Unless somethings is done now by the governments of the world, light pollution will have a major impact on astronomers, professional and amateur, in the future." This is echoed by **Katherine Hix**, "the more light there is, and our hobby will begin to fade." Regrettably, all those who have been visiting our Cahas Mountain overlook observing site have noticed an increased general sky glow.

What will be the fruits of all astronomers labors? No one knows, but here are a few possible developments: understanding dark matter, compiling a greater database of near-earth objects, enhancements to the inflationary big bang theory, and detailed knowledge of extra-solar planetary systems. **Clark Thomas**, always viewing from the edge, thinks, "The greatest changes will occur past ten years, when certain new telescopes and, perhaps, a Moon base, and then a Martian base, are operational. The wild card is SETI." The discovery of extraterrestrial life would be

profound indeed. A more philosophic view is given by **Gary Hatfield**, "As technology advances and we are able to see further out into space, and back in time, I think we will be much closer to understanding how we came to be, and whether we are alone, or, as I believe, just one of many intelligent civilizations existing in the vast expanse of the universe."

As you can see, everyone's opinion is encouragingly optimistic, all seeing better equipment, and great cosmic discoveries just around the corner. However, there is that awful glow of light pollution looming on the horizon.

### Closing Remarks

Here is one final viewpoint, that of the author. Whatever is in the amateur's bag of equipment will be driven by demand, and will be supplied by the marketplace within the range of technological constraints. A vast number of newcomers will want GoTo scopes to avoid the time and frustrations associated with learning the night sky and with manually locating dim objects. Astro-imagers will want accurate GoTo scopes fully integrated with electronic imagers. And they will have them.

There may very well be instruments appearing in a few years that will offer eyepiece viewing only as an option. The trend will be away from manual visual observing to more detailed video imaging. Ultimately, and especially if the fight against light pollution

is lost, fully robotic large telescopes located on remote high mountain tops will image, on demand, deep sky objects with incredible detail and speed. Amateurs will no longer need to leave the comforts of their own living rooms.

Where will this put our world of starlight nights, of studying celestial charts, of peering through finder scopes and Telrads, and of searching many minutes for that elusive faint object, while enduring Cahas temperatures? The outside visual amateur may become a rare breed. One final quote, this time by Euripedes: "All is change; all yields its place and goes."

Then again, there always will be those poetically inspired individuals who will choose to relax under the starry dome and wonder what it's all about.

- Let's welcome **Bruce Jones** to the RVAS Executive Committee. He is our new Member-at-Large.
- "Space isn't remote at all. It's only an hour's drive away, if your car could go straight upwards."  
- Fred Hoyle
- "Astronomy compels the soul to look upwards, and leads us from this world to another."  
- Plato
- "Who turned off the lights?"  
- Ann Onymous

Hot Food and Wet Scopes

# RVASers Feast, then Enjoy a Lovely Evening Under Franklin County Stars

By Mark Hodges

Sat. Sept. 11th: a nice sunny day. I gathered up scope, accessories and picnic supplies and headed out to the Franklin County Park for our annual club picnic.

I arrived at the park a little after 3 p.m. **Mike Overaker**

We enjoyed a very nice meal with plenty of goodies supplied by various club members. And thanks to everyone who brought food to the picnic! About forty hungry members showed up for the picnic.

After everyone ate like little piggies, we had a brief club meeting. **Katherine** reminded everybody about

**Chris Tschappatt** - *NightWatch*

**Carl Barnhardt and Mark Hodges** - One year free RVAS membership

**Jeff Suhr** - RVAS Mug. Congratulations to the lucky winners.

We then started to set up scopes for the evening's observing. The sky was clear,

but it was very humid and dew was dripping off of scopes. But we still were able to observe the brighter objects in the sky. I observed Neptune and Uranus under steady skies, along with several globulars. A highlight of the evening was observing the majestic first-magnitude ISS passing overhead about 9 p.m.

- and thanks to

**Dave Godman**

for letting everyone know about that. We also saw a few meteors.

What with the long afternoon, full stomachs and the heavy dew we started to pack up a little after 10 p.m. I know I had an enjoyable day, and I hope everyone else did too. See you next September!



Katherine and Paul sort the loot

Photo: M. Overaker

arrived shortly afterwards, and the president of the Blue Ridge club joined us. Other members arrived, and we set up for the picnic. While everyone chatted I started up the grill. This is where I found out I forget to bring matches(grin). But a car cigarette lighter and a piece of paper saved the day.

VAAS in Oct., and we then drew for door prizes.

The lucky winners were...

**Beverly Suhr** - Planisphere

**Paul Caffery** - Lunar 100 chart

**Barbara Manvel** - *Universe in a Nutshell*

**Mike Good** - *The Modern Moon*

## VAAS 2004 Registration Form

Registration form must be *received* by Saturday, October 9, 2004 for early registration pricing.

You will receive one door prize ticket for each person registered and one extra for each lunch ticket purchased.

Additional door prize tickets may be purchased at the door for \$2.00 each or 3 for \$5.00.

You may register at the door for the late registration fee.  
Lunch tickets may not be available to late registrants.

Name	
Address	
City, State Zip	
Telephone	
Email Address	
Additional Registrant	
Additional Registrant	

REGISTRATION TYPE	Price	Quantity	Amount
General Early (Before 10/9/04)	\$10.00		
Teacher/Student Early (Bring a School ID)	\$5.00		
General Late or at the Door	\$15.00		
Teacher/Student Late (Bring a School ID)	\$10.00		
Lunch Ticket	\$8.00		
<b>TOTAL:</b>	----	----	

I would like to reserve swap table space:	Yes / No	4ft / 8ft
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# *Society Events and Activities for October 2004*

**OCTOBER MEETING: Monday, October 18th, 7:30 p.m., fifth floor meeting room, Center In The Square, Roanoke.** The program for the evening will be a big fat mystery...but we guarantee you will leave excited, elated, and educated.

**"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, October 8th and 9th.** Sunset is at 6:52 p.m. Astronomical twilight ends at 8:18 p.m. The Moon sets at 4:27 and 4:57 p.m., respectively
- **Friday and Saturday, October 15th and 16th.** Sunset is at 6:43 p.m. Astronomical twilight ends at 8:09 p.m. The Moon sets at 7:40 and 8:17 p.m., respectively.
- **November Sessions:** 5th and 6th; 12th and 13th.

**FRANKLIN CO. PARKS DEPT./RVAS PUBLIC STARGAZE:** The next session is November 6th.

**ROANOKE CITY PARKS DEPT./RVAS PUBLIC STARGAZE:** Saturday, October 16th, 7:15 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: November 13th, 5:45 p.m., Cahas Overlook.)

**RVAS EXECUTIVE COMMITTEE MEETING:** Meetings are now held the first Tuesday of each month; contact one of the officers regarding specific location and time information.

Roanoke Valley Astronomical Society  
740 Arbutus Avenue  
Roanoke, VA 24014-2504