



ROANOKE VALLEY ASTRONOMICAL SOCIETY

NEWS ABOUT AMATEUR ASTRONOMY IN SOUTHWESTERN VIRGINIA



<http://www.roavas.org>

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VIRGINIA ASSOCIATION OF ASTRONOMICAL SOCIETIES

Something for Everyone at VAAS 2002

Randolph-Macon College in Ashland Virginia was the site of this year's conference of the Virginia Association of Astronomical Societies (VAAS). On Saturday October 5, fifty-eight amateur astronomy enthusiasts assembled for a day long event packed with lectures, workshops, swap tables and door prizes. The RVAS was well represented with Sherwin Brady, Dave Godman, John Goss, and Matt Maness making the 3 hour journey.

The morning was kicked off by the president of the Richmond Astronomical Society, Jim Blowers, describing Native American beliefs of the creation of the Milky Way. After Jim's intriguing remarks, the first lecture commenced.

Randolph-Macon College's own Dr. George Spagna described an ambitious student project: constructing a working radio astronomy dish from in-house components. No one was completely certain whether the Center of the Universe Radio Telescope (CURT) project could be done. But to the delight of everyone involved, especially the very nervous physics student, it worked! On a July morning, radio signals from the sun were detected along with those possibly emanating from M1, the Crab Nebula pulsar.

Remember last May's tour of Greenbank and the 140 foot equatorially mounted dish that was standing silent? On the big dish's last observing run, Dr. Robert Rood of UVa was investigating Helium-3 concentrations in various nebulae including M42 and the Rosette. His talk, entitled "An Old Dog's Last Hunt: the 140 Foot Radio Telescope and the Helium-3 Saga," described this productive session as generating the

highest quality data he has ever collected with the giant dish. Maybe this "old dog" shouldn't have been decommissioned.

The morning's final presentation was given by Dr. Eric Douglass. Many RVAS members may remember him from his talk last year in Roanoke about impact craters. In "The Geology of Lunar Basins," Dr. Douglass again spoke about a fascinating lunar subject: large impact basins and lunar maria. He covered both the Tsunami and Ring Tectonic hypotheses regarding 400 km wide ring wall formations. He encourages more amateurs to re-examine the earth's nearest neighbor, this time much more closely. Tell-tale signs of the violent lunar past can be seen with a small telescope. One just needs to take the time and know where to look.

After lunch, attendees anxiously awaited the awarding of door prizes. The RAS received donations from Orion Telescopes, Meade Instruments, Willmann-Bell Books and others. The Grand Prize was a 14 mm UltraWide eyepiece from Meade. The stars did not shine on Sherwin, Dave, John or Matt--maybe next year! However, Dave Godman did pick up a well-worn brass telescope at the swap table. After a good lens cleaning and tube polishing, Dave hopes to have this baby up and running!

The remainder of the afternoon was filled with workshops and seminars ranging from the historical to the technological. Amateurs had to pick and choose since there were more sections (6) than hours (3) available!

Dr. Robert Hicks, in the persona of 17th

century ship's master Toby Felgate, demonstrated the tools of the day that were commonly used aboard ship while navigating across the Atlantic. Even though longitude determination wasn't easy, the "scientific" instruments available were simple to use and reliable. Have you ever examined a cross staff, backstaff, and astrolabe? Here was your chance.

RVAS member John Goss reprised his talk from ALCon "Hunting for Herschels." John spoke about difficulties in locating the many objects belonging to the Herschel 400 observing list. Particular attention was given to star hopping in the dreaded Virgo-Coma region of distant galaxies. As was illustrated, the most difficult Herschel wasn't necessarily the dimmest. Hint: Can you pronounce *Camelopardalis*?

Imaging the night sky was covered in a CCD workshop given by the Richmond Club's Gary Cowardin. Gary demonstrated the latest off-the-shelf cameras by Sony and others. These digital video camcorders are able to shoot in dim light like never before!

The near perfect day was topped off at nearby Poor Farm Park with a cook out featuring hot dogs, hamburgers, beans, potato salad, cookies and soft drinks. The night skies cooperated for the event by being the clearest they had been in quite awhile. Taking advantage of that was quite an array of telescopes and binoculars. All said and done, there were a lot of satisfied VAAS goers.

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A WORD OF THANKS

Members fill in for newsletter editor

The Editor would like to thank and give special recognition to John Goss and Mahesh Tailor (and their wives Genevieve and Martha, respectively) for their gracious efforts in producing the September and October RVAS newsletters while the editor was busy with a new baby daughter, Jessica, and helping wife Laura through a difficult delivery and additional recovery time in the hospital. Both mommy and baby are doing well. Now if we could all just get some more sleep!

VAAS 2002, CONTINUED

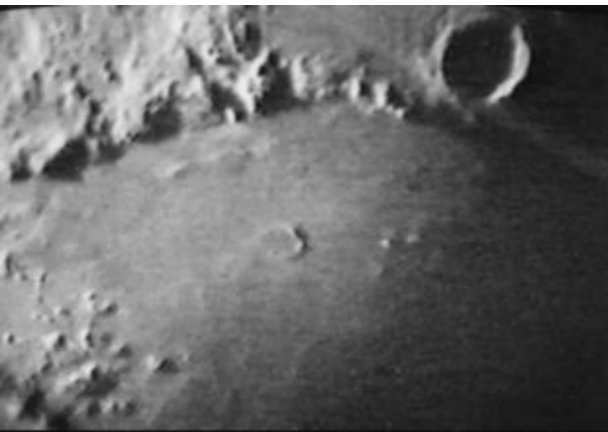
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Congratulations are in order for the Richmond Astronomical Society and its hard working members for the great lectures, informative workshops, tasty cookout and super weather!!

Mystery Object

Can you identify the below object? (Saying it's the moon doesn't count!)

E-mail your guesses to Dave Thomas at thomasde-ka8inl@worldnet.att.net



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 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: \$25.00; Student membership: \$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.

Officers/Executive Committee: Paul Caffrey, President (345-2847); Katherine Hix, Vice President (334-2443); Carol Mesimer, Secretary (334-1177); Lynn Slonaker, Treasurer (774-5695); Dennis Stevens, Executive Committee Member-At-Large (989-8801); Dave Godman, Immediate Past President (774-3337); Dave Reese, Newsletter Editor (366-8775, dereese@mindspring.com), Dave Thomas, Mystery Object columnist (thomasde-ka8inl@worldnet.att.net), RVAS Message Line: 540-774-5651, RVAS Web page: <http://www.roavas.org>

SOCIETY BUSINESS

President's E-mail address changed

Please note that our President, Paul Caffrey, has changed ISPs and his new e-mail address is caffrey@cox.net

THE LOCAL GROUP

Share the stars!

Not long ago, RVAS members viewed a video clip featuring astronomer John Dobson challenging amateur astronomers to share their hobby. Recently, I've had two conversations in which club members mentioned their introductions to astronomy. Larry Dennis thanked a teacher who invited him and a few buddies to do some observing. That teacher was also the first person they had encountered, in their less-than-cosmopolitan region of Pennsylvania, with a home library. What a lasting impression with just a little effort!

John Goss credited his sister Janis, older by eight years, with his first three astronomical memories: 1) her insistence that, despite John's belief otherwise, the moon could in-

deed be seen in the daytime; 2) her offering of a view of the moon's craters through a small (maybe 7 X 35) pair of binoculars; and 3) her invitation to 7-year-old John to accompany her to her high school in Camas, WA, one evening, where her 10th-grade science teacher showed Saturn (with rings!) through a telescope.

Throughout the Roanoke valley, there are scores of people who can thank Frank Baratta for his introduction to the night sky. At the Science Museum of Western Virginia, Mark Hodges, Dave Godman and Isaac Campbell have reached many potential young astronomers. Former Astronomical League president, Chuck Allen, and his classmate, noted astrophysicist J. Richard Gott, were both members of Boy Scout troop in Louisville, KY, with an amateur astronomer as a leader.

Some people are lured into astronomy by noteworthy astro-events (such as Bill Jones's search for Halley's comet and Mahesh Tailor & Martha Kuchar's attendance at a Hale-Bopp viewing session on the Parkway). Their appreciation was enhanced by contact with others sharing these events.

My message, then, is to invite people to take

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Astro-Quiz

Our newsletter calendar of events lists the monthly club observing sessions, including the time that astronomical twilight ends. How is the end of astronomical twilight determined and who originated the standard?

Answer to Last Month's Astro-Quiz: Last time, we asked if an observer on a planet orbiting a star in M31, the Andromeda Galaxy, would see our Milky Way Galaxy face-on, edge-on or somewhere in between. As observed from earth, M31 is about 15 degrees from the plane of the Milky Way. This can be noticed on any clear night in the fall or winter. The Andromeda Galaxy is a little less than 1 hand span on an outstretched arm from the Cassiopeia region of the Milky Way. This indicates that the Milky Way, as seen from M31, would be tilted about 15 degrees and would appear nearly edge-on. Thanks to John and Genevieve Goss for the question and the answer!

NOVEMBER MEETING PROGRAM

"Exoplanets and Exolife" by Clark Thomas

Club member Clark Thomas will be presenting a two-part program concerning the discovery of planets around nearby stars and the possibility of life on these planets.

Clark will be discussing what planetary systems have been discovered so far and the tools astronomers use to discover these planets. 55 Cancri is one of these star systems. He will be talking about the forthcoming Kepler Space Telescope and other projects which should make it possible to directly image Earth-sized planets around nearby stars.

The second part of Clark's talk will focus on

Last Month's Mystery Object



NGC 6822—Irr. Galaxy in Sagittarius

The October mystery object is NGC 6822—an irregular galaxy. The galaxy is about 560 kpc distant and weighs in at around 1.7 billion solar masses.

6822 resides in the eastern regions of Sagittarius at RA 19h,42m and Dec -14 degrees, 53'. It is a resident of the local group which includes our galaxy, the Milky Way, and the Andromeda galaxy along with a dozen or so others. The galaxy is best viewed in smaller scopes at lower magnifications due to its low surface brightness.

Dave Thomas

the question of life on these foreign worlds—how much and what kinds of life. Clark will be discussing the Drake equation and other interesting speculations.

Clark will have handouts available with coordinates and other data to help club members locate some of the prime targets. He will also have for distribution a reproduced NASA two-page leaflet on the Kepler Mission.

The topic of Earth-like planets circling nearby stars and the possibilities of life there has always been a fascinating topic for astronomers, so this is a meeting you will surely not want to miss.

COMPUTERS AND ASTRONOMY

November Meeting Software Demo

Ever wanted to fly through the galaxy at warp speed with the nearby stars streaming past you like on the Starship Enterprise? How about visiting a nearby or no-so-nearby star in order to see what the sky would look like from it, and how the familiar constellations would change shape as you recede from Earth? Just where would the sun appear in the sky from Alpha Centauri? How many of you are familiar with the popular "Powers of Ten" video?

Dovetailing well with Clark Thomas's presentation regarding planets and life around nearby stars, newsletter editor Dave Reese will present a brief overview of Partiview, a freeware software program that will allow you to do just these types of things. Available for free download at the Hayden Planetarium's web site at www.haydenplanetarium.org, Partiview, short for Particle Viewer, is a 3D simulation program that permits the 3D display and manipulation of any three-dimensional data set coupled to it. In our case, that dataset is the Orion Arm of the Milky Way, our local stellar neighborhood, out to about 700 light years.

This amazing software, a freeware version (available in Windows and UNIX varieties) of that used at the Hayden Planetarium in NYC and developed by

the National Center for Supercomputing Applications with data provided by the American Museum of Natural History's Rose Center for Earth and Space, displays real 3D positional data from the Hipparcos satellite star catalog. It is also "open-source" software, meaning that the code, like the Linux operating system, is freely available and customizable. The freeware is expected to evolve and improve as new features and data are added to it.

The August 2002 issue of Sky and Telescope, p.61, has an article devoted to it entitled "Master of the Universe." Come to the November meeting and see a demo of one of the slickest freeware you've ever seen.

THE LOCAL GROUP, CONTINUED

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a look through your telescope. Don't be timid in sharing your enthusiasm! The general public has gotten out of touch with the night sky. You may be the person who opens a whole new world.

Genevieve Goss

The Endless Universe

**For I can end as I began.
From our home on the earth we look out
into the distances and
strive to imagine the sort of world into
which we are born.
Today we have reached far out into
space.
Our immediate neighborhood we know
rather intimately.
But with increasing distance our knowl-
edge fades...
until at the last dim horizon we search
among ghostly errors
of observations for landmarks that are
scarcely more substantial.
The search will continue.
The urge is older than history.
It is not satisfied and it will not be sup-
pressed.**

Edwin P. Hubble

OCTOBER MEETING REVIEW

Isaac Campbell's Excellent Adventures, Among Other Things

You'd have thought we were giving away food again at the October RVAS meeting, but maybe it was just food for thought. It seemed as though there were as many people (35) at our monthly meeting as there were at the annual picnic in September. A good number of Michael Good's astronomy class students attended along with many of our club members, and we hope they were inspired.

In case you missed it, Jack Horkheimer (via video) discussed the fall constellation lineup, which he calls the "season of soft sky." According to Mr. Horkheimer, autumn has no major constellation associated with it in particular, but Scorpius sets with the sun and Orion rises at midnight, allowing us to bid goodbye to summer and preview the spectacular winter sky before it gets really cold.

Paul Caffrey discussed the viewing at one of the club's observing sessions on Saturday, September 7, at Cahas Overlook. There was a spectacular aurora that lasted for some time, as well as a fireball. Apparently, these phenomena caused Frank Baratta's public stargaze program, which took place at the same time, to be even more impressive than usual.

Dave Godman discussed VAAS, which took place at Randolph-Macon College in Ashland (covered more fully elsewhere in this newsletter), and John Goss was awarded an Astronomical League certificate for finding the 100 Arp Peculiar Galaxies. For those of you who'd like to try this, ten of the Arp galaxies are also Messiers; if you've completed your Messier certificate, you're one-tenth of the way there!

The main event was Isaac Campbell's 2002 Summer Astronomy Report. Isaac's excellent adventures, as we know, included being given the Jack Horkheimer award at the Astronomical League's 2002 Convention (ALCon) in Salt Lake City, Utah. However, we also

got details of his June trip to astronomy camp at the University of Arizona. Along with his research project at the camp, Isaac visited the Steward Observatory Mirror Lab, where borosilicate glass is spun in a rotating oven that causes the gigantic mirrors created to be honeycombed on the inside. He also visited Kitt Peak National Observatory, where he toured the 25-meter dish radio telescope that is part of the Very Long Baseline Array, as well as the Mayall 4-meter reflecting telescope, held in place by a 19-story concrete mount that is separate from the dome and its building. This telescope's mirror can be used with either a prime focus or a relocated image.

Being a veteran of this astronomy camp, to Isaac's delight he was allowed the observing equipment to himself a great deal. Of the several telescopes located at the University of Arizona, Isaac particularly used the 61" Kuiper telescope (outside of which Mr. Kuiper is buried), a Cassegrain reflector which is now fully motorized for slewing and which is used for visible-wavelength observations with its f/13.5 secondary, and infrared observations with an f/45 secondary. Also at the university, there is a 40" f/16 Cassegrain reflector (somewhat diminished in diameter due to a chip in its mirror) used for photometry. Some students at the camp used this telescope to attempt detection of extrasolar planets by determining changes in light curves around certain stars.

Isaac used the Kuiper for his research project, which was to image extragalactic globulars ("EGGs") and compare them with globular clusters in our galaxy. He used red (I), blue (B) and green (V) filters, and imaged globular clusters G52 (mag. 15, in M31), G76 (mag. 13.5, in Cassiopeia), and G1 (mag. 13, orbiting Andromeda Galaxy, which Alan McRobert, in [Sky and Telescope](#), September 17, 2002, states is the "most massive globular known"). He spent hours repeating the imaging process using these three filters on different nights. Although Isaac had more observing time than he did analyzing time, and although the blue filtered images' values didn't "come out right," his research team did find V-I magnitude values for EGGs, compared to globu-

lars in the Milky Way, that appeared to correspond with data already gathered by other astronomers.

Gee, all my family did was go to the beach.

Katherine Hix

WACKY IDEAS PERMITTED

Messier Monikers for All?

My pea brain has concocted a fun project for every member of the club: We have fewer than 100 members, and there are 110 Messier objects. Why not have every member "adopt" one of the Messier objects?!

We could be known within the club both by our human handle and by our Messier moniker. For example, you could call me Clark, or you could call me M31. Each member will thus be enticed to become an expert on their personal Messier object.

And we'll even have some spare Messier objects available for new members. (If this wacky idea catches on, I can envision small clusters of people from different clubs, but with the same Messier moniker, informally getting to know each other at events such as the VAAS convention.)

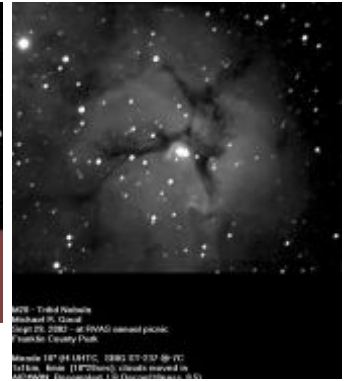
Clark Thomas

Ed. Note: Let Clark know what you think. As for me, I was already planning on having NGC4565 branded into my forehead! ☺

MEMBER ASTROIMAGING

The AstroPhotography of Michael R. Good

The RVAS has always been a club devoted to observing, and a few have had the available skies, time, resources, and inclination to pursue the challenging and rewarding sub-hobby of astronomical photography. Michael Good has been our most prolific astrophotographer of late, and has spent untold hours imaging with his SBIG ST-237 CCD camera and 8" and 10" Meade telescopes. Below are some of the fruits of his labors. For access all of his images including larger versions of these, please see Michael's Web page at <http://users.lynchburg.net/mgood/>.



Society Calendar of Events and Activities for November 2002

NOVEMBER MEETING: Monday, November 18th, 7:30 p.m., fifth floor meeting room, Center in the Square, Roanoke. The evening's program will be "Exoplanets and Exolife" by Clark Thomas

"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, 1st and 2nd.** Sunset is at 5:22 p.m. Astronomical twilight ends at 6:50 p.m. The Moon sets at 3:49 and 4:20 p.m., respectively.
- **Friday and Saturday, 8th and 9th.** Sunset is at 5:15 p.m. Astronomical twilight ends at 6:44 p.m. The Moon sets at 8:38 and 9:39 p.m., respectively.
- **Friday and Saturday, 29th and 30th.** Sunset is at 5:03 p.m. Astronomical twilight ends at 6:35 p.m. The Moon sets at 2:19 and 2:49 p.m., respectively.
- **December Sessions:** 6th and 7th; and 27th and 28th.

FRANKLIN CO. PARKS DEPT./RVAS PUBLIC STARGAZE: Saturday, November 2nd, 5:45 p.m., Franklin County Recreational Park. Free. Call 540-483-9293 to register. RVAS members planning to attend need not register. (Note: 2003 session have not yet been scheduled.)

ROANOKE CITY PARKS DEPT./RVAS PUBLIC STARGAZE: Saturday, November 23rd, 5:45 p.m., Cahas Overlook, milepost 139, Blue Ridge Parkway. Free. Call 540-853-2236 to register. (Next month: December 14th, 7:30 p.m., Fallon Park.)

RVAS EXECUTIVE COMMITTEE MEETING: Meetings are now held the first Tuesday of each month; contact an officer for info.

**ROANOKE VALLEY ASTRONOMICAL SOCIETY
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