ROANOKE VALLEY ASTRONOMICAL SOCIETY

NEWS ABOUT AMATEUR ASTRONOMY
IN SOUTHWESTERN VIRGINIA

http://www.roavas.org

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A TALE OF METEORS

Leonid Observing: Monday-Tuesday, Nov. 18-19, 2002

RVAS members at Cahas Mountain Overlook, just before dawn on Tuesday, November 19, 2002. Photo by Mark Shepard

Quiet. Nothing is as quiet as sitting on top of a dark mountain. All that can be heard is the occasional breeze. With a full moon up, everything turns to a strange gray/silver color. Shadows are dark gray, not black. It's cold. Crisp cold. Like biting into a freshly picked apple. The lack of wind helps ease that somewhat, but as a

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A NOTE OF THANKS

Dave and I would like to thank the RVAS for their kindness and generosity in giving us so many nice baby items for Jessica and for recognizing us at the November meeting. This meant a lot to us. And a special thank you to Carol Mesimer for spearheading the effort.

Laura Reese

Ed. Note: A very proud editor/father hopes our youngest member will be present and in good behavior for many upcoming club meetings and activities!

DECEMBER MEETING PROGRAM

The December meeting will feature our annual Christmas social, so please bring goodies to share. The club will furnish the drinks, ice, cups, plates, plasticware, and napkins.

The topic of the evening is yet to be finalized as of this writing however, we will most likely be reflecting on the highlights of 2002 plus reviewing upcoming 2003 astronomical events and activities.

Bring a friend and share our love for the universe!

RVAS NOVEMBER MEETING: SOMETHING FOR EVERYONE

Pegasus, Partiview, Plus Possible Populated Planets Pleases Participants

On the night of Monday, November 18 with the Leonids just hours away, astronomy was certainly on many minds. So many, that the monthly meeting of the RVAS had nearly 40 people attending. We were all wondering, "Exactly how many chairs can the lecture room hold?" We almost found out!

The mythology and sky location of Pegasus and its Great Square was discussed by Jack Horkheimer in his Stargazer episode, "Big Barbecue in the Sky." Every November between 9 and 10 p.m., Pegasus is ideally situated high in the sky. Why was this configuration of a winged horse important to the ancients? Many ships had as their figurehead a horse's head and fore quarters. In fact, Pegasus means "bridled horse." This grouping of stars was also recognized by Hindus, who saw it as a bed mat, and Guiana Indians who saw it as a sort of giant celestial barbecue.

Amateurs in the Roanoke area haven't complained (much) about all the rain bearing clouds that have been overhead much of October and November. However, the clear skies of Friday November 8 gave a great observing opportunity. Therefore, RVAS members including Mark Hodges, Frank Baratta, Donnie Grisso, Paul Caffrey, Roger Poe and Isaac Campbell met on the Blue Ridge Parkway seeking stunning sundry celestial sights. As Isaac said, "Carpe Noctem."

A mini-program was offered by David Reese highlighting an amazing free software program called "Partiview". Dave gave the RVAS crowd a 3-D tour of our solar neighborhood and a 3000 light year round trip journey to Alnilam, one of Orion's belt stars. How about a quick jaunt to Alpha Centauri? No problem with this incredible program. For the curious, visit the Hayden Planetarium's web site, www.haydenplanetarium.org, for instructions on download-

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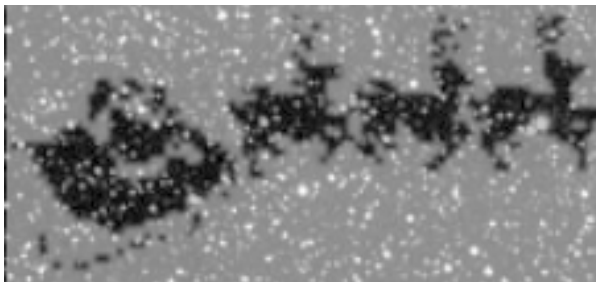
Mystery Object

Can you identify the below object?

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



Astro-Quiz

Most amateur astronomers have read about the variety of time units used for various purposes, such as Universal Time, apparent solar time, civil time and so on. But what is "French Revolution Time"?

Answer to Last Month's Astro-Quiz: Each month our newsletter calendar of events lists the monthly club observing sessions, including the time that astronomical twilight ends. Astronomical twilight is defined as the interval between day and night, and the level of natural illumination, that occurs when the center of the refracted Sun is between 12 and 18 degrees below the western horizon. This definition harkens back to none other than Claudius Ptolemaeus (Ptolemy), who, around 140 A.D., produced tables of the solar rising, setting and twilights times. The ending time of astronomical twilight is when full darkness is presumed to have been reached.

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

RVAS NOVEMBER MEETING, CONTINUED

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ing this software. Simply astonishing!

Other Worlds Than Ours

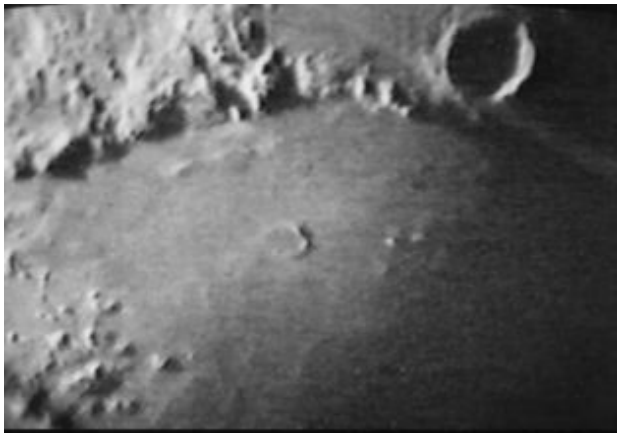
The closely connected subjects of the search for extra-solar planets and extraterrestrial life were discussed by Clark Thomas in the evening's feature presentation, "Exoplanets and Exolife." Clark's talk covered the extra-solar planet detection methods of radial velocity, planetary transits, astrometry, and optical means. The 2007 launch of the 1.4 meter Kepler Telescope will vastly enhance astronomers ability to detect earth sized planets transiting their parent stars. In the next 20 years, the Space Interferometry Telescope will enable researchers to, not only find exo-planets, but measure planetary atmospheres for methane and ozone which are two indicators of life.

While the search for an earthlike planet still has a ways to go, many large planets have been found. All are thought to be gas giant variations on Jupiter. The more astronomers look, they more they find. Gamma Cephei demonstrates that planets can exist in a double star system. Iota Draconis shows that planets can orbit old giant stars. The next few years ought to bring some big discoveries!

Clark continued his enthusiastic and fast paced talk by discussing the possibility of life on other worlds. He mentioned a thought provoking theory: Life in Dark Solar Systems. As found from earth's extremophile bacteria, life doesn't necessarily require a hot parent sun. Since many planets are thought to generate and retain their own heat, they could be hospitable for life.

We have all heard of the Drake Equation. But how many truly understand its implications? Clark showed that by "tweaking" some of its values, large differences in the final outcome could be obtained. The value for the last parameter, the lifetime of the communicative civilization, is very speculative to say the least. Human civilization in the 20th and 21st centuries has created scenarios illustrating how short that could be. Of the 250,000 stars that lie within 250 light years of us, how many have life? If some do, are they interested in us? The late Carl Sagan once said, "Advanced civilizations, if they exist, aren't breaking their backs to save us before we destroy ourselves." Stay tuned.

Last Month's Mystery Object



Luna, Mare Ibrium region

The November mystery object is a lot closer to earth than most—about one and one half light seconds. In miles this is about 240,000 or around 384,000 km.

That's right—it's the moon, Luna, the big light in the night sky: Well, actually a small part of it anyway.

The part in the photo is actually four: The Apennine Mountains, the Mare Ibrium, the crater Eratosthenes, and the crater Wallace.

Dave Thomas

The club thanks Clark Thomas for the publicity he recently brought to the RVAS in an 11/19/02 Roanoke Times article to which he contributed. See http://www.roanoke.com/roatimes/news/story139889.html

Cahas Observing November 8, 2002

I showed up at exactly 7:30 p.m.; Mark Hodges was already there. The sky was completely clouded over when I arrived and I was tempted to leave; Mark talked me out of it. Frank Baratta and Donnie Grisso showed up about 8:15. We talked for a while as the skies gradually cleared up and by 9:15 the skies were completely clear. We set up our instruments; I had the Coulter 13.1", Mark had the C11 GPS and Frank had his 15".

Isaac Campbell showed up a bit later with his brand spanking new Discovery 15. The Discovery 15 proved worth the wait and we got some spectacular views of the Great Nebula in Orion. The Discovery has some very nice features for a scope in its class including large collimating wing nuts, a balancing system and a very impressive mirror cell. It was an absolute dream to collimate.

Roger Poe turned up around 10:00 with his Orion 10".

Mark Hodges showed off his new Paul Rini 65mm. The Rini showed the complete Pleadies with the 13.1". In Marks C11 the Rini 65 showed pinpoint start all the way to the edge of the field of view. After that everybody wanted to borrow the Rini, I still think it likes my Coulter the best! what do you think Mark?

Roger then took out his Nagler 20mm and showed us some breathtaking views of M42 detail with the C11. As with the Rini, the Nagler made its rounds.

It was a bit cold maybe 50 and there was quite a breeze but everybody seemed equipped for the elements. The seeing was about 3/5 with the transparency close to 5/5.

Frank and Donnie packed up around midnight. The rest of us packed up around 2:00am and all minus Roger headed to the IHOP for a early morning snack.

Paul Caffrey

breeze comes up, you're glad you have fleece and wool.

OK OK....It was cold, dark and I was ALONE!! Where the heck WAS everyone? I got to Cahas Overlook at 10pm, going directly there from the meeting Monday night. I figured we'd have at least a few hardy folks show up from town. Not a soul. I had cut my headlights off approaching the overlook, so as not to ruin anyone's night vision. The cows didn't care. About 15 min later, one single truck passed the overlook headed south. At 11:22, another truck passing going north. Talk about ALONE!! I'm a country gal, but that was bizarre.

Clouds had been sporadic, but I could easily see stars thru them. Clouds were lying down along the eastern horizon. It was clear from Orion on west at that time. Clear as a bell overhead, and not a meteor in sight.

12:08am - What do you do when clouds roll in? You get really bored and start thinking of other things you could be doing right then. Like being WARM. Instead, I held out for some others to show up, and counted the points of light I could see from there. Facing east, I counted 178 different points or clusters of lights. Bummer. We're losing that view.

12:15am - Another vehicle headed south. Geeeeeze..Where is everyone??

12:30am - Ok..I'm pretty hardy, but cold is cold. You all missed the show. I managed to wiggle into warmer clothes while sitting in the driver's seat of my van. (Gotta be ready for the quick getaway in case some wierdo shows up.) The clouds had broken up and I still wanted to see some meteors. Not willing to get out of the van alone up there though.

12:38am - Yahooooooo!! I see streaks of light! There really ARE meteors up there. About that time Frank Baratta showed up. Gosh, sure was good to see ya Frank! Meteors sporadically passing over now. Just me and Frank until 1:20am.

1:20am - Isaac Campbell showed up. He said he saw a meteor while driving up the parkway. Glad to hear I'm not alone in watching the sky and the road at the same time. By 1:45, we had seen perhaps 20-25 meteors, but the frequency was increasing slowly.

2:30am - Still just the three of us, but the skies are clear and a light breeze is blowing. The sleeping bags we all brought are very welcome warmth. Isaac has the trick of the night. Go crawl up onto your car hood and use that warmth from the engine to help keep you alive.

2:45am - Paul Caffrey showed up. He had been reading and planned to just go to bed, but looked out and it was clear, so came on up. By 3am, we all were feeling the cold, except for Frank. Frank had a sleeping bag, 35 lbs (at least) of clothes, and said...."You know, I've been warm and I've been cold. Warm is better!" A few minutes later Frank said, "You know, I'm almost TOO warm." We all offered to take some of that heavy equipment he had, like parkas, gloves and sleeping bags. He decided he wasn't that warm.

Leonid Photo by Matt Maness

A very few folks from town came and went. Perhaps 4 cars all night.

By 4am, clouds had rolled in from the west. Viewing took a dramatic dive. Keeping warm had become a thing to consider. As long as the meteors were flashing past, nobody minded the cold. But clouds sure put a damper on things. At 4:30, Mark Shepard showed up, so we at least had someone new to harass.

4:45am - Isaac Campbell summed up viewing conditions for us all, "This sucks!" The breaks we had in the clouds to the east gave us a new game to play. What is that coming up over Cahas Mtn? Is it Mars? Arcturus? Guess the mystery sky object. By 5am, we were once again trying to decide if it was Venus or an airplane. We do this every year. It's still fun. Paul put a rest to our guesses by pulling out a stronger eyepiece and letting us all take a peek. Yup, it's Venus!
Q: How many amateur astronomers does it take to know Venus rising when we see it?
A: More than this club has!

5:45am - Clouds had cleared out and viewing had once again become wonderful. We had all found a horizontal place to view from, and were having a great time. Isaac was the only one counting meteors, and at 5:45 he counted 90/5 min. According to Isaac, "This no longer sucks." The sun coming up that morning was spectacular. It reminded me of the sunrises in Arizona. Lovely shades of deep red, orange and gold. The clouds were highlighted with pinks and gold.

The only thing that put a damper on the evening for me was the full moon. I did manage to keep it to my back most of the night, or behind the van. Compared to last year, it was less crowded by a WIDE margin, there were fewer visible meteors, and my toes were cold.

I had a GREAT time, wish you were there!

Carol Mesimer

BOOK REVIEW

Observing Handbook and Catalogue of Deep-Sky Objects

Christian B. Luginbuhl and Brian A. Skiff

A comprehensive handbook describing observing techniques and the telescope-observer relationship has in finding deep sky objects is sorely lacking among the titles available to the amateur astronomer. What is needed is a book that explains how to get the most out of the telescope and its accessories, how to get the most out the time spent behind the eyepiece, and what methods are needed to view elusive and obscure objects. In short, "how to observe better than you've ever observed before." That book has not yet been written. For a detailed star atlas there is Uranometria, for an exhaustive listing of deep sky objects there is Burnham's Celestial Handbook, but for advanced observing techniques there is an empty place on the shelf.

Authors Christian Luginbuhl and Brian Skiff have taken a step in filling that spot with their book "Observing Handbook and Catalogue of Deep-Sky Objects." As can be deduced from the title, this work is divided into two sections: an observing and equipment tutorial followed by a compendium of detailed descriptions of over 2000 clusters, nebulae and galaxies as seen through various apertures.

Techniques that work

This book is clearly not meant for the novice. There is no discussion of constellations and no astrophysical explanations of deep sky objects. However, there is a good deal of information regarding effective observing procedures: proper dark adaptation, averted vision, peripheral vision with a moving stimulus, oxygenation, and blockage of stray light. This is definitely the strong point of the book: the connection the eye has with the telescope.

Equipment that is needed

Eyepieces are discussed, albeit too briefly. Much more information needs to be presented about common eyepiece designs and their suitability in various situations. What magnification is best and why? What about field of view, exit pupil and eye relief? These topics were barely touched upon.

The authors recommend using at least a 20x60 finderscope with interchangeable 1.25″ eyepieces to help in spotting objects. This is a big step up from most commercial finders. It needs to be remembered that while a finder may be the piece of equipment used, it is star hopping that locates the object of choice. With this method, large aperture-high magnification finders are not necessary. This certainly is at odds with their finderscope recommendations. Star hopping is covered inadequately which is disappointing since enjoyment at the eyepiece depends on easily finding the desired targets.

Note taking is essential for good observing. Luginbuhl and Skiff thoroughly cover basic details such as date, time, seeing, transparency, magnification and aperture. They also give pointers on what to include when describing an object. Is it resolvable? What is its relative brightness, apparent size, shape and orientation? A short bit on drawing deep sky objects would have been a great conclusion to this section.

The Catalogue

The catalogue portion of the book describes the appearance of a great many deep sky objects as viewed through 6 cm, 25 cm, and 30 cm telescopes. This work pales in comparison with Kepple and Sanner's massive two volume set, "The Night Sky Observer's Guide." But then again, it is less costly--$38 vs. $70.

Just about every object that comes to mind is contained within OH&CDSO's 352 pages, from the little observed NGC 0001 to the brighter globular clusters of the Fornax dwarf galaxy, and from the Veil Nebula to the mysterious Cederblad 62. Included with the object's magnitude, angular size and surface brightness is important information such as apparent size, relative brightness, star count, and resolvability. While reading the descriptions, realize that they are written by an experienced observer under nearly ideal conditions. The write up of M74, a large galaxy in Pisces with a relatively low surface brightness, gives a good illustration of what's in store for the curious reader:

NGC 628 dimen. 10 ′ x 9.6′ V=9.2 sfc.br. 14.0
Messier 74 is visible in 60 mm as a circular weakly condensed patch about 5′ diameter. 25 cm (10 inch) shows the halo to about 8′ diameter, slightly elongated E-W. The 1′ diameter core seems off-center and has a granular texture. Nine or ten stars lie about the periphery, mostly to the W. With 30 cm (12 inch) the irregular halo is unevenly bright with many stellarings and knots appearing almost unconnected by the faint background haze. The core is very broadly condensed, about 2.5′ across, and has at least two faint stars superposed on it. A particularly bright knot is visible in the center of a string of three stars 3.5′ E of center. Another fainter knot is visible between this string and the nucleus.

A complete book on effective observing should include detailed, easily understood explanations of eyepiece selection, observing techniques, star hopping, high contrast filters, and record keeping. In this work, most of these topics need to be covered more thoroughly. Hence, this is not the standard that all other observing books are to be judged, just a step in the right direction.

Is this "handbook" worthy of a spot on the deep sky enthusiast's shelf? All in all, yes. However, a place should be left for the yet unwritten defining book. Just in time for Christmas, if you or some astronomer you know has been extra good, half.com has it for $19.49! Not bad.

John Goss

Society Calendar of Events and Activities for December 2002

DECEMBER MEETING: Monday, December 16th, 7:30 p.m., fifth floor meeting room, Center in the Square, Roanoke. Tonight is the RVAS annual winter social, an evening of food, friends and fun. Bring a snack to share and join us for an informal gathering where you never know what will happen!

"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, 6th and 7th.** Sunset is at 5:02 p.m. Astronomical twilight ends at 6:35 p.m. The Moon sets at 7:21 and 8:26 p.m., respectively.

- **Friday and Saturday, 27th and 28th.** Sunset is at 5:10 p.m. Astronomical twilight ends at 6:44 p.m. The Moon rises at 1:40 and 2:51 a. m., respectively.

- **January Sessions:** 3rd and 4th; and 24th and 25th; and 31st and (Feb.) 1st.

FRANKLIN CO. PARKS DEPT./RVAS PUBLIC STARGAZE: There is no session in December and the 2003 sessions have not yet been scheduled.

ROANOKE CITY PARKS DEPT./RVAS PUBLIC STARGAZE: Saturday, December 14th, 7:30 p.m., Fallon Park, Dale Avenue (Rt 24), Roanoke. Free. Call 540-853-2236 to register. (Next month: January 11th, 6:30 p.m., Fallon Park.)

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
8229 HUNTERS LANE
ROANOKE, VIRGINIA 24019-6810

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