



ROANOKE VALLEY ASTRONOMICAL SOCIETY

NEWS ABOUT AMATEUR ASTRONOMY IN SOUTHWESTERN VIRGINIA



<http://www.roavas.org>

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PARTNERSHIP BENEFITS BOTH ORGANIZATIONS



RVAS and Meeting of the Saturns



On Wednesday evening March 12, the RVAS will team up with Saturn of Roanoke Valley for a telescopic introduction of Saturn (the planet), Jupiter

and the moon. Saturn of RV has invited children from Carver Elementary School for this cookout/observing activity. The RVAS is looking for 8 telescopes with owners to give the kids a good look at the ringed planet. If you are interested contact John Goss (966-4606) for the details!

WINTER READING AND SPRING PLANTING

The Local Group

Several members of RVAS have reported on their winter reading: Katherine Hix recommends The Star Gazer, a book about Galileo's struggles with the Church, by a Hungarian writer, Zsolt de Harsanyi. John Goss thanks Paul Caffrey for the loan of The Night Sky Observer's Guide (Volumes I & II) by Kepple and Sanner, which is reviewed in a separate newsletter article. John recently finished Seeing in the Dark : How Backyard Stargazers Are Probing Deep Space and Guarding Earth from Interplanetary Peril by Timothy Ferris which, among other interesting facts, contains the earthshaking item that a member of the rock group 'Queen' is an amateur astronomer! Find these books through the public library (search <http://www.rvl.info>) or through your favorite bookseller. If you would like to recommend a book of interest to RVAS members, please e-mail me with your selection.

Do you suppose that it's not entirely a matter of chance that our family has, at one time or another, owned a Mercury, a Saturn, a Voyager and a Subaru (the Japanese word for Pleiades)?! Apparently, the fascination with the cosmos has also entered the realm of gardening---further evidence of the duration and strength of this winter! Should you desire an astronomical theme for your garden, may I recommend a few plant varieties that caught my eye? For

simplicity's sake, only 3 garden suppliers are listed, designated by 'J' for Jung (<http://www.jungseed.com>), 'P' for Park (<http://www.parkseed.com>) or 'S' for Shumway (<http://www.rhshumway.com>).

If fruit is your fancy, grow an heirloom variety of watermelon 'Moon & Stars (P, S) or plant a 'Saturn' peach tree (J), 'Allstar or Tristar' strawberries (J), 'Mars' blue seedless grapes (J,S) or 'North Star' cherries (J). Make a stellar statement with vegetables such as 'Comet' broccoli (P), 'Early Sunglow' sweet corn (S), 'Spacemaster' cucumber (P), 'Sugar Star' snap peas (S) or both 'Starship' and 'Enterprise' summer squash (P)! Satisfy your flower fixation with sunflowers---'Starburst' (J), 'Sunspot' (P), 'Solar Babies' (P) or 'Ruby Moon' (J). Other flower choices might include asters ('Blue Moon' (J) or 'Starlight' (P), chrysanthemums 'Polar Star' (P), clematis 'Violet Star Gazer' (J), dahlias 'Procyon' (J), Venus flytrap (S), 'Solar Flare' daylilies (J), 'Flaming Meteor' or 'Comet' gladiolus (J), 'Starry Night' or 'Moon Shadow' roses (J), 'Star Cluster' Pentas (P), 'Cosmic' cosmos (P) and 'Milky Way' morning glories (J). An astro-garden might help pass those annoying daylight hours as you wait for observing time to begin!

Genevieve Goss

THINGS RVAS MEMBERS WOULD NEVER SAY

Strangest Things

These are genuine, unexpurgated snippets from my introductory astronomy classes at the University of Alabama. This certainly demolishes my illusions of teaching effectiveness, but does give almost enough material for a "Universe according to Student Bloopers" collection. Usually I can tell what went in and became garbled, but some of these I can't figure out at all.

Bill Keel, University of Alabama

- A radio telescope often sends messages to the astronomer by the use of frequencies.
- The gravity of the earth while rotating receives a bulge on the sides due to the speed of the earth and in what relation the moon is to the earth. When the ocean waters become full to capacity it overflows upon the beaches. After the earth rotates the oceans can hold that water again and the beaches become dry. The two bulges are directly opposite each other on the earth due to the relation of gravity and mass of the two direct points.
- During the winter months, the Earth is higher away from the Sun so we have longer days.
- During a lunar eclipse the sun is completely covered by the moon and during a lunar eclipse the moon just passes through the earth's shadow.

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2003 MASON DIXON STAR PARTY

Upcoming Star Party

The York County Astronomical Society will be presenting the 14th annual Mason Dixon Star Party at a new location at Codorus State Park* near Hanover, PA on May 30, 31, and June 1, 2003. This large gathering of amateur astronomers will have speakers, vendors, swap tables, door and raffle prizes, photography contest, telescope contest and a 24-hour food caterer, May's Munchables of Hanover, PA.

*The new location is about 20 miles west of our old location. We will have flush toilets, access to showers, as well as access to all the facilities of this wonderful state park (additional park fees for the swimming pool, adjacent to the viewing field).

Admission rates (which includes camping) for the 2003 party is as follows:



Price Before May 15 / After May 15

Adults \$20.00 / \$25.00
 Age 12-16 \$6.00 / \$ 8.00
 Family Rate \$40.00 / \$45.00
 Student Rate \$10.00 / \$15.00
 Day Rate N/A / \$15.00
 Under age 12 Free

Mystery Object?

Hardly. But a very decent photo of M42, the Great Orion Nebula, captured December 1, 2002 by RVAS member Matt Maness. It's a 2 minute CCD exposure through his 10" Meade LXDS55. Image was touched up in Photoshop.



STRANGEST THINGS, CONTINUED

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- During lunar eclipses, the moon travels around the sun preventing light to the earth. During solar eclipses, the earth travels around the moon.
- The earth's surface is closer to the moon

For more information, updated speaker and activity schedule, maps and registration forms, go to the web site at <http://masondixonstarparty.org>.
 E-mail info@masondixonstarparty.org

Club voice mail 717-578-9109

We hope to see you there!

Phil De Rosa, Chairman

than it is to the center of the earth.

- The star starts out by being formed by gravity pushing being pushed back.
- Clouds of gas and particles float throughout the atmosphere. As these processes continue the stars gain luminosity, size, distance, and energy.
- Helium has no insulation, so therefore it radiates off the star and causes it to swell.
- It will be several millenia before there are any significant changes in the Sun.
- A main sequence star transforms into a Red Giant - the Red Giant is very hot. The Red Giant goes to the envelope magnitude and after gradual cooling, the end process is a

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Astro-Quiz

Though we tend to do so, it's not true to think of the plane of earth's orbit as the plane of the solar system. Why?

Answer to Last Month's Astro-Quiz: The *ecliptic* and the *celestial equator* intersect at the vernal equinox, the "0 point" for both. *Ecliptic longitude* is measured westward along the ecliptic through 360 equal degrees from and back to the vernal equinox, while equatorial *right ascension* is measured westward along the equator through 24 equal hours. At "opposition," a planet lies at one end of a line passing through earth, with the Sun at the other end; i.e. the planet lies halfway around the sky from the Sun, as seen from earth. At its "opposition" on February 1st, Jupiter was near 9 hours right ascension and also near 135 degrees ecliptic longitude. So, the Sun's position was 12 hours of right ascension and 180 degrees of ecliptic longitude westward, or at 21 hours right ascension and 315 degrees ecliptic longitude.

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>

March Meeting Program

The RVAS welcomes Dr. Frank Munley of Roanoke College as a special speaker in March. Dr. Munley will speak on "The Inflationary Big Bang." His talk will focus on the prediction of the big bang in the late 1940s, discoveries which led to its acceptance, problems with the "standard" big bang theory, and the inflationary "fix" for the problems. He will also talk about recent discoveries regarding fine details of the cosmic background radiation and how these details affect the inflationary theory. There will be time for questions and discussion following his talk.

Last Month's Mystery Object



NGC 2017

The mystery object for February is NGC 2017 in Lepus. It is a multiple star system at R.A. 5h39.3m, Dec. -17° 51'.

The system contains four stars, a 6th magnitude double and three 8th magnitude stars around the brighter member.

The system was misclassified as an open cluster because of fainter stars in the field of view.

The brighter star of the system is a subarc-second double that needs a higher magnification to separate.

Clear Skies,

A New Standard In Deep Sky Reference Books: "The Night Sky Observer's Guide" by George Kepple and Glen Sanner

For many years the book everyone consulted when they wanted to know anything about a deep sky object was Robert Burnham's "Celestial Handbook." This three volume set contained a wealth of information about an extensive collection of double stars, clusters, nebulae and galaxies. It was so detailed in fact, that many professional astronomers kept a copy on their shelves. A major fault was that it did not provide a description of the appearance of the desired object as viewed through an amateur's telescope. This is where the "The Night Sky Observer's Guide" steps in with its numerous descriptions, drawings, detailed charts, and representative photographs.

When Burnham's was published in 1966, large amateur scopes were considered to be in the 10-12 inch range. Today's scopes, because of the advent of the Dobsonian design, can reach into the upper teens or low twenties. That's not a forecast for winter weather, either! Thousands of deep sky objects that were out of reach 20 years ago, are targets for well equipped enthusiasts. There wasn't a reference these amateurs could turn to for their newer and fainter quarries--until now.

While it does not contain as much astrophysical information as Burnham's and hardly any historical data, "The Night Sky Observer's Guide" does begin with a short, but informative, astronomy survey on stars and deep sky objects. Observing techniques are not left out. Chapter 1 is entitled "Observation of Deep Sky Objects." Its topics are dark adaptation, visual telescopic descriptions, record keeping, drawing and sketching and, of course, telescopes.

Some Familiar and Unfamiliar Catalogues

In this work, items from 38 deep sky catalogues are represented. We have all heard of the Messier List and the huge NGC compilation but have you sought objects in the Berkeley, Cederblad, Dolidze, Markarian, Perek & Kohoutek, Trumpler, or Uppsala catalogues? Within its 700 plus pages are 827 drawings, or rather eyepiece impressions, of hundreds of clusters, nebulae and galaxies. That is the real strength of "The Night Sky Observers Guide." Need an idea of what an object plotted in Sky Atlas 2000 or Uranometria looks like? Descriptions are included of over 3400 deep sky objects visible through 8-20 inch telescopes. Consider the elusive galaxy Messier 74 (which was discussed in two previous review articles). Below is its thorough description as viewed through instruments in 3 aperture ranges.

NGC 628 --Messier 74

8/10" Scopes-100x: Messier 74 is a fairly faint, large, circular object. Its broad, well-condensed core is surrounded by a mottled, uneven 8' diameter halo. Foreground field stars are numerous just east and west of the galaxy.

12/14" Scopes-125x: This bright galaxy is large, irregularly round, and has a large, bright core. 175x reveals a stellar nucleus in a granular core upon which several stars are superimposed. Faint spiral arms wind out from the core counterclockwise into the halo.

16/18" Scopes-150x: In larger instruments, the 10' diameter halo is irregular with many bright knots and dark spaces visible between the two counterclockwise spiral arms. The southern arm curves further from the core than the northern arm, which uncurls eastward from the NW edge of the core. The core is bright, about 2.5' across, and has several bright knots and several foreground stars embedded in it. The halo reaches east and west just be-

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NASA's Space Place

Seven Strangers? *by Dr. Tony Phillips, NASA*



At the dawn of the space age some 40 years ago, we always knew who was orbiting Earth or flying to the Moon. Neil Armstrong, Yuri Gagarin, John Glenn. They were household names--everywhere.

Lately it's different. Space flight has become more routine. Another flight of the shuttle. Another visit to the space station. Who's onboard this time? Unless you're a NASA employee or a serious space enthusiast, you might not know.

Dave Brown, Rick Husband, Laurel Clark, Kalpana Chawla, Michael Anderson, William McCool, and Ilan Ramon.

Now we know. Those are the names of the seven astronauts who were tragically lost on Saturday, Feb. 1st, when the space shuttle Columbia (STS-107) broke apart over Texas.

Before the accident, perhaps, they were strangers to you. But if that's

so, why did you have a knot in your gut when you heard the news? What were those tears all about? Why do you feel so deep-down sad for seven strangers?

Astronauts have an unaccountable hold on us. They are explorers. Curious, humorous, serious, daring, careful. Where they go, they go in peace. Every kid wants to be one. Astronauts are the essence of humanity.

They are not strangers. They are us.

While still in orbit Dave Brown asked, jokingly, "do we really have to come back?"

No. But we wish you had.

Please see the NASA Home Page (<http://www.nasa.gov>) for more information on the Columbia Investigation.

Ed. Note: The Space Place is a new column for the RVAS newsletter. Tailored for our youngest RVAS members, the Space Place column will appear periodically in the newsletter. It is produced by NASA's Jet Propulsion Laboratory and courtesy of Nancy J. Leon of JPL.

BOOK REVIEW, CONTINUED

(Continued from page 3)

yond two rows of 12th and 13 magnitude stars.

One certainly comes away with a mental image of this galaxy and what to expect when peering through the eyepiece. Keep in mind that these descriptions were taken on nights of good seeing: your results may vary!

With items from 14 double star and variable star catalogues included, amateurs will find over 2100 entries to "split" and 433 variables for light curve study. These are Burnham's, Draper's, and the Struves' favorite stars. We have all heard of the "double-double" in Lyra, but have you seen Lyra's "other double-double," Struve 2470/2474? Kepple and Saner will lead you right to it. If you're curious about variable stars, why not give the famous RR Lyrae a closer look? Its period is only 13 hours and, therefore, noticeably changes brightness in just a few hours. Perfect for a mid-summer night's study.

"The Night Sky Observer's Guide" comprises 2 thick volumes. Each book consists of chapters representing the constellations. Interesting objects are listed in order of their right ascension within each constellation. Volume 1 contains items in the Autumn and Winter skies and volume 2 contains those in the Spring and Summer constellations. All of this material does not come cheap as each volume runs about \$35. But if you want deep sky information from an amateur's viewpoint in book form that is easy to use, "The Night Sky Observer's Guide" is for you. This has the potential of becoming a classic amateur reference. Anyone up for examining the greenish planetary nebula PK194+2.1?

"The Night Sky Observer's Guide," Kepple, George Robert and Sanner, Glen W., Willman-Bell, Inc., 1998, 2 vol., 736 pages.

John Jardine Goss

Philpott Lake seeks amateur summer astronomy educator

I recently went down and spoke with Jim Shauger at Scopes and Stuff about coming out to Philpott to do a program for us. Alas - Smith Mountain State Park has him hand-cuffed to their visitor center and sworn to celestial secrecy (I used to be a State Park Interpreter - I know how they operate :). He gave me the name of your club.

I am a Park Ranger at Philpott Lake and am seeking someone who might be able to help teach me some basics about naked eye sky interpretation that I can share with our campers this summer. (Of course I would really love a member that lived nearby who would be willing to come out and share their expertise in a program - but hey I know I'm a dreamer. Summer sky watchers have to be night owls - and most people like to go to bed instead

of creeping thru the woods with the owls and restless campers...) So... I would just be delighted with someone that would guide me through the development of an exciting program for a novice to be given to a bunch of beginners.

I know very little about astronomy - although I just dug into my pocket and hit EBAY for a few resources in crash course self learning which will begin arriving USPS any day now. I don't expect to be an "expert". Most campers won't need to know how to read planispheres or know all there is to know about "M objects", or parsec. But my question is - just what is a good "basic 45 minute beginner program" supposed to be about??? And how does one go about delivering that information to a group of people in a way that is understandable. How to you orient people to look at specific areas in the sky without equipment (Green pen's a bit expensive...) - and how can you make it stimulating enough to create a desire in them to want to learn more when they leave? And by Zeus, what on Earth do you do if it is cloudy on the eve of your event? (Gemini crickets, all the other planets appear to have mythical names - who was earth named after???)

Can you think of anyone that might be suited for such a task? Thanks.

*Susan Vary Traxel, Park Ranger
U.S. Army Corps of Engineers
Philpott Lake Visitor Assistance Center
1058 Philpott Dam Road
Bassett, VA 24055*

STRANGEST THINGS, CONTINUED

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- white dwarf. A white dwarf generates no energy inside its core. This whole process can take months and sometimes years.
- Mesopotamia was an area in the valley of Euphrates and Tigris river, now the region of Iraq. Much of the celestial bodies and their ways came from the people of this area. The summarians, a pre-semantic population, occupied this ancient area of land.
- These smaller planets are said to be fragments produced by collisions and some of the larger ones were named by the collisions.
- Some 200 years ago, X-ray astronomy was used to obtain temperatures of the atmosphere at many different altitudes.
- Most impacts on the Earth's surface are impact craters.
- Asteroids are minor planets that orbit the sun like a planet in the area of the solar system called the asteroid belt.
- A comet is an object that orbits the sun in the shape of an ellipse.
- This era has experienced a new aspect of science termed Radio Astronomy, "a vile new science which stemmed from radio engineering but finally became established as a powerful complementary ally to the most ancient of the sciences".
- The incredible fascination with the Milky Way has become so great that poets have even written poems about it.
- Most of this reasoning lies in the fact that the Milky Way is not alone. It is part of the magnificent Milky Way Galaxy which is still being studied today.
- People all around the world are fascinated with the thought that there may be extraterrestrial life on Mars.

Society Calendar of Events and Activities for March 2003

MARCH MEETING: Monday, March 17th, 7:30 p.m., fifth floor meeting room, Center in the Square, Roanoke. Tonight's meeting will feature a program by Dr. Frank Munley of Roanoke College entitled "The Inflationary Big Bang." Join us!

"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, 21st and 22nd.** Sunset is at 6:33 p.m. Astronomical twilight ends at 8:01 p.m. The Moon rises at 10:43 p.m. and 11:56 p.m., respectively.
- **Friday and Saturday, 28th and 29th.** Sunset is at 6:40 p.m. Astronomical twilight ends at 8:08 p.m. The Moon sets at 2:44 and 3:46 p.m., respectively.
- **April Sessions:** 19th (Saturday only); and 25th and 26th.

FRANKLIN CO. PARKS DEPT./RVAS PUBLIC STARGAZE: Saturday, March 8th, 6:45 p.m., Franklin Co. Recreational Park. Free sessions for Franklin Co. residents. RVAS members are welcome to participate and should call the Message Line at 540-774-5651 to request details. (Next session: May 31st, 9:15 p.m.)

ROANOKE CITY PARKS DEPT./RVAS PUBLIC STARGAZE: Saturday, March 22nd, 7:15 p.m., Cahas Overlook, milepost 139, Blue Ridge Parkway. Free. Call 540-853-2236 to register. (Next month: April 26th, 9:00 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
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ADDRESS CORRECTION REQUESTED