Roanoke Valley Astronomical Society

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View From the Sun

By John J. Goss,

As our solar system is approached from the depths of interstellar space, the body that dominates the view is the sun. All planets, asteroids, and comets are dwarfed in every respect and are all but invisible. The sun is the solar system.

What about Jupiter? When discussing the sun and its locale, some astronomers include that giant planet. Why? In about every planetary statistic, Jupiter reigns king. It contains more mass than the rest of the planets combined. It creates the largest gravitational well and influences the orbits of all bodies in the outer solar system. Its magnetic and radiation fields are second to none. Last, but not least, it is big. Does it merit the all the attention? Perhaps observing it from a much different location than Roanoke will provide an answer.

How does the solar system appear as viewed from the sun? No planet exhibits phases. No planet has an opposition or conjunction, just perihelion and aphelion. None of their apparent angular diameters vary greatly. Cometary tails are partially obstructed by the comet's head.

What planet is the brightest in the solar sky and what planet shows the largest angular size? In other words, what planet dominates? The nearby Mercury or perhaps some other?

The chart, as viewed from the Sun, gives all the answers. Mercury is not the most prominent object in the solar sky. It is not the brightest as that honor is awarded to Venus. Mercury may be the closest but it is also one of the smallest. Jupiter, as was mentioned above, is big. So big in fact, that its size overpowers

	From the Earth		From the Sun		
	Maximum Angular Size (sec.)	Maximum Magnitude	Angular Size (sec.)	Magnitude	Angular Distance (min.)
Mercury	12	-1.9	17	-4.4	
Venus	58	-4.4	23	-5.5	
Earth	---	---	18	-4.4	
Moon	1800	-12	5	0.9	
Earth - Moon separation					9
Mars	25	-2.5	6	0.1	
Jupiter	47	-2.5	38	-2.0	
Jupter - Callisto separation					8
Saturn	21	-0.4	18	-0.7	
Saturn Ring	49		41		
Saturn - Titan separation					3
Uranus	4	5.7	4	5.8	
Neptune	2	7.8	2	7.9	

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What is the Value of Our Hobby?

By Clark M. Thomas

When we disappear into the dark to look at things invisible to the naked eye, it is not surprising that others might take us to be eccentric. That opinion is more benign than how the Church viewed Galileo after he reported what he saw! It's also a lot less serious than visions in the sky that guided shamans and early astrologers. We are blessed with merely being seen as eccentric, and maybe a little nerdy.

Boys need their toys; and the only difference between a boy and a man is the cost of his toys. But there is more: It is said that play is the work of children. Why shouldn't some play also be part of the work of an adult? Since when did our entire adult lives become set in stone?

We live in a society that values speed and productivity. Our hobby provides a Zen corrective to excesses of modern civilization. Paradoxically, we use some of the finest technical creations of our era to escape from our era.

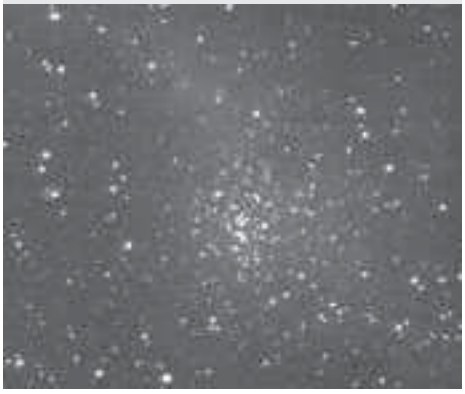
An unintended aspect of modern life is alienation. We are all to some degree alienated from our evolutionary origins, from Nature. Stepping outside to view the dark skies filled with wondrous light sources is a direct and primal way for us to reconnect with our true nature as citizens of the entire universe. We are in essence much more than our Social Security numbers. So, what indeed is the value of our hobby?

Mystery Object

Be a HUNTER and look for this NGC cluster at the top of a LOOP.

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

thomasde-ka8inl
@worldnet.att.net



Astro-Quiz

Female astronomers were long denied use of the great telescopes at Palomar Mountain. What reason was given for doing so?

Answer to Last Month's Astro-Quiz: During the period from Full to New, the Moon is "waning." Last Quarter occurs roughly in the middle of this period, with the Moon rising around midnight. The Moon never strays more than 5 degrees from the ecliptic, the apparent path of the Sun across the sky. The Vernal Equinox is the point in the sky where the ecliptic crosses the celestial equator, the projection of Earth's equator onto the sky. At present, the Vernal Equinox is located in the constellation Pisces, just south of the eastern side of Pegasus. This area of the sky rises around midnight in the summer months. So, the waning Moon will be near the Vernal Equinox during the summer.

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: 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); John Goss, Past President (966-4606); Clark M. Thomas, Newsletter Editor (427-1873, clarkt7@cox.net). Dave Thomas, Mystery Object Columnist (thomasde-ka8inl@worldnet.att.net).

The Local Group...

By Genevieve Goss

Spring is just around the corner! If milder temperatures lure you outside to observe, perhaps you need some guidance on where to start. For the beginner, why not try the Astronomical League's **Universe Sampler**? As a member of RVAS, you are automatically a member of the Astronomical League and are, therefore, eligible to submit your observations to the AL for recognition upon completion of observing lists. You will then receive a certificate and a pin and, more importantly, the satisfaction and knowledge that accompany this challenge.

The great attraction of the Universe Sampler is that you don't even need a telescope to complete it... an ideal way to see how much you enjoy the hobby of astronomy before shelling out the cash for a telescope! However, if you do have a 'scope or binoculars, you can use them to complete the **Object II list**. You'll learn the names of the brightest stars and the constellations in which they are found, study the moon and some of the planets that share our solar system, and greet a comet as it leaves the outer reaches of the solar system to visit our celestial neighborhood. You will also become acquainted with double stars, variable stars, star clusters, nebulae and galaxies. As an alternative beginning program, the **Lunar Club** provides a comprehensive look at the Moon and its mountains, maria, craters, and rills. As a target for the new telescope user, the Moon is impossible to miss!

If you are not new to amateur astronomy, but have never formally completed an observing club, now is the time to begin! The **Binocular Messier and the standard Messier clubs** offer the challenge of retracing Charles Messier's 18th-century observations with modern equipment. An important advantage of the **Double Star Club** is that most of its targets are of a sufficient brightness that observations can occur in moonlit skies, thus increasing the number of observing opportunities. Locating double stars will fine-tune your knowledge of constellations and boost your observing confidence.

Notice: The March RVAS meeting will be your chance to learn more about the club's participation in the **Night Sky Network** and to sign up as a volunteer.

Last Month's Mystery Object

The mystery object for the month of February was NGC1788 in Orion. It is located at R.A. 5h06.9m, Dec. -3 deg 21' - and covers a 5' by 3' patch of sky.

NGC1788 is a reflection nebula, and it is bright in a 10 inch scope. It is diffuse and lighted by a hidden star cluster. Check it out soon!

Odds and Ends

* **Mike Overacker** now has three astronomy web sites:
  — *http://www.darkskyphotos.com* for astrophotography
  — *http://www.lx200classic.com* for Meade LX200 classics
  — *http://www.meadelxd55.com* for Meade LXD55 owners

* Get out your binoculars! It's a great time to see **comet C/2002 T7**. It's about sixth magnitude, and about twelve degrees west of Venus, at the 4 o'clock position. It is very close to the 2.8 mag. star, Algenib, about 2 - 3 degrees at the 7 o'clock position. In the spring it will be a morning comet, and possibly approaching first magnitude!

* Make your plans to attend this year's ***Tri*Star* 2004** in North Carolina, on Saturday, March 6th. Several club members attended last year (including your editor), and we all had a great time. Go to this web site for complete details: *http://technet.gtcc.cc.nc.us/comserv/cline/tristar.htm*

Master the Messiers With Your Eyes AND Your Go-To Technology

By Mike Overacker

The field of astronomy is full of varied opinions and theories. Everyone has their own take on the heavens. Some are vigorously debated, some languish in the "who cares" files. Bring up the subject of "GoTo" telescopes, and the world of astronomy unravels into distinct camps. Those who have them, and those who hate them. The "Hate Them" camp is usually the Dobsonian Owners Group (aka "the DOGs"). Now, don't get me wrong, I love Dobs, and someday soon I hope to be a DOG myself, but in the meantime, I have four GoTo scopes, and I use them as often as possible. They are great for public skywatches, and they can quickly move an interested visitor from one object to the next to make our hobby "appear" to be fast paced and exciting — when it is actually slow paced and exciting.

I recently began my "Messier Club" attempt through the Astronomical League. I spent several nights observing, and have logged forty objects so far. I made mention of the technique I am using on the RVAS Internet Forum, and immediately got a few members to reply to my use of the GoTo capabilities of my scope. Here is what I am doing:

I set up with my Meade 10" LX200 Classic. I do the two star alignment in the Alt/Az configuration. I do all of my slewing to the objects with my controller so the telescope knows where it is at all times. I find the general area with my TelRad finder, and then I use the crosshairs in my 10x60 optical finder to locate the object, or fine tune the search. I then go to my eyepiece to center the object. For Messier objects,

this is rather uncomplicated, because most can be seen in the finder scope anyway. Once I have my object centered in my viewfinder, I punch the Messier Object number into my keypad, and hit the GoTo button. If the scope never moves, or moves ever so slightly within the same field of view, I have instant verification that I have indeed found the object! One person questioned the use of GoTo in the Messier search, but the rules do not prohibit verifying with the GoTo, just finding with it.

The quote from the Astronomical League website says: "Since the purpose of the Messier Club is to familiarize the observer with the nature and location of the objects in the sky, the use of an automated telescope which finds the objects without effort on the part of the observer is not acceptable."

In a way, using the GoTo computer to verify the find is a much more accurate way to assure that the candidate has indeed found what he or she is looking for. If a candidate thinks they have found a dimmer planetary nebula, and prepares to log it as found, and then punches in the object and the scope slews to a different field, then the candidate instantly knows that they did not find the object, and can slew away from the GoTo field and then attempt again to find the object in question. Without the GoTo informing the candidate that their attempt was wrong, the candidate would have logged the object as found, when it had, indeed, not been located.

Another point that was brought up is a bit more puzzling. What if you are looking for some of the more faint objects, such as the Herschel

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The Solar System Seen from the Sun ...

its seemingly great distance. It easily has the largest apparent angular size of all the planets. Maybe some astronomers are right thinking that the solar system is more than just the sun. It is the sun and Jupiter.

Of the four terrestrial planets, three are always extremely bright beacons: Mercury, Venus and the Earth. Poor Mars! Even with its notable eccentric orbit, it is never a stand out, always shining near 0.1 magnitude and always giving a diameter of about 6 arc seconds. There are no close approaches as Roanoke experienced last summer. What a change from our earthly perspective!

Distinguishing Earth from an equally bright Mercury, is a sometimes easy task. The earth is always accompanied by the moon. From our skies, the moon glows at -12 magnitude, but from the sun its brightness drastically diminishes to that of a +1 magnitude star. Scooting back and forth monthly, the moon would never be more than 9 arc minutes from its parent world and would occasionally be lost in the earth's -4.4 magnitude glare. On May 4 and October 27 the earth will occult the moon, an event on earth called a total lunar eclipse.

An unusual alignment of the sun, Venus and Earth will occur this June 8. Alignments of various planets and the sun don't happen very often. In fact, they are extremely rare. From the Earth's point of view, Venus will pass across the face of the sun as Venus overtakes the Earth in their race around the sun. This means, that from certain points on the sun's surface, Venus will occult the Earth. Imagine a -5.5 magnitude "star" merging with another -4.4 magnitude "star" that has +1 magnitude companion 8 arc minutes to the left. After twenty minutes, the two stars will separate and the brightest will combine nine hours later with the +1 magnitude companion. Indeed, a remarkable sight!

Mike Overacker Messier Solution...

Objects, and when you get one in your scope FOV there is another next to it? You center on the object that you think is your target, and when you hit the GoTo for that object it does a short slew to the other object in the same field of view. Is this cheating?

Well, what would you do if you didn't have the GoTo confirmation? You would log it as found, and then log the other object as found, never really knowing which one was which. It is a good question, but the simple fact is that if you have them both in the same field of view, you have found them both. It doesn't matter because they occupy the same FOV, and you found that area, so I feel it is a moot point. If the GoTo shows you that you picked the wrong one of the two in the field, at least you know the objects orientation to each other, which you would never know if it wasn't pointed out to you. I feel the GoTo for verification can be nothing but a good thing in the teaching of the night sky, and knowing that you are indeed looking at what you were attempting to find. It is like having your own personal professor overseeing your progress and accuracy.

I know I will probably never sway the astronomers that are deeply entrenched in the "old way" of observing, but I feel that I must project my points so the newer technology will not be ostracized as pointless. The GoTo capability of a telescope should be used as a tool, not a crutch. Learning the night sky is a daunting task, but a telescope that can ease the learning curve of celestial viewing can promote the growth of our hobby to unprecedented levels. I will continue to use my GoTo capability to confirm my findings. I think it is a good thing. I take comfort in knowing that I did find all of the Messier objects. I know that I did not mistake any of them for another object. When I get my Messier Certificate from the Astronomical League there will not be a doubt in my mind that I found every object that I logged, and I earned my place on the Messier Club List.

And if you don't believe me, ask my telescope. She verified them for me.

Society Calendar of Events and Activities for March 2004

MARCH MEETING: Monday, March 15th, 7:30 p.m. fifth floor meeting room, Center in the Square, Roanoke. Presentations will be done by Sherwin Brady, Paul Caffrey, and Mike Good on the observatories they are building, or have built.

"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, 12th and 13th. Sunset is at 6:26 p.m. Astronomical twilight ends at 7:52 p.m. The Moon rises at 1:13 and 2:22 a.m., respectively.

-- Friday and Saturday, 19th and 20th. Sunset is at 6:32 p.m. Astronomical twilight ends at 7:59 p.m. The Moon sets at 5:21 and 6:25 p.m., respectively.

-- April Sessions: 9th and 10th; 16th and 17th.

FRANKLIN CO. PARKS DEPT./RVAS PUBLIC STARGAZE: Saturday, March 13th, 7:15 p.m., Franklin County Recreational Park. For Franklin Co. residents. RVAS members welcome to participate. Call the RVAS Message Line, 540-774-5651, for information. (Next session: May 8th, 9:15 p.m., FCRP.)

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