The
Rosette Gazette

Volume 14, Issue 1 | Newsletter of the Rose City Astronomers | January, 2002

In This Issue:

Annual Information Fair

It's time for the annual Rose City Astronomers INFORMATION FAIR, which will be held in place of the General meeting on **January 21, 2002**.

The Fair will provide answers for those with questions regarding **membership services,** privileges, and benefits with the RCA, and you will be able to sign up or renew your membership that evening. If your resolution for the new year is to begin a new **observing program,** have we got a program for you! We can answer questions on **beginning observer, binocular, Messier, and deep sky programs, as well as Herschel I and II**, and **solar observing**. We have answers for **youths** interested in these programs as well. For tracking your program swing by the **sales** table and pick up one of the great 2001 calendars.

If you are fascinated with the dynamics of the Earth's atmosphere and weather and wanted to know more, visit the **Weather Special Interest Group (SIG)** booth. If you had thoughts about the origin of the universe, you may want to drop by the **Cosmology/Astrophysics SIG.**

Building your own scope? Get answers from the experts at the **telescope making** booth. Learn of the workshop facilities, location, and schedule. While you're at it you may want to ask about the homemade and manufactured scopes in the **telescope library** and check one out.

Most frequently asked question: Where's the party? Answer: Stop by the **star parties** booth for a complete list.

For those who prefer seeking their own answers, you may find certainty of this in one of the more than 400 books and CDs in the **club library**. Jan Keiskie, the club librarian also has IRS-suitable donation forms for any library donations folks want to itemize a charitable deductions.

Meet the Members

The new RCA editor is inaugurating a column to introduce RCA members to each other. Guess who gets to go first?

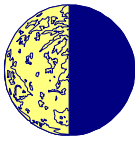
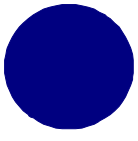
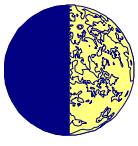
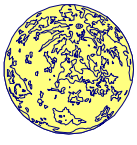
Peter Abrahams, on the subject of himself:
Although my 'telescope time' is very important to me, I don't spend a sizeable number of nights per year under the stars. I am more of an armchair astronomer; reading & writing, in print & on the internet. I find the history of the telescope to be particularly interesting, and when I realized how little was written on the subject, I was motivated to make my own contribution. I have published a half dozen articles in journals, and have a web site with many more texts & some images as well (linked on the RCA web site). I have come to regard this history as the most important activity I am engaged in, but it is a bit peripheral to RCA involvement. I am motivated to help run RCA because I think stargazing & related activities are the most rewarding avocations a person can find. I was not exposed to amateur astronomy until I was in my mid thirties, and one of my few regrets is that I didn't learn about it as a child. Like many other 'gadget nuts', I end up more interested in the telescopes than in the celestial objects; but I don't confuse which is more meaningful; and no telescope compares with a big spiral galaxy, or comet Hyakutake, or many other sights.

I have a 13 year old daughter who especially likes the Swan nebula, and would be more involved if it weren't something her old man was so nuts about. My wife enjoys a view, but not enough to freeze all night or rough it for a long weekend.

Astronomy outside the RCA includes travel; I go to Riverside every year & to meetings of a telescope history group, the Antique Telescope Society, which I help to run. I intend to do much more travel in another half decade; I'd like to go to all the major star parties, especially ATM oriented events like Stellafane, and to visit old ob-

(Continued on page 7)

January 6 | January 13 | January 22 | January 28

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President's Message

By Peter Abrahams

January 2001

As you will see at the January meeting, the RCA is a group composed of people with widely varying approaches to & interests in astronomy. Those who use elaborate equipment to capture images are involved in an different activity than those who grab a view with binoculars. Observers under the cold night sky are removed from those cruising the internet or reading books. Daylight astronomers might use a telescope, but solar observing feels quite a bit different than the nocturnal variety. Some people are interested in the history of astronomy, others in the future.

We can all further each others goals, and the purpose of the RCA is to do what it can for members & the public. We've tried to set up sub-groups and activities that foster individual goals. Our Special Interest Groups (SIGs) are dedicated to some of the more popular activities. As the RCA has grown past large to huge, the number of different interests has grown to the point that the board has been reluctant to start new SIGs. Each SIG requires maintenance; and more importantly, when a group is formalized by becoming RCA sanctioned, the RCA assumes some responsibility for mishaps like cancelled meetings, accidents, etc.

Even though new SIGs might not be freely created, the board definitely wants to encourage & assist members who want to join up with other people who share their astronomical interests. We provide means of communication, to seek others & to share with them, via the Gazette, the email list, and the web site. If you would like to find other RCA members who share your interests, please email or contact me; write the email list; talk to Dareth about a post on the web site, or submit a letter to Regis for the Gazette.

RCA

MAGAZINE SUBSCRIPTIONS

One of the main services offered to RCA members is subscriptions to *Astronomy* and *Sky & Telescope* magazines at a much reduced rate from newsstand prices. *Astronomy Magazine is $29 and Sky & Telescope Magazine is $29.95*. See Larry Godsey, Subscription Coordinator at the Membership Table at General Meetings for further information. Please note: Allow two months for your subscription to be renewed from the time you bring or send your renewal to Larry until the magazine has processed the renewal.

THE "KIDS" OF ROSE CITY ASTRONOMERS

RCA Kids

Children ages 4-12 are welcome to join in fun and educational activities while the grownups attend the monthly general RCA meetings. The kids' meeting takes place in the adjoining cafeteria at OMSI from 7:30 p.m. to 9:00 p.m. If you have any questions, please e-mail Jennifer at jenny@theforrest.org.

The **Young Rose City Astronomers** (ages 13 - 18). This group meets from 6:30 to 7:30 on the third Monday of the month in the OMSI auditorium, before the regular RCA meeting. In addition, the YRCA meets on the first Thursday of the month. Kids with all levels of experience are welcome. There's no need to join - just come to the meetings and have fun. Adult volunteers are always welcome. Call Margaret McCrea, 232-7636, for more information.

2001 Leonid Meteor Storm

I just have to write about the 2001 Leonid Meteor Storm. One of my first astronomically related memories is of the famous 1966 meteor storm, which happened right at the start of my interest in astronomy. Unfortunately, this memory is centered on hearing about the great storm on the radio and TV the next day, and of my intense feelings of having missed something very special. I remember thinking that maybe I'd see it the next year (1967) and only gradually did I learn that I would have to wait over 30 years for my next chance to see the Leonid's storm. This year my turn finally came and I couldn't be happier.

As luck would have it all the circumstance lined up – the predicted storm was on the weekend, the weather was clear and I had the time, not to mention the motivation, to go to the darkest sky site I could get to. Judy and I ended up at a site halfway between Prineville and the Prineville Reservoir which presented us with a magnitude 6.4+ sky. At most a slight zephyr of a breeze would remind us how cold it was – the mid 20's – but it was essentially as perfect a night one could imagine for meteor watching in mid-November.

We arrived at the site about 12:25am and immediately saw several long and bright meteors. Or at least Judy did, since she was diligently following the First Rule of Astronomy (FRoA*) while I was setting up our lounge chairs, the heater, radio and camera.

Once I started looking up I discovered that Judy was still seeing all the meteors as I was looking in the southern part of the sky while she was looking toward the north. I then turned to the north and within a few seconds joined the fun – Leonids were flying every few seconds, especially through the Big Dipper. I set up my camera hoping to catch at least one more on film.

A quick backtrack: in approximately a dozen tries to capture a meteor on film over the years I had never succeeded. And now back to the 2001 Leonids:

To my great astonishment, seven bright Leonids whipped through the Big Dipper in the next couple of minutes and I not only seemed assured of finally getting a meteor on film, but I could quite possibly have a tremendous photo.

From 12:30am to about 2:30am, the meteors were coming at about 5 to 10 per minute – by far the most prolific meteor shower I'd ever seen but not what I'd characterize a meteor storm. And then thinks picked up.

For the next hour the Leonids were technically storming, that is coming in at a rate of more than 1000 an hour. Three times Judy and I saw 6 or 7 meteors at once and the average rate was about 20 to 25 meteors per minute (which translates to 1200 to 1500 per hour). It was mesmerizing especially during the 5 to 6 meteors at once bursts – several times I jumped up and cheered!

Interestingly, the bulk of the activity now seemed to be overhead and near the radiant. For the rest of the night it seemed the meteors were more likely to be seen in the southern sky, but I can't think of a mechanism beyond random chance that would account for this. Even so, meteors were seen all the sky all night with some of the more interesting ones at the horizon – some were a dark orange simply from atmospheric refraction.

We saw maybe a dozen super bright exploding meteors, and some left long lasting trails that were amazing to watch twist in the high altitude winds through binoculars.

From 3:30am to 5:30am, when we packed up and headed back to the motel, the overall rate backed off to about 5 to 10 meteors per hour again – which although much higher than any other meteor shower I'd seen up until this year's Leonid's, now seemed somewhat sparse. How easily I'm spoiled.

Yehaw! I'd finally seen the Leonid's storm! But I immediately had two opposing reactions:

- I've only cheered at one other astronomical event – the 1979 total solar eclipse which also ranks number 1 in my personal list of memorable sky events. I was excited not only at the spectacle of seeing so many Leonids, but also because I'd waited 35 years for the chance.
- But even at its peak, the visual impression of 20 to 25 meteors per minute was not as spectacular as I'd imagined. At the three peaks of 5 to 6 meteors at once I barely got the physical impression of the radiant as a dynamic illusion of perspective. I had over-imagined what I'd actually see.

Without my over-blown imagination, the 2001 Leonid Meteor Storm was spectacular beyond reproach. If I rate it simply by my cheering, it would be a solid number 2 sight on my all-time list. But more goes into it than that. Awe-inspiring grandeur plays a big part as does rarity and spectacle. My personal all-time top five list is as follows (as inspired by the RCA email list conversation that followed the Storm):

1. 1979 total solar eclipse seen from the Columbia River Gorge
2. 1996 Great Comet Hyakutake
3. 1994 Comet Shoemaker-Levy 9 impacts on Jupiter
4. 1997 Great Comet Hale-Bopp
5. 2001 Leonid Meteor Storm

After thinking about what I'd seen and comparing it to my initial emotional reaction to the Leonid Storm, I realized I'd seen something more special than my emotional reaction was indicating, and that if I had cause to be disappointed it should only be with my less than critical imagination. After all, how much sense does it make to feel disappointed when I'd seen more meteors in one night than in the previous 35 years put together?

By the way I did get a bunch of meteors on film, especially on that first exposure of the Big Dipper. However, I neglected to get a good focus on the camera lens – rats! – so all the photos turned out rather crummy. Oh well, maybe next time…

* FRoA = look up.

BRIGHT BIRTHDAY STARS

Dale Fenske

The November issue of Sky & Telescope magazine published an article called, "Stellar guides for Your Birthday". In it, Jeff Farinacce used the Hipparcos/Tyco projects to find distances to 50 stars less than 70 light years distant. From these projects he compiled his guides of personal stellar chronology. The article stated, "Since the speed of light is finite, gazing into space is equivalent to looking backward in time. We see things as they were, not as they currently are". Light we see is light that was produced by that star long ago. On your birthday, you can look at your specific star and declare, "I am seeing light that started its journey to my retina approximately on the day I was born".

With enough effort one could analyze the Hipparcos data and find a star for every year, but that includes many obscure, hard to find stars. To alleviate complexity, I shortened the list to only eleven of the brightest and most prominent, close stars in the Northern sky. These beacons of the night are all first magnitude stars except for Castor. These outstanding stars are fun to point out and their distances are easily memorized. This gives you a wide range of bright "Birthday" stars.

Ages and Distances	**Name**	**Hipparcos Data**
8.6 years	Sirius	.37921
11.35 years	Procyon	.28713
16.76 years	Altair	.19444
25.06 years	Fomalhaut	.13008
25.29 years	Vega	.12893
33.7 years	Pollux	.09674
36.7 years	Arcturus	.08885
42.18 years	Capella	.07729
51.5 years	Castor	.06327
65.08 years	Aldebaran	.05009
77.45 years	Regulus	.04209

There are a total of fifteen first magnitude stars visible from our latitude. The five other stars are giant, superluminous stars, very bright, but also very far away. Their light takes longer to travel to Earth than the span of years of a human life.

262.06 years	Spica	.01244
427.26 years	Betelgeuse	.00763
603.7 years	Antares	.00540
772.51 years	Rigel	.00422
3227.7 years	Deneb	.00101

Other six first magnitude stars are only visible in the Southern hemisphere.

4.22 years	Alpha Centauri	.77233
144.38	Achernar	.02268
312.6 years	Canopus	.01043
320.55	Acrux	.01017
524.96	Hadar	.00621
1405.41	Becrux	.00925

Knowing the eleven "Birthday" stars will make you the hit of any starparty. Have a great starparty with your birthday star!

The math behind it all: Triangulation and parallax. The first calculation shows that light travels 19 trillion miles in 3.26 years.

(Sec per day * day per yr. * Lt spd (mi per sec) * ly per parsec = miles in 3.26 ly)

86400 * 365.25 * 186,282 * 3.26 = 19…..(12 zeros)

The second calculation shows an object with a 1 arc second parallax is 19 trillion miles away. If one travels 93 million miles across space or the radius of Earth's orbit around the sun, and an object seems to move one arc second against a nonmoving background sky, this object is 19 trillion miles away. The same distance as 3.26 light years.

mi sun to earth * radian * minutes * seconds=miles in parsec

93,000,000 * 57.29577951 * 60 * 60 =19…..(12 zeros)

Once this calculation is done, we never have to do it again. We simply take that small portion of angle that is left and multiply its ratio times 3.26 light years to obtain the star's distance.

For instance, the star Alpha Centauri has a Hipparcos parallax listed as 772.33 in milliparsecs. To change milliparsecs to a decimal move the decimal to the left three places. The result is that 772.33 milliparsecs equals .77233 seconds of an angle. Find the ratio by dividing the parallax number by one, then multiply that times 3.26 light years to get distance of the object.

Ratio of .77233 multiply times 3.26 l y
Alpha Centauri is:

1 / .77233 * 3.26 = 4.22099 light years away.

If your wonderings make you hungry for more data, the Hipparcos information can be accessed at

http://astro.estec.esa.nl/Hipparcos/

This article is continued next month, when we will be exploring interesting facts and how ratios and radians help us to visualize the solar system.

THE WEATHER SIG

Beginning in January 2002, RCA's weather SIG meetings will meet on a quarterly basis. We will continue to use the basement conference room of the Colonial Office Complex. The following dates in 2002 have been reserved for our meetings: Jan 30th, Apr 24th, Jul 31st, & Oct 30th.

Place: Colonial Office Complex

10175 SW Barbur Blvd, Suite 100-BB

Portland, OR 97219

Time: 7:00 pm

OBSERVING TECHNIQUES– WHAT CAN YOU SEE WITH YOUR NEW SCOPE?

Ken Cone

Ok, Santa brings you a new scope, you set it up in the driveway, wait for the clouds to clear and peer into the eyepiece. How do you know how much you can or cannot see? Can you see all the Messier objects?

Determining how many Messier or other deep sky objects you can see involves several factors. Learning the capability and limitations of your scope big or small, can save some frustration and allow you to better plan your observing sessions. Here are some factors that determine what one can or not see.

Aperture: With a 18" or 20" scope you will be able to see more deep sky objects than with an 6" or 8". I have a 15" Dobsonian and on a good night can just pick out magnitude 13 to 14 background stars from my driveway in West Slope. More on finding stars in a minute. But don't be discouraged with a scope of smaller aperture. With the right conditions you can find several of the brighter M objects from your driveway.

Magnitude and Surface Brightness: M51 the whirlpool galaxy has an absolute magnitude of 8.4 and surface brightness of 12.5 mag/sq arcmin. This means you can probably see from your driveway the surrounding stars but not the galaxy itself. Why? The reason is the surface brightness of M51is high (dim). The magnitude of an object is the integral brightness of the entire object. M51 is a BIG object covering 10.3'x6.9', and you are observing the flat side of the galaxy. A large flat spiral usually has a low surface brightness so it is difficult to find unless you are in a very dark area. Save M51 for that out of town dark site like OSP. Edge-on galaxies like M82 at mag 8.4 with SB of 11.8 mag/sq arcmin. are somewhat easier to find because their light is concentrated into a smaller area. You can find the surface brightness of objects listed in most computer star databases such as SkyMap Pro.

Object Type: M57 the ring nebula at mag 9.0 is usually easier to find than a galaxy of the same magnitude. With nebula you can also use a filter to improve the contrast of the object to background. I've seen M57 from in town with my 90mm scope. Globular (star) clusters like M5 at mag 5.8 are a piece of cake. It's easy to find these critters because there are fewer points of light that make up the overall object so they appear brighter for a given magnitude.

Star Hopping, a.k.a. know where to look! It can be frustrating trying to find an object, particularly if you are not looking in the right spot! Start with a bright star then use printed pages from your favorite computer program or a star atlas to hop to the object you are trying to find. Sometimes you may see the surrounding stars but not the object, but you know where it's supposed to be! So sketch it in you log so you can hop right to it when conditions are better. Star hopping takes time but can be very rewarding. You will probably see a satellite or two along the way. For references I use the Sky Atlas 2000 for Messiers and the Millennium Star Atlas for more difficult objects.

Observing Conditions, Transparency and Seeing: Transparency is darkness and Seeing is steadiness or lack of twinkle. "Observe the Herschel II Program" by Cole and Pratt has an excellent discussion on seeing and transparency. Transparency in town might be a 4, meaning you can see mag 4 stars in the handle of the Little Dipper with the unaided eye. At OSP or Hancock, transparency might be 6 or greater allowing you to see M51 and other dim objects. I keep a quick reference in the front of my log book that shows magnitude of stars around Ursa Major and Minor for determining Transparency.

References: The RCA library has great references on observing. "The Night Sky Observer's Guide" by Kepple and Sanner. Volume 1 has an introduction on observing techniques, and Volume2 a section on Ursa Minor to help determine transparency (darkness). The Library also has "Star Hopping" by Robert Garfinkle to help you locate those dim fuzzys.

Enjoy you scope, keep it ready so when there is a break in the clouds you know what you can observe and where to find it. Good Luck and Clear Skys.

ASTROPHYSICS / COSMOLOGY SIG

TIME: 7:00 PM

DATE: January 24, 2002

TOPIC: What's new in Astrophotography, Mike Cole

PLACE: Linus Pauling House, 3941 S.E. Hawthorne Blvd.

Below: Dan Gray works with future ATMers at OSP 2001 (Photo by Peter Abrahams)

CHASING RED DWARFS

Bob McGown

Ann Buehner

Ann Buehner, now living in the Portland area, is an interesting figure in early twentieth century American astronomical history. Born in Coatesville, Pennsylvania, in 1924 Ann was inspired to apply to Swarthmore College by her high school correspondence with a famous woman astronomer of the time, Charlotte Moore Sidderly. The information that was imparted to her sparked her interest in astronomy. Charlotte earned her Ph.D. at the University of California, Berkeley using Mt. Wilson plates to analyze atomic lines in the sunspot spectra and discovered the spectra of gold in the sun. Charlotte had an illustrious career focused primarily on solar spectrum and spectral line multiplets.

World War II had just begun when Ann, fresh from high school, was admitted to Swarthmore College in 1942. While earning her Bachelor of Arts degree there, she studied and performed observational research at Sproul Observatory at Swarthmore. She worked with Sarah Lippincott who was research associate to Peter Van de Kamp, professor of astronomy and director of the observatory, on precise measurements of the positions of stars. Ann was a 'computer' who crunched the numbers on a Monroe calculator for observatory work, which Van de Camp thought the most likely candidates for extra-solar planets. Van de Camp was particularly interested in Barnard's Star's wobble, which he was convinced was evidence of an extra-solar planet. In fact, in 1963, after 26 years of research he announced to the scientific community's acclaim that a planet about one and one-half times the mass of Jupiter was orbiting around Barnard's Star. Later, one astronomer attributed this to a flaw in the optics discrediting the possible discovery.

Ann's work involved measuring images on plates. To bisect the image, first the aligning screw had to be moved all the way to the right to bisect the image. Then precisely the set screw would be moved all the way to the left , then come back and bisect the image again to avoid any possible error. This process took a considerable amount of time. Care was taken in each measurement. Ann made hundreds of measurements of film on glass to maintain accuracy of the position of Llanda 22185, Von Maaden's Star, Wolf 354 as well as Barnard's Star.

Sproul Observatory, built in 1906, was bestowed with a 24" refractor telescope, a precise instrument for attaining stellar distances and parallax. Using the 24" refractor telescope attained accurate stellar distances and parallax. The students used a 9" refractor telescope to practice with. With frost on the telescope, she and one of her professors Dr. Pittman, suffered through many cold evenings. Ann studied at Swarthmore with Nancy Grace Roman, a renowned astronomer during 1942-1946, where she attained her BA degree.
Note: The first photograph of Pluto was taken in Swarthmore at the Sproul observatory.

Ann continued her astronomical adventures while attending the University of Virginia for her Master's Degree in the Arts, by helping to classify stellar spectra for Dr. Alexander M. Vyssotski who was at the University of Virginia, at McCormick Observatory. Ann's task was to classify the spectra of stars selected by Columbia University. A.N.Vysstsky of Univ. of Virginia made the observations and had the plates necessary for Ann to study. The prism dispersion was 300A/mm. For her contribution to this research, she was nominated for associate membership in Sigma XI, the Scientific Research Society that is a non-profit membership society of nearly 75,000 scientists and engineers. Still concentrating her efforts on red dwarfs, she stumbled upon a carbon star, a rarity then, and sent her research to Ralph Wilson, at Wilson Observatory who verified her observations. In all his years of searching for extra-solar planets, Ann wistfully remarked, in our interview, that she never did find one.
She studied the spectra of 28,000 stars at Univ. of Virginia.

A colleague of Ann's at Univ. of Virginia who she attained her Master's degree with was Karl Henize. He went on to attain his PhD in astronomy. Karl later became an astronaut. At 58, he was the oldest astronaut to fly. When Karl would occasionally visit Ann in Portland, it was always interesting to hear of his adventures on Skylab 2. When he reached 65 he retired from NASA. At 66, Karl was tragically killed in a mountaineering accident on Mt. Everest.

(Continued on page 7)

Below: University of Virginia's McCormick Observatory & 26" refractor "115 years old and still observing science" (From the cover of the 1985 University of Virginia Alumni News.

IN THE JANUARY SKY

1 Jupiter at opposition
2 Earth at perihelion (closest point to sun, 91.4 million miles)
3 Quadrantid meteor shower peaks
13 New moon
14 Mercury visible naked eye
14 Venus in superior conjunction
28 Full Moon

Jupiter, Mercury, Mars, Venus, and Saturn should all be visible in modest telescopes and binoculars this month.

(Continued from page 6)
Ann attended AAS conferences with other astronomers where she met Henry Norris Russell, Cecilia Payne Gaposchkin, Allan Sandage, and Harlow Shapley. However Ann says that Shapley, president of AAS at the time, was too aloof to associate with mere grad students!

Ann and her husband Henry, whom she met in Graduate School in Virginia, enjoyed spelunking and made a traverse of the Sinks of Gandy for which they received a certificate. They enjoyed caving together in Virginia but Ann always thought lava tube caves were too dangerous for her to explore.

Ann worked in the east coast and eventually settled in Portland with her husband to raise three children; Ted, Gretchen and Heidi. Ted went on to become a warning coordinator meteorologist for NOAH. This was for tsunamis and other natural disasters.

Although she left the field of astronomy many years ago, Ann has retained her enthusiasm for astronomy. She lectured at OMSI in 1951 and became a member of the local Portland Astronomical Society, a predecessor of the Rose City Astronomers. To this day, she recalls her early astronomical adventures with pleasure and maintains correspondence with Nancy Grace Roman, her Swarthmore classmate.

(Continued from page 1)
servatories. All of this travel would be with the goal of writing the history of the people & instruments found at the destinations; though I also want to see the southern sky & a solar eclipse.

I was very involved in meteorites for a number of years, but recently I have not had the time to pursue that very interesting field. Likewise for a variety of early astronomical instruments -- sundials, astrolabes, orreries, celestial maps & globes -- they are fascinating but there are only so many hours in the day.

Peter Abrahams
http://www.europa.com/~telscope/binotele.htm

LETTER FROM THE EDITOR

Regis Krug

This is my first complete issue as the Editor for the Gazette. I know much more about writing and publishing than I do about Astronomy. I'm an amateur amateur astronomer. I did find quite as few more DSOs (about 25) at the 2001 OSP with my rebuilt 8-inch Meade Dob. I just took delivery of a 16-inch F5.5 mirror from Steve Swayze. I'm an avid woodworker with most of my 3 car garage is taken over by this activity. As soon as I finish building Christmas gifts for my family, I'm starting on the scope to go around my new mirror. I hope to have a regular series of articles outlining it's planning and construction.

The Gazette is a newsletter for the club and will only be successful and useful if club members participate by submitting articles and pictures for publication. I hope to hear from many of you in the coming months.

Beginning with the January issue of the Gazette, the contents will be available in hardcopy delivered to your home, online in a single PDF document that you can view (Adobe Reader) and print with , and as individual articles in HTML if you prefer not to download the entire newsletter. I'll be working with Dareth to get as many of the past articles available in HTML that we can locate and convert. You should be able to search for any of these articles by keyword, topic, or author.

I'd also like to ask you for your input on the kinds of articles that you'd like to see in the Gazette. With nearly 400 members, there undoubtedly is a huge variety of Astronomy related interests amongst the club members. Email me and let me know what you'd like to read about.

Below: Solar eclipse's outer corona from Zambia Africa June 21, 2001 Photo courtesy Mel Bartels

RCA Photo Gallery

Below: NGC 7331, August 24-25, 2001 (Photo by David Haworth)

SPACE JOURNEY

John DeLacey

Last summer I took a journey through the center of the Orion Nebula. No, I'm not hallucinating; I attended the planetarium show at the new, re-built Hayden Planetarium Space Theater at the American Museum of Natural History in New York.

The entire complex, called the Rose Center for Earth and Space, is new. It includes the planetarium and several other halls and activities in a futuristic building that is dominated by the enormous sphere suspended in the middle that is the Hayden Planetarium. The upper half of the sphere is the space theater while the lower half is a round, concave showroom where visitors experience the Big Bang. The Big Bang is a great hit with children and startling to adults who don't expect what is coming.

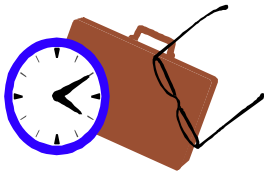
The show at the space theater is a half-hour journey from a crowded street in Manhattan to the edge of the observable universe, narrated by Tom Hanks. For me, the best part was a three-dimensional ride through the Orion Nebula. They used the latest data and images from the Hubble Space Telescope and other sources to create a computer model of what the inside of the nebula might look like. It includes as many actual images as possible. We flew past bright clouds of gas and dust, past brownish comet-shaped globules that represent nascent star systems, and out the back of the nebula. Inside some of the globules you could glimpse rings of dust with bright jets shooting out the poles, suggesting a new solar system in the making. I think they did a very good job of combining facts, images and best-guesses to create an entire picture of the Orion Nebula.

At the end of the journey, the traveler is brought back to earth via a trip through a black hole. The narrator is careful to mention that this idea is just speculation and not based on much science. Still, it's a good end to the show.

One of the best-done aspects of the presentation was the attempt to show the scale and position of the earth, solar system, our spiral arm, the Milky Way, and the local Supercluster in relation to each other and the whole universe. I was particularly impressed with how much science fact and theory was packed into all the shows and activities of the Rose Center complex. And it was done in an exciting and entertaining way that held the attention of everyone.

The bottom floor of the complex is called the Hall of the Universe, containing in a prominent position the Willamette Meteorite, which was sold to the museum in the 19th Century. While they note that the Native Americans in Oregon considered the meteorite a sacred object, there is no mention of the fact that they want it back. With the new hall and the central position of the meteorite, there is probably no chance that it will return to Oregon.

The Hall of the Universe contains many exhibits covering other aspects of the universe. It is very educational and informative if you can get over the irony of seeing "our" meteorite in the middle of the display. The Rose Center for Earth and Space is certainly worth a stop if you visit New York City.



BOARD MEETING MINUTES

DECEMBER 3, 2001

Ron Forrester

Present: Carol Huston, Doug Huston, Scott Turner, Peter Abrahams, Jan Keiski, Scott Fitzgerald, Bob McGown, Dareth Murray, Ron Forrester, Matt Brewster, Norm Trost, Regis, Sameer Ruiwale, Ginny Pitts

Treasurer: Vern/Ginny: Checking account stands at $4087 and the money market is at $11,428, total $15515. Deposits slips will be distributed to those with funds (i.e. Sales, etc) for direct deposit into the account. Treasurer still needs documentation regarding the deposit.

Programming: Matt: Holiday Party on track. Would like to post on the email list that people can bring slides and there will be a projector at the party to display them, and people can sell their wares. Party will be on the 3rd Monday (17th). January will be the information fair. For the next annual meeting perhaps publish more detailed information (separate publication) so we don't have to cover it verbally. February, JPL Ambassador.

Star Parties: Scott: Working on 2002 star party schedule. New contact at Camp Hancock. Tenatively 2 trips there in May, October. Having an Astronomy week out there, with kids, with the following weekend parents will be present, looking for volunteers, but conflicts with OSP. Needs to be approved by Jan. 15th for the February newsletter.

Sales: Sameer: $587 collected in November. Will have new calendars at the December meeting.

Membership: Doug: 337 member families. Could use some help at the membership table.

New Members: Carol: Nominal

Library: Jan: Can a membership record include the email address? Although they change so often it might not make sense. Do we have an electronic donation form (have at least a draft, Peter to run it by the board)? The cart has been found? Adding another staff person to help library.

Light Pollution: Bob: IDA Conference (April 13th at Haggard) is moving ahead, Dareth and Bob organizing it. Looking for speakers and displays.

SIG's: Scott: Working on organizing the SIG directors for the January meeting.

AL: Dale: Nominal

Editor: Candace/Regis: Want to get more stuff up on the website (HTML). January issue is the first for Regis. Candace aiding in the transition and is still doing the copying, and doesn't mind continuing for a short time, but we need to find someone else – it is a significant amount of work. Saves at least $400 a year to do it ourselves.

YRCA: Ron: Good attendance for November meeting, new materials purchased with additional budget were extremely helpful.

Community Affairs: Norm: Nominal

OMSI: Peter: Science and Toys show: Dan (and RCA member): Jenny and Ron to volunteer Saturday.

Webmaster: Dareth: Nominal

Telescope Library: Going good.

Magazine: Larry: Has a list of all subscribers this year.

Phone Line: Bob-Dec., Scott-Jan.

The cart for the sales, sticks above the wall of the planetarium and it can be seen. May be another closet for library or sales storage.

Departing board members need to help new board members transition into the position with as much documentation as possible.

Email list issues:

- need a password to unsubscribe, but no one currently knows their password
- should we keep default reply-to sender or go back to reply-to list. A few members have complained, most have been silent on the issue.
- Mike proposes that non-members should be able to receive list email, but not post. Discussion includes fact that our email list is a member benefit, in general board feels our list should remain closed.
- Board list will be Reply-all

Board meetings in Classroom 1 next year.

Astronomy Day 2002 (late April): If OMSI doesn't participate, RCA will have to do a significant amount of work. Haggard will be having an Astronomy week. Is OMSI going to be at Rooster Rock?

CLASSIFIED ADS

Run your non-commercial astronomy related classified ad in the monthly Gazette. Rates are reasonable (free!)

FOR SALE: Celestron C-90, motorized equatorial mount, tripod, case, additional optics. $500—Terry or Helen Sutfin, Vancouver, 360-696-9162"

FOR SALE: TeleVue 70mm Pronto refractor with 2" star diagonal, 1 1/4" adaptor, 1/4-20 adapted for mount, dew cap, 25mm Plossl "star beam" finder, padded carrying case. 18 mo. old, like new. Awesome optics! $800 OBO (was $1100 new). Call Keith Osborne, 1-503-835-4420, Amity OR.

WANTED:Clave (Paris) Plossl eyepieces, 1.25" size. Will TRADE artwork from these nationally acclaimed wildlife artists, one or all. Terry Redlin (Whitewater– framed) value $1200, Scott Kennedy (Aurora-unframed with original holder) value $225, Charles Gause (Arctic Journey-framed, but glass has one small crack) value $250. John W. Siple, 33230 Primrose Rd., Corvallis, OR 97333 (541) 758-8326

WANTED:Looking for Unitron 3" refractor or parts, Cave Astrola 12.5" F/5 Newtonian reflector, and these catalogues: *Star Flite* (1970s), *The Optical Craftsmen*, *Telescopics* (1970s), *Starliner*, *Safari Telescopes*, *University Optics* (1970s), *Cross Optics* (1980s), & *Criterion/Dynascope*. Will pay $12 each if in good condition. John W. Siple, 33230 Primrose Rd., Corvallis, OR 97333 (541) 758-8326

FOR SALE: Meade ETX-60AT, 60mm digital achromatic refractor astronomical & terrestrial telescope, F5.8, 350mm FL. Included are MA9mm and MA25mm eyepieces and instruction manual. Telescope is equipped with a Autostar computer controller. Also included is a standard tripod w/case, 3X Barlow eyepiece and a hard carrying case (these 3 accessories were bought separately). I never set up the scope on the tripod. It is in good condition. Scope & accessories purchased September 2001. $380-Negotiable Nick Anderson, 605 So 19th Ave, Yakima, WA 98902 (509)248-4705 (call between 7PM-8:30PM because I'm an early riser)

January 2002

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

February 2002

Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28		

January

Jan. 5	Sat.	Telescope Making Workshop	Tech Marine Srvc	10-3
Jan. 7	Mon.	Board Meeting	OMSI Parker	7:00 PM
Jan. 21	Mon.	YRCA (ages 13-18)	OMSI Cafeteria	6:30 PM
Jan. 21	Mon.	RCA Kids (ages 4-12)	OMSI Cafeteria	7:30 PM
Jan. 21	**Mon.**	**General Meeting**	**OMSI Auditorium**	**7:30 PM**
Jan. 24	Thurs.	Cosmology/Astrophysics SIG	Linus Pauling House	7:00 PM
Jan. 30	Wed.	Weather SIG	Colonial Office Complex	7:00 PM

February

Feb. 2	Sat.	Telescope Making Workshop	Tech Marine Srvc	10-3
Feb. 4	Mon.	Board Meeting	OMSI Parker	7:00 PM
Feb. 18	Mon.	YRCA (ages 13-18)	OMSI Cafeteria	6:30 PM
Feb. 18	Mon.	RCA Kids (ages 4-12)	OMSI Cafeteria	7:30 PM
Feb. 18	**Mon.**	**General Meeting**	**OMSI Auditorium**	**7:30 PM**
Feb. 21	Thurs.	Cosmology/Astrophysics SIG	Linus Pauling House	7:00 PM

The RCA General Meeting falls on the third Monday of each month. We usually meet in the Auditorium at OMSI, next to the Murdock Planetarium. Occasionally the meeting is held in Murdock Planetarium. Check here each month for details, or look us up at the RCA web site (http://www.rca-omsi.org/rca/index.htm).

OMSI Parker Room is on the Mezzanine level. Go into the main lobby, past the turbine to the elevators at the end of the turbine hall. Take the elevators to the "Parker Room", which is marked on the elevator. The monthly Board Meeting is held there.

The Weather SIG address is: Colonial Office Complex, 10175 SW Barbur Blvd, Suite 100-BB, Portland. From downtown, go south on I-5 to the Barbur Blvd. Exit. Cross back over I-5 and the Complex will be on your left.

RCA CLUB INFORMATION
Message Line: (503) 255-2016
Web Site: http://www.rca-omsi.org/rca/

Oregon Museum of Science and Industry
Rose City Astronomers
1945 SE Water Avenue
Portland, Oregon 97214-3354

The
Rosette Gazette

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In This Issue:

2001 Mars Odyssey and NASA's Mars Exploration Rover Program

The 2001 Mars Odyssey spacecraft is NASA's latest robotic explorer of the red planet. Launched in April 2001, it successfully arrived at Mars October 24th and recently completed aero braking, a processes by which it used the atmosphere of Mars to adjust its orbit around Mars. At the February 21 RCA General Meeting, Rob Grover will give an overview of Odyssey's mission, its exciting science objectives and a look at the spacecraft itself. From Odyssey forward, the presentation will also focus on NASA's plans for continued Mars exploration including the Mars Exploration Rover mission currently under development at NASA's Jet Propulsion Lab and scheduled for a Mars landing in early 2004.

Rob Grover is a native of Portland, Oregon and a former science educator at the Oregon Museum of Science and Industry. A career change led Rob to the University of Washington where he earned a Masters degree in Astronautical Engineering in 1998. Hired by Lockheed Martin in 1999, he became an attitude control engineer for the Mars Odyssey spacecraft. In 2001, Rob was sent on assignment by Lockheed to NASA's Jet Propulsion Lab (JPL) where he joined the entry, descent and landing team for NASA's Mars Exploration Rover (MER) mission. He recently became a permanent spacecraft systems engineer at JPL where he continues working on the MER program.

2002 RCA Star Party Schedule

Scott has pulled together an awesome schedule for this year. Check it out on the web site at:
http://www.rca-omsi.org/starschedule.htm

Meet the Members

Scott Turner, VP Observing/Star Parties

Unlike many of the members of the Rose City Astronomers, I never had a telescope as a kid or was fascinated by astronomy and space as a child. My astronomy interest began when I took an astronomy course to fulfill my science credits (I couldn't deal with physics!). Our assignments were to go out and observe the Winter sky. I had never really looked up before. I began by using binoculars, and keeping a journal of my observations. I really enjoy reading my notes today. And yes, I did "ace" that class!

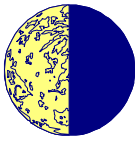
Within the broad scope of astronomy-related interests, I most enjoy visual observing and telescope making.

Early in 1998 I joined the Rose City Astronomers shortly after receiving an 80 mm Orion Refractor for Christmas. It took me almost a year before I attended my first star party (Kah-Nee-Ta in March of 1999). For that event, I borrowed a friend's 13" red-tube Coulter. I was amazed at being able to find so many things on my first night out! I recently completed my Messier documentation and was reviewing my notes from that night. I observed the Whirlpool galaxy (M51), the Ring Nebula (M57), Hercules Cluster (M13). On and on, I observed so many gems in the sky that night. I was hooked!

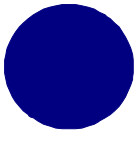
In December of 1999, I decided to build a telescope. From a friend, I borrowed Richard Barry's book, "The Dobsonian Telescope" and read. I then purchased a 12.5" f/6 mirror from Steve Swayze and the wood necessary to begin. I spent a little over three months designing and constructing. First light with my Dobsonian telescope was March 15, 2000. I am proud of the results; although a telescope builder always sees things they wished they would have done different! Now it's been a couple of years since I built my telescope, and I'm getting the itch to build an-

(Continued on page 7)

February 4



February 12



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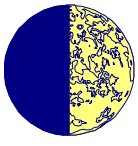
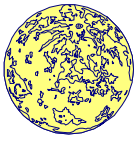


February 27



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VP, Communications	Matt Brewster	(503) 774-0360	brewster@teleport.com
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Media Director	Glenn Graham	(503) 579-1141	sueandglenn@msn.com
Special Interest Groups	Scott Fitzpatrick	(503) 669-8243	slfitzpatrick@cs.com
Youth Director	Margaret McCrea	(503) 232-7636	r_mcgown@msn.com
Light Pollution Rep.	Bob McGown	(503) 244-0078	telescope@qwest.net
New Member Programs	Carol Huston	(503) 629-8809	StarsCarol@aol.com
Magazine Subscriptions	Larry Godsey	(503) 675-5217	larrygodsey@att.net

February 2002

Two recent events bring to light the issue of RCA's relationship with persons with disabilities.

We have a member who is (over a long period of time) constructing a folded refractor, on a Springfield mount, with the eyepiece stationary at the pier. This is intended to be a club scope, designed for wheelchair access. Don't wait up nights anticipating the unveiling of this telescope, like most of us the builder is busy with job & family. I mention it as an excellent idea that could allow us to specifically invite a group of people to our events, many of whom have (no doubt) never looked through a telescope. We welcome other ideas for similar equipment and events.

We received a phone call from a deaf person (a 'relay call', where they type & an intermediary talks), interested in attending a meeting & asking if we provide signing. We're starting to look into this. Members with experience in this field are welcome to contact me. Networking with the deaf population seems a good match for a visual activity like observing, but we could quickly get in over our heads with the cost and planning details.

Members who are experienced with working under ADA regulations are also welcome to contact me or another board member. If we are required to provide signing at meetings, or telescope access to the handicapped at public events, our financial situation would change dramatically. The legality of ADA rules as applied to 501-C-3 groups seems complicated & perhaps not entirely resolved.

We would always welcome disabled persons to our functions. The question is, if we make an effort to accommodate these persons, with signing or special telescopes, and invite them to our meetings, what sorts of financial and organizational obligations are we incurring?

RCA
MAGAZINE SUBSCRIPTIONS

Now, renew Astronomy Magazine for two years and you can save even more!

One of the main services offered to RCA members is subscriptions to Astronomy and Sky & Telescope magazines at a much reduced rate from newsstand prices.

Astronomy Magazine is $29 for one year or $55 for two years. *Sky & Telescope Magazine* is $29.95 for one year. *Skywatch 2002* is available from Sky&Tel for $4.95. See Larry Godsey, Subscription Coordinator at the Membership Table at General Meetings for further information.

Please note: Allow two months for your subscription to be renewed from the time you bring or send your renewal to Larry until the magazine has processed the renewal.

THE "KIDS" OF ROSE CITY ASTRONOMERS

RCA Kids
Children ages 4-12 are welcome to join in fun and educational activities while the grownups attend the monthly general RCA meetings. The kids' meeting takes place in the adjoining cafeteria at OMSI from 7:30 p.m. to 9:00 p.m. If you have any questions, please e-mail Jennifer at jenny@theforrest.org.

The **Young Rose City Astronomers** (ages 13 - 18). This group meets from 6:30 to 7:30 on the third Monday of the month in the OMSI auditorium, before the regular RCA meeting. In addition, the YRCA meets on the first Thursday of the month. Kids with all levels of experience are welcome. There's no need to join - just come to the meetings and have fun. Adult volunteers are always welcome. Call Margaret McCrea, 232-7636, for more information.

MESSIER MARATHON ..... *Carol Huston*

Traditionally, RCA has opened its star party season each year by holding a star party and Messier Marathon in March on the new moon weekend. This year's kick-off event will be held March 15-17 with the 16th Annual Messier Marathon at the Kah-Nee-Ta Resort in Warm Springs. Even though this event is billed as a Messier Marathon, observers (and their families) come for many reasons: to try their hands at locating as many of the 110 Messier Objects as they can during a one-night shot, to observe their favorite objects under Central Oregon's clear dark skies, to spend a wonderful weekend with other astronomers swapping observing stories and exchanging information, or even just to spend a relaxing weekend with their families – all in comfortable accommodations that offer various other activities.

And – what is a Messier Marathon you ask? Well, Charles Messier was a 18th Century comet-hunting astronomer who organized a catalog of 103 galaxies, clusters, and nebulae. Seven more objects were added by later astronomers bringing the total of the list to 110 of the brightest and best known deep-sky objects in the Northern Hemisphere. The Messier Catalog has become one of the most popular observing lists of its kind. During mid March, given certain conditions, all of the 110 objects can be seen in one night (from dusk until dawn). An organized blitz to find all 110 objects in one night is called a Messier Marathon.

During our past 15 functions, the weather has been very good to us; we have never failed to obtain at least part of a night's clear skies for observing, which is nothing short of amazing during spring in the Pacific Northwest. Over the years, the event has become a two-night function, with a Saturday evening banquet as a prelude to the observing that evening. The event is popular with families since it is one of the few that affords a warm bed and hot shower, not to mention a heated swimming pool, great food, a giant fireplace, a luscious spa, and much more. The Kah-Nee-Ta Resort has a variety of family activities in which all can participate. They roll out the carpet for RCA, offering us rooms at half off their regular prices as well as a social gathering room for daytime get-togethers. There is no formal registration for the event itself, and you make your room reservations directly with Kah-Nee-Ta. There is, however, advanced registration/payment required for the Saturday night banquet. Here are the details for this year's star party:

DATES: March 15, 16, and 17, 2002

LODGING: Rooms will rent for $70 per night, single or double, plus $14 extra per person up to a maximum of four per room. Children under 14 are free when occupying the same room as their parents. This represents a savings of 50% over regular room rates. To register for a room, you should call Kah-Nee-Ta directly at 1-800-554-4786 to make your reservation, mentioning that you are with the RCA star party. RCA has reserved a number of rooms at the special rate that will held until February 20, so please make your reservations as soon as possible. There is also lodging available at the lower village, but no tent or RV camping allowed.

EVENT REGISTRATION: No registration to attend the star party; however, you need to reserve your room directly with Kah-Nee-Ta AND register and prepay for the banquet.

BANQUET: The Saturday evening banquet will feature a roast chicken dinner for adults for $21 per person and chicken strips & fries for children for $10 (both include gratuity). You will need to sign up and prepay for attending the banquet – deadline is March 8. You can do this through event host Carol Huston by phone (503-629-8809), by e-mail (StarsCarol@aol.com), by snail mail (19360 SW Hennig Street, Aloha, OR 97006), or at the January and February general meetings.

ACTIVITIES: Information packets will be available at the general meetings, on the RCA web site (www.rca-omsi.org), and at the social room during the event. These include a guide to the event, a Messier Marathon sequence check-off list, information about Messier objects and Messier Marathons, and a map to the observing site. A social room will be set up at the lodge on Saturday from 11 AM until 3 PM. Participants are encouraged to bring pictures, inventions, observation notes, junk to repair, questions, and tall tales to share with others. There are many other activities available through the resort: swimming, horseback riding, hiking, golf, tennis, a health spa, and casino gaming. Check the web site for more resort information at www.kah-nee-taresort.com.

FOR MORE INFORMATION: Contact Carol Huston at 503-629-8809 or StarsCarol@aol.com

Start your 2002 observing season with RCA by attending the 16th Annual Messier Marathon. You don't have to do a marathon to participate. Some participants come just to spend their time observing their favorite objects, work on their observing programs, or mingle with other astronomers. You don't even need a telescope to participate; other members are enthusiastic to share their views. This is a good opportunity for beginners to get acquainted and seasoned observers to get back into the groove. We look forward to seeing you there!

IN THE FEBRUARY SKY

4 Last Quarter moon, 5:33 AM PST
9 The moon passes 5° south of Mercury, 9:00 PM PST
12 New moon, 11:41 AM PST
16 The moon passes 5° south of Mars, 4:00 PM PST
20 The moon passes 0.2° north of Saturn, 4:00 PM PST
20 First Quarter moon, 4:02 AM PST
20 Full moon, 4:17 AM PST (closest point all year)

On February 20, catch the occultation of Saturn by the moon. You won't see it again until 2014.

RADIANS AND RATIOS

Dale Fenske

Methods of finding perspective are used in many professions. Surveyors use precise measuring instruments and perspective rangefinders to determine areas of plots of ground, or find heights of mountains. Navigators use mathematical perspectives to determine positions and calculate trip routes. Professional astronomers see apparent sizes with their telescopes. When they know the distances they figure perspective and know the actual sizes of objects. One method of determining perspective uses the ratio of distance and diameter. See the calculations and the table at the end of this article.

With our telescopes, we view alien surfaces and question, "how would the sky appear from an alien perspective?" What would the sun or planets or moons look like if I were in that location? We place ourselves on these alien worlds and imagine the scene around us.

Using the method described at the end of this article, we can figure perspective. Once perspective is found, then we can let our imagination run wild. The following list includes answers to a few of my imagined travels:

What is the size of the Earth from the moon? 2 degrees, almost 4 times the size of our moon;

What does the Earth, Moon system would look like from Venus? Earth would glow a beautiful azure blue, and would be located a little more than ½ degree or 32 minutes from a smaller, white moon. Their distance apart is about the size of the diameter of the disc of the sun, when viewed from Earth;

What does the Earth, Moon system would look like from Mars? The Earth, moon distance apart would be 17 minutes, about ½ the distance of the diameter of the sun when viewed from Earth;

What is the size of sun from as seen from Mercury? 1 degree 25 minutes, nearly three times the size of the sun from Earth;

What would the moons of Mars look from the surface of Mars? Like our moon, both Martian moons are locked into synchronous orbits, the same side always faces Mars. Their albedo is quite dark so they appear dimmer than other solar system objects under the same circumstances.

Phobos is 1/5th of a degree or 12.5 min. This is very small, approximately one third the size of our moon. It orbits Mars every 7.7 hours. Because it orbits in the same direction as Mars rotates it is visible for a little more than 4 hours per orbit. It shines at magnitude –3.9 comparable to Venus in our sky.

Deimos is only 2.6 min., barely a discernable disc. A magnitude of –0.1 it would look similar to the bright star Vega. Its' orbital period of 1.26 days means it travels very slowly across the sky and takes nearly two days to go through all its phases;

What is the size of the Sun from surface of Mars. Approximately 21.5 minutes or 2/3 the size of the sun as seen from earth;

What is the size of the Sun from Jupiter's surface. You would be able to see a small disc that was 6 minutes or 1/10th of a degree in diameter;

What would the moons of Jupiter look like from the surface of Jupiter? What would Jupiter look like from the surfaces of these moons?

Io, is so close to Jupiter, gravity is causing surface disruptions and volcanoes. Like our moon, it is in synchronous orbit, and keeps one side facing Jupiter. From Jupiter's surface IO would be twice as large as our moon or 1 degree. From Io, Jupiter would look huge, with an apparent diameter of 19 degrees 26 minutes.

Europa from Jupiter's surface would have an apparent size of 16 minutes, ½ the size of our moon. From Europa, Jupiter is still huge and would be 12 degrees, 13 minutes.

Ganymede is the solar system's largest moon and would have an apparent size of approximately ½ degree, 36 minutes or nearly the same size as our moon. From Ganymede, Jupiter would still subtend 7 degrees and 39 minutes.

From Jupiter, Callisto would have an apparent size of 8.8 minutes or 1/4th the size of our moon. From Callisto, Jupiter would subtend 4 degrees 20 minutes;

What would the Sun look like from Saturn? Our eyes would be able to discern the very small disc of the Sun, only 2 minutes in size which is nearly twice as large as Venus appears from Earth.

From Saturn, Titan would be 14 ½ minutes in size, about ½ the size of our moon. From Titan, Saturn would be a little more than 5 degrees 39 minutes across.

What would the Sun look like from Pluto? The size of Sun is .83 minutes. The sun is similar to a very bright star, not large enough for the naked eye to discern size.

What would Pluto and its moon, Charon, look like from each other? Even though they both are quite small, they

(Continued on page 6)

THE WEATHER SIG

Beginning in January 2002, RCA's weather SIG meetings will meet on a quarterly basis. We will continue to use the basement conference room of the Colonial Office Complex. The following dates in 2002 have been reserved for our meetings: Jan 30th, Apr 24th, Jul 31st, & Oct 30th.

Place: Colonial Office Complex

10175 SW Barbur Blvd, Suite 100-BB

Portland, OR 97219

Time: 7:00 pm

LUNAR LONGITUDE

Robert McGown

Historically, the Earth's prime meridian has been moved several times, as navigational and cartographic advances led to changes in our perception of geography. At one time, most nations had their own prime meridian. In 1884, the Greenwich meridian was finally adopted as the universal prime meridian.[1] As we look ahead to future space endeavors, while still maintaining ground-based observatories, the system of measuring longitude on the Moon seems confusing and outdated. Perhaps it is time to change the lunar coordinate system.

Currently, lunar or selenographic longitude is based on a central meridian in the center of the side visible from Earth. Longitude is measured east and west from this meridian, so that the edges of the visible disc are at approximately 90°W and 90°E (with some areas concealed or revealed due to libration). These are lunar globe coordinates, so east and west on the Moon are reversed from east and west in the sky. Prior to 1961, the convention was to treat east and west as with celestial coordinates. [2] Our changing observational perspective led to this change, as the Moon went from being a detached world in the sky, only half of which was visible, to a globe that we might visit and explore. We propose that our perspective has changed again, and that the lunar prime meridian should be placed at what is now 90°W.

First, moving the central meridian would allow us to eliminate confusion regarding east and west. Longitude would be numbered continuously from 0° – 360°, with longitudes 0° through 180° encompassing the Earth-facing half of the Moon. This numbering is logical both for earthbound observers (who will no longer confuse lunar and celestial coordinates) and for astronauts. When features in libration zones and polar areas are referred to by their coordinates, it will be easier to mentally place these features on their correct limb.

A continuous longitude system will be of great benefit to lay persons like amateur astronomers and the media. For example, since most of the lunar maria are on the near side, all will have near-side longitudes (0° – 180°). Likewise, the heavily cratered features of the far side will all have longitudes greater than 180°, so the two very different faces are separated from each other. Currently, the central meridian and 180° bisect these faces, based on an artificial, arbitrary designation of east and west.[3] Sometimes, positive and negative longitudes are used in place of east and west, but these start from the same central meridian and are also confusing. Coincidentally, the new prime meridian will be at the leading edge of the Moon's orbit around Earth, another baseline.

Implementing the new system should not create much difficulty. The major lines of longitude would still run through the same features; only the numbering would change. Current maps would still be useful if relabeled. It would be wise to update the lunar coordinate system now, before the establishment of permanent settlements on the Moon. With a new, intuitive system in place, we can clarify the confusing issue of lunar longitude for generations of astronomers and selenographers to come.

ASTROPHYSICS / COSMOLOGY SIG

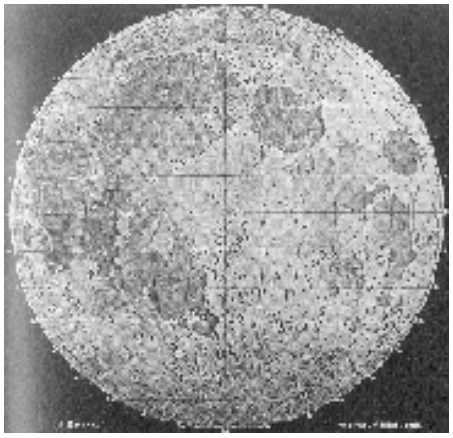
TIME: 7:00 PM

DATE: February 21, 2002

TOPIC: The Art of Observing, Alan Davenport

PLACE: Linus Pauling House, 3941 S.E. Hawthorne Blvd.

Possible Historical Reasons for Placing the Prime Meridian in the Center of the Moon's Earth-facing Hemisphere



Throughout history, the center of the Moon has been a sighting location used by navigators. The central prime meridian was used by navigators even before the invention of the sextant. The lunar distance method was widely used from 1472 to 1914.[4] This was a technically difficult method that was generally replaced by Harrison's grid iron chronometer, introduced in 1720.[5] Moon sightings are still occasionally used for the lost art of celestial navigation. Stars, planets and the Sun are preferred.[6] Even commercial airlines used celestial navigation until the late 1950s. Any navigators using a Moon shot would automatically shoot the center of the Moon, so this was a natural central meridian for lunar coordinates. Today, both the navigational method and the placement of the

(Continued on page 6)

[1]Thrower, Norman J. W. In: Andrewes, William J. H. *The Quest for Longitude*. Harvard University, Cambridge, MA. 1996: p. 61.
[2]Rükl, Antonín. *Atlas of the Moon*. Kalmbach Publishing, Waukesha, WI. 1996: p. 17.
[3] *Ibid.*
[4]*Bryce Walden LBRT, Wes Stone, personal correspondence*
[5]Bowditch, Nathaniel. *American Practical Navigator*. US Naval Oceanographic Office, Washington, DC. 1966, p. 45.
[6]*Ibid.*, p. 46

(Continued from page 5)
meridian appear to be obsolete.

Confusion and Error Related to Conflicts Between Measurement Systems

Any change of the lunar coordinate system would have to be universally adopted. Confusion arises when conversion between systems is necessary. A metric-to-English conversion resulted in the loss of a spacecraft. One can imagine the consequences of mistaking east for west or "+" for "-." The west pole prime meridian system would prevent navigational confusion by its continuous progression of longitude. Hopefully, the nature of the system, and its association with the prominent Mare Orientale, will transcend the confusion caused by the last coordinate system change. British astronomer and author Patrick Moore, in *New Guide to the Moon* (1976), tells observers: "I have followed the IAU convention with regard to east and west—so that anyone who happens to have an earlier edition of this book will find everything reversed." How counterintuitive![7]

Lunar Time Systems

On Earth, the Greenwich Prime Meridian is the zero-point for timekeeping, with 24 time zone boundaries laid out at approximately every 15° of longitude. The International Date Line lies opposite the Prime Meridian. It remains to be seen whether lunar time (for those living on the Moon) should follow the same conventions. In the same way sunrise and sunset tables are made for the Earth, like tables would be calculated for the 14 day passage of the sun set and sunrise terminator. Although future colonists will retain their Earth-based 24 hour biological clocks, they may simply use Universal Time. Times of local sunrise and sunset would be expressed in tables in the Daily Lunar News, for colonists with work schedules dependent on sunlight, or for those simply needing to adjust the solar panels after the long lunar night.

[7]Toghill, Jeff. *Celestial Navigation*. W. W. Norton, New York. 1986, pp. 73-74.
[8]Moore, Patrick. *New Guide to the Moon.* W. W. Norton, New York. 1976, p. 233.

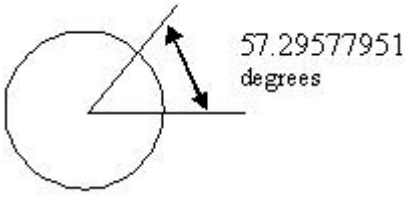
NOTE: In the January issue, page 8, the photo of NGC 7331 was incorrectly credited to David Haworth. If you know who took this photo, please contact me at regis_krug@mentor.com or 503-685-1299 so proper credit can be given. I'm fairly certain that the photo was in a message on the RCA mail list.

(Continued from page 4)
are very close to each other, like double planets revolving around each other. The size of Charon from the surface of Pluto is 3 ¾ degrees. The size of Pluto from the surface of Charon is 6 ¾ degrees.

These facts are fun and easy to calculate. The following shows the math for calculating the perceived size of any object.

The Magic of Ratios and Radians

If an object is the same distance away as it is tall, the size to distance ratio is **one to one**, and the view of this object would subtend 57.29577951 degrees, which is called a radian.



If an object is twice as far away as it is tall, the size to distance ratio is **two to one**, and our view of it would be a radian divided by 2 or 28.6 degrees.

If an object is 114 times as far away as it is tall, the size to distance ratio is **114 to one,** and our view of it would be a radian divided by 114, which figures to be approximately as 1/2 a degree or 30 minutes.

We know the sun and the moon are very different in actual size. Why do the sun and moon appear to be the same size in the sky? The following calculations explain why. Figures are approximate.

The moon is 220,000 miles away. It is 2000 miles in diameter. The size to distance ratio is 110 to 1.
The sun is 93,000,000 miles away. It is 890,000 miles in diameter. The size to distance ratio is 104.5 to 1. Both ratios are similar. Divide the radian by their ratio the result is the apparent size of an object in degrees.

If you want the result in minutes of a degree instead of decimals, multiply the decimal part of the answer by 60. For instance, the decimal .50 of a degree is ½ half a degree in decimals. ½ a degree is 30 minutes when you multiply .50 X 60. Our view of both the sun and moon is a little more than ½ of a degree.

(Continued on page 8)

CALL FOR 2002 OSP SPEAKERS

Candace Pratt

Indian Trail Spring in the Ochoco Mountains of Central Oregon will come to life again this August 8-11th, for the 15th Annual Oregon Star Party. Thursday, Friday and Saturday afternoons will feature presentations on a wide range of astronomical topics presented by amateur astronomers from the Pacific Northwest.

Suggested topics for this year's OSP include: astronomy equipment; observing award programs; documenting your observations with photography, CCD imaging and sketching; eclipse trips and other astronomy-related travel; deep sky observing; observing aurora/meteors/comets; getting started in amateur astronomy; telescope making; etc., etc.

If you are interested in presenting an hour program at OSP, please contact me Friday, February 15th with your suggested topic and brief description. We're hoping to have the completed program on the website by the end of February.

The SKY'S the limit! Think about what you'd like to share. I'll start first: I volunteer to present a program titled, "Observing in the Australian Outback with the NG FFT (Next Generation Frequent Flier Telescope)".

(Continued from page 1)
other. This time I think I'll work on an 8" Dobsonian with my 10 year-old daughter. (You can see my efforts on my web site linked from the RCA site).

I'm lucky to have full support from my family to pursue this hobby. It can take a lot of time (thankfully, they are asleep most of the time I'm gone!). Actually, my wife Helen, daughter Abby (10), and son Aiden (6) enjoy attending a few star parties with me during the year (especially Kah-Nee-Ta due to the warm beds and swimming pools).

Attending a dark-sky star party is the ultimate astronomical experience for me. There is nothing like a two or three night star party at a dark site (OSP, Camp Hancock, Table Mt., etc.) where you can really focus on some serious observing. I also enjoy being around the interesting people this hobby attracts. The people in this club are a significant reason why I joined the RCA's board as VP of Observing. I wanted to lend my hand at making sure the RCA continued having as many star party opportunities as possible. The position is fairly easy as most of the "work" is setting up the schedule in the Fall and Winter for the following year. After that, all I do is attend as many as I can. Pretty neat job huh?

In addition to astronomy, I like to golf in the summer with my wife and enjoy coaching my children's sports teams (basketball, soccer and baseball). Cooking is also an obsession of mine (as I was a chef for over a dozen years in my first career). On the Monday's I'm not at RCA meetings, I alternate volleyball and playing poker with the boys. Go figure. You can also catch me at the occasional Blazer game.

I'm looking forward to meeting more of you at this year's meetings and star parties. Clear skies for you all.

BUILDING A 16" TELESCOPE

Regis Krug

The purists say that if you consider yourself an ATMer, you must build every part of your scope yourself. There's a lot to be said about the satisfaction gained from admiring that finished scope and saying "I built this myself." I thoroughly enjoy working with wood (and metal) to create something new and unique. However, the purpose of having a telescope is to view the marvelous expanse of the heavens, tracking down those elusive DSOs or admiring the swirling cloud formations on Jupiter, rather than spending the next two years in the shop.

I've decided to compromise for the time being. The thought of creating a mirror from scratch is appealing, and someday I may give it a shot. For now, I have a brand new 16" F5.5 mirror (from Steve Swayze) sitting in the corner of my bedroom, waiting to see first light. I chose F5.5 as a compromise. It should limit coma, provide outstanding views of DSOs, and allow me to examine the planets in great detail, without balancing any higher off the ground than necessary.

I will probably buy many components "off-the-shelf" for this scope, such as the secondary, spider, truss connectors and poles, focuser, and finder.

I'm in the process of designing an 18-point mirror cell using *The Dobsonian Telescope: A Practical Manual for Building Large Aperture* Telescopes by David Kriege and Richard Berry as my guide. I have an old Lincoln welder and some welding experience (OK from 30 years ago) so I will build the mirror cell myself. I'll also build the secondary cage, rocker box, and ground board. I am anxious to try out some nice dovetail joints and inlay work on the rocker box.

My goal is to have this scope ready for first light before summer, but OSP is probably more realistic.

Some day, with a lot more experience, I hope to build an ultra light, but that is another saga.

JUPITER OBSERVERS ON THE ALERT

Candace Pratt

Jupiter is without doubt the most dynamic planet for amateur astronomers. From night to night, its appearance in backyard telescopes changes at an amazing rate, and as if to emphasize the point, Jupiter currently is undergoing a historic event. John McAnally, assistant coordinator of the Association of Lunar and Planetary Observers Jupiter section (ALPO), issued an alert January 15th to encourage amateurs to observe the activity taking place near the Great Red Spot (GRS), located in the south edge of Jupiter's South Equatorial Belt, one of the two conspicuous cloud bands girdling the planet.

For 60 years, three large ovals persisted in the South Temperate Belt. Now the last of the three, designated BA, appears to be on a collision course with the Great Red Spot. Observers favored with steady seeing conditions and clear skies will have a ringside seat for this rare event. But, more than this, amateur observations may also provide insight into the dynamics of Jupiter's cloud belts. Says McAnally, "Astronomers are asked to make special efforts to observe this GRS/BA interaction so that a complete sequence of events can be constructed to characterize the behavior of the winds, jet stream, and other atmospheric conditions surrounding this interaction-data that would be of great value."

To see the oval, you'll need our predictions of when Jupiter's Great Red Spot and surrounding areas transit the planet's meridian and are best for viewing (<http://www.skyandtelescope.com/sights/moonplanets/redspot.html>).

Amateurs are requested to visit the ALPO Jupiter section (<http://www.lpl.arizona.edu/~rhill/alpo/jup.html>) for instructions on how to submit their observations.

(Continued from page 6)

Radian	ratio		½ deg		minutes of a degree
Moon calculation	**57.29577951**	**/**	**110**	**=**	**.520871 X 60 = 31.25**
Sun calculation	57.29577951	/	104.5	=	.548314 X 60 = 32.90

Diameter/Distance Table of Solar System Objects

Name	Diameter km	Diameter mi	Orbital Dist km	Orbital Dist mi
Sun	1,390,000	890,000		
Mercury	4,878	3,031	57,910,000	36,600,000
Venus	12,104	7,521	108,200,000	67,000,000
Earth	12,756	7,927	149,600,000	93,000,000
Moon	3,476	2,160	384,400	238,860
Mars	6,794	4,222	227,940,000	142,000,000
Phobos	21	13	9,380	5,830
Deimos	12	8	23,460	14,580
Jupiter	142,980	88,848	778,000,000	484,000,000
IO	3,630	2,256	421,600	261,970
Europa	3,130	1,945	670,900	416,880
Ganymede	5,268	3,274	1,070,000	664,870
Callisto	4,806	2,986	1,883,000	1,170,000
Saturn	120,536	74,901	1,429,000,000	887,000,000
Titan	5,150	3,200	1,221,850	759,200
Pluto	2,320	1,440	5,913,520,000	3,676,000,000
Charon	1270	790	19,640	12,200

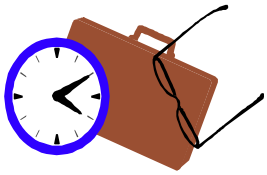
WELCOME NEW MEMBERS!

Brian Bergeron, Mike Bliziotes, Bruce Breckenridge, Corey Green, Scott Huddleston, Lior Levin, Joel, Loh, Daniel McManus, Les Oliver, Dave Price

RCA MEMBER AWARDS

As recognition of RCA members who complete one of the many observing programs offered by the Astronomical League, we will feature those members who have been awarded a certificate of achievement. Dale Fenske, the RCA Alcor to the Astronomical League, has more information if you are interested in an observing program.

Binocular Messier Master
#466, Meg Grace
Meteor Club
#85, Wes Stone



BOARD MEETING MINUTES

JANUARY 7, 2002

Ron Forrester

Present: Scott Fitzgerald, Peter Abrahams, Norm Trost, Dale Fenske, Vern Weiss, Ginny Pitts, Jeff Hennings, Scott Turner, Bob McGown, Dareth Murray, Carol Houston, Doug Houston, Regis Krug, Larry Godsey, Ron Forrester, Sameer Ruiwale, Jan Keiski

Treasurer - Vern: $15501 balance. Changing people who can sign forms at the Wells Fargo account. Peter Abrahams motions that Vern Weiss, Ginny Pitts and Peter Abrahams be empowered to effect securities transactions for the Rose City Astronomers Club (as outlined in and in accordance with appropriate Wells Fargo authorization form) -- Dareth seconds the motion. Motion passed unanimously.

Programming - Matt: Jan. is the annual info-fair. February is Rob Grover of JPL on Mars missions. Carol announce (5 minutes) Kah-nee-tah in January meeting, in February a more lengthy (10 minutes) discussion of the Messier Marathon.

Star Parties - Scott: 2002 Draft Star Party Schedule distributed by Scott Turner. Doug makes the motion that we accept the schedule proposed along with verbal amendments -- Sameer seconds the motion. Motion passed unanimously.

Sales - Sameer: December sales were $764. Sales would be better if our holiday party was on the second Monday like usual, giving time for people to buy gifts.

Membership - Doug: 341 member families.

New Members - Carol: Corresponding with a number of new members on the email list.

Library - Jan: A couple of new articles and videos. Also the new donation forms for tax write offs for library donations. Going to get a new card like the sales cart. Reorganized the library into 2 different categories.

Light Pollution - Bob: Organizing the light pollution conference for March. If anyone has any shielded lights to donate for a hands on display, please contact Bob or Dareth. Dareth working on the Tri-fold for the event.

SIG's - Scott: Most sig directors have been contacted for the info-fair and should be prepared. Kids will be out in the general meeting area at the JRCA table.

AL - Dale: Three new awards for this next month.

Editor-Regis: Would like to add 2 pages to the max page count for the newsletter – he will find out how much extra it will cost. Carol: We no longer get bad address returns for the newsletter, which makes it difficult to find out who isn't getting it.

YRCA - Ron: Nominal

Community Affairs - Norm: Presentation at elementary school in Tigard (Mary Woodward) Feb 28th. Candace agreed to do it. Another call from Jackson Bottom people for another gathering in June.

OMSI - Peter: Contract coming up in May, don't anticipate any changes. Ron profess that it would be nice to be able schedule use of the OMSI InFocus projector without fee. Can we get our display case back here at OMSI at least a couple of times a year? Can JRCA get classroom 1 at each general meeting for the kids as it is much quieter, and more convenient to the restrooms.

Webmaster - Dareth: HTML Newsletters are up. 200 people on the email list.

Telescope Library: New focusers for 3 of the scopes. Email a list of scope inventory to the board list.

Magazine: 113 Sky&Tel and 58 Astronomy.

Phone Line: Scott T. Jan 7 to Feb. 4 – Feb 4th to March 4th: Norm

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Storage is becoming an issue. Peter, Sameer, Jeff and Jan will be checking on the storage spaces we have.

Photocopying: we need a volunteer to deal with it – once a month for about 3-4 hours at OMSI during business hours.

Astronomy Day: Carol to contact Jim regarding OMSI plans.

Carol: Board needs to review the by-laws and any legal obligations. Also, passing on a clear understanding of a position as new board members take on the positions.

SECOND ANNUAL PACIFIC NORTHWEST CONFERENCE OF THE INTERNATIONAL DARK-SKY ASSOCIATION

Dareth Murray

The Second Annual Pacific Northwest Conference of the International Dark-Sky Association will be held Saturday April 13, 2002 at Clackamas Community College's Environmental Learning Center. Haggart Observatory is located adjacent to the center and will be available for evening observing.

Haggart Observatory

The program will include a keynote presentation given by a representative from the International Dark-Sky Association, panel discussions, a hands-on hardware workshop and a lighting walkabout. Some of the topics include dark sky preserves, light pollution and the immune system and measuring light pollution. Corvallis activist Ken Bronstein will lead a panel discussion on lighting activism.

The full day conference, including lunch, is only $25.00 if you register before March 1. Registration brochures will available at the RCA general meeting. You can also contact conference coordinators Dareth Murray (dareth@web-ster.com) or Bob McGown (r_mcgown@msn.com) for complete details. Visit Oregon Dark Skies (http://www.rca-omsi.org/darkskies.htm) for more information.

February 2002

Sun	Mon	Tue	We	Thu	Fri	Sat
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28		

March 2002

Sun	Mon	Tue	We	Thu	Fri	Sat
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

February

Feb. 2	Sat.	Telescope Making Workshop	Tech Marine Srvc	10-3
Feb. 4	Mon.	Board Meeting	OMSI Classroom 1	7:00 PM
Feb. 18	Mon.	YRCA (ages 13-18)	OMSI Cafeteria	6:30 PM
Feb. 18	Mon.	RCA Kids (ages 4-12)	OMSI Cafeteria	7:30 PM
Feb. 18	**Mon.**	**General Meeting**	**OMSI Auditorium**	**7:30 PM**
Feb. 21	Thurs.	Astrophysics/Cosmology SIG	Linus Pauling House	7:00 PM

March

Mar. 2	Sat.	Telescope Making Workshop	Tech Marine Srvc	10-3
Mar. 4	Mon.	Board Meeting	OMSI Classroom 1	7:00 PM
Mar. 18	Mon.	YRCA (ages 13-18)	OMSI Cafeteria	6:30 PM
Mar. 18	Mon.	RCA Kids (ages 4-12)	OMSI Cafeteria	7:30 PM
Mar. 18	**Mon.**	**General Meeting**	**OMSI Auditorium**	**7:30 PM**
Mar. 21	Thurs.	Astrophysics/Cosmology SIG	Linus Pauling House	7:00 PM

The RCA General Meeting falls on the third Monday of each month. We usually meet in the Auditorium at OMSI, next to the Murdock Planetarium. Occasionally the meeting is held in Murdock Planetarium. Check here each month for details, or look us up at the RCA web site (http://www.rca-omsi.org).

The Weather SIG address is: Colonial Office Complex, 10175 SW Barbur Blvd, Suite 100-BB, Portland. From downtown, go south on I-5 to the Barbur Blvd. Exit. Cross back over I-5 and the Complex will be on your left.

RCA CLUB INFORMATION
Message Line: (503) 255-2016
Web Site: http://www.rca-omsi.org

Oregon Museum of Science and Industry
Rose City Astronomers
1945 SE Water Avenue
Portland, Oregon 97214-3354

The
Rosette Gazette

Volume 14, Issue 3 | Newsletter of the Rose City Astronomers | March, 2002

In This Issue:

Observatory Night

Monday, March 18th

Local to Portland are three astronomical observatories that are open to the public for observing opportunities, and some possibilities for doing research with advanced instrumentation. The Rose City Astronomers will be introducing at the March general meeting the following representatives:

Stephen Stout
Goldendale Observatory
Goldendale, Washington

James Dickinson
Haggart Observatory
Oregon City, Oregon

Rick Kang
Pine Mt. Observatory
Bend, Oregon.

Together, these facilities offer unique experiences for observing with large aperture, high quality instruments in the comfort of mechanized domes. We will learn of the various observing programs offered, possibilities for astronomical research, and camping facilities available. In addition, we will hear of volunteer opportunities including night sky tour guides. Depending on weather, we are hopeful of linking to the 32-inch Pine Mt. telescope for a live remote demonstration.

So join us in getting the full scoop of the recent, vast improvements made at these facilities.

See You There!

In The March Sky

5, Last Quarter Moon
13, New Moon
13, Comet LINEAR WM1 should be visible in the early morning
15, Venus returns as the evening star
15, Venus, Mars, Saturn, and Jupiter visible
15-17, Messier Marathon
21, First Quarter Moon
28, Full Moon

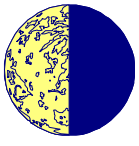
Spring to the Stars!

Spring officially begins with the vernal equinox on Tuesday, March 20 at 11:16 am PST. On Saturday evening, March 23, OMSI and Rose City Astronomers and will celebrate the vernal equinox and the beginning of spring with a free Star Party!

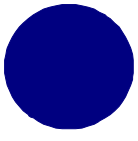
Join us as we gaze at the spring sky at OMSI's east parking lot, located on 1945 SE Water Ave, starting at 7:30 pm. From beginners to experts of all ages, here's your opportunity to view the stars, and other objects up-close and personal through telescopes. Viewing highlights includes the planets, Orion Nebula, Beehive star cluster, and more!

For possible weather cancellation, call (503) 797-4610 on March 23 after 3:00 PM to get the latest information. The 2002 OMSI Star Party schedule can be found on the OMSI website at www.omsi.edu

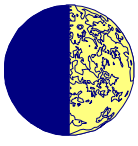
March 5



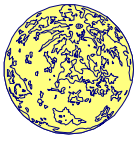
March 13



March 21



March 28



Club Officers			
President	Peter Abrahams	(503) 699-1056	telscope@europa.com
Past President	Candace Pratt	(503) 296-6758	candace@europa.com
VP Members	Doug Huston	(503) 629-8809	geometer31415@aol.com
VP Observing	Scott Turner	(503) 788-6484	kings1@attbi.com
VP Community Affairs	Norm Trost	(503) 668-7979	normt@europa.com
VP, Communications	Matt Brewster	(503) 740-2329	brewster@teleport.com
Treasurer	Ginny Pitts	(360) 737-0569	vepitts@attbi.com
Secretary	Ron Forrester	(503) 504-8071	rjf@skyhackers.org
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Web Master	Dareth Murray	(503) 656-1293	dareth@web-ster.com
Alcor, Historian	Dale Fenske	(503) 256-1840	fenskedf@juno.com
Library Director	Jan Keiski	(503) 293-3281	jikeiski@juno.com
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Media Director	Glenn Graham	(503) 579-1141	sueandglenn@msn.com
IDA Liaison	Bob McGown	(503) 244-0078	r_mcgown@msn.com
OSP Liaison	Chuck Dethloff	(503) 357-6163	telmor@teleport.com
Camp Hancock Liaison	Glenn Graham	(503) 579-1141	the.grahams@verizon.net
Subscription Director	Larry Godsey	(503) 675-5217	larrygodsey@att.net
SIG Director	Scott Fitzpatrick	(503) 669-8243	slfitzpatrick@cs.com
Youth Programs Director	Jenny Forrester	(503) 504-8071	jenny@theforrest.org

President's Message

By Peter Abrahams
March 2002

Some upcoming events are worth a repeat announcement:
The weekend of March 15 is RCA weekend at Kah Nee Tah resort east of Mt. Hood. This is our only event held at a hotel; and the obvious reason is the disinclination of RCA members to camp out during an Oregon winter. These weekends at Kah Nee Tah receive very good reviews from participants, and are a great way to include your non-observing family members in an outing.

Saturday, March 23, is the first of our 2002 OMSI / RCA star parties. We get upwards of 1,000 people at these events. This is an illuminated site; not good for dim objects, but Jupiter, Saturn, and the moon will be very visible; and experienced observers can find a dozen bright planetary nebulae from OMSI. If you've never given someone their first look at Saturn, it is quite an experience. Plus, we pay our rent at OMSI by staffing these star parties.

March 30-31 is the weekend of the Telescope Optics Workshop in Bellingham, WA. This is an outstanding event for those interested in telescopes. You can find it on the web. A half dozen or more RCA members attend these meetings.

On April 13 will be the first Portland area International Dark Sky Association, PNW region, conference. This will be at Haggart Observatory at Clackamas Community College, a small facility, and will not be a large meeting. We hope it will be influential. We also hope that more RCA members join IDA.

April 20, 2002 is Astronomy day. RCA plans to join with Haggart Observatory in some daytime activities. Members who wish to take the lead in A-day activities, please contact myself or a board member. There are RCA resources available to devote to this national day of celebrating astronomy.

Tune up your telescopes, spring is in the air.....

RCA

Magazine Subscriptions

One of the main services offered to RCA members is subscriptions to *Astronomy* and *Sky & Telescope* magazines at a much reduced rate from newsstand prices. *Astronomy* $29 for one year or $55 for two years. *Sky & Telescope* is $29.95 for one year.

Checks must be made out to Rose City Astronomers to get the reduced rates.

For further information, see Larry Godsey, Subscription Coordinator, at the Membership Table at General Meetings or check the RCA website. Please note: Allow two months for your subscription to be renewed.

Sky & Telescope Store Discount

RCA members who subscribe to *Sky & Telescope* are entitled to a 10% discount at the *Sky & Telescope* online store at: *http://skyandtelescope.com/shopsky* To get your discount, enter Rose City Astronomers when prompted for your club name during checkout at the *Sky & Telescope magazine* is $29.95 for one year. online store.

The "Kids" of Rose City Astronomers

RCA Kids
Children ages 4-12 are welcome to join in fun and educational activities while the grownups attend the monthly general RCA meetings. The kids' meeting takes place in the adjoining cafeteria at OMSI from 7:30 p.m. to 9:00 p.m. If you have any questions, please e-mail Jennifer at jenny@theforrest.org.

The **Young Rose City Astronomers** (ages 13 - 18). This group meets from 6:30 to 7:30 on the third Monday of the month in the OMSI auditorium, before the regular RCA meeting. In addition, the YRCA meets on the first Thursday of the month. Kids with all levels of experience are welcome. There's no need to join - just come to the meetings and have fun. Adult volunteers are always welcome. Call Margaret McCrea, 232-7636, for more information.

THE OBSERVERS CORNER ..... *Howard Banich*

The past four months have been a particularly barren stretch as far as observing goes. The weather has been much cloudier and wetter than last year, which has actually helped in a way since I've been re-finishing my main scope. I've observed on the back patio a few times with my small scope, but the last time I was out under a dark, star-filled sky with a scope was in October with a memorable couple of nights at Steens Mountain.

Man, that seems like a long time ago!

So now the big scope is ready to go and still the clouds haven't cooperated. Not counting the gorgeously clear night on Valentine's Day that is - timing is everything…

In the meantime I've put together a short list of objects I'll observe the first chance I get, something I normally do anyway, but over the past couple of months this activity has taken on a more central role in my astronomical enjoyment. In case you're in the same boat as I am, here's a few objects on my current observing "short list":

NGC 2207 and **IC 2163** are interacting galaxies located in Canis Major that have been featured in a recent Hubble Heritage image as well as the February 2002 issue of Astronomy magazine. I was initially intrigued by the closeness of the interaction shown in the Hubble image – the overlapping spiral arms are beautiful. The February Astronomy features two images by Al Kelly, which caught my attention; one is color and the other is black and white, with the latter being labeled as a deeper image than the color one. That piqued my interest even more since they seem to show the same amount of detail with the color image seeming to be a slightly longer exposure.

Digitized Sky Survey image of NGC2207 and IC2163

Perhaps a minor blooper, but the description caught my attention the most, as the magnitude for 2207 is listed at 10.7 with a size of 4.8 x 2.3 – large and bright! IC 2163 is slightly fainter and smaller at magnitude 11.9 with a size of 3.0 x 1.2 – pretty good numbers. Together this galaxy pair could be a compelling sight in the eyepiece. Can't wait to have a look…

NGC 2440 is a fairly large and bright planetary nebula in Puppis. I've observed this once before – in my 8" scope in 1993, but if not for my notes I wouldn't have remembered it at all. In the 8" I noted that it was tough to pick out from the surrounding star field at 105x, and was just a little larger than an equally bright star image.

Digitized Sky Survey image of NGC 2440

What re-ignited my interest were a string of posts on a planetary nebula observers email list describing this planetary as having lots of internal detail using scopes in the 12' to 20" range. A link to an image by Al Kelly was listed that was described as being

(Continued on page 4) ..Observers Corner

WELCOME NEW MEMBERS!

Alan Aversa, Victor Bruhn, Greg dardis
Gary Hewitt, Jeff Lee, Karen Luke
Dave Voegtlin, Steve Weiler

Observers Corner (Continued from page 3)

only slightly more detailed than what could be seen visually. With a magnitude of 9.4 and a size of 14 x 32 arc seconds it seems like a great object to examine more closely.

By the way, Mr. Kelly's images, taken with a 32" scope, can be found at: http://www.ghg.net/akelly/ . To check out the Hubble Heritage images, go to: http://heritage.stsci.edu/

While checking on the physical characteristics of the above in *The Night Sky Observer's Guide* I came across **Sharpless 2-301**, an emission nebula that is supposedly a fairly obvious sight in 8" and larger scope using an OIII or UHC filter. Described as a large, subtle object having three prongs of nebulosity sprinkled with faint stars, this sounds like a compelling sight.

Digitized Sky Survey image of NGC 2362

An object I saw last winter with my 8", **NGC 2362**, is a cool sight. A very tight open cluster, the fainter members of 2362 are nearly hidden in the glare of 4th magnitude Tau Canis Major. I'm intrigued to see it again in my larger scope.

The Hickson Compact Galaxy Group list is also at the forefront of my observing interests, but I know that as soon as I find myself under a dark clear sky I'll start by looking at some old favorites – and the objects I've just mentioned - rather than delving right away into the much fainter pleasures of the Hickson list.

Man, I can barely wait!

Digitized Sky Survey images are based on photographic data obtained using Oschin Schmidt Telescope on Palomar Mountain. The Palomar Observatory Sky Survey was funded by the National Geographic Society. The Oschin Schmidt Telescope is operated by the California Institute of Technology and Palomar Observatory. The plates were processed into the present compressed digital format with their permission. The Digitized Sky Survey was produced at the Space Telescope Science Institute (ST ScI) under U.S. Government grant NAG W-2166.

THE WEATHER SIG

Beginning in January 2002, RCA's weather SIG meetings will meet on a quarterly basis. We will continue to use the basement conference room of the Colonial Office Complex. The following dates in 2002 have been reserved for our meetings: Jan 30th, Apr 24th, Jul 31st, & Oct 30th.

Place: Colonial Office Complex

10175 SW Barbur Blvd, Suite 100-BB

Portland, OR 97219

Time: 7:00 pm

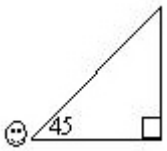
PLANE GEOMETRY WITH A TWIST

Dale Fenske

Last month I described an easy way to "visualize apparent sizes of objects in the Solar System." I stated that, "An object that is just as far away as it is tall subtends an angle of 57.29577951 degrees." I felt it necessary to write a follow-up article to take this explanation one more step.

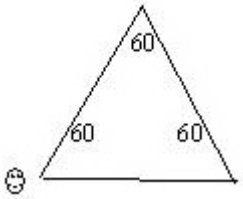
We live inside a ball. Our eye is located in the very center of a sphere, at least that is how we observe the universe around us. Our eyes discern light as small, discrete areas of color pasted on the inside surface of this sphere. Our eyes detect photons on a curved palette. We have a 360-degree panoramic view of our universe.

Most calculations used in Plane geometry describe a flat universe with straight sides and angles. Our eyes do not perceive the universe in this way. For instance, in describing an object as far away as it is tall, one might think I was describing an isosceles triangle with a 90-degree angle at its base. This isosceles triangle subtends a 45-degree angle. This does not fit the description my object. This isosceles triangle has the top of the object more distant from the observer than at the bottom.



isosceles

An equilateral triangle adheres closer to the requirements. It has all three sides equal and all three angles equal. The angles are 60 degrees and still do not fit the re-



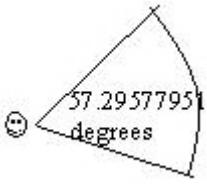
equilateral

(Continued on page 5) Plane Geometry

Plane Geometry (Continued from page 4)

quired 57…. degrees. The center of the object is also closer to the observer than both the top and bottom.

Drawing the object on a circle, as our eyes perceive the object, fits all the requirements. This arc of the object is equally distant from the observer at all points. This reduces the subtended angle from 60 degrees to 57.29577951 degrees, which is one of the exact definitions of a radian. This is the figure we use with our ratios.



Radian on a circle

Solar system objects come in an assortment of shapes and sizes and they move in a variety of orbits. Parts of an object may be closer or farther from us than other parts. If an object is quite near, these things need to be considered as part of our calculations. Fortunately for us, astronomical objects are usually so far away that these variables have a miniscule effect on our answers. Our calculations used for estimating sizes of objects are to give us enjoyment. If one spends an enormous amount of time calculating all of the many small variables, it takes away from the pleasure of our tour of the universe. We are supposed to have fun with our imagination. So my advice is, "Make it simple and enjoy the trip!"

ASTROPHYSICS / COSMOLOGY SIG

TIME: 7:00 PM

DATE: March 21, 2002

TOPIC: The Incompleteness Theorem - Doug Houston

PLACE: Linus Pauling House, 3941 S.E. Hawthorne Blvd.

DR. JILL TARTER - STILL LISTENING FOR THE COSMIC DIAL TONE

By Bob McGown & Dareth Murray

It was a rare treat to interview Dr. Jill Cornell Tarter, Director of the Phoenix project for the SETI Institute. A few hours before her presentation "Search for Extraterrestrial Intelligence", the January lecture offered by the Institute for Science, Engineering and Public Policy (ISEPP), she shared tea with us at the classic Heathman Hotel in downtown Portland.

She explained that it is really the search for 'extraterrestrial technology' that is the focus of the varied SETI Institute research projects and educational curriculum. With the support of the SETI Institute, newly organized Oregon Team SETI was pleased to offer complimentary tickets for the lecture to about thirty local SETI enthusiasts, thanks to the generosity of Terry Bristol, Director of ISEPP.

Beginning her career in a male-dominated science to become a world-class astronomer, Jill is a refreshing role model for any young woman. Among her many awards she holds the "Lifetime Achievement Award" from Women in Aerospace. As the model for the character 'Ellie' in the movie *Contact*, she did not have a ham radio license as the movie character does, however she did like to take radios apart. In Carl Sagan's book *Contact*, omitted in the movie, she figures out how to fix a vacuum tube radio. She admitted to us that sometimes her dad would help her put the radios back together, but many times there were parts left over.

At an early age, she had decided to become an engineer. Her teachers did not encourage her, telling her: "Why bother? You'll just get married and have babies." She asked her Dad: "Why can't I be an engineer?" He told her that if that's what she really wanted to do, and she was willing to work hard for it, it was ok with him. Jill was a popular majorette in high school. When she took a calculus course, in preparation for her career as an engineer, it soon became as important to her as twirling a baton.

Jill was the only woman out of 300 students in the freshman engineering class at Cornell University and graduated with distinction. Finding engineering 'boring', she went on to earn her master's degree and doctorate in astronomy at the University of California at Berkeley, where her major field of study was theoretical high-energy astrophysics. Jill coined the term 'brown dwarf' while working on her doctoral thesis. She told us that she first used the term because "brown is not a color" and the type of star she was studying did not emit any particular color of the spectrum.

As a graduate student at Berkeley, she became involved in the beginning stages of a small search for radio signals from extraterrestrial civilizations using the Hat Creek Observatory 85-foot telescope. While working at Hat Creek Radio Observatory, she read Bernard Oliver's *Cyclops Report*, which she told us was the stimulus for her instant attraction to SETI and her lifelong pursuit for signs of intelligent life in the universe. In 1997 the Board of Trustees of the SETI Institute appointed her to a newly endowed position at the SETI Institute: the Bernard M. Oliver Chair.

(Continued on page 6) Still Listening

Still Listening (Continued from page 5)

Jill shared with us some of the interesting work being done by her colleague John Carlstrom, professor of Astronomy at University of Chicago. He is using new instruments to measure the primary anisotropy in the Cosmic Microwave Background (CMB) radiation and the Sunyaev-Zel'dovich Effect. The Interferometric Sunyaev-Zel'dovich Effect Imaging Experiment uses the signatures which galaxy clusters leave in the cosmic microwave background to measure the age and geometry of our universe and to better understand the formation of massive structures.

In the last year the SETI Institute has been conducting a series of workshops to take a fresh look at SETI strategies, in both radio wave and optical frequencies. From these workshops originated the optical SETI projects being built both at Harvard/ Smithsonian and at Berkeley. Jill mentioned her colleagues, Paul Horowitz and Andrew Howard, who are part of a team based at Harvard University and Oak Ridge Observatory. They have built a system to detect a pulsed laser beacon signal, using a relatively simple high-speed optical detector at Harvard's 61" optical telescope. This telescope, which is located at the same site as the 84' radio telescope used for The Planetary Society's BETA search, is currently engaged in a continuing radial velocity survey of 2500 nearby solar-type stars, conducted by David Latham and Robert Stefanik. The optical SETI project piggybacks on the 61" telescope.

When we asked about the influence of Carl Sagan in her life, Jill responded that she and Carl had shared a special bond. They both fought cancer and only Jill was a survivor. His death was a deep personal loss for her as well as for the world. We ended the interview on a positive note with Jill talking about the exciting new Allen Telescope Array project, a 350 dish 5 meter telescope phased array, being built at Hat Creek Observatory in California.

LIBRARY NEWS

The Rose City Astronomers maintains a comprehensive club library of astronomy related articles, books, CD-ROMs and videos. These items can be borrowed by members through checkout at the general meetings for a period of one month with renewals available by phone or e-mail to the club library director, Jan Keiski (jikeiski@juno.com) - (503) 293-3281. The RCA library is constantly growing through many donations and the purchase of new materials. To keep pace, the RCA library staff is growing too. Welcome Tammy Ross who will be helping with the putting away of library material after the RCA general meeting.

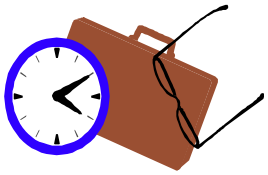
Other library staff include: Larry Froberg - data input & inventory of materials; Rea Young - check in of returned materials & backup for check outs; Richard Labar - set up library. Online access to a list of library materials will be implemented within the next few months, as well as color coding of library materials by category. In the not too distant future, check in & out will be done using a laptop donated by Larry Froberg.

Visit the RCA library web page at: http://www.rca-omsi.org/library.htm

RCA Photo Gallery

Who says that you have to invest thousands into a CCD camera to capture awesome pictures of some of our celestial jewels?

Glenn Graham made it outside on the last night of February. What a great view of the planets. The air overhead was pretty smooth and the details in Jupiter's clouds were great. After observing for a while, Glen took his laptop and web cam out for a couple of quick captures. Looks like he's starting to get the hang of it. Setup and takedown are only a few minutes each way.
Below are the results: Jupiter and Saturn.



BOARD MEETING MINUTES

FEBRUARY 4, 2002

Dareth Murray

Present: Peter Abrahams, Matt Brewster, Dale Fenske, Scott Fitzgerald, Larry Godsey, Jeff Hennings, Carol Huston, Doug Huston, Jan Keiski , Regis Krug, Dareth Murray, Bob McGown, Ginny Pitts, Sameer Ruiwale, Norm Trost, Scott Turner, Vern Weiss.

Treasurer - Vern: $4.754 in checking; $11,484 money market funds.

Programs - Matt: February is set with Rob Grover confirmed. Dareth will introduce him. March will be 'Observatory' month with Rick Kang from Pine Mountain, John LeCalvalier from Haggart and Steve Stout from Goldendale. Matt is trying to get John Dobson for June.

Star Parties - Scott: The star party schedule needs to go in the newsletter. Regis will put it in March issue. Peter and Scott are in contact with a representative from the State Parks re multiple star parties this summer called "From Campfire to Stars" at Rooster Rock and other parks in the Columbia Gorge. RCA is being asked to provide volunteers, if possible.

Carol reported on the Kah-nee-ta Messier Marathon. Get reservations in soon to Kah-nee-ta for a room. Matt offered to operate the solar scope at Kah-nee-ta for the weekend.

Sales - Sameer: In January gross sales were $273, net $45.

Membership - Doug: about 360 member families.

New Members - Carol: Nominal

Library - Jan: Nominal

Light Pollution - Bob: Discussed the upcoming April 13th Pacific Northwest IDA conference at CCC. Registration brochures will be available at the RCA February meeting. Also mentioned some of the activities being planned by CCC for Astronomy 'Week' and particularly Astronomy Day (April 20th).

SIG's - Scott: Nominal

AL - Dale: The AL has some new officers. Check out their website.

Editor - Regis: It is only $15 more to add 2 pages to the newsletter. He will have a longer issue for March and include the Star Party Schedule.

YRCA - Jenny: Nominal.

Community Affairs - Norm: There is a request from Tualatin Valley Playschool (5-6 year olds) for volunteers. Contact Norm if you are interested.

OMSI - Peter: Nominal

Webmaster - Dareth: Brought up the possible WebRing link to the website. Scott suggested moving member websites to the top of the 'Starlinks' page for higher member visibility.

Telescope Library: Jeff is checking the scopes as they come in. He will get Dareth more detail for the website.

Magazine - Larry Godsey has created a section for the website with lots of information including ordering and even a calculator online to add up the amounts. He is working on getting more magazines for club discounts.

Phone Line: Feb. 4 - March 4: Norm; March 4 - April 1: Dale

Other Business:

There was a lengthy and spirited discussion by all about the recent request for a signer for our public RCA meetings. Since we are a volunteer organization, the board decided we should make it a priority to try to get volunteer signers if possible. It was suggested that an interim solution might be to offer a printout of the program for the hearing impaired. Peter and Ginny are researching where we might find volunteer signers and how much it would cost to 'hire' a signer for each program. A possible solution was suggested to give the signing volunteer a free membership. Peter will report back to the Board at the next meeting on this issue.

It was determined that for voting purposes, a quorum of the RCA Board will be 11 members present. A motion was made, seconded and approved to create a directorship (voting) position on the board for magazine subscriptions. Larry Godsey is our new Magazine Subscription Director.

Bylaws: Carol led the Board in a quick review of the present bylaws with copies given to those who did not have them already. Board members were encouraged to read them thoroughly and if they have any questions or concerns bring them up at the next board meeting. The proposed RCA Policy for requirements as a 501.C.3 organization was discussed as well.

It was noted that as past President, Candace Pratt should be added to the roster of Board members (both on the website and newsletter.

Meeting was adjourned at 9 p.m.

METEOR OBSERVING AWARD

Looking for information on the Meteor Observing Award?

The following are three locations are really good places to start looking for information:

The North American Meteor Network at: http://www.namnmeteors.org/

The International Meteor Organization at: http://www.imo.net/index.html

The Astronomical League Meteor Club at: http://www.astroleague.org/al/obsclubs/meteor/metrcl.html

Note that this one also give the exact rules and requirement for the award.

2002 RCA Observing Schedule

Month	Day	Day of Week	Event	Location
Mar	15-17	Fri-Sat	Messier Marathon	Kah-Nee-Ta *
Mar	23	Sat	Vernal Equinox	OMSI
Apr	13	Sat	Dark Sky Star Party	Sunriver *
Apr	20	Sat	Astronomy Day	Rooster Rock w/ OMSI
May	10-12	Fri-Sun	Dark Sky Star Party	Camp Hancock *
May	18	Sat	Planet Parade	OMSI
June	8	Sat	Inter-Club Star Party -RCA &Eugene & Salem & Corvallis Clubs	Mary's Peak (Conner's Camp)
June	15	Sat	Summer Solstice	OMSI
July	6	Sat	Local Observing	White River Canyon
July	13	Sat	Dark Sky Star Party	Klondike
July	11-13	Fri-Sun	Table Mountain Star Party *	Washington
July	20	Sat	Lunar Viewing	OMSI
Aug	3	Sat	Local Observing	Larch Mountain
Aug	8-11	Thur-Sun	2001 Oregon Star Party	Indian Trail Springs *
Aug	11	Sun	Perseid Meteor Shower	Rooster Rock w/ OMSI
Aug	31	Sat	Local Observing	Larch Mountain
Sep	7-8	Sat-Sun	Dark Sky Star Party	Indian Trail Springs *
Sept	14	Sat	Autumnal Equinox	OMSI
Oct	4-6	Fri-Sun	Dark Sky Star Party	Camp Hancock *
Oct	12	Sat	Dark Sky Star Party	Klondike
Nov	2	Sat	Local Observing	Larch Mountain
Nov	19	Tues	Partial Lunar Eclipse	OMSI

*Indicates camping or camping nearby.
For all events: weather permitting. Schedule subject to change.
RCA members do also occasionally get together for other impromptu star parties. RCA's E-mail list provides you with the opportunity to hear about these spontaneous opportunities as they occur. If you are an RCA member and would like to be added to this list, please send E-mail to Dareth at dareth@web-ster.com requesting that you be added to the list.
For more information about all RCA activities, please check out our club's web site at: http://www.rca-omsi.org/ Or call our club's phone information line at (503) 255-2016.
Much discussion has been held regarding the **SAFETY** of RCA members while observing at public or private locations. The RCA does **NOT** assume any liability for the actions of others and can **NOT** guarantee your safety at any site. **It is always a good idea to observe in small groups to minimize your risks.**

2002 RCA STAR PARTY SITES

Included below are directions and information for the events listed on the 2002 Star Party schedule. More detailed information about each star party will be included in the appropriate issues of the Rosette Gazette. If you are new to star parties, please be sure to pick up your copy of RCA's "Star Party Tips" at any of the RCA General meetings. In it, you will find valuable information that will help your first experiences be pleasurable ones!

CAMP HANCOCK

OMSI's Camp Hancock Field Station is located near Clarno. You have two basic route choices to choose from:

1) Take I-84 east from Portland to Biggs Junction (exit 104), exit and head south on Hwy 97 to Shaniko.

2) Or you may take Hwy 26 east over Mount Hood. Turn left onto Hwy 216, which will take you to Hwy 197 just east of Maupin. Turn right on Hwy 197 and take it south to it's junction with Hwy 97. Turn left onto Hwy 97 and take it to Shaniko.

At Shaniko, take a left onto Hwy 218 (Shaniko-Fossil Hwy) and continue through Antelope and east towards Clarno near the John Day River. Look for the entrance to Camp Hancock about two miles east of the John Day River.

COLDWATER RIDGE

Travel north into Washington on I-5, take exit #49 (Castle Rock) and take a right at the stoplight. You will travel east for 31 miles on State Hwy 504 from that stoplight and turn left onto Forest Service Road 3100. When you come to the T, go left down the hill about ½ mile into a large opening.

INDIAN TRAIL SPRING

Travel east out of Prineville on Hwy 26 approximately 14 miles past the Forest Service Headquarters located at the east end of town, turn right onto the Ochoco Ranger Station Road. Zero your trip meter and travel 8.4 miles, until you come to a Y in the road just past the Big Summit Ranger Station. At this Y, stay to the right turning onto FS road # 42. Follow this for 19 miles as it winds up into and through Big Summit Prairie. Then turn right onto FS 4240 and proceed for 2.7 miles, turn right onto FS-800. Go 1.5 miles west on 800 and you will arrive at Indian Trail Spring. The site is located on National Forest Service lands and is at 5000 feet of elevation.

This site is also the location of the OREGON STAR PARTY. For more information, please check out the following web site: http://www.oregonstarparty.org/ .

KAH-NEE-TA

Travel east on Hwy 26 past Mt. Hood Government Camp, turning south towards Bend at the junction on Mt. Hood. Turn Left towards Simnasho (approximately 29 miles east of Government Camp - Big Kah-Nee-Ta sign on Hwy 26). Follow the road to Kah-Nee-Ta resort (also marked by large sign at resort driveway entrance). On the way to the resort, you'll pass the observing site before dropping down into the river valley. It is in the open field up to your left from the highway close to the Mile 14 milepost marker.

KLONDIKE

Take I-84 east from Portland to Biggs Junction (exit 104) and take Hwy 97 south for about 12 miles to Wasco. From Wasco, head east on Klondike road for about 3.5 miles and turn left onto North Klondike Road. Go a little over a mile and turn right onto Dehler Road. Go east 1 mile and turn off into a shallow bowl area. It is marked as a gravel pit on BLM's map. For more information, please visit: http://www.jps.net/spaceman/klondike.htm

LARCH MOUNTAIN

From Portland take I-84 towards Hood River and take exit #22 for Corbett. Zero your trip meter at the stop sign. At the stop sign you turn right and head up the hill towards Corbett. At 1.3 miles the road Y's, stay left at this "Y" and then take a left onto the Columbia Gorge Scenic Hwy. Zero your trip meter and proceed for 1.9 miles, take a right onto Larch Mountain Road. It is paved and marked with a big sign. Follow the road to the top of Larch Mountain (14 miles). At the top you turn right (just before the parking lot) into a large unpaved open area. You are at 4000 feet elevation.

MARY'S PEAK (CONNER'S CORNER)

From I-5: Take the Route 34 exit (to Corvallis) off I-5 and turn west onto Route 34. As you're approaching Corvallis (before the bridge over the Willamette) the route turns left at a stop light. Take this turn and continue on Route 34 all the way to Philomath. After passing the downtown portion of Philomath, you'll come upon an intersection (just past the wood mill to the left) indicating a continuation of Rt. 34 - by turning to the left, (staying straight will put you on Rt. 20 to Newport - Do not go straight!). Take this left turn onto Rt 34 toward Waldport, and drive for several miles (approximately 11 miles). Route 34 takes you on a winding journey through the Mary's Peak foothills, then leads you to a hillcrest where the Mary's Peak access road (marked by a sign to the right) begins. Turn right, onto this road, and drive for just over 5 miles. After this point, you'll encounter a brief patch of gravel road, just beyond the gravel is an intersection for a road to the left. Do NOT turn on this road, just continue straight on the paved road for another hundred yards and the Conner's Camp turn-off (marked by signs) will be seen to the right. Take this turn and continue to the parking area, which is only a few hundred yards away.

PINE MOUNTAIN OBSERVATORY

Turn right onto Pine Mountain Road (look for PMO sign) just east of the Millican store, approximately 25 miles east of Bend on Hwy 20. Follow the signs up the hill to the observatory. PMO has invited RCA members to become more active with the observatory. In exchange there would be access to a 15" and a 24" scope! For more information on how you can become qualified to use these big scopes, please contact Rick Kang . Or you may phone him at (541) 683-1381.

Click here for very detailed directions for Pine Mountain.

Visit Pine Mountain Observatory's web page.

*(Continued on page 10)**Star Party Sites***

Star Party Sites *(Continued from page 9)*

ROOSTER ROCK
Head east on I-84 from Portland. Take exit #25 and loop over the freeway to the State park. Day Use Permit is $3.00 non-member / $1.50 OMSI member per vehicle at Rooster Rock State Park

SUNRIVER LAVA QUARRY
Sunriver Lava Quarry Observing Site Directions: From Bend, go 15 miles south on U.S. 97, to the flashing yellow light marking the intersection to the Sunriver access road. Instead of turning right to go to Sunriver, turn left and go 0.8 miles to the observing site, a lava quarry. Turn right into a large open lot, and you are at the observing site.

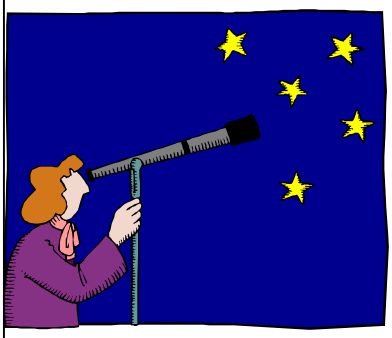
Accommodations: Most attendees stay at nearby Sunriver Resort (2 miles away) which has a lodge, condos and houses for rent, restaurants, grocery store, espresso, etc. The observing site itself is not geared for tent or RV camping, but there are camping areas within 20 miles of the site in the Bend, Sunriver, LaPine vicinity.

TABLE MOUNTAIN STAR PARTY
The Table Mountain Star Party and Convention is hosted by the Northwest Region of the Astronomical League. Last year over 1200 people attended this star party, making it one of the largest in the US! The 6000-foot site at Lion Rock is located near Ellensburg, WA. Directions are included with their entry form, which is usually mailed out by June 1st. If you are not mailed an entry form and would like more information about this event, please check out their web page at: http://www.tmspa.com/

This is a weekend camping experience. The site isn't a formal campground, but tent and RV camping are set up in a large grassy field. Porta-potties are provided, and there is generally a portable grill and concession stand for food. Water isn't available at the site, and there are no disposal facilities, so - you bring it in and you carry it out (including garbage and cigarette butts). There are motel accommodations about 45 minutes away in the town of Ellensburg.

WHITE RIVER CANYON
From Portland, take Hwy 26 east towards Mt. Hood. Shortly past Government Camp, you will see a sign for Hwy 35 (Hood River turn off). Take this exit and go approximately 4.2 miles and look for a green sign marked "White River Canyon BSA Lodge Parking". Go past the entrance roughly 50 yards and turn left into a large Forest Service parking area.

STARS FROM THE CAMPFIRE



"**Stars From the Campfire**", is a small, casual opportunity for a few park visitors to learn & see the skies while camping on weekends and an opportunity for RCA members to share their knowledge (along with staff) with the park visitors.

Goal: "to inspire park visitors to more awareness of the sky, even if only a beginning level"

Options: each program could be supplemented with a video or other idea you might have. It does not have to be the same program plan on each date and creativity is welcomed or casual viewing is okay too.

Free Campsite Available To Participants: We would make a free campsite available to each participant upon request;-- some like to make it fun for themselves. We would need to know in advance to reserve a site for you.

When: coordinated dates throughout summer 2002 June, July and August on weekends; possibly 3 dates each month

Where: Columbia River Gorge State Park campgrounds, Memaloose,Viento, Ainsworth State Parks. We invite the members to previsit the sites if desired. We hope to make the best of what we have since the Gorge will always limit us this way.

Who: One Oregon State Park staff and ideally two scheduled RCA members for each chosen date working together.

Time: start at dark or recommended time

Length: can be 15 minutes long supplemented with an astronomy video or longer like an hour in those parks with better viewing opportunities and visitor interest (each park is unique)

Equipment: we have a Celestron Nexstar 11 GPS telescope to use (which we haven't yet used and probably need assistance from you). You can also bring your telescope

Possible open dates to consider as of today (Note: I am working on 2002 programs and some dates may or may not be available later on unless of course we have been able to confirm the date with you first):

June 7, 14, 21, 22, 28, 29 (June 10 new moon)
July 5, 6, 19, 20, 26 (July 10 new moon)
August 9, 10, 16, 17, 23 Aug 30, 31, Sep 1 (Aug 8 new moon)

**We don't think you can schedule all of these dates but we are trying to give you options to pick from and hoping to get possibly about 3 dates each month if enough of RCA members are interested.*

(Continued on page 11) Campfire

Campfire (Continued from page 10)

RCA members may want to consider the following activities for their visits to the Columbia River Gorge State Parks this summer:

Bring a short video with you to have the campers watch and answer questions afterward.

Do a "star walk" by pointing out the brighter and prominent constellations in the sky.

Consider discussing basic information like why some stars are brighter than others,

How does size, and distance affect the apparent brightness of a star

Point out a few stars that meet magnitude milestones (the box of the little dipper with 2nd, 3rd, 4th, and 5th magnitude stars)

Bring a telescope with you to show off a few of the brighter gems in the sky (remember beginners don't want to see the really neat 14.2 magnitude NGC galaxy you just spotted last week!)

Tell a constellation lore/story/history

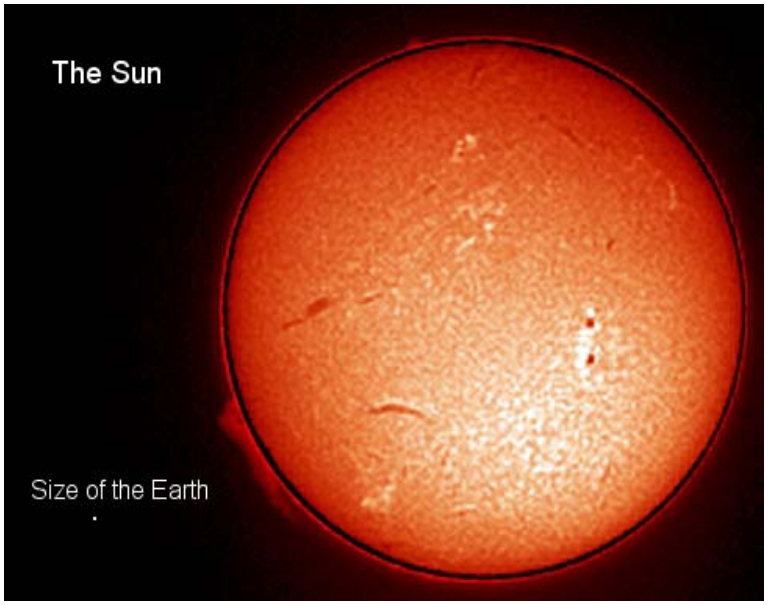
Teach a few astronomy "tricks" such as how far is a degree, 5 degrees etc. (using your hand at arms length).

Describe what they are seeing in the Milky Way (spiraled arms of our galaxy, where we are in the galaxy, our galaxy's shape, etc.)

There are so many things to share with the public, I think that the only problem is that there won't be enough time to tell it all!

Are you interested in sharing your knowledge with our Park Visitors? Please contact:
Lisa Midlam, Visitor Services Team Leader, Columbia River Gorge State Parks
503-695-2261 ext. 228
lisa.midlam@state.or.us

Full disk image of the solar prominence with another image showing disk detail. This photo by Glenn Graham (March 1, 2002) gives a good idea of the size of this week's big prominence.



CLASSIFIED ADS

Run your non-commercial astronomy related classified ad in the monthly Gazette. Rates are reasonable (free!)

FOR SALE: 7mm Nagler for $145. Contact Chuck Dethloff at telmor@teleport.com, or (503) 357-6163.

FOR SALE: Orion 8" F6 Deep Space Explorer Dobsonian (4 years old) Stock equipment (1.25" focuser, 26 mm Orion Plossl), plus Telrad finder, plus small Orion eyepiece case plus all original documentation. Divorce sale. This scope used sparingly at OSP for 3 years. All in excellent condition. Asking $315 OBO. Larry Froberg lfroboz@cs.com 360-883-5513

WANTED:Clave (Paris) Plossl 1.25" eyepieces, any focal length or condition. These were sold for many years by Cross Optics, S & S Optica, Roger Tuthill, and Conklins of Portland. Will TRADE artwork from Terry Redlin (Whitewater–value $1200) for 4 Claves, artwork from Charles Gause (Arctic Journey"-as is-value $225) for 1 Clave, and huge artwork by local artist of NGC 891 in Andromeda that is astronomically accurate (professionally framed-vale $500) for 2 Claves. John W. Siple, 33230 Primrose Rd., Corvallis, OR 97333 (541) 758-8326

WANTED:Older Televue 24mm 1.25" Wide field. 1970s University Optics 6.8 & 10.2mm Professional Series Orthos (multi-coated with blue lettering). Older Televue 21mm Plossl. Unitron 3-inch OTA (1970s) and/or complete instrument. Cave Astrola 12.5" F5 Reflector. University Optics Abbe Orthos 4-25mm focal lengths (these once sold for $15.95 ea). John W. Siple, 33230 Primrose Rd., Corvallis, OR 97333 (541) 758-8326

March 2002

Sun	Mon	Tue	We	Thu	Fri	Sat
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

April 2002

Sun	Mon	Tue	We	Thu	Fri	Sat
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

March

Mar. 2	Sat.	Telescope Making Workshop	Tech Marine Srvc	10-3
Mar. 4	Mon.	Board Meeting	OMSI Classroom 1	7:00 PM
Mar. 18	Mon.	YRCA (ages 13-18)	OMSI Cafeteria	6:30 PM
Mar. 18	Mon.	RCA Kids (ages 4-12)	OMSI Cafeteria	7:30 PM
Mar. 18	**Mon.**	**General Meeting**	**OMSI Auditorium**	**7:30 PM**
Mar. 21	Thurs.	Astrophysics/Cosmology SIG	Linus Pauling House	7:00 PM

April

Apr. 1	Mon.	Board Meeting	OMSI Classroom 1	7:00 PM
Apr. 6	Sat.	Telescope Making Workshop	Tech Marine Srvc	10-3
Apr. 15	Mon.	YRCA (ages 13-18)	OMSI Cafeteria	6:30 PM
Apr. 15	Mon.	RCA Kids (ages 4-12)	OMSI Cafeteria	7:30 PM
Apr. 15	**Mon.**	**General Meeting**	**OMSI Auditorium**	**7:30 PM**
Apr. 18	Thurs.	Astrophysics/Cosmology SIG	Linus Pauling House	7:00 PM
Apr. 24	Wed.	Weather SIG	Colonial Office Complex	7:00 PM

The RCA General Meeting falls on the third Monday of each month. We usually meet in the Auditorium at OMSI, next to the Murdock Planetarium. Occasionally the meeting is held in Murdock Planetarium. Check here each month for details, or look us up at the RCA web site (http://www.rca-omsi.org).

The Weather SIG address is: Colonial Office Complex, 10175 SW Barbur Blvd, Suite 100-BB, Portland. From downtown, go south on I-5 to the Barbur Blvd. Exit. Cross back over I-5 and the Complex will be on your left.

RCA CLUB INFORMATION

Message Line: (503) 255-2016

Web Site: http://www.rca-omsi.org

Oregon Museum of Science and Industry
Rose City Astronomers
1945 SE Water Avenue
Portland, Oregon 97214-3354

The
Rosette Gazette

Volume 14, Issue 4 | Newsletter of the Rose City Astronomers | April, 2002

In This Issue:

April Speakers

Bill Hughes and **Ken Bronstein** will be our guest speakers for the Rose City Astronomer's General Meeting on Monday, April 15th at 7:30 p.m. in the OMSI auditorium. Featured on the program for the Second Annual Pacific Northwest Conference of the International Dark-Sky Association, to be held April 13th at Clackamas Community College, Bill and Ken share an enthusiasm for lighting issues and the problem of light pollution.

Bill Hughes is presently retired from the City of Portland. Bill worked for the City of Portland Street Lighting Division, Supervisor of Design, Operations, Planning, Construction and Maintenance for 28 years. During this time the City of Portland introduced the use of cut-off fixtures on all City arterial. Bill also designed and consulted on lighting for the Oregon Garden Bill is a member of the Illuminating Engineering Society, Roadway Lighting Committee, Maintenance and Light Source Subcommittee, Standard Practice Subcommittee, and Chair of the Obtrusive Light Subcommittee.

Ken Bronstein is an R&D Software Project Manager for the Imaging and Printing Division of Hewlett-Packard in Corvallis, Oregon. Ken is an amateur astronomer who has been involved in affecting Corvallis public lighting practices off and on for seven years. Ken will focus on one key point that he thinks can make a huge difference to lighting analysis and design.

Why are engineers, medical professionals and amateur astronomers concerned about the effects of Light Pollution?
Some studies show that the effects of not sleeping in total darkness can degrade the immune system of animals and humans. Poor lighting and wasted energy is misuse of electricity and money. Misdirected light, 'Light Trespass' is a nuisance and architecturally unappealing. Studies show that various uses of lighting may actually increase crime, just exactly the opposite of what people try to achieve. The light pollution from inferior lighting design on highways creates a hazard to driving known as 'Road Glare.' The light polluted night sky is a priceless educational resource lost to poor lighting management.

Observing Under Southern Hemisphere Skies

By Candace Pratt

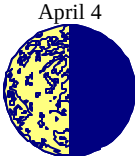
Observing in the southern hemisphere is close to indescribable for me. The larger-than-life deep sky objects, absolute blackness of the sky and richness of the extreme southern Milky Way is the ultimate in amateur observing. I told a friend there are no DFO's (dim fuzzy objects) in the southern hemisphere; they're all enormous naked-eye objects!

Last October I returned to Grove Creek Observatory, about four hours west of Sydney, in New South Wales followed by several days near the Siding Springs Observatory, the site of the 4 meter Anglo-Australian Telescope. GCO was built in 1985 to show the world Halley's Comet. Since that time it has been a premier amateur observatory for individuals to reserve telescopes for viewing, astrophotography and CCD imaging. The website for GCO is http://www.gco.org.au. Steven Williams is the manager at the observatory. In 1992 a group of 11 RCA members made the trip to GCO, and I have always hoped to return.

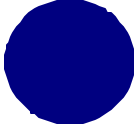
For the past couple years Chuck Dethloff of Telescopes and More and I have been redesigning a

(Continued on page 9) Southern Hemisphere

April 4



April 12



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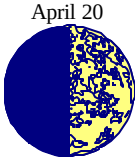

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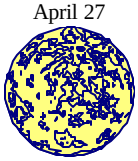

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VP Community Affairs	Norm Trost	(503) 668-7979	normt@europa.com
VP, Communications	Matt Brewster	(503) 740-2329	brewster@teleport.com
Treasurer	Ginny Pitts	(360) 737-0569	vepitts@attbi.com
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Camp Hancock Liaison	Glenn Graham	(503) 579-1141	the.grahams@verizon.net
Subscription Director	Larry Godsey	(503) 675-5217	larrygodsey@att.net
SIG Director	Scott Fitzpatrick	(503) 669-8243	slfitzpatrick@cs.com
Youth Programs Director	Jenny Forrester	(503) 504-8071	jenny@theforrest.org

President's Message

By Peter Abrahams

April 2002

The history of amateur astronomy & telescope making in the Portland area.

I recently read through the collection of papers that makes up the RCA 'archives', kept by our historian, Dale Fenske. I am putting together a text for the WWW on telescope makers in the Pacific Northwest, and found some useful clues for this project. Any RCA members who have any information on people who made telescopes in times past, please contact me. There are many intriguing clues to unknown instruments; for example, in 1972, Clark College in Vancouver planned an observatory with a 24.5 inch Cassegrain telescope.

The RCA began in 1989 as a coalition of earlier groups. We have some newsletters, and many of the pre-1989 participants are still around, but there has been little continuity and most of the experience of earlier boards has not been inherited by the current board. I was interested in seeing what types of issues the RCA board dealt with in earlier years. The answer was, many of the same issues we are still dealing with. Clearly, if we had better continuity and more records, we would find many of our jobs to be easier.

Astronomy was a popular activity in earlier years. In January of 1974, there were 175 people at a meeting featuring UO astronomy professor Ebbighausen. There have been telescope shops in Portland, in the 1980s the Northwest Telescope & Binocular Shop on Beaverton Hillsdale Hwy; then the 'Sky King' store on NW 185th, which closed in 1986. Anyone with information on these & other people, places, & telescopes is asked to contact me. Thanks.

RCA

MAGAZINE SUBSCRIPTIONS

One of the main services offered to RCA members is subscriptions to *Astronomy* and *Sky & Telescope* magazines at a much reduced rate from newsstand prices. *Astronomy* $29 for one year or $55 for two years. *Sky & Telescope* is $29.95 for one year.

Checks must be made out to Rose City Astronomers to get the reduced rates.

For further information, see Larry Godsey, Subscription Coordinator, at the Membership Table at General Meetings or check the RCA website. Please note: Allow two months for your subscription to be renewed.

Sky & Telescope Store Discount

RCA members who subscribe to *Sky & Telescope* are entitled to a 10% discount at the *Sky & Telescope* online store at: *http://skyandtelescope.com/shopsky* To get your discount, enter Rose City Astronomers when prompted for your club name during checkout at the *Sky & Telescope magazine* is $29.95 for one year. online store.

THE "KIDS" OF ROSE CITY ASTRONOMERS

RCA Kids

Children ages 4-12 are welcome to join in fun and educational activities while the grownups attend the monthly general RCA meetings. The kids' meeting takes place in the adjoining cafeteria at OMSI from 7:30 p.m. to 9:00 p.m. If you have any questions, please e-mail Jennifer at jenny@theforrest.org.

The **Young Rose City Astronomers** (ages 13 - 18). This group meets from 6:30 to 7:30 on the third Monday of the month in the OMSI auditorium, before the regular RCA meeting. In addition, the YRCA meets on the first Thursday of the month. Kids with all levels of experience are welcome. There's no need to join - just come to the meetings and have fun. Adult volunteers are always welcome. Call Margaret McCrea, 232-7636, for more information.

THE OBSERVERS CORNER ..... *Howard Banich*

The weather forecast could hardly have been bleaker - overcast, with snow showers and windy. Even though the Kah-Nee-Ta Messier Marathon star party has a well-deserved reputation of always coming through, I still had the thought as I was packing the scope in my truck that perhaps I was merely going to ride it to Kah-Nee-Ta and back without having the chance to set it up and observe.

But being the die-hard optimist that I am, that thought faded as soon as it formed.

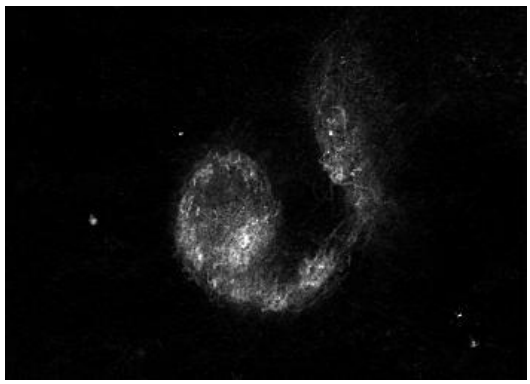
I had a hunch the sky would clear, at least for awhile each night, because Kah-Nee-Ta lies in the rain shadow of the Cascades, and the satellite loops for the preceding days had showed clearing for several nights leading up to the star party weekend.

The drive over Government Camp on Hwy 26 was beautiful – man there's a lot of snow up there now – and the road was in great shape, just a bit slushy in spots. But not a crack in the clouds and as darkness fell Friday evening, Judy and I retired to our room with a movie, resigned to the fact that this night would have no observing.

But by 10pm, the sky had cleared and I raced off to the observing site to set up the scope. Judy stayed in cozy comfort of the room, deciding it was too late for her to get going again, once again proving her sanity.

The wind was blowing hard enough to make setting up the scope a surprisingly miserable experience, plus a series of small but irritating bloopers ensued dragging out the set up to almost an hour. But once up and ready, the sky was beautiful and the wind had died down. Oh boy! This was the first time I had my scope set up in a dark sky since starting its renovation and upgrading last October so was doubly psyched.

The objects on my "must see list" (see last months column) were already below the western horizon so I set off for the galaxies of Corvus and Virgo. **NGC's 4038/39**, the interacting Antennae Galaxies, were the first object/s I looked at, and what a great view. The distorted spiral arms of both galaxies were littered with tiny star-like specs, which are actually vast star clouds of new and massive stars formed from the interaction of the two galaxies.



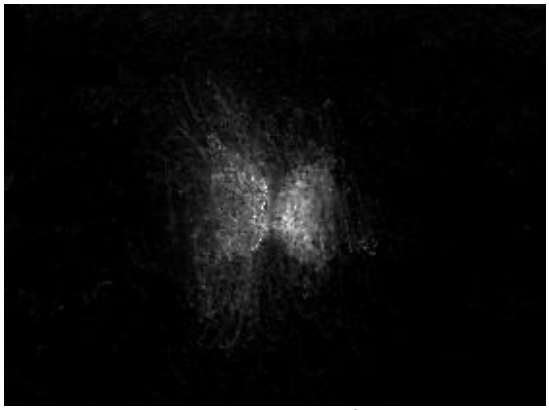
Next up was a long look at **M87**. I've been trying for several years to see the relativistic jet of material shooting from M87's core, but again no luck. I used a range of magnifications, averted vision and kept this up for about an hour so my lack of success wasn't from a lack of effort!

A swing though the core of the Virgo galaxy cluster then off to visit some of the brighter galaxies in Leo ending with the bright barred spiral galaxy, **NGC 2903**.

By this time I was the only one left on the observing field, as clouds had come and gone, convincing everyone else to head back to the lodge. As I was enjoying a particularly fine view of 2903 what felt like a small raindrop hit the left side of chin. Hmm, that couldn't be – the sky was clear and it was much too cold for rain anyway. I looked up from the eyepiece and sure enough the sky was clear but I felt another raindrop. Pointing my white light flashlight into the sky showed that a light snow was falling, evidently being wafted over from a cloud that was still behind the western horizon. Hmmm.

So I went back to the eyepiece for another look at 2903, enjoying the view even more now as the number of snowflakes hitting my face increased. A rare treat indeed.

Saturday night started off with a brief snow squall, but it quickly went its way and left mostly clear skies in its wake. Happily, I was able to enjoy two of the objects on my "must see" list – interacting galaxies **NGC 2207/IC 2163** in Canis Major and planetary nebula **NGC 2440** in Puppis. Unfortunately, the 2207 galaxy pair was a disappointment – just two faint smudges almost in contact. But 2440 was excellent – surprisingly bright and shapely.



At low power (93x) it's rather small but easy to distinguish as non-stellar. Its bi-polar shape starts to become apparent at 170x and becomes easy to see at 260x. My best view came at 413x as this revealed fainter streamers coming off the western lobe of the planetary. Using the OIII filter revealed a large and faint halo around the entire nebula. All in all, the view reminded me of what the Dumbbell Nebula (M27) might look like if it were a lot further away.

NGC 2440 is a real find. It's an object that should be able to be enjoyed in a wide variety of scopes and magnifications, plus it should show up well through light polluted skies.

(Continued on page 5) ..Observers Corner

CLASSIFIED ADS

Run your non-commercial astronomy related classified ad in the monthly Gazette. Rates are reasonable (free!)

FOR SALE: 10 inch Cave, Newtonian, on Cave equatorial mount. Mirror engraved on edge: M762207 CAVE OPTICAL CO. 10" OCT 7 1976 FL 50 15/16". Mirror in good condition. Mount looks good after a fast inspection, motors might not work. $1200.

Cave Astrola equatorial mount, 5 feet tall, no telescope, motors do not work. $250.

A contact here in Portland has a mounted Cave telescope; & a Cave equatorial mount for sale. Contact me for details (I have no further facts but have seen them & can arrange a visit if someone is interested in purchasing them). Prices will be negotiable if no sale happens. Peter Abrahams, telscope@europa.com 503-636-2988.

For Sale: Celestron C8, upgraded view finder, wedge mount with electric tracking system, heavy duty tripod. $800 Steve Mock (503) 570-8808

THE WEATHER SIG

Beginning in January 2002, RCA's weather SIG meetings will meet on a quarterly basis. We will continue to use the basement conference room of the Colonial Office Complex. The following dates in 2002 have been reserved for our meetings:
Jan 30th, **Apr 24th**, Jul 31st, & Oct 30th.

Place: Colonial Office Complex
10175 SW Barbur Blvd, Suite 100-BB
Portland, OR 97219

Time: 7:00 pm

Come rain or shine . . .

Astro History in Portland (Photo courtesy of Peter Abrahams)

CAMP HANCOCK DARK SKY STAR PARTY

Scott Turner, VP Observing

The Camp Hancock star party is scheduled for May 10 and 11 (Friday and Saturday night). For those of you who not yet experienced this place, allow me to introduce you to Camp Hancock Field Station located near Clarno, Oregon. Camp Hancock is an OMSI sponsored field station for the promotion of science education. The Camp is located the John Day river in NE Oregon. Directions can be found on the RCA's Web site at:

http://www.rca-omsi.org/starpartysites.htm#hancock

or see your March 2002 Gazette with the RCA 2002 Star Party schedule.

CAMP HANCOCK
Rose City Astronomers
2002 Spring Star Party

To RSVP: Send a Registration Form and a check to Larry Deal (address below). Registration is not considered complete until both a check and a registration form is received. This year, Larry has generously offered to coordinate the registration of this event. Please inform Larry as soon as possible if you have special diet needs or have any relevant medical issues that need special attention.

Lodging Options are on a first come basis (plenty of space):

- Large (14 bunk) A-frame cabins
- Small (3 bunk) A-frame cabins
- Tipi (5 bunk) with wood frame door
- Limited RV parking (limited electricity/water hookups)
- Tent areas

Cost for lodging is $14 per night per person for cabins and $8 per night for tent or RV parking.

Meals: Camp Hancock offers breakfast, lunch, and dinner for our event (no breakfast or lunch on Friday and no dinner on Sunday). Meals need to be ordered and paid for in advance, if possible, by April 27th. (Call Larry Deal at (503) 816-2364 if you need an extension. We are possibly allowed an extension until May 3rd.) Late meal orders may not be available.

Prices for meals are:

- Breakfast $3.75
- Lunch $3.50
- Dinner $4.75

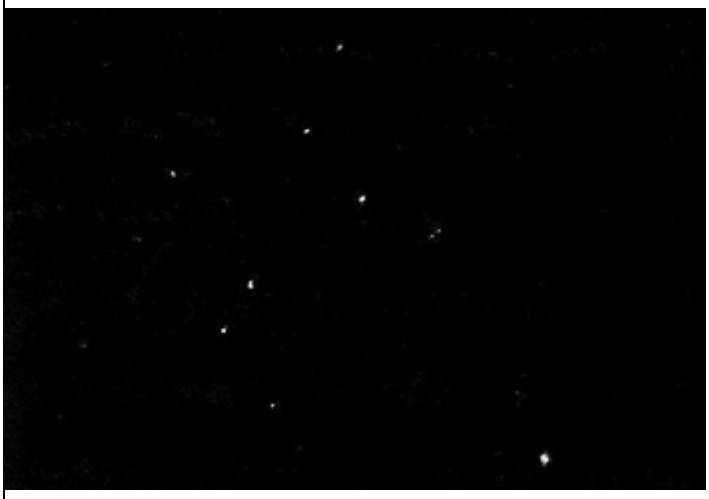
Rules, Rules, Rules: (Per Camp Hancock administration):

- Need to order all meals two weeks in advance Checks need to be received by April 27, 2002 (Possible extension till 5/3)
- Camp stoves only, no open fires.

(Continued on page 8) Camp Hancock

Observers Corner (Continued from page 3)

My final object at Kah-Nee-Ta was the **Double Quasar, 0957+561 A+B**, located in Ursa Major. This is perhaps my favorite challenge object and is a sensitive barometer of sky transparency and steadiness. It was right on the meridian when I began my observation of it Saturday night, which placed it fairly close to directly overhead. The sky was at its finest at this point and I was rewarded with my best look at this elusive sight.



The Double Quasar is a gravitationally split image of a single quasar located approximately 5 billion light years away. Both components are a little over 17th magnitude and are separated by 5.7 arc seconds, which combined make this a challenging object to detect at all let alone see as double. But the conditions Saturday night conspired to provide me with the best view yet. If it's possible to state that any 17th magnitude object was "obvious", this was it.

The best part is that the light I saw from the Double Quasar had traveled a third of the way across the observable universe since the time the solar system had formed. Fascinating, enjoyably mind-boggling!

Clouds covered up the western horizon at this point (about 11:30pm) and a few snowflakes started drifting by. Everyone called it night, packing up their scopes and heading back to the lodge. As usual, I was the last to get ready, and by the time I headed back it the sky had cleared again. Oh well, that was the weather pattern – clear/cloudy/snow/clear – and it probably repeated all night. Another snow shower was passing through when I woke up Sunday morning so that seems to be the case.

The drive home Sunday afternoon was even more scenic as there was a significant amount more snow, especially on the trees.

And finally, what is perhaps the most incredible fact of all from this annual star party, for the 16th year in a row we had some clear skies for observing.

Addendum

When I first sat down to write this article I was really tired, and all that came out was a goofy little haiku. But I haven't been able to bring myself to delete it yet, so here it is:

Observing magic
While snow is softly falling,
Universal poem.

Somehow this holds the essence of my Kah-Nee-Ta experience this year.

ASTROPHYSICS / COSMOLOGY SIG

TIME: 7:00 PM

DATE: April 16, 2002

TOPIC: The Exploration of Mars and the Search for Life - Gus Frederick

PLACE: Linus Pauling House, 3941 S.E. Hawthorne Blvd.

PRESERVING OREGON'S DARK SKIES
IDA CONFERENCE LIGHTING ACTIVISTS SPEAK OUT!

The **Second Annual Pacific Northwest Conference of the International Dark-Sky Association** will be held Saturday April 13th, 2002 at Clackamas Community College's Environmental Learning Center. Haggart Observatory is adjacent to the center and will be available for evening observing. The conference will focus on understanding light pollution, dark sky preserves, lighting activism and more. There will be speakers from IDA headquarters in Tucson, Arizona, as well as from the pacific northwest. Cost of the conference is $35. at the door. Contact conference coordinators Dareth Murray (dareth@web-ster.com) or Bob McGown (r_mcgown@msn.com) for complete details or visit:
http://www.rca-omsi.org/confprogram.htm

LIBRARY NEWS

The Rose City Astronomers maintains a comprehensive club library of astronomy related articles, books, CD-ROMs and videos. These items can be borrowed by members through checkout at the general meetings for a period of one month with renewals available by phone or e-mail to the club library director, Jan Keiski (jikeiski@juno.com) - (503) 293-3281. The RCA library is constantly growing through many donations and the purchase of new materials. To keep pace, the RCA library staff is growing too. Welcome Tammy Ross who will be helping with the putting away of library material after the RCA general meeting.

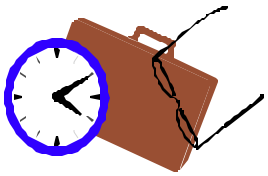
Other library staff include: Larry Froberg - data input & inventory of materials; Rea Young - check in of returned materials & backup for check outs; Richard Labar - set up library. Online access to a list of library materials will be implemented within the next few months, as well as color coding of library materials by category. In the not too distant future, check in & out will be done using a laptop donated by Larry Froberg.
Visit the RCA library web page at:
http://www.rca-omsi.org/library.htm

RCA Photo Gallery

Mike Cole took these photos when he visited Kit Peak in February. The photo on the left is from above most except the 4meter scope which is behind me and a composites with a Milky way photo from a couple of years ago. (http://home.earthlink.net/~urbanimager)

Right: From Inside the one meter SCT observatory.

You have to see these on Mike's web site to truly appreciate them.



BOARD MEETING MINUTES

MARCH 4, 2002

Ron Forrester

Present: Ron Forrester, Peter Abrahams, Dale Fenske, Scott Fitzgerald, Larry Godsey, Jeff Hennings, Carol Huston, Doug Huston, Jan Keiski , Dareth Murray, Bob McGown, Ginny Pitts, Sameer Ruiwale, Norm Trost, Scott Turner, Vern Weiss

Treasurer - Vern: $13818 balance. Vern moves to have Ginny take over as treasurer to serve the rest of his term. Seconded by Carol. Motion approved by a quorum. Vern resigns as treasurer today, March 4th, 2002.

Programming - Matt: Nominal , March is 3 representatives from local observatories

Star Parties - Scott: Nominal

Sales - Sameer: Nominal

Membership - Doug: 372 Member families

New Members - Carol: Consistent interchange with new members where she is handing out information.

Library - Jan: Sameer will share his cart. Books will be color coded by category starting at the April general meeting. Dareth is helping with the list of books and materials for the website. Tammy Ross is new to the staff for general meetings. Jan expresses her gratitude to the JRCA kids for the thank you card they made during the Feb. meeting.

Light Pollution - Bob: Looking at getting 2 banners. Attendance for the IDA conference is currently light, speakers are all ready to go. Been working on putting shields on fixtures around town, the lighting class will let people do some hands on work with this.

SIG's - Scott: Doug is doing the cosmology talk this month.

AL - Dale: AL Convention is scheduled for Salt Lake City.

Editor-Regis: Nominal

YRCA - Ron: Nominal

Community Affairs - Norm: Asked by OASIS (enrich adult life), who is doing an inter-generational look at the moon, and they would like someone to facilitate that discussion. Doug has a letter from "Youth exploring science" – they would like a letter in support of them – Peter points out that it's not our place as a club to do these types of recommendation letters.

OMSI - Peter: Many new security policies, including locking up the mail room. Current contract is up in May.

Webmaster - Dareth: Still getting requests from people who aren't members to join the email list. Current position is that it's a benefit of membership.

Telescope Library: Nominal

Magazine- Larry: Spent every penny he brought in.

Phone Line: Dale March 4th to April, Doug April to May

Got a phone call from South Jersey Astronomy club, they want to use some content from our website and give us full attribution.

Haggart Astronomy Week – they don't have a strict schedule, hoping to "flow" for a week.

NASA's Space Place

WHAT SPACE-AGE INVENTIONS HAVE YOU TOUCHED TODAY?

Exploring space is not easy. Space engineers and scientists have invented many new things to make it safe and not too expensive to go into space. Some of the inventions are used to help humans live in space. Showers and toilets that work without gravity are examples of inventions used on the Space Shuttle and International Space Station. Other inventions are used on spacecraft going to Mars and beyond.

Many things invented for space are also very useful right here on Earth. New inventions or new uses for things invented for space are called "spin-offs." For example, special materials were developed for space suits to protect astronauts from the harsh environment of space. These same materials are used in the special clothing that fire fighters wear to protect them from the harsh environment of a building on fire! Cordless tools were invented for the Apollo astronauts to use on the moon. Cordless drills and vacuum cleaners are examples of spin-offs from these inventions.

Doctors can now take amazing pictures of people's insides to find out exactly what is wrong with them. These pictures are possible because of technology developed to process pictures from space. And what about the TV satellite dish you may have on your roof? Space program technology helped to make those pictures and sounds crisp and clear.

If it weren't for the space program, some of these wonderful inventions might never have come about! Find out about more space program spin-offs and play the Spin-offs Memory Game at The Space Place, http://spaceplace.nasa.gov/spinoffs.htm .

The Space Place is a web site for children with fun and educational activities and facts related to many of NASA's space missions. This article was provided by NASA's Jet Propulsion Laboratory, managed by Caltech in Pasadena.

This computer game joystick, made by ThrustMaster, uses technology developed for a Space shuttle hand controller. The design for these toy gliders (AeroNerf Gliders), made by Hasbro, Inc., benefited from NASA wind tunnel and aerodynamic research.

Camp Hancock (Continued from page 5)

- Last minute sign-ups may not be able to order meals (but will be able to get lodging accommodations)
- NO PETS (this has been an issue in the past, please respect the Camp's rules)
- No Bicycles (insurance/safety rule)
- Children must be monitored at all times
- No camping on the surrounding park service land
- The Staff housing area is off limits to guests.

Larry will need to receive an RSVP and check by April 27th
Please make checks out to "Rose City Astronomers".
Send Registration Form to:

Larry Deal
6230 SW Chestnut Ave.
Beaverton, OR 97005-4235
Deal@compuserve.com (if you have questions)
(503) 816-2364

Camp Hancock Spring 2002 Registration Form

Name: _____

Address: _____

City, State, Zip: _____

Phone Number: _____

E-mail (optional): _____

Lodging:

Fri. night cabin lodging:	$14 x ____persons, subtotal $_____
Sat. night cabin lodging;	$14 x ____persons, subtotal $_____
Fri. night Tent/RV lodging;	$8 x ___tents/RV's, subtotal $_____
Sat. night Tent or RV lodging;	$8 x ___tents/RV's, subtotal $_____

Meals:

Friday Dinner:	$4.75 x ____ persons, subtotal $_____
Saturday Breakfast:	$3.75 x ____ persons, subtotal $_____
Saturday Lunch:	$3.50 x ____ persons, subtotal $_____
Saturday Dinner:	$4.75 x ____ persons, subtotal $_____
Sunday Breakfast:	$3.75 x ____ persons, subtotal $_____
Sunday Lunch:	$3.50 x ____ persons, subtotal $_____

Total enclosed $_____

IN THE APRIL SKY

4, Last Quarter Moon
9, Two of Jupiter's moons, Io and Europa are in conjunction
17, Asteroid 4 Vesta is 6' north of 108 Tauri
22, Lyrid meteor shower in progress

Jupiter, Saturn, Mars, Venus, and Mercury are all visible this month.

Intra-Club Star Party
June 8, 2002
Mary's Peak
(Conner's Camp)

This summer we have a special star party scheduled in June. The Eugene Astronomical Society, Hearts of the Valley Astronomers, Night Sky 45, Rose City Astronomers, and Umpqua Amateur Astronomers will be hosting a star party at Mary's Peak near Corvallis, Oregon. The Intra-club Star Party is a chance for members of the four organizations (and anyone else who shows up) to socialize and observe together in a centralized location.

Directions to the Conner's Camp area of Mary's Peak can be found on the RCA website. The observing site offers a paved parking lot that can hold up to 24 automobiles (there is an overflow parking lot a few hundred feet away), and a flat grass area to setup telescopes. There is a bathroom and a single garbage can ("pack it out" rule is a good idea). There are good horizons and the site is dark at night far enough off the main road to the summit that we shouldn't have interference from the curious locals.

There is a $5.00 day use fee for the area per automobile. It is a self-registration system (so bring exact change).

Our tentative agenda for the event is:

5:00PM	Meet at Conner's Camp for refreshments/ potluck (A-M main type of courses and N-Z side dishes and desserts) Coffee and juice will be available.
6:00PM	Informal swap meet (private parties only due to park land). Bring a blanket and display your astronomy related stuff you want to sell. This is a low key event.
7:00PM	Constellation talk on what's interesting in the sky. This is an open discussion
7:45PM	Telescope setup and observing begins.

There is NO OVERNIGHT CAMPING at this site. So if you drive far, consider a local hotel in Corvallis or there are some pull-off areas on the main Mary's Peak road for you to grab an hour's rest.

Due to limited parking, PLEASE consider car pooling.

Please Arrive before dusk as automotive lights will disturb viewing (if you come late, park in the overflow lot (see directions)

A weather DECISION will be made by 2 p.m. on Saturday June 8, 2001. Please call (503) 291-7583 after 2:00 p.m. on June 8th to find out about a possible weather cancellation.

Southern Hemisphere (Continued from page 1)
new 12.5" travel telescope. Chuck built my first scope for the 1992 trip to GCO, which we named the FFT (Frequent Flier Telescope). So now 10 years later, Chuck and I decided to design a lighter weight, easier assembling and more travel-friendly FFT for the October trip. Once again the NG FFT (Next Generation FFT) made its maiden voyage and saw first light at Grove Creek on October 15th with its first target 47 Tucanae, a globular cluster next to the Small Magellanic Cloud. This new telescope built by Chuck is the most amazing telescope I have viewed through. Its images are exceptional, the telescope is stable, and the ease of assembly and packing is a breeze. The 12.5" Galaxy mirror rests in a modified computer carry-on case, while the rocker box assembly fits in a large Samsonite suitcase for check through at the airports.

My nights at GCO were a combination of photography and observing. My husband and Steven took 4-5 CCD images each evening of deep sky objects using the C-14 and SBIG imager. We also took long-exposure Milky Way astroimages with the Meade 10" telescope and my Nikon piggybacked using Kodak E200 Professional film. In between these activities, we marched through my list of southern sky objects using the NG FFT. Every object was viewed through every TeleVue eyepiece I had taken. (My suitcase contained mostly eyepieces and warm clothes!)

Springtime observing in October and November is such a treat in this environment. (Yes, seasons are reversed in the southern hemisphere) The Small Magellanic Cloud and Large Magellanic Cloud are straight overhead with globular clusters and the depth of the Milky Way dominating the sky. To see a naked-eye galaxy that is 4 times the diameter of the moon is nothing less than breathtaking.

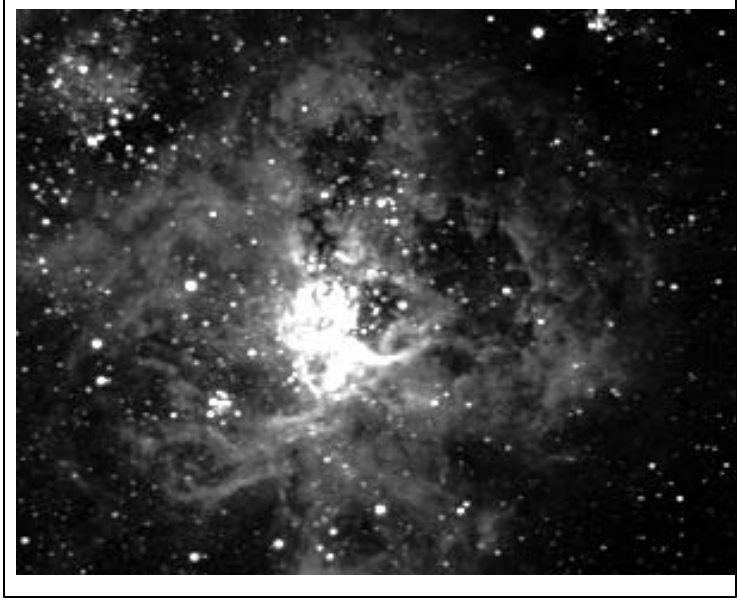
While the Magellanic Clouds are in their best viewing position in spring, the area near the Centaurus/Crux border is not. To see the Coalsack, Jewel Box, Centaurus A and other gems of this region you have to wait till the early hours of morning. No problem. J GCO has some of the steadiest skies in the world. As in 1992, it proved to be a premier observing location.

Six hours north of GCO is Siding Springs Observatory year Coonabarabran, NSW. A wide range of research telescopes is located on the mountain including the AAT. We stayed 12 km from SSO in an isolated cabin outside town. With the NG FFT, each night was filled with viewing objects I had never seen until now. The first night at our cabin I spent almost 3 hours sketching and mapping the SMC – every knot, filament, open cluster, globular cluster and twist and turn I tried to view! Night two was globular cluster night. Globulars are my favorite deep sky object. Seeing NGC 4372 in Musca, NGC 362 in Tucana, NGC 1851 in Columba, and NGC 6397 in Ara, along with many others was globular heaven. Galaxies near the south celestial pole were my next night's challenge. The weather was great for this week of observing in New South Wales; I certainly appreciated the weather cooperating.

You do not need a large scope in the southern hemisphere to see thousands of objects. A C-5 or comparable telescope is ideal, and the trip is definitely worth the effort. A note about Grove Creek Observatory: the devastating fires in NSW during Dec/Jan that resulted in NSW being declared a disaster area affected GCO. A power surge from a nearby transformer caused extensive electrical damage to the observatory's equipment. The facility is temporarily closed and funding will be need before reopening is possible.

Below: The Southern Milky Way from Grove Creek Observatory. Candace took this 20-minute exposure with Kodak E200 film piggybacked on a Meade LX200.

Below: The Eta Carina Nebula taken at Grove Creek Observatory using a C-14 and SBIG ST6 by Steven Williams and Candace Pratt.



WELCOME NEW MEMBERS!

Mary Ann Buchanan, Vicki Dalpez,
Lars Hedbor, Scott Huddleston, George Johnson,
Patricia Jones, Ron Karcher, Michael McFarland,
William Moynihan, Kelly Murphy,
Dennis and Joyce Partipilo, Cynthia Pieschel,
Karl Joe "Rottman, Sr.", L. A. Wikowsky

JIM KARLE, AN OREGON ASTRONOMICAL PIONEER (A two-part Series)

by Robert McGown

James Karle Observatory Lewis & Clark College

James H. Karle was born in Portland, Oregon on February 9, 1919, in a house his grandfather built in Sellwood. The house is on the historical registry of Oregon. In my interviews with Jim, he shared with me, even as a child, Jim was fascinated with interested in astronomy. Jim studied chemical engineering at the University of Portland in 1936, but left without earning a degree. Jim was married to Hildegarde on July 25, 1942; they had one son, Mark. Jim became a Portland firefighter in 1942.

Jim was drafted in 1943. During World War II, he was stationed in England and France and worked as an air base firefighter during the Normandy campaign. Two of the air bases he was stationed at during the war were Chippingonger and an air base near Sidmouth, England. After the war, he continued to work as a firefighter until a fire fighting accident broke both of his heels. This led to the change of occupation - to the teaching of astronomy and physics.

As an undergraduate, Jim taught astronomy at Lewis and Clark College. In 1947-48, along with Harry Carruthers and Norman Smale, he founded a local club: "PDX Amateur Telescope Makers and Observers"(PATMO). Jim received his Bachelor of Science degree at Lewis and Clark College (1951), and taught astronomy there from 1947-1985 except for two years during which he studied at Brigham Young University. Jim earned a Master of Science degree from Brigham Young in 1964.

Jim Karle was also active as the Secretary and President of the Astronomical League. The popular Astronomical League non-Euclidean space logo was his creation. Jim went to an Astronomical League (AL) convention in Madison Wisconsin, where he was voted in as the new president of the AL. As president of the Astronomical League, he published a collection of astronomy abstracts from the Dallas/ Seattle 1950's Gatherings. The Astronomical League has a complete history of their conferences. A colleague, Grace Schultz, was the secretary of the Astronomical League while Jim was president. Grace later married Arnold Spitzer, the builder of the renowned Spitzer Planetarium.

Teaching and Research

Beginning in 1947, Jim taught astronomy at Lewis and Clark College as an amateur astronomer before getting his Bachelor's degree in 1951. While attending Lewis and Clark, he received a research grant of $600 from The Research Corporation. In order to continue teaching at Lewis & Clark, he was required to earn Master's Degree. Jim attended Brigham Young University for two years, funded by a National Science Foundation Grant. He studied visual binaries and one galactic cluster with photometry. His Master's thesis was titled: "C&L Photometry on 13 Visual Binaries and Galactic Cluster M39." (C and L are specific filters for photometric wavelengths.) His thesis advisor was David McNamara, head of the astronomy department at Brigham Young who was a specialist in spectroscopy.

Jim also received assistance in photometry from Gerald Kron of the Lick Observatory. Kron had written an article for Albert Ingalls' classic books on amateur telescope making, and Jim met him at the Astronomical Society of the Pacific meeting in Los Angeles. Gerald Kron suggested eclipsing binaries as a field of research that Jim might pursue, and got him started. Eclipsing binaries are pairs of stars with orbits such that they eclipse each other as viewed from the Earth. The duration and magnitude of eclipse is different for each star system. From light curves, and graphs of the variation in brightness during the eclipses, one can obtain the orbital elements and masses of the two stars. To get the minima, many observations were taken, with photometric data displayed on a chart recorder. Jim obtained photometric measurements at his house until 1976, and then used the facilities on the Lewis and Clark campus.

Jim Karle was also an inspirational teacher. Numerous students followed his teachings into the fields of physics and astronomy. Some of his first students who worked on photometry were Roger Charlton, a mechanical engineer who graduated in 1960 and Hugh Keener MS, a physicist, who as under-graduates worked as a team observing eclipsing binary stars. Other students who did binary star research were Barbra Gaston PhD. and Elizabeth Sherman MS teaching at Hanford.

Jim used Baker's textbooks and material from the Astronomical Society of the Pacific to teach two sessions of astronomy per term, while continuing his research. In 1956, Hildegarde and his son Mark went with Jim to Minnesota to view the total solar eclipse.

Monroe Calculator

At Brigham Young, Jim learned to use the machine-driven Monroe Calculator. Returning to Lewis and Clark College, he had the college order a Monroe Calculator to calculate the reduction times of minima of the eclipsing binaries. The electric calculating machine was much faster than its manual predecessors; one could reduce the data into a meaningful form after a night's observing. These calculating engines were state of the art, and regarded as essential for orbit calculations. However, at this time, the Monroe Calculator lacked a log button. Since magnitude calculations

(Continued on page 11) Karle

Karle (Continued from page 10)
are logarithmic, much of the work needed to be performed with log tables. In this case, slide rules were not accurate enough. On the manual machine, there was a spider knob that allowed movement of the carriage to put the decimal in its correct place. On the electric version of the Monroe Calculator, this was an automatic function.

The desk-top calculating engine was not foreign to the rigorous mathematics of astronomy and space science. The father of the Soviet space program, Dr. Grechko, performed the orbital calculations with a calculating engine for the world's first satellite "Sputnik-1". There were no computers available. Their engineering accomplishments in the Soviet space program using calculating engines like the Monroe calculator were remarkable.

The Meteorite Hunt

One interesting saga in Jim Karle's adventures was his exploration for the legendary 22,000 pound pallisite allegedly discovered by Dr. John Evans near Port Orford, Oregon in 1856. Dr. John Evans, a geologist for the Department of Interior, arrived at the Coast Fork of the Willamette River in two weeks after bush-

Port Orford Coastal area, site of mystery pallisite.

whacking through Manzanita and Oregon Grape along Indian campgrounds. Evans was a medical doctor turned geologist who collected a curious box of rocks during his overland journey. When he sent this box of rocks to Dr. Charles T. Jackson of New York for sampling, it was discovered that one of these rocks was a meteorite known as a pallisite. In the diary of Dr. John Evans, on his journey through the Coquille Mountains, he describes a mountain with a bare knob with a meteorite imbedded in a field. Evans also suggests floating the meteorite out on the Sixes River, according to Karle's study of the original diary. In 1861, Dr. Evans died suddenly before any expedition could be organized. Many a meteorite hunter, including the famous H. H. Nininger, bushwhacked and searched through the underbrush and Devil's Club, searching for the Port Orford Meteorite. After studying the Evans diary, Jim Karle and Earl Roberts (a Portland fire chief) spent two 2-week trips in 1950 and again in 1952 retracing Evans' steps. In the early 50's, there were not the survivalists of today packing guns in the wilderness. The wilderness was a safe place to explore.

Researching any existing information, they were influenced by the University professor who wrote a series of articles in an *Oregonian* newspaper column about astronomy and the Port Orford Meteorite. Jim and Earl searched during two summers for the legendary Port Orford meteorite. They searched Myrtle creek with an eye fixed on Iron Mountain from the south which they thought was Evan's Bald Peak. Karle was always challenged by a scientific opportunity, especially when the potential discovery of a large rare pallisite was at stake. To this day, there is not a confirmed discovery of a large meteorite in the area, although false claims have been made. Also fooling the amateur rock hound and meteorite hunter, the manganese ore in the area attracts a magnet.

An article in *Sky and Telescope* discussed the possibility of the Port Orford meteorite being a hoax because of the microscopic similarity with other pallisite. Earlier that century in 1822, a meteorite was discovered in Atacama Desert near Imilac, Chile. Modern metallurgists determined the Port Orford samples to have a striking resemblance to the Imilac pallisite. Jim Karle still feels that Dr. John Evans had no motive to fake a meteorite by putting a pallisite in with his rock specimens. The great opportunity of potential scientific discovery outweighed Karle's skepticism.

Deery's Cosmic Ray Detector

About 1975, Karle and Physics professor Robert Deery took Deery's photo multiplying cosmic ray detector to the Stanford Linear Accelerator (SLAC) to calibrate the device. A beam of electrons of known energy was used to calibrate the detector. Karle enjoyed this research collaboration. They made summertime trips to SLAC for up to 2 weeks at a time. When they returned, Deery began observing cosmic rays using the small refrigerator-sized instrument of his original design. The actual construction of the instrument was sandwiched ¼" lead with scintillation plastic contained in an aluminum frame. Light comes into the 2-foot cube via funnels that gather the light from photomultiplier tubes. Electrons produce scintillation in the plastic through a shower that builds up in the lead. The shower counter counts the electrons that produce this scintillation. A billion electron-volts is a common charge trapped by the scintillator and measured by the photomultiplier array sandwiched between the lead and the plastic. The goal is to gather a sample proportional to the energy of the first particle. At Stanford they would use a particle of a known amount of electron energy to test the instrument. The instrument was designed to detect the interaction of cosmic rays. As the cosmic rays went through the plates, they caused scintillation, which was picked up by photomultiplier tubes that measured the cosmic ray energy.

Next month, The Karle Telescope

April 2002

Sun	Mon	Tue	We	Thu	Fri	Sat
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

May 2002

Sun	Mon	Tue	We	Thu	Fri	Sat
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

April

Apr. 1	Mon.	Board Meeting	OMSI Classroom 1	7:00 PM
Apr. 6	Sat.	Telescope Making Workshop	Tech Marine Srvc	10-3
Apr. 15	Mon.	YRCA (ages 13-18)	OMSI Cafeteria	6:30 PM
Apr. 15	Mon.	RCA Kids (ages 4-12)	OMSI Cafeteria	7:30 PM
Apr. 15	**Mon.**	**General Meeting**	**OMSI Auditorium**	**7:30 PM**
Apr. 18	Thurs.	Astrophysics/Cosmology SIG	Linus Pauling House	7:00 PM
Apr. 24	Wed.	Weather SIG	Colonial Office Complex	7:00 PM

May

May 4	Sat.	Telescope Making Workshop	Tech Marine Srvc	10-3
May 6	Mon.	Board Meeting	OMSI Classroom 1	7:00 PM
May 20	Mon.	YRCA (ages 13-18)	OMSI Cafeteria	6:30 PM
May 20	Mon.	RCA Kids (ages 4-12)	OMSI Cafeteria	7:30 PM
May 20	**Mon.**	**General Meeting**	**OMSI Auditorium**	**7:30 PM**
May 23	Thurs.	Astrophysics/Cosmology SIG	Linus Pauling House	7:00 PM

The RCA General Meeting falls on the third Monday of each month. We usually meet in the Auditorium at OMSI, next to the Murdock Planetarium. Occasionally the meeting is held in Murdock Planetarium. Check here each month for details, or look us up at the RCA web site (http://www.rca-omsi.org).

The Weather SIG address is: Colonial Office Complex, 10175 SW Barbur Blvd, Suite 100-BB, Portland. From downtown, go south on I-5 to the Barbur Blvd. Exit. Cross back over I-5 and the Complex will be on your left.

RCA CLUB INFORMATION
Message Line: (503) 255-2016
Web Site: http://www.rca-omsi.org

Oregon Museum of Science and Industry
Rose City Astronomers
1945 SE Water Avenue
Portland, Oregon 97214-3354

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The
Rosette Gazette

Volume 14, Issue 5 | Newsletter of the Rose City Astronomers | May, 2002

In This Issue:

OMNIMAX Theater Presentation

Space Station

Join the Rose City Astronomers for an exclusive showing of the IMAX film "Space Station" for our club on Monday, May 20th. We will NOT be meeting in the auditorium next to the planetarium, but rather, will meet in the OMNIMAX Theater at 7:30. The RCA library, merchandise sales, membership, and display tables will be set-up in the OMNIMAX lobby.

Space Station is the story of the greatest engineering feat since landing a man on the Moon: the on-orbit assembly of the International Space Station as it travels 220 miles above Earth at 17,500 mph. Transported by the magic of the IMAX® technology, the audience blasts off into space with the astronauts and cosmonauts from Florida's Kennedy Space Center and Russia's Baikonur Cosmodrome to rendezvous with their new home above Earth. *Space Station* is the story of the unique partnership of 16 nations building a permanent laboratory in outer space for the study of the effects of the long-duration exposure to zero gravity, and the necessary first step towards the global, cooperative effort needed if we are to go to Mars someday.

This movie has been getting rave reviews and the response OMSI is having is second only to the movie Everest. It will be fun to join together to share this film and support OMSI.

OMSI CELEBRATES PLANET LINE-UP WITH MAY 18 STAR PARTY

Contact: Jim Todd 797-4511
Karen Kane 707-4537

Four planets and Earth's moon will closely gather by dusk May 18th, when Venus, Mars, Saturn, Jupiter and the Moon will gather in the west in the evening sky.

"Compared to the planetary line up on April 20th, the four planets will be even closer to each other on May 18th." said Jim Todd, Planetarium Director at the Oregon Museum of Science and Industry, "and the waxing crescent Moon will certainly add drama." he added. After May, the planets will disappear from our evening sky for this year. To celebrate the event, OMSI, Rose City Astronomers (RCA) and Vancouver Sidewalk Astronomers are throwing a Planet Parade Star Party at OMSI east parking lot on Saturday, May 18th, weather permitting. The free event starts at 7:30 p.m. at 1945 SE Water Ave. Members of RCA and Vancouver Sidewalk Astronomers will make their telescopes available to anyone who attends, and Todd will present informal talks on the occurrence.

This is a good opportunity for star watchers to view the planets, as telescopes aren't needed. "That's another aspect that makes this occurrence unique - the fact that we'll have four naked-eye planets in the sky," he said. Mercury is moving between the earth and sun, and on about the 17th it moves too close to the sun be seen any longer. Its disappearance leaves, in order from bottom to top, Saturn, Mars, Venus, and Jupiter visible from the end of evening twilight. This planetary grouping spans nearly two months in time. It is a series of events with several highlights, and it is an excellent opportunity to watch their motions in the sky and to see change from night to night. It can be enjoyed from an urban area as long as the western horizon is not blocked. A telescope does not help, but binoculars will enhance the view.

May 4 | May 12 | May 19 | May 26

Club Officers

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SIG Director	Scott Fitzpatrick	(503) 669-8243	slfitzpatrick@cs.com
Youth Programs Director	Jenny Forrester	(503) 504-8071	jenny@theforrest.org

President's Message

By Peter Abrahams

May 2002

RCA has been lucky to receive some donations of equipment and some assistance from volunteers recently. Betty Botteron, widow of long time member Don Botteron, donated eyepieces, a 10 inch Newtonian tube assembly, a 4 inch refractor, and many books -- all of which will be well-used. We very much appreciate these donations; it allows us to spend the budget of the telescope library on repairs, rather than buying eyepieces.

Both the book librarian and the sales director have received assistance from volunteers, while setting up & working at our general meetings. These have become very big jobs, and they really appreciate the help. Our new members / membership table, staffed by Carol & Doug Huston, still could use some help. Talk to them if you can assist.

Debra Hirschmann has agreed to take on the task of photocopying RCA handouts and other papers. This is a hidden & generally thankless job, that has become a very big job in recent years. We distribute massive amounts of paper, in calendars, beginners packets, and other handouts.

As far as I know, none of the current board members wants to serve on the board for the remainder of their time on earth, so it is essential that we continue to attract new volunteers. I run an informal pair of lists, one of 'volunteers for unspecified causes' and one of 'chores that need to be done'. Let me know if you have the willingness to sign up. Thanks, Peter

RCA

MAGAZINE SUBSCRIPTIONS

One of the main services offered to RCA members is subscriptions to *Astronomy* and *Sky & Telescope* magazines at a much reduced rate from newsstand prices. *Astronomy* $29 for one year or $55 for two years. *Sky & Telescope* is $29.95 for one year.

Checks must be made out to Rose City Astronomers to get the reduced rates.

For further information, see Larry Godsey, Subscription Coordinator, at the Membership Table at General Meetings or check the RCA website. Please note: Allow two months for your subscription to be renewed.

Sky & Telescope Store Discount

RCA members who subscribe to *Sky & Telescope* are entitled to a 10% discount at the *Sky & Telescope* online store at: *http://skyandtelescope.com/shopsky* To get your discount, enter Rose City Astronomers when prompted for your club name during checkout at the *Sky & Telescope* online store.

THE "KIDS" OF ROSE CITY ASTRONOMERS

RCA Kids

Children ages 4-12 are welcome to join in fun and educational activities while the grownups attend the monthly general RCA meetings. The kids' meeting takes place in the adjoining cafeteria at OMSI from 7:30 p.m. to 9:00 p.m. If you have any questions, please e-mail Jennifer at jenny@theforrest.org.

The **Young Rose City Astronomers** (ages 13 - 18). This group meets from 6:30 to 7:30 on the third Monday of the month in the OMSI auditorium, before the regular RCA meeting. In addition, the YRCA meets on the first Thursday of the month. Kids with all levels of experience are welcome. There's no need to join - just come to the meetings and have fun. Adult volunteers are always welcome. Call Margaret McCrea, 232-7636, for more information.

COMET I-Z'S TWILIGHT RENDEZVOUS WITH ANDROMEDA

Dareth Murray

Timing is everything

Driving into the sunset we hoped we could make our destination by twilight. Observing and photographing Comet Ikeya-Zhang was our focus and we knew we only had a small window of time. Gold and orange hues shimmered on the western horizon, intensified by the Gobi dust storm. High above, the sky was transparent - a very good sign.

As we turned off the Sunset Highway onto Highway 47, North to Vernonia, the sun dropped behind the western hills. On the drive to the site, Bob McGown talked about comets in general and particularly the magnetic sector boundary of the solar wind and the dramatic tail disconnection event that happens occasionally. It was a good build-up for our up-coming comet observation. About 4 miles off the highway, we found the road that led us to Vernonia Bald Peak, near Linear Park. It was about 7:30 and Venus was low on the horizon. We knew the comet was there, waiting for us.

Setting up

John Foster unloaded his gear: a 10" Celestron SCT, an OM1 SLR camera and a huge assortment of equipment - in a very heavy, lumpy duffel bag. Bob toted his trusty 10" scope, camera gear, tripod and collection of other stuff over the berm separating the old logging road from the present road that winds up the clear cut peak. I am using the word "road" in the broadest sense; I wouldn't recommend driving my mother's old Mercedes up here!

First out of the wagon, I tucked my 10x50 'Messier binoculars' under my arm and started looking for a level observing site, which turned out to be about 75 yards up the old road. The city lights of Portland were almost blocked by the bluff to the east. There was a slight 20-degree light bubble taking up the northeast to southeast quadrant of the horizon. Since we were interested in the western view, we didn't see this as a problem. According to Bob, this site is comparable to Chuck and Judy Dethloff's excellent upper ridge site. There was virtually no wind and the temperature was in the low-50s. The air was still and dry; it was really an exceptional night for this western coastal range. The three farms to the east had low level lighting that did not pose a threat to our viewing. We heard not one barking dog but only the croaking of bullfrogs warming up for their summer concert.

Finally - the comet is in view

As John was setting up, I spotted the comet naked eye and found it in my binoculars (after some focusing issues) in about 2 minutes. It was dramatic! I had the comet at the top of my field of view with the tail streaming up at least 4-5 degrees. Andromeda was a fuzzy patch down and to the right of the comet. The coma was visible like a halo around the comet and a few stars dotted the distance between it and the galaxy. I was amazed that my wide field binocular view was as good or better than the one from the 10" scope, which was focused just on the comet.

John finished his preparations with the ease of a professional who has done it countless times and began the first of his many exposures, with his camera piggy-backed on the SCT. He framed the comet, Andromeda and some of the horizon in his viewfinder and it looked to me like an excellent combination for an award-winning image. Bob was busy taking timed exposures on his OM1 SLR and keeping his scope fixed on the comet. Warmed by hot cocoa, I alternated between looking through my binoculars, checking out John's current view and observing on the 10". I tried my hand at sketching the comet's rendezvous with Andromeda. They appeared together in my binocular view as 'right-side up' while Bob was sketching the Comet I-Z and Andromeda from his scope, seeing them 'upside-down' in the Newtonian view. The combination sketch resulted in a mirror image of the real thing.

Photo by John Foster

Blazing shutters

The night sky deepened and we realized we had the perfect setting. John pointed out the stunning Zodiacal light. The reason Sirius was so intense was because of atmospheric scintillation, Bob explained. The brilliant star, low on the horizon, was pulsating with aquamarine and green flashes, a mesmerizing sight. Fifty pictures later, film exhausted, we said goodbye to Comet Ikeya-Zhang which set over the western horizon. Such a beautiful night could not be wasted, so we roamed the dark sky hunting for galaxies and nebulas. Within the 'winter circle' we observed Jupiter blazing on high, four moons aligned to the right. During the course of the evening we also noticed about eight meteors, possibly associated with the Virginid's meteor shower, one exceptionally bright. Of course John was hoping for a meteor to shoot right through one of his exposures but none of them were that accommodating! Bob rated the sky transparency at 8 and seeing at near 8. On the Bortle scale, he rated it class 3 on a scale of 1-9.

Black helicopters

As we were packing up, we heard the unmistakable chop-whocking noise of helicopters. It startled us because the whole evening had been so quiet up until then. We couldn't see anything, but by the sound we knew it was extremely close. In a few seconds the sound had drowned out even the bull frog concert! Growling, and then suddenly too loud, a dark shape rose up from the western hill - barely 200 yards from us. It was unbelievably low and flying with no visible lights. Another one

(Continued on page 8) ..Twilight Rendezvous

CLASSIFIED ADS

Run your non-commercial astronomy related classified ad in the monthly Gazette. Rates are reasonable (free!)

FOR SALE: Celestron Hard Case for a Nexstar 60/80/114 (it will fit others as well). It's hardly been used and is in great condition. $50 Anyone interested can contact Jeff Martin at martinj@dsl-only.net or (503) 408-0966.

FOR SALE: Meade SCT LX50, 10" f10, equipped as originally purchased, plus Magellan ll and more. ($1575). For information contact Jack Breshears, jtbresh@aol.com, (503) 667-0499

FOR SALE: 10" F/6.3 Meade LX200. Includes: Mettler Wedge ($400 value), 2" Star diagonal with 1.25" adapter, 26mm eyepiece (brand new), Telrad, 8x50 Finder scope, Scope Saver platform ($100 value), AC Adapter, 12v to 18v DC adapter, $2000 OBO, Dick Hodgson, (503) 292-4093, rahmd@attbi.com.

FOR SALE: Microscope eyepieces, approx.16mm F.L. with surprising image quality and nice eye relief. Barrel diameter 23mm, can be used with an adapter in either .965" or 1.25" eyepiece holders. Brand new,$10.00 each or $5.00 each for five or more on one purchase. Available at Nurnberg Scientific, Monday through Friday, 8:30-4:30. Stop in at 6310 S.W. Virginia Avenue (corner of Carolina & Virginia near Johns Landing) or call Stan for further details at 503-246-8297.

IN THE MAY SKY

4, Last Quarter Moon, Mars will pass 2 degrees north of Saturn
5, Peak of Eta Aquarid meteor shower
7, Venus will pass 2 degrees north of Saturn
10, Venus will pass 0.3 degrees north of Mars
12, New Moon
19, First Quarter Moon
26, Full Moon

Keep your eye on the planets this month; you can capture a number of planets in the same binocular field.

FOR SALE: 6" Celestron Starhopper Dobsonian, 1200mm focal length, F/8, 10mm/25mm eyepieces, wooden case, stand, mint and clean. Local shipping available within 50 mile radius. See Ebay auction item 1099211213 or call 503-359-9266 for more information

THE LUNAR ANALEMMA

Maurice Bruce Stewart

The Sun which appears in the sky every day is known to astronomers as the Apparent Sun. If you look for the Apparent Sun at the same time every day you will see that its altitude and azimuth change from day to day, but repeat themselves, more or less, after a year has gone by. Astronomers have invented another Sun, the Mean Sun, which behaves in a much simpler way than the Apparent Sun. The Mean Sun, being fictitious, is of course invisible, but if you could see it, you would see that the Mean Sun has the same altitude and azimuth at the same time of day every day. This simpler behavior of the Mean Sun is because our ordinary clocks and watches are synchronized to follow the motion of the Mean Sun. Dennis di Cicco made his famous photograph of the solar analemma by fixing a camera in his back yard, waiting until the Mean Sun was in the center of the field of view, and then making a photograph of the Apparent Sun. He explains all the details of how he did it in his article on page 536 of *Sky and Telescope* for June 1979.

You can see his photograph of the solar analemma on the web at http://sundials.org/links/local/pages/dicicco.htm. It helps to keep in mind that the solar analemma is an artifact, not a natural phenomenon. It is only because di Cicco took the pictures at the same time every day that he captured the analemma shape. If you take pictures at the correct times on the correct days, you can make a picture of the Apparent Sun spelling out *RCA*.

Suppose you want to make a photograph of the lunar analemma. You can just copy di Cicco's technique by substituting the Moon for the Sun. There will be, of course, two Moons: the Apparent Moon and the Mean Moon. Since you can't see the Mean Moon, you must calculate when it has the same altitude and azimuth again and again so that you know when to make the photographs of the Apparent Moon. If you try to calculate the altitude and azimuth of the Moon directly you enter a thicket of spherical trigonometry, but there is a simpler way. The Mean Moon goes east completely around the celestial equator with respect to the Mean Sun once every synodic month of 29.530589 days. Thus you will "see" the Mean Moon pass through your field of view only 28.530589 times while the Mean Sun passes 29.530589 times. Hence, Mean Moon will be have the same altitude and azimuth every (29.530589 / 28.530589) * 24 hours or 24.841202 hours.

Armed with this knowledge you can make a di Cicco style photograph of the lunar analemma, but only after your patience is severely tried. Sometimes you will be photographing the Apparent Moon at night and sometimes in the daytime. Sometimes the Apparent Sun will get in the way, not to mention the clouds. However, you can easily see the lunar analemma by using one of the many popular computer planetarium programs. Just choose the local horizon view, fix the moon in place, set paths to be shown, and make steps of 24.841202 hours. You probably don't need more than six digits of accuracy, but five are not enough. Unlike the subtle changes from year to year in the shape of the solar analemma, the shape of the lunar analemma changes markedly from month to month. Just compare the lunar analemmas beginning on 2001 July 3, 2002 July 2, and 2003 November 20. To see the lunar analemma change in size, compare starting on 2005 September 25 with starting 1996 November 5.

THE SIDEWALK ASTRONOMER

John Broxton

They're looking at an object they've seen thousands of times since the day they were born. The reactions vary, but more often than not, they invoke a sense of awe. Mark Seibold has heard them all.

This one lady took a look, and said, 'What's happening? What's going on? Are we going to burn up? he recalls with a chuckle. I told her, 'No, this has been happening for billions of years.'

Mark is a sidewalk astronomer, and for the past seven months he's been traversing the greater Portland area with his eight-inch Meade Cassegrain telescope fitted with a hydrogen-alpha filter, allowing the public a glimpse of our closest cosmic wonder, the sun.

On Easter Sunday the noon sky over Beaverton Town Square is dark and blotchy and spitting rain at infrequent intervals. In his hounds tooth jacket, T-shirt, and jeans, Mark doesn't appear to be dressed accordingly. I haven't listened to a weather report in years, he says as the bitter wind rips apart the plastic shield protecting a poster. Wow. I've never seen anything like that before.

While Mark carefully assembles his equipment-- tripod, telescope, h-alpha filter, 12-volt car battery to power the filter, black screen over the eyepiece to shade the viewer's eyes-- two men stop and inquire. When Mark explains to them in precise detail how he intends to look at the sun through an h-alpha filter, they laugh. Mark is unfazed as raindrops splatter on his upturned lenses. I'm the most optimistic cynic I know.

An hour later it's still raining, but blue cracks have begun to appear. While there is nothing to see at the moment, there is still plenty of teaching to be done. An older gentleman in a cap and light jacket listens patiently as Mark explains his background. I was a nighttime astronomer for thirty years, I thought I'd seen everything there was to see in the sky, then I looked at the sun one day through this filtration device and it just blew me away. I thought, My God, everybody's got to see this. The man excuses himself; he's off to find out how the Blazers are doing.

A young mother has stopped with her two daughters. The cracks in the sky grow wider, and in anticipation of the sun's arrival, the air is charged with excitement. In the telescope, there is a faint outline of a reddish disk obscured by black smoke. Light from the sun is, of course, white, but because the h-alpha filter only allows a fraction of the sun's light through in the red part of the spectrum, the image appears red. Finally, the light bursts forth, and the image becomes perfectly visible.

(Continued on page 8) Sidewalk Astronomer

SECOND ANNUAL PACIFIC NORTHWEST DARK SKIES CHAPTER MEETING

Dareth Murray and Bob McGown of the Rose City Astronomers (RCA) collaborated with the International Dark-Sky Association (IDA) to hold the Second Annual Pacific Northwest Dark Skies chapter meeting on Saturday, April 13th. It was held at the John Inskeep Environmental Learning Center, near Haggart Observatory, located on the Clackamas Community College campus. The conference was a big success and well attended!

The national headquarters of IDA supported this conference in a positive way. Associate Director, Elizabeth Alvarez del Castillo, along with Scott Davis (Technical Manager) gave a keynote presentation and participated in discussions throughout the conference. They were very personable and full of helpful information channeled towards our collective goals of improving the quality of lighting and ultimately our nighttime skies.

Active participation from organizations and businesses who have the real ability to affect how future lighting is designed and used was very encouraging. Included in the panel discussions were James Benya (Principal, Benya Lighting Design, Portland, Or), Mike Crossland (Senior Lighting Specialist, PGE), Stephen Cousineau (Power trader for PacifiCorp, Power Marketing, Inc.) and Bill Hughes (Roadway Glare Taskforce Chair, Illuminating Engineering Society) and long-time IDA promoter. Another group of excellent speakers included amateur astronomers and lighting activists Richard Berry, Ken Bronstein, Glenn Graham and Dr. Tom Thrall. Also in attendance was a free-lance reporter for *Discover* Magazine!

Bob and Dareth did an excellent job of hosting this conference. Both are well known in the Portland astronomy community. Bob is the owner of Ace Electric, an electrical contractor and also author of "Galaxy Groups and Clusters" observing guide. He is an avid amateur astronomer and experienced observer. He is the Oregon Section Chair for the American Alpine Association and has published papers for the National Space Society, Oregon L-5 Chapter, Space and Robotics Journal. Bob is also the Oregon Project Argus Director for the radio telescope project for Pine Mountain Observatory. Dareth is the Manager of Library and Web Services/Webmaster for Tri-Met in addition to her volunteer work of managing the websites for both the RCA and Oregon Star Party. As a professional librarian, she is the treasurer of the Oregon Chapter of the Special Libraries Association. She is also the Oregon Team SETI coordinator and IDA representative to the board of directors for Friends of Pine Mountain Observatory.

The facilities were perfect for the group in attendance and the speakers were all easy to hear. The chairs were filled to capacity when I arrived shortly before 11am. I did a quick head count at one time and came up with 45-50 folks in the room. Many more filtered in and out through the day making it hard to estimate how many actually did attend. Active audience participation and communication took the place of formal discussion and regular program scheduling and breaks. This was the tip of iceberg. Covering all of the material discussed at the conference in detail would be a topic suitable for another article. And since I missed the first

(Continued on page 8) Dark Sky Conference

ASTROPHYSICS / COSMOLOGY SIG

TIME: 7:00 PM

DATE: April 16, 2002

TOPIC: The Exploration of Mars and the Search for Life - Gus Frederick

PLACE: Linus Pauling House, 3941 S.E. Hawthorne Blvd.

WELCOME NEW MEMBERS!

Ray Beeson, Joe Brooks, Thomas and Tina Corr, Jan Johnston, Gary Lodge, Gary Smith, Jim Woodruff, Hannah Zaiv

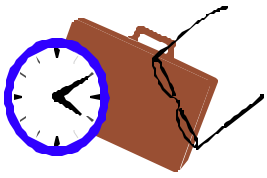
RCA Photo Gallery

Comet Ikeya-Zhang put on a great show in the early April evening skies. 5 minute exposure taken by Chuck Dethloff on April 2 with a 400 mm F/6 lens on Fuji Superia 400 film.

LIBRARY NEWS

The Rose City Astronomers maintains a comprehensive club library of astronomy related articles, books, CD-ROMs and videos. These items can be borrowed by members through checkout at the general meetings for a period of one month with renewals available by phone or e-mail to the club library director, Jan Keiski (jikeiski@juno.com) - (503) 293-3281. The RCA library is constantly growing through many donations and the purchase of new materials. To keep pace, the RCA library staff is growing too. Welcome Tammy Ross who will be helping with the putting away of library material after the RCA general meeting.

Other library staff include: Larry Froberg - data input & inventory of materials; Rea Young - check in of returned materials & backup for check outs; Richard Labar - set up library. Online access to a list of library materials will be implemented within the next few months, as well as color coding of library materials by category. In the not too distant future, check in & out will be done using a laptop donated by Larry Froberg.
Visit the RCA library web page at:
http://www.rca-omsi.org/library.htm



BOARD MEETING MINUTES

APRIL 1, 2002

Ron Forrester

Present: Ron Forrester, Regis Krug, Dareth Murray, Bob McGown, Jeff Henning, Larry Godsey, Peter Abrahams, Matt Brewster, Doug Huston, Carol Huston, Ginny Pitts, Scott Fitzpatrick. Dale Fenske, Jan Keiski, Candace Pratt

Guests: Debra Hirschmann (copy volunteer) – Candace has made sure Debra has a volunteer badge, and given her all the materials for doing copy work for the SIG's, etc. The club extends a giant welcome, and a heartfelt thanks for volunteering to take care of this task.

Treasurer - Ginny: $13934 in our account.

Programming - Matt: April presentation is the Dark Sky (IDA), speakers Ken Bronstein (city of Corvallis) and Bill Hughes, retired light engineer and light activist (on the IDA task force).

Star Parties - Scott: Nominal

Sales - Sameer: Nominal

Membership - Doug: Thanks to Ginny for help at the last gen-

(Continued on page 7) Board Minutes

Board Minutes (Continued from page 6)

eral meeting, filling in for Doug and Carol. About 400 current member families.

New Members - Carol: Nominal

Library - Jan: Purchased a couple of new CD's for the library. Meg may help out as a library staff member at general meetings. A bunch of old books were donated to the RCA, we sold about a dozen of them at the last meeting.

Light Pollution - Bob: IDA Conference full steam ahead, about 35 people registered. Jan says, the Klondike site has some new wind turbines with lights, some are red (Northwestern), others are very bright white.

SIG's - Scott: Cosmology SIG is up to 10-15 members, doing really good.

AL - Dale: Nominal

Editor-Regis: Nominal

YRCA - Ron: Nominal

Community Affairs - Norm: Nominal

OMSI - Peter: 2 year contract is up, working on revisions for the next contract period.

Webmaster - Dareth: Nominal

Telescope Library: Upgrading some telescopes. New solar telescope is under review and being prepared for general usage.

Magazine: Nominal

Phone Line: April 2nd through May 6th: Scott Fitzpatrick, Carol from May 6th to June.

IDA Conference: Acquired some more speakers, fewer RCA members registered than hoped and expected.

Carol suggests that perhaps we need a volunteer coordinator to help rally the members to volunteer for various tasks, projects and presentation, or adding a field on the member renewal form for someone to fill in if they are willing to volunteer. Peter will keep a file of volunteers needed.

Jan to make sure and pick up mail on a regular basis.

Astronomy Celebration at Haggard: Sean will be there with a solar scope.

OMSI Contract:

Doug makes a motion that the contract be modified as discussed (changes to be distributed to the board by the Secretary, via the board email list); Dale seconds the motion; The motion passes unanimously.

NASA's Space Place

HOW MANY MILES PER TORTILLA DO YOU GET?

How are batteries, gasoline, and tortillas alike? They all store energy. Of course, the energy they store is used in very different ways by different things. Cell phones can't run on gasoline and people can't run on batteries! But, even so, the energy stored in these different ways is really the same stuff!

We could compare the amount of energy stored in different kinds of fuel, and see, for example, how much gasoline it would take to operate a person (we don't recommend trying this!) or how many tortillas it would take to operate an automobile (we don't advise this either!).

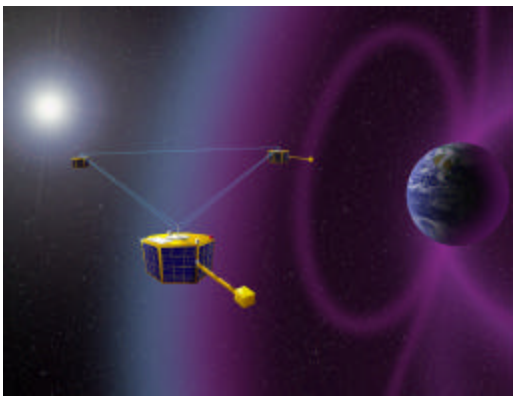
Speaking of tortillas, when we start figuring up how much energy different kinds of substances can store, we find that food is very efficient. For fun, we could compare how many tortillas it would take to operate an automobile, a space shuttle, a very small and advanced robotic spacecraft, and you.

You are already familiar with automobiles and space shuttles. The spacecraft we will compare these with is called Space Technology 5. Three of these tiny craft will be launched into Earth orbit to test out their advanced, miniaturized, energy-efficient technologies.

So, how many tortillas would it take to operate each of these energy-users for one day? Space Technology 5—4.4 tortillas; human—14-20 tortillas; space shuttle—2,904 tortillas; automobile—12,192 tortillas! Now you know why cars are called tortilla guz . . . er, gas guzzlers!

Learn more about how energy is stored and enter a Space Place contest. All you have to do is design your own spacecraft using tortillas or create an original recipe using tortillas. To enter the contest, go to spaceplace.nasa.gov/st5/st5_tortillas1.htm .

This article, written by Diane Fisher and Eric Elkins, was provided by the Jet Propulsion Laboratory, California Institute of Technology in Pasadena, CA, under a contract with the National Aeronautics and Space Administration's New Millennium



Space Technology 5 will fly three birthday-cake-sized spacecraft to test advanced, miniaturized, energy-efficient technologies in space.

Sidewalk Astronomer (Continued from page 5)

A tremendous amount of activity is taking place on the sun's surface. Because we cannot look directly at the sun, we are only aware of the massive amount of energy it generates, but with this energy removed the surface appears as solid as if you were looking at a nearby planet covered with water; undulating, shimmering, in a state of constant dynamism. Several sunspots, as clearly defined as punctuation marks and hundreds of times the size of the Earth, blemish the upper hemisphere. A solar flare the shape of a tornado stretches hundreds of thousands of miles into space. There are also several smaller flares near the top of the disk called hedgerows. The young mother takes a look and gasps.

The best way to describe it is 'visceral,' Mark offers. –I had a nurse look in the telescope once and she said the image reminded her of a giant eyeball. It says something, I think, about a cosmic biology, how we're all interrelated.

As the crowd grows, Mark, the consummate didact, releases a steady stream of information designed to enhance the viewer's experience. If you look on the far edge of the disk, to your right, you'll see some solar prominences, flames reaching out hundreds of thousands of miles. Ten Earths end to end wouldn't measure the length of that flare. And just to the left you'll see a number of sunspots, electromagnetic storms which cause depressions in the sun's surface thousands of miles deep. Impromptu dialogues form between strangers; discussions of primal soup, Einstein, cosmic ancestry.

Only one woman seems nonplused. She looks for a few moments, then turns to her boyfriend and complains about the cold. Two men and a woman speaking Korean politely ask if they may be allowed to look. Mark jumps to the telescope to make sure it's adjusted properly. What's the Korean word for 'sun'? he asks. What's the word for 'flare'?

The sun is obscured, and all activity around the telescope ceases. Mark turns up his collar and waits for the next break. Being out of work helps Mark to be patient with Portland's fickle weather. It's funny, people always ask me, 'How much does it cost?' and I tell them, 'Well, about five thousand dollars.' And they say, 'Five thousand dollars just to look?' and I say, 'No, the whole setup costs five thousand dollars. All that's required to look is your time and patience.

Twilight Rendezvous (Continued from page 3)

came up just as quickly and they both hugged the ground as they headed north - possibly on a military practice maneuver? What should we do? Call the FCC? 911? Naturally, we were out of film! Just a little bit nervous, we decided to pack our gear up fast and make it back to the city as soon as possible.

Home at last

We dropped John off and I was able to peek at some truly remarkable paintings casually propped up in his living room, any one of which would be spotlighted in the finest of art galleries or museums. Finally home, I was exhausted but exhilarated to have been in such good company and to have been able to witness such a sensational comet first hand. Comet I-Z's encounter with Andromeda was my best comet experience since Hale-Bopp and a wonderful beginning for the spring of 2002.

Dark Sky Conference (Continued from page 5)

couple speakers in not arriving until 10:45 am, I could not do justice to all the presentations I missed. I will only comment on some of them, but each and every speaker had great information.

Richard Berry gave an excellent presentation on measuring light pollution. He thoroughly covered the topic, describing the units used to measure light pollution as well as the various ways that have been used over the years by amateurs and professionals to map light pollution. Richard stated that the most useful tools are photometric methods which are highly accurate and provide quantitative results. His own work in this area resulted in the sky darkness Berry 1-4 scale which is similar to the recent Bortle 1-9 scale. Another great tool are the high resolution images of the earth's surface taken from above at night. They show the actual amounts of light pollution instead of using estimates based solely upon population densities.

Dr. Tom Thrall followed next with a short but evocative presentation regarding medical studies indicating that those deprived of darkness at night by bright ambient light sources may be more prone to contracting various diseases. This relates to the light signals received by the pineal gland in our brain which in turn produces the hormone melatonin that makes us sleepy at night. Various case studies have indicated that if our body is deprived of a dark night cycle for extended periods of time it lowers the production rate of melatonin which could be harmful to us. That because melatonin is a strong anti-oxidant and also influences various other hormone productions important to us.

This notion is not strongly supported by all however. The point was made by one attendee that those included in these studies worked at night and those results may not apply equally to people sleeping in a brighter environment because ones eyes are closed while sleeping thus blocking the signal from reaching the pineal gland.

Next up was Stephen Cousineau who discussed details regarding power production and consumption. He made a strong argument that power consumption is largely dependent on cost. In many instances the costs for using more power (such as car dealers might at night to illuminate their show room) might cost them very little extra because they are charged a flat base fee with only a small added surcharge for usage above a preset base level.

He also talked about ways that are used to temporarily store power. Such as Los Angeles buying power during cheaper low usage periods at night that is used to pump water up hill to be

(Continued on page 9) Dark Sky Conference

Dark Sky Conference Continued from page 8)
temporarily stored. It is then released back downhill the next day and used to generate power reducing the need to purchase as much power when the higher daytime rates apply.

Next followed the lunch break and we were entertained by RCA member Glenn Graham while we ate the bag lunches that were fresh and tasty. Glenn's presentation was filled with amazing pictures and video clips, most of which were taken from his urban Beaverton house. Of particular beauty was his photo of Hale-Bopp taken in central Oregon. Even when enlarged to a huge size on the screen the star images were relatively small and round. It was also nice to again see his video of the Saturn occultation by the Moon last year. After seeing his excellent efforts mostly working from bad skies, one of the attendees stated that his presentation was almost contrary to the needs of reducing light pollution given such good work can be done from brighter skies. But Glenn quickly pointed out that even better work is attainable from darker locations.

After lunch, Dr. Bruce Weertman was up next. He discussed methods of controlling light pollution, namely education, better lighting ordinances, and also working with the appropriate people. He had some neat photos of the effects of different types of light fixtures at night for illumination and glare purposes. Also some of the Space Needle and the Paul Allen version of the "bat beam". He noted that glare is a major problem, even more so for us as our eyes age and become less able to handle it. I found one of his factoids quite interesting, that being that the light from a single 100-watt incandescent bulb placed at a distance of one mile is brighter than any star in the sky!

James Benya and Bill Hughes next teamed up to talk about light planning and ordinances. Benya commented that unfortunately ordinances are not consistent all over and he would like to see more unification of them. He also talked about the concept of task adapted luminance as a effective way of figuring out how much light is actually needed and how best used. He made the point that many of the bad lights out there produce more glare, but are actually much more able to evenly illuminate large areas which leads to their attractiveness to many. To use better lighting is of course possible, it just requires more thought and planning.

Hughes supported that notion indicating that there is a need for more cost effective choices with regards to lighting fixtures so that the incentive will be there for people to use better lights. You can go buy a horrible light at your local home improvement store that is cheap and effective, but produces a lot of glare and light trespass. He indicated that continued efforts between all organizations involved with the control or design and usage of lights to work together is critical.

Following that discussion there was a short video provided by IDA about light pollution and then a panel discussion led by Bob McGown including most of those noted above. After the panel discussion there was an open period of socializing and inspecting various light fixtures along with a short door prize drawing that included several books and an eyepiece. Also many folks got a chance to tour the rebuilt Haggart Observatory which was a special treat!

During the late afternoon panel discussion Bill Hughes noted that it was important to include youth in the education process. Peter Abrahams (RCA President) was in attendance and indicated that Portland does have a lot of youth activity and that perhaps more could be done in the future to introduce our community's youth to the value of the dark night sky.

Elizabeth Alverez del Castillo made the point that we need to remember that the topic of reducing light pollution requires that a broad base of individuals and entities work together effectively. And channel their efforts not only just related to the value of the dark night sky, but to other diverse areas of support as well.

Richard Berry noted that he thought the use of the term "light pollution" was excellent for educating the public as is done during times when special events happen that capture more of the public's attention like comets, etc.

The IDA representation collectively mentioned that it would be great if someone in Oregon could step forward and lead an Oregon chapter for the IDA. Bruce Weertman and another couple, Jack and Beverly Sales (organizers of the Sacramento chapter), noted that the more the better because it is hard for regional folks to cover a great distance and still be effective. Elizabeth Alverez del Castillo essentially threw down the gauntlet asking for someone to pick it up and run with it in Oregon. She indicated the IDA would strongly back up this person be there to offer support in many ways. All that is needed is for someone to step forward to lead the efforts here. Any takers out there?

Bob McGown noted that a lot of folks are helping out with the effort in Oregon even though there is no single authority figure. Work is going on with regard to light pollution in several locations in the state and progress has been made. He proposed rather that a committee comprised of those leaders work together until someone can step forward to lead the efforts more comprehensively.

The conference ended in a very positive way with the formation of an e-mail list which will be the nucleus of the new entity Oregon Dark Skies Section, IDA. If you would like to join this list, please visit http://mail.patch.com/mailman/listinfo/dso. You will also hear more from several motivated community leaders in the future! Both State Representative Steve March and U.S. Representative Earl Blumenaur, who could not attend because of scheduling conflicts, gave their support to the conference.

As I drove home after the conference I felt quite positive about the efforts that are being done with regard to reducing light pollution. As an avid visual astronomer who has seen a noticeably increase in the amount of light pollution over the past decade or so, I don't take the nighttime sky for granted anymore.

The fight to reclaim, or at least slow down the future loss of our dark skies, is a fight we must all think of as a long term project. It will take the strong support of many more people then currently are members of IDA. It is not enough to simply say that RCA is a member, please consider joining the IDA if you are not already a member. Your support would go a long ways towards reducing the light pollution problems of the future.

For more information on how you can help maintain Oregon's dark skies, please visit http://www.rca-omsi.org/darkskies or the IDA site at: http://www.darksky.org/ida/ soon.

Chuck Dethloff

JIM KARLE, AN OREGON ASTRONOMICAL PIONEER

(Second of a two-part Series)

by Robert McGown

The Karle Telescope

In 1945, Jim returned from WWII and started the construction of a 10" f/8 Newtonian reflector. The primary mirror, which was made from the same glass as the 200" Hale mirror, was ground at his home before the war. The original mounting was a square hemlock yoke mount. Jim's first observations were at his home off Capitol Highway in 1947-48, where he observed the well-known eclipsing binary Algol. Besides the Algol research, he observed deep sky objects and the planets. Jim used to take Lewis and Clark students from astronomy class to the outdoor mount at his home to observe. One student, the class clown, remarked about the Ring Nebula that it looked "like an old, soggy Cheerio." The telescope remained at Jim's house until 1976.

The Jim Karle long focus binary star telescope.

Later, at Lewis and Clark College, machinist/model-maker Robert Perry built a yoke mount with metal trusses and a clock drive. The telescope included an electric focuser and two finder scopes. In 1976, after being rebuilt by Robert Perry under Jim Karle's supervision, Jim's 10" Newtonian was moved to an open location on the roof of the Evans music building. Eventually, the telescope was moved by crane to a dome on the Olin Physics/ Chemistry building in 1977-78.

A concrete isolation pier in Olin was a major design element from the foundation to the roof. It was constructed to give the telescope a steady platform. The observatory dome was a dry permanent home for the telescope, and provided shelter to those conducting research. A Honeywell-Brown chart recorder recorded data from the photomultiplier tube. A GE DC amplifier took the signal and put it into the Brown recorder. The weak signal from the photomultiplier tube has to be amplified in order to be recorded. A meter gauges the intensity of the DC signal in milliamperes from the photomultiplier tube. The photomultiplier puts out a current that is directly proportional to the amount of light that falls on the photocathode (photons received from the star). The more intense the light, the more current (or more electrons) are given off. This is known as the photoelectric effect.

To set up the telescope and photomultiplier, the photomultiplier is bolted to the eyepiece holder. The photomultiplier is exactly in line with the light cone at the Newtonian focus. Two special electrical cables are hooked up: one to the amplifier and one to the Brown chart recorder. When the photometer is ready to be used, a port is opened on the photomultiplier head and pulverized dry ice is inserted to cool the cooling fins, lowering the temperature of the photomultiplier. With the amplifier on and the power supply turned on, the photomultiplier is turned on.. The next step is to use the finder scope or setting circles to find the eclipsing binary star. There is an illuminated reticle on the finder scope. In the eyepiece on the photometer, center the star. With a flip lever on the side the star's light is put through to the photometer or to the illuminated reticle eyepiece. A small aperture slide is used to eliminate light from field stars and sky glow. The scope is now set up for the evening. After 4 hours, the dry ice, which is pushed up against the electrodes, will need to be refilled for the rest of the night's observing.

The Solar Telescope

During his teaching at Lewis and Clark, Jim also had an interest in solar astronomy. He wanted students to record daily sunspot numbers. Jim supervised construction of a vertical solar coelostat of 50-foot focal length in Olin Hall. The light enters the solar telescope on the Olin physics building roof. The telescope uses two optical flats of ¼-wave surface accuracy and 10" achromatic doublet lens of ¼-wave surface accuracy. Cave Optical made the achromat and the flats. Robert Perry made the metal work for the scope. For visual viewing, the scope gives an image of the Sun's disk 6" projected in the spectroscopy lab in the basement of Olin. Originally, the building was designed with a clear channel connecting the roof to the Spectroscopy lab. However, the spectrograph was never finished. There is a diffraction grating and slit in its own mounting dedicated for the spectrograph. The solar diffraction grating is used for the UV tunable dye laser that professor Tom Olsen constructed. The solar scope was built over a period of two years. Jim observed the sun every clear day until his retirement in 1985.

Retirement

In the early 1980's, before Jim's retirement on August 31, 1985, research at the Observatory ceased. From 1985 on, Jim Karle continued to observe the Sun and Venus in the daytime from his home in southwest Portland. Observing and reading his monthly Sky and Telescope magazine has kept Jim abreast of recent astronomical events. In one way, Jim continues to influence others in the astronomical world with his writings in an astronomical column in his church newspaper, "Our Redeemer Lutheran Church" in Tigard. His column in the monthly bulletin is called the "the Resident Astronomer." For Jim Karle, it wasn't the notoriety achieved through his pursuit of astronomy - it was the love of the scientific quest.

Ongoing Research of Eclipsing Binary Stars at Lewis and Clark

In 1989, Physics professor and solar astronomer Herschel Snodgrass worked with Jim Karle and a student as collaborators on a paper on V505 Sagittarii, which was published in the Astronomical Journal in 1993. Herschel is a referee for the Astrophysical Journal.

In 1990, Lewis and Clark received a grant from the Murdock Charitable Trust for new observatory equipment. The equipment purchases included several Schmidt-Cassegrain telescopes, a large Dobsonian, a hydrogen-alpha solar filter, and a CCD camera. While the new equipment did not serve the research program, it made the observatory more student-friendly. Students from diverse majors enjoyed an occasional visit to the observatory, and the freshman Basic Inquiry class had a small unit on practical astronomy. Physics and astronomy classes, taught by Tom Olsen, Herschel Snodgrass, and visiting professor Doug McCarty, had

(Continued on page 11)

Karle (Continued from page 10)
regularly scheduled viewing nights. In 1993, lab instructor Tom Bennett and die-hard amateur astronomer Wes Stone started the Observatory Users' Group, members of the present day Rose City Astronomers Club. Meeting topics included a presentation on CCD imaging by Dennis Luse and a mirror grinding workshop by Bob McGown where the students ground on telescope mirrors up to 12½ inches. Colby Jurgenson, who joined the group in 1994, was especially interested in the observatory, and quickly learned to operate the equipment.

In 1994, Tom Bennett worked with Jim Karle to refurbish the photometer tube that went into the photomultiplier. Tom was interested in long-term observations of eclipsing binary stars after a friend observed Algol's eclipses from Tromso, Norway, where Algol is circumpolar. Tom, a chemistry student, and Bob McGown made evening runs on short-period eclipsing binaries in Draco and Hercules.

In 1994, the Lewis and Clark facility was dedicated as the James H. Karle Observatory. Festivities included a special guest lecture from Dr. Lidia Corosa, who received her Ph.D. for studies of the neutron star Hercules X-1. Lidia also taught at Mt. Hood Community College along with Doug McCarty. Lydia's dedication of the observatory included a lecture on molecules in space. An amusing quote from her dedication lecture was: "Thermodynamically, we're doomed to existence!"

Herschel Snodgrass sought to revive the eclipsing binaries program started by Jim Karle, and found willing participants in physics major Colby Jurgenson and graduate education student Matt Price. Matt and Colby worked on the Karle 10" telescope, repairing the clock drive, photomultiplier, and chart recorder. This took most of the summer of 1996, but the research grant was renewed the following summer, and the team began recording light curves of short-period eclipsing binaries. During their work, Colby and Matt not only took data, but also created a manual detailing the use and care of the telescope and photometry equipment. Two other students, Darryl MacInnes and Melissa Pereira, became involved in the program during subsequent summers. In 1998, the aging Brown chart recorder was retired, and a computer was used in its place.

For the 2000 research season, the College acquired a laptop computer, a Santa Barbara Instruments Group ST-7E CCD camera, and new software. A Celestron C-11 Schmidt-Cassegrain was refurbished for the eclipsing binary studies.

Jim Karle's life was an exciting mixture of astronomical teaching, telescope making, meteorite hunting, and astrophysics. His teaching inspired many students to go on the become astrophysics in their own right. The Lewis and Clark students will follow the astronomical legacy he created.

Amateur astronomers in Portland, a historical note

Norman Smaile was a amateur astronomer who, with Jim Karle and others, helped found the PDX Amateur telescope Makers and Observers, PATMO) in 1947-48. Norman Smaile ground mirrors with Jim together attain a parabola on the 10" mirror. At OMSI Norman worked as a planetarium lecturer and was in charge of the planetarium for a while. Together they observed a transit of mercury together with a solar telescope. He was a dedicated amateur known by many who worked previously for the Veterans Administration.

Harry Carruthers was an active member of PATMO who would observe with Jim, Norm and a friend, Arthur Goddard, with Arthur's large 16 in German Equatorial Mount Telescope. Together, they made trips to Corvallis area to observe through Arthur's scope. They met together on Telescope making nights.

Another amateur who was active member in PATMO was Don Conner. Don worked with the Golden dale Observatory in the early 50's.

In the 50's, the group of amateurs, observed with Harold Haggard's 20in. Telescope built in Oregon City. Reportedly, the dome it was built out of was the fuselage of a WWII bomber. Eventually the observatory was moved to Clackamas Community College where it was recently refurbished 2000-2001. The present telescope is a 24in custom dobsonian built by Steve Swayze, a Portland Optician.

Jim Karle used to do astrophotography of star clouds of Sagittarius with A. E. Mac Intosh on Council Crest, a good dark observing site back then, with the 20 inch Newtonian. MacKintosh donated his 20 in Palomar design split ring equatorial to U of P where physics professor Starr built a observatory around it. It is still used recreationally today and is under renovation. However in recent times, the telescope has limited use because of the light pollution from the ship yards.

Web Sites

Lewis and Clark Physics Department www.lclark.edu/~physics/
L&C Telescope Operating Manual James Karle Observatory

References

1. Karle Genealogy: James had a sister named Helen Karle. James Karle's mother's maiden name was Ida Harmen, and his father was William Henry Karle, James father's father, Michael Karle, was from Germany and was married to Barbra Karle. James' mother's father, William Porter Harmon, built the historic house in Sellwood. He was married to Sara Harmon.

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Sky and Telescope. Port Orford Meteorite.
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Port Orford Meteorite, Hult, Ruby C. L. 1957: pp. 94–103.

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Conversations with Matt Price, Tom Bennett, Dick Pugh, and Wes Stone.
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Astrophysical Journal, 1993
Dr. Hugh Pruett. *Oregonian* articles.
AIAA Northern Ohio section-Charles Radley

May 2002

Sun	Mon	Tue	Wed	Thu	Fri	Sat
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June 2002

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30						

May

May 4	Sat.	Telescope Making Workshop	Tech Marine Srvc	10-3
May 6	Mon.	Board Meeting	OMSI Classroom 1	7:00 PM
May 10-12	Fri-Sun	Dark Sky Star Party—Camp Hancock		
May 18	Sat.	Planet Parade—OMSI		
May 20	Mon.	YRCA (ages 13-18)	OMSI Cafeteria	6:30 PM
May 20	Mon.	RCA Kids (ages 4-12)	OMSI Cafeteria	7:30 PM
May 20	**Mon.**	**General Meeting**	**OMSI Auditorium**	**7:30 PM**
May 23	Thurs.	Astrophysics/Cosmology SIG	Linus Pauling House	7:00 PM

June

June 1	Sat.	Telescope Making Workshop	Tech Marine Srvc	10-3
June 3	Mon.	Board Meeting	OMSI Classroom 1	7:00 PM
June 8	Sat	Inter-club Star Party—Mary's Peak		
June 15	Sat	Summer Solstice-OMSI		
June 17	Mon.	YRCA (ages 13-18)	OMSI Cafeteria	6:30 PM
June 17	Mon.	RCA Kids (ages 4-12)	OMSI Cafeteria	7:30 PM
June 17	**Mon.**	**General Meeting**	**OMSI Auditorium**	**7:30 PM**
June 20	Thurs.	Astrophysics/Cosmology SIG	Linus Pauling House	7:00 PM

The RCA General Meeting falls on the third Monday of each month. We usually meet in the Auditorium at OMSI, next to the Murdock Planetarium. Occasionally the meeting is held in Murdock Planetarium. Check here each month for details, or look us up at the RCA web site (http://www.rca-omsi.org).

The Weather SIG address is: Colonial Office Complex, 10175 SW Barbur Blvd, Suite 100-BB, Portland. From downtown, go south on I-5 to the Barbur Blvd. Exit. Cross back over I-5 and the Complex will be on your left.

RCA CLUB INFORMATION

Message Line: (503) 255-2016

Web Site: http://www.rca-omsi.org

Oregon Museum of Science and Industry
Rose City Astronomers
1945 SE Water Avenue
Portland, Oregon 97214-3354

The
Rosette Gazette

Volume 14, Issue 6 | Newsletter of the Rose City Astronomers | June, 2002

In This Issue:

April showers Bring May showers

How does that axiom go? For clarity on this and other Oregon weather related topics, please join together and welcome **State Climatologist, George Taylor** (note: weather clarity NOT guaranteed).

If the bold skyscapes we have been experiencing have you pondering weather processes, then you will be delighted to partake in Mr. Taylor's engaging presentation involving large-scale influences on Oregon weather and climate. He will provide us with a look at climate trends over decades, centuries, and millennia. We will focus on some interesting and severe historical weather events experienced in Oregon. Then, we may consult Mr. Taylor on his predictions of what the future holds.

George received his M.S. in Meteorology from the University of Utah and presently serves with the Oregon State University dept. of Atmospheric Sciences. He has been State Climatologist in Oregon since 1989.

So come learn of the effecting and dynamic processes of Oregon weather in the June general meeting of the Rose City Astronomers.

Observing the Night Sky at OMSI

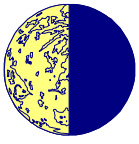
June 10th: OMSI Partial Solar Eclipse Viewing On Monday afternoon, June 10th, the Pacific Northwest will witness a partial eclipse of the Sun. As seen from Portland, the Moon will move in between Earth and Sun starting at 5:02 PM PDT and ending at 7:04 PM PDT. The eclipse will reach its maximum at about 6:06 PM, with nearly 54% of the Sun covered by the Moon. At the time of the maximum eclipse, the sun will be 27 degrees above the western horizon.

Weather permitting, OMSI, Rose City Astronomers Club, and Vancouver Sidewalk Astronomers will set up special solar filtered telescopes starting at 4:30 PM Monday, June 10th at the OMSI's east parking area to view the partial eclipse. Learn how to safely view the eclipse with the experts and be apart of the event! !

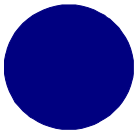
June 15th: OMSI Star Party / Solstice Celebration Join OMSI and Vancouver Sidewalk Astronomers, Rose City Astronomers to celebrate the summer solstice with local astronomy experts at a FREE Star Party on June 15 starting at 9:30 p.m. in OMSI's East Parking Lot, located at 1945 SE Water Avenue. Peer through powerful telescopes to view stars, planet Venus, nebulae, constellations and other fascinating aspects of the night sky. For possible cancellation due to weather, call 503/797-4610 on June 15. For the 2002 star party schedule, visit OMSI's web site at http://www.omsi.edu/explore/planetarium/starparty

We are pleased to share with the members that Howard Banich won a merit award for his innovative 8" Springsonian telescope at the Riverside Telescope Makers Convention in May. For those that have not seen his scope, the eyepiece is located in the middle of the altitude bearing making it very convenient to view through the eyepiece while sitting on a chair as the eyepiece stays at the same height no matter what elevation the scope is pointed. Congratulations Howard for a well deserved award!

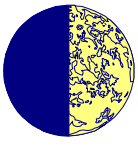
June 2



June 10



June 17



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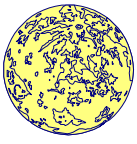

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President's Message

By Peter Abrahams
June 2002

On June 8 we will participate in the Inter-Club Star Party, at Mary's Peak, outside Corvallis (subject to weather cancellation, as usual). Regardless of rain, and whether or not you can attend, we should all be aware of the many other amateur astronomy groups and projects in the Pacific Northwest.

The following list is reasonably up to date, but should be considered 'current or recent' organizations:

In Oregon, there are (in order of distance from Portland): Oregon City - Haggart Observatory; Vernonia - Northwest Astronomy Group; Salem - Night Sky 45; Corvallis - Heart of the Valley Astronomers; Eugene Astronomical Society; Roseburg - Umpqua Amateur Astronomers; Ashland - Southern Oregon Skywatchers; Bend - Central Oregon Astronomical Society; Sunriver Nature Center Observatory; and the Friends of Pine Mountain Observatory.

In Washington, there are the Vancouver Sidewalk Astronomers; Kelso - Friends of Galileo; Olympia / Centralia - Southwest Washington Astronomical Society; and groups in Tacoma, Federal Way, Puyallup, Seattle, Bellevue, Issaquah, Bainbridge Island, Bremerton, Everett, Bellingham; also Goldendale, Richland, Rattlesnake Mountain, Yakima, Spokane, and Pullman (where there is a 12 inch Alvan Clark refractor at WSU).

That's a lot of groups.

There are also astro-imagers that meet annually; telescope makers that meet at star parties & annually in Bellingham, SETI activists, and other networks.

RCA might possibly be the best group, but it isn't the only one.

RCA

Magazine Subscriptions

One of the main services offered to RCA members is subscriptions to *Astronomy* and *Sky & Telescope* magazines at a much reduced rate from newsstand prices. *Astronomy* $29 for one year or $55 for two years. *Sky & Telescope* is $29.95 for one year.

Checks must be made out to Rose City Astronomers to get the reduced rates.

For further information, see Larry Godsey, Subscription Coordinator, at the Membership Table at General Meetings or check the RCA website. Please note: Allow two months for your subscription to be renewed.

Sky & Telescope Store Discount

RCA members who subscribe to *Sky & Telescope* are entitled to a 10% discount at the *Sky & Telescope* online store at: *http://skyandtelescope.com/shopsky* To get your discount, enter Rose City Astronomers when prompted for your club name during checkout at the *Sky & Telescope* online store.

The "Kids" of Rose City Astronomers

RCA Kids
Children ages 4-12 are welcome to join in fun and educational activities while the grownups attend the monthly general RCA meetings. The kids' meeting takes place in the adjoining cafeteria at OMSI from 7:30 p.m. to 9:00 p.m. If you have any questions, please e-mail Jennifer at jenny@theforrest.org.

The **Young Rose City Astronomers** (ages 13 - 18). This group meets from 6:30 to 7:30 on the third Monday of the month in the OMSI auditorium, before the regular RCA meeting. In addition, the YRCA meets on the first Thursday of the month. Kids with all levels of experience are welcome. There's no need to join - just come to the meetings and have fun. Adult volunteers are always welcome. Call Margaret McCrea, 232-7636, for more information.

Important safety tip…

The first images from Hubble's new camera inspired me to observe the same four objects through my scope – The Cone Nebula, the Omega Nebula, "The Mice" interacting galaxies and the "Tadpole" galaxy. I'd seen three of the four previously, but taking the time to observe them, particularly the Tadpole and The Mice galaxies, with the knowledge of what they more truly looked like was irresistible. Not only that, it seemed like a great idea for this article.

So where is the Tadpole galaxy? MegaStar solved that mystery in short order, and after printing off a few charts, as well as printing the Hubble images, I was all set. I'd marked the location of the Mice on my charts several years ago and the locations of the Cone and Omega nebulae were also no problem – except that the Cone is too close to the Sun right now and the Omega isn't high enough for a decent look until early in the morning. These two will have to wait.

My scope was set up at Chuck's place where I'd been lured by a brief clearing a few nights earlier. Although the forecast was pessimistic I had a hunch we'd have some clearing in a day or two. On Friday, May 3 the day gradually cleared and by nightfall a beautifully clear sky presented itself.

After a major grocery shopping expedition at Fred Meyer's I called Chuck to let him know I was on my way, but when he answered the phone and said something like "good – you have to come!" I felt a twinge of unease. After he explained that a gust of wind had blown my newly renovated 20" Obsession telescope over and it was laying on its back on the ground my heart stopped.

How did I feel? Something like "Aauugghhh – my scope blew over!!!" but mostly I was just numb.

As far as he could tell the optics were ok, but he couldn't be sure. It's a 50-minute drive to his place so he made the excellent suggestion that I be sure to pay attention to the road while driving over. I made it to his place without incident, and I used those 50 minutes to get emotionally ready for the potential reality that my scope was cracked, chipped, gouged, splintered, torn and generally mutilated and perhaps beyond repair. Gulp.

I arrive at Chuck's around 9:30pm to find the scope on the ground just as Chuck had described, with the tarp lying crumpled nearby. What struck me right away was how peaceful a scene it was – looked rather like someone had carefully laid the scope on the ground. Closer inspection revealed the true extant of the damage – which somehow turned out to be surprisingly minor.

The mirror cells protected the mirrors wonderfully and the optics are 100% ok. Incredible.

The top ring of the UTA needs repair, which is underway right now, but it should turn out just fine.

A small wood slat I added to the back of the mirror box to hold counter weights needs replacing, but it's probably the most easily replaced part of the scope.

A few assorted dings in the woodwork, mostly inconspicuous and on the equatorial platform (which is also fine) need to be touched up and are no big deal.

The force of impact bent the diagonal mirror holder, but I was able to repair it on the spot.

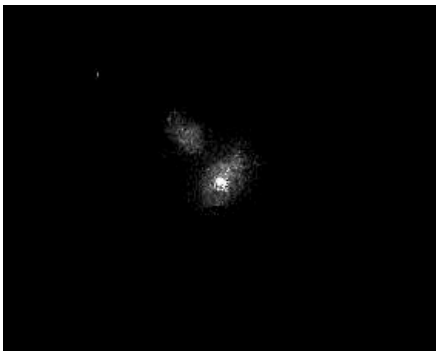
Photo by Chuck Dethloff

Whew. And thank you…

The most amazing part of this episode was that Chuck and I had the scope back together and running in about two hours, damage and all. I observed with it until Moonrise at about 3:30am, and yes, I did find the Tadpole and the Mice.

The sky was clear but less transparent than usual so dim objects were even more subdued than usual, plus the seeing started out quite soft. But I was happy and relieved to have a scope to observe with so I didn't much care that the conditions were less than ideal. Hey, it was a Friday night and the sky was clear – that would have been more than enough to keep me smiling even without the happy ending with my scope.

The Mice (aka NGC 4676) are the two interacting galaxies with long tails of stars streaming away from both galaxies – at least they look like that in the Hubble image. They appeared to me as two small patches of fuzz that were almost in contact, with one galaxy slightly brighter and larger with a more condensed core. No sign of the tails, which isn't surprising since they are extremely faint and the sky was less than optimum. But they were well placed on the meridian, so at least my timing was good. Moderately high power is often best for seeing detail in dim galaxies so I pushed up to 413x on the Mice, which ended up providing the best view.



(Continued on page 5) ..Observers Corner

CLASSIFIED ADS

Run your non-commercial astronomy related classified ad in the monthly Gazette. Rates are reasonable (free!)

FOR SALE: Russian-made Mak-Cassegrain lens, 500mm f/8, $100/offer; older Meade Research Grade 20mm wide angle, $30; old style TeleVue 40mm Plossl, $50; Meade #539 8X50 right angle Polar viewfinder w/illuminated reticle, bracket, $100/offer; Sirius 10mm, 26mm, 35mm Plossls, $35 each/offer; Orion 12.5mm illuminated reticle Plossl (wireless), $65; Orion #3503 DC Dew zapper for 8" SCT, $30; 2 f/5 telecompressors for 8" SCT's, $20 each. Contact Jim Girard at 503-643-1813 or argo@teleport.com.

Meade 4500 4.5" Newtonian on equatorial mount. MA25MM eyepiece + 2X Barlow. $250 OBO Contact Ken Rairden 503-657-9895

IN THE JUNE SKY

2, Last Quarter Moon
3, Venus will pass 1.6 degrees north of Jupiter
7, Pluto at opposition
10, New Moon
17, First Quarter Moon
21, Summer Solstice at 6:24 AM
24, Full Moon

WHAT'S IT WORTH?

By John Siple

Many amateur astronomers accumulate optics and accessories, especially after owning that first inspirational telescope. Depending on financial conditions, this "hidden wealth" may remain boxed away in storage in basements and attics or could be needed for funding that next telescope project.

There are price guides for all types of antiques and collectibles, but unfortunately nothing is available to guide the individual who has potentially valuable telescopes and accessories for sale (buyers may find a guide useful too). Notably some accessories are actually worth more than the telescope itself!

A telescope does not necessarily have to be an old brass work of art to be considered desirable; telescopes made in the 1950's and later are eagerly sought after by today's group of observers. The smart amateur appraises equipment not only from a collector's standpoint but also from its functionality. This tends to increase the monetary value of the telescope or accessory.

Values listed are for telescopes and accessories in excellent or better condition. Glass surfaces of mirrors and lenses should not be scratched, motor drives if present in good working order, barrels and tops of eyepieces free of dings and deep scratches. Corroded surfaces from weathering or bad storage will significantly reduce the value of any item, but if restorable some or most of the lost value may be recovered. Wooden tripods and cases can be refinished and mountings repainted, but this detracts from the originality and results in the loss of marketability.

The list is by no means complete, and is based on numerous sources: the Internet classifieds, ads in club newsletters, telescope dealers, ads in magazines, auctions, and personal experience. Prices may vary slightly from region-to-region, and are given for the basic instrument as supplied from the manufacturer. Accessories can add considerably to the price. Readers are encouraged to check for themselves on prices given in this article. The pages of older *Sky & Telescope* and *Astronomy* magazines are great for obtaining telescope specifications and original price lists. **All prices shown are for used items only!**

The "King" of achromatic refractors in bygone days is Unitron. Founded in 1952, this line of refractors is one of the best in appearance and consistent performance. 2.4" f/15 alt-az $375-650 & 2.4" eq. $750, 3" f/16 alt-az $700 & 3" eq. $900-1200, 4"f/15 alt-az (two designs) $1300-1700 & 4" eq. $1750-2800 (weight-driven photo equatorials $4000). Meade's Model 420 as sold in the late 1970's is very similar to Unitron's Model 152 and gets $2800.

Vernonscope (Brandon) 92-94mm. F/7 and 130mm. F/8 apochromatic refractors using Christen triplets and Unitron components were made a dozen years ago. Only 500 of the 94mm. and 100 of the 130mm. units were produced. Renowned for their portability and performance these OTA (optical tube assemblies) are in high demand, only exceeded by the AstroPhysics, Inc. 105mm. Traveler. 94mm. $1200-1500 & 130mm. $3500 (OTA's only). Vernonscope's Master Birder 80mm. f/6 gets $600.

AstroPhysics, Inc. markets some of the most desirable triplet refractors in the world. Quality is legendary and they are an astrophotographer's dream because of color correction and short focal length. They use a large 2.7" focuser (a 4" is available). 105mm. Traveler $3600, 4" (older 1980's) $1600, 5" f/6-12 $3500-5200, 6" f/8-12 $4200-4500 (OTA's only). EDFS telescopes are significantly higher priced, as are OTA's that use 900 GTO or similar mountings. A popular combination among astrophotographers is to couple a Losmandy G-11 mounting ($1700) with an AstroPhysics OTA.

Cave Astrola scopes were marketed out of Long Beach, CA by Thomas R. Cave, Jr. & his father. They made tens of thousands of mirrors and set a standard of optical quality that is seldom reached. The company was started in the 50's and closed its doors in 1980. Parks purchased the patterns and has marketed similar-looking telescopes. Meade Research-Series Newtonians also look like the old Caves. Cave sold mostly Newtonians and some Cassegrains (f/16) and a few 4 & 6" refractors. The best optician was Alika K. Herring, and a telescope with one of his mirrors has its value doubled automatically. 6" $550, 8" $775-1000, 10" $1000-1800, 12.5" $2100-2800, 4" f/16 refractor $1400, 8" Cassegrain (pier model) $1100, 10" Cassegrain (wooden tripod version) $1300.

Criterion Mfg. Co. of Hartford, CT. sold a very popular basic 6" Newtonian for many decades, starting in the late 1950's. The RV-6 6" f/8 is probably the one used telescope that most amateurs will run across sooner or later. The tube is Bakelite and came with a 30mm. finder and 1.25" focuser. The mounting is a German equatorial with pier and 3-detachable legs. A motor drive was standard, and a separate declination arm or bracket could be added. Criterion also sold its "Masterpiece Series", a line of Dynascopes designed to perfection. These are rare and seldom offered for sale. Optical quality in all Criterion mirrors is superb or better. RV-6 $425, RV-8 (8" f/7 & 8) $650, Masterpiece 10" f/8 $1500.

The Optical Craftsmen was one of the 1960's premier telescope manufacturers. Originally located at Northridge, CA they moved their facilities to Chatsworth, CA for the bulk of later production. They sold two lines of scopes, the Standard and Connoisseur. The Standard is sometimes available on the secondary market, while the Connoisseur seldom shows up for sale (people hold onto these as the mountings are objects of art for astrophotographers). Pacific Instrument's mountings strongly resemble those used on the Standard Line. 6" f/10 Canopus $400-500, 8" f/6 Discoverer $550-795, 10" f/7 Connoisseur $2000.

Edmund Scientific (Edscorp) sold numerous bottom-end reflectors and refractors for the budget-minded amateur. These were no-frills designed telescopes, but fully functional nevertheless. Some are actually of very high quality compared to today's instruments. The newer red-tube phenolic models are in less demand than the older 1960-70"s aluminum-tubed ones. Edmund did market kits so beware of this when purchasing an Edmund brand refractor or reflector. 3" f/15 eq. Refractor $350 & 4" eq. $500-800, 6" f/8 eq. Reflector $375-450 & 8" f/8 $600-700, Astroscan $150-175.

Meade Instruments Corp., originally an importer of fine telescopes and accessories in the 1970's, completely dominates the astronomy marketplace today. They have sold so many different versions of their 6-16" telescopes that it is hard to summarize all of them here in this short space. In general the quality control is excellent and it is hard to find a disappointed amateur who owns one of their telescopes or accessories. Meade sold literally thousands of Newtonians through Crown Optics several decades ago. Expect to pay $300-400 for a 6" Newtonian reflector, $400-795 for an 8", and $2000 or more a Meade DS-16 equatorial. Meade Schmidt-Cassegrains are plentiful, and an 8" will fetch $800-1200 while a

(Continued on page 8) Worth

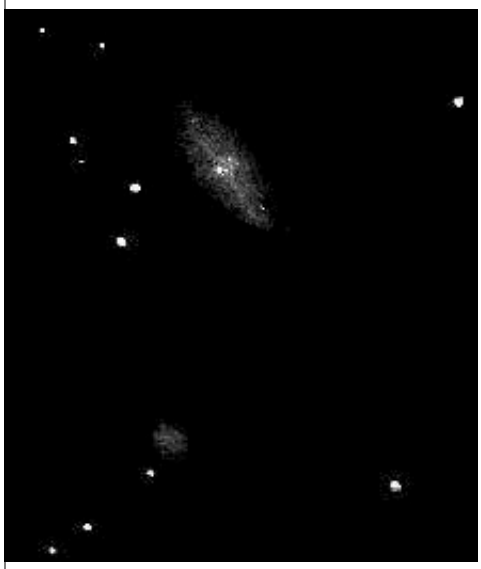
Observers Corner (Continued from page 3)

By the way, the Mice are in the same general Coma Berenices neighborhood as NGC 4565 and are not difficult to find by star and galaxy hopping.

I drew this sketch at the eyepiece and touched it up a bit as I prepared this article so it presents more of the appearance I actually saw.

The **Tadpole** (UCG 10214) was as easy to find in Draco as the Mice were in Coma. At magnitude 14.4 it is brighter than I anticipated but still rather dim. But I found it a thrilling view knowing what was there even though I could see only a tiny fraction of the galaxies in the Hubble image.

It was fun matching stars in the field of view to my MegaStar charts and then noticing that the brightest (magnitude 15.4) background galaxy was also visible – MCG +9-26-54. Matching it to the Hubble image was awesome fun and provided an even more direct link to it. No, I couldn't see the double spiral arms or the long tail of stars, but I was mesmerized by the view even so.



Knowing there are thousands of background galaxies in this field of view captured me as few non-visible objects had. I probably looked for over an hour between sketching and gawking.

I used 413x for this drawing as well, and reworked the at-the-eyepiece sketch to represent what I saw more accurately.

After these two objects I observed a few Hickson galaxy groups and ended the evening with M13, which was nearly at the zenith. With the seeing at its best for the night the great globular was a beautiful – and much brighter – sight to end the night with.

So what have I learned from this memorable evening? For now I've come up with these thoughts:

1. Always "cube" my scope when leaving it out for a few days.
2. Never underestimate the power of the wind and an unintentional sail.
3. A well-built mirror cell is worth the cost of the mirror it supports.
4. Looking at the objects Hubble takes images of is an enjoyable and thoughtful experience I'll do more of.

That, and I am one lucky son of a gun.

A Quasi-stellar Encounter
Deep sky Galaxy Observations on Mt. Hood

by Bob McGown

The thin crescent shadow of the Earth covered the surrounding cinder cones and snow-capped hills. On the western horizon, Jupiter, Saturn, Mars, and Venus were telescopic jewels above the alpine glow. This cool crisp evening was the 10th year that I have hosted climbers ascending Mt Hood at Silcox Hut, taking advantage of the 7th magnitude telescopic views of the night sky and thin air. The Hut is a classic 1933 WPA Cascadian structure that was initially renovated in 1985 with the assistance of two $50,000 grants from the Murdock Foundation and was the site of the second ski lift in North America. It now has sleeping quarters for 24 mountain adventurers.

M58 Credit: AURA/NOAO/NSF

As a friend and I were observing at Silcox Hut on this cold May evening, we noticed two climbers hiking up the mountain to our snowy platform at 7,000 feet on the slopes of Mt. Hood. They traversed the mountainside over to the telescope bathed in red light, curious as to what we were doing. We were interested in observing Messier galaxies in Virgo, Leo and Coma Berenices and shared some deep sky views through the 10" Newtonian with them.

Soon a group of climbers gathered around the telescope and I gave them a constellation tour. We could see the winter circle's farewell as it set with the planets and the rising of the summer constellations. One of the climbers gazing through the scope told us about an interesting quasar research project he'd just completed.

When he was an undergraduate student at UC Santa Cruz, majoring in computer software, he had been involved in a research project with a group of astronomers who were working on a quasar study in local galaxies. We discussed the theory that when large black holes munch up stars, a low surface brightness quasi-stellar flare-up occurs. The idea was that perhaps this flare-up of quasars was happening in our Local Group, not just in ancient galaxies. If one of these events was subtle, it might only raise the surface brightness of the galaxy by 10% or so. Astronomers and supernova hunters might miss this flare-up at the galaxy's core and a quasi-stellar event could possibly go unnoticed. To compare these galaxies, old spiral nebula photographs from the Hooker Telescope and Lick Observatory were used to establish the longest base-line brightness measurement over time. Our climbing grad student had written a computer program to aid in the search for these quasi-stellar objects in local galaxies. Although this specific research project did not prove to be fruitful on the quasi-stellar comparison of galaxies, it was thought that it might yield interesting insights into the nature of galaxy structure and processes.

After viewing the Leo trio against an inky black sky, the climber and his companion left our icy shelf and slogged upward on the slopes on the Palmer Glacier. We continued to hunt for Messier galaxies in Ursa Major and finished the early morning observing session sketching and viewing 30+ galaxies. Although we had seen these galaxies many times before, it was like the annual pilgrimage to the mountains to see the wild flowers in spring. In particular we wanted to see Stephen J. O'Meara's favorite Messier, 83 - a face-on spiral radio galaxy at the head of Centaurus. We were looking for the structure and dark lanes in the oddly shaped spiral arms. The galaxy's central bar was oriented across its main axis. It was amazing how much detail was apparent in the bright nucleus.

(Continued on page 8) Quasi-Stellar Encounter

ASTROPHYSICS / COSMOLOGY SIG

TIME: 7:00 PM

DATE: June 20, 2002

TOPIC: Celestial Navigation - Bob McGown

PLACE: Linus Pauling House, 3941 S.E.

WELCOME NEW MEMBERS!

Paddy Barry
Lim Choon
Andrew Guzie
Bob and Ester Pyle

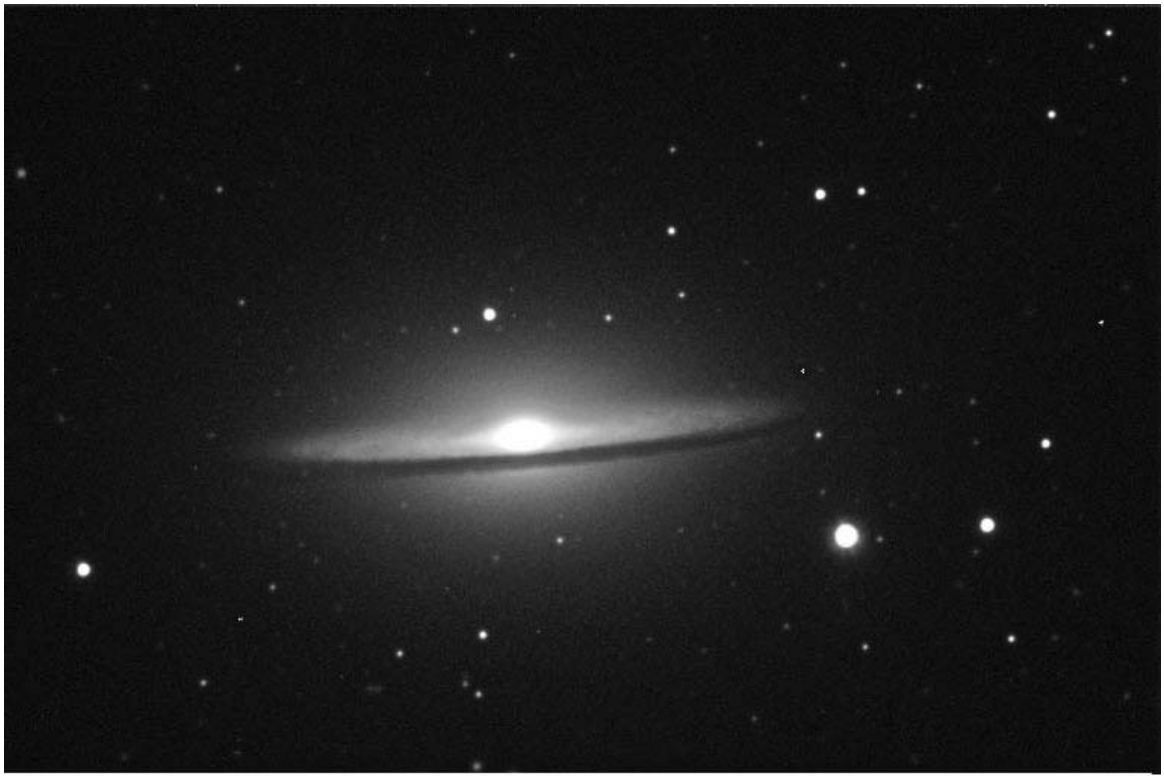
RCA Photo Gallery

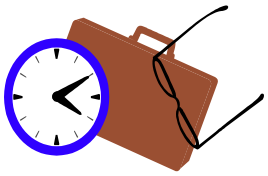
LIBRARY NEWS

The Rose City Astronomers maintains a comprehensive club library of astronomy related articles, books, CD-ROMs and videos. These items can be borrowed by members through checkout at the general meetings for a period of one month with renewals available by phone or e-mail to the club library director, Jan Keiski (jikeiski@juno.com) - (503) 293-3281. The RCA library is constantly growing through many donations and the purchase of new materials. To keep pace, the RCA library staff is growing too. Welcome Tammy Ross who will be helping with the putting away of library material after the RCA general meeting.

Other library staff include: Larry Froberg - data input & inventory of materials; Rea Young - check in of returned materials & backup for check outs; Richard Labar - set up library. Online access to a list of library materials will be implemented within the next few months, as well as color coding of library materials by category. In the not too distant future, check in & out will be done using a laptop donated by Larry Froberg.
Visit the RCA library web page at:
http://www.rca-omsi.org/library.htm

M104 (The Sombrero Galaxy). This nearly edge-on spiral galaxy is one of the brighter examples of a galaxy with a dark dust lane running through it. Taken 5/15/02 with an ST-7E and Celestron CG-11/Gemini. Guided with CCDSoft v5 controlling the AO7 unit running at 0.5 Hz. Eight 5 minute exposures were added. 5 iterations of L-R deconvolution was then applied using CCDSharp. Finally, the image was processed twice - once to reveal inner detail and once to reveal outer detail, and the 2 images were combined with a layer mask in Photoshop. (Photo by Dave Sandage)





BOARD MEETING MINUTES

MAY 6, 2002

Ron Forrester

Present: Norm Trost, Ginny Pitts, Jeff Henning, Peter Abrahams, Ron Forrester, Candace Pratt, Scott Turner, Bob McGown, Jim Todd, Dareth Murray, Larry Godsey, Jan Keiski, Scott Fitzpatrick, Matt Brewer

Treasurer - Ginny: $13723 in the bank.

Programming - Matt: May is OMNI-Max, will charge $7 per person. General meeting portion in the OMNI-Max lobby. Norm moves that the club pay for the May general OMNI-Max presentation, and the print Gazette be updated to reflect this if possible. Ron seconds the motion. Scott calls for a vote after significant discussion. Passed by 11 yes votes, 1 against. June is George Taylor. July is John Dobson.

Star Parties - Scott: Nominal

Sales - Sameer: Nominal

Membership - Doug: Nominal

New Members - Carol: Nominal

Library - Jan: Didn't have to spend money on another cart, will roll into some telescope making videos.

Light Pollution - Bob: ~6hr video from the IDA conference. Bill Hughes donated some light fixtures for display.

SIG's - Scott: Nominal

AL - Dale: Nominal

Editor- Regis: Nominal, although minor edits will be attempted before this printing.

YRCA - Ron: Nominal

Community Affairs - Norm: May have a presentation in Beaverton

OMSI - Peter: Nominal

Webmaster - Dareth: Nominal

Telescope Library – Peter/Jeff: Various very nice donations for the telescope library.

Magazine – Larry: Nominal

Phone Line: Carol from May 6th to June.

Jim Todd: Presented current OMSI/RCA agreement and fielded comments and questions. Agreement is essentially unchanged from last year. Scott motions that we accept the agreement. Candace seconds the motion. Passed unanimously.

Star Party Issues: Star Parties need to show up on the calendar on the back of the Gazette. Scott, with the help Howard K. and Mike R., are searching for some more observing sites on the west and east side from the air. Scott is proposing the club pay for half the cost of the flight and materials for this quest. Bob recommends some photography to aid in the search. Norm moves that the club authorize funds up to $220 to cover the cost of an Arial star party site search. Ginny seconds. Passed unanimously.

Budget: Discussion on the proposed budget ensued. Please email Ginny proposed budget changes.

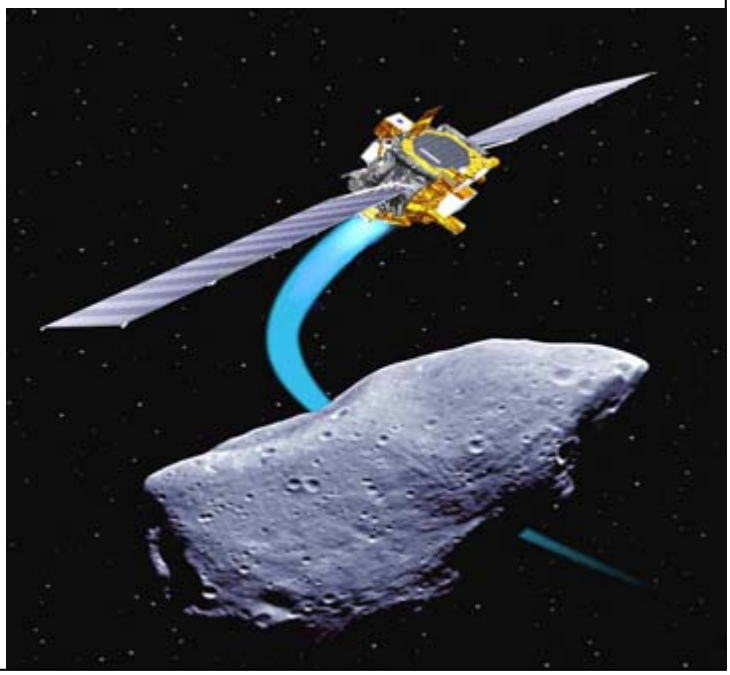
SCIENCE FICTION BECOMES SCIENCE FACT

For more than 40 years, science fiction writers have imagined ways for spacecraft to fly more quickly around the solar system. One idea they came up with was an "ion" engine, powered by a gas called xenon. This allows a spaceship to fly almost 10 times faster than a regular spaceship using the same amount of fuel.

Spaceships powered by this fictional technology have appeared in several science fiction movies. Ion propulsion was mentioned in a "Star Trek" episode in 1968. And in the "Star Wars" movies, the TIE (Twin Ion Engine) fighters that raced around the galaxy used ion propulsion.

But now, the fantasy of science fiction has become a reality. In 1998, NASA launched its Deep Space 1 mission with an ion engine onboard to test. The engine performed exactly as mission operators thought it would. By the time the spacecraft retired in December, 2001, the ion propulsion system had accumulated 677 days of operation and had expended well over 90% of the xenon it carried at launch. The ion engine powered the spacecraft past Comet Borrelly and allowed Deep Space 1 to return the best-ever images from a comet.

This means that we can now reach destinations in our solar system that we only dreamed about before. Planning is now underway for NASA's new Dawn mission which will use ion propulsion to travel to two asteroids. Other missions are also considering using this now-proven technology. What was once science fiction has now truly become a reality.



Quasi-Stellar Encounter (Continued from page 5)

M84-86 Credit: AURA/NOAO/NSF

One of the most prominent Messier galaxies is the barred spiral, M59, whose spiral bar is visible even in an 8-inch telescope. In binoculars the threesome of galaxies M58, M59, M60 is an impressive sight. The circlet of galaxies that appears to have M84 and M86 at its core may actually be an artifact of galaxy projection. Some of these distances are disputed. Surrounding the giant ellipticals are the beautiful edge-on galaxies, some of the richest galaxy fields in astronomy.

After a hot cocoa break, we continued our observing, viewing some globular clusters in Ophiuchus. They were amazingly rich and compact, about half the size of M13 with very bright surface brightness. Finding some of the globulars was difficult by star hopping since there were few field stars and about a 15-degree discrepancy in our old Messier star chart. In the middle of the evening a class 1.5 aurora revealed some beautiful spikes and slight curtains.

During the course of the night's observing groups of climbers coming up the icy slopes in crampons would see the telescope and our red lights and come like moths to the flame. When one of these small groups came up to our astro setup, we would stop our galaxy quest and slew the telescope to a brilliant Messier object such as the Hercules Cluster or the Dumbell Nebula. One of the climbers remarked: "I never dreamed I could climb up this mountain on such a beautiful cloudless night and find people doing astronomy at such a high and wild place!" It was deeply satisfying to share the splendor of the universe at such an unexpected time and extreme environment with strangers, who took away with them a broader knowledge and appreciation of amateur astronomy.

Worth (Continued from page 4)

10" will bring $975-2500. The newer and very coveted 12" SCT sells used for $2800-3500. Meade apochromatic refractors are popular and a 5" f/9 gets $2800. The recently introduced ETX-125 is advertised used for $895-1000. The 7" Maksutov-Cassegrain brings in over $2000. Meade LX-200 models bring in higher prices. Large Meade Dobs (Starfinders) are well constructed and expect to realize $425 for a 10", $600 for a 12.5", & $900 for a 16".

Celestron International introduced its popular sand-cast mass- produced SCT in 1971. Affordable in price, these compact telescopes exhibit portability and are aimed at the astrophotographer's heart. Included in the package were the OTA, fork arms, drive base, and tripod and wedge. Celestron did sell a rare 10" SCT during the 1960's that is a collector's item ($3500) and other variants of its SCT design. The C-5 is harder to find than the other models and this is reflected in the price. C-5 $750-1000, C-8 (orange) $625, C-11 $1900-2500, Ultima 11" $2800-3500, & C-14 $4500. Many times just the OTA is offered for sale and these are often bargain basement priced (C-8 $400 & Celestron 9.25" $825). Celestron also sold an orange 5.5" RFT called the Comet Catcher (now $250) and a series of Starhopper Dobsonians. The 6" Starhopper brings $350 and the 8" $495. Celestron made a high-quality series of black-tube fluorite and achromatic refractors. 4" f/10 doublet OTA $95-225 (a bargain for the performance), 70mm. fluorite $700, & 4" fluorite $1300-1800. Celestron has been as prolific as Meade in introducing a new line of telescopes each year. Computerized Celestrons sell for considerably more than the non-mechanized versions.

TeleVue Optics, started by Al Nagler of NASA fame, is today's premier refractor maker. These portable units are flawless in mechanical and optical design. Pronto 70mm. -$700, TV-85 $1500, Genesis f/5 fluorite $1700, TV-101 $2300-2600.

Coulter Optical Co. of Idyllwild, CA rode the popularity craze of the Dobsonian telescope in the 1980's and 90's. Originally blue-colored with heavy plywood construction (the mirror had to be removed each time the telescope was taken down), the design was later changed to a more portable arrangement with a permanent mirror (and repainted a red color). The mirror is very thin in the new design. 10" f/4.5 $350, 13.1" f/4.5 $575-725, & 17.5" f/4.5 $1000-1300. Coulter is now owned by Murnaghan Instruments.

Large Dobsonians have become the "in-thing" today, that is, they combine portability in most cases with significant light-gathering power, and an aperture stop can give images of planets that rival the best triplet refractors. The truss tube design is preferable to the solid sonotube design. There have been a variety of makers of these "light buckets" over the years such as Juno, Safari, Discovery, & Sky Designs. Expect to get $2000-3500 for a 15-18" and $3000-4500 for a 20". Equatorial platforms for tracking can add significantly to the selling price. JMI sells a split-ring design, but these are expensive. Obsession and Starsplitter Dobsonians are heavily sought after (primary mirrors may be made by Galaxy, Pegasus, Nova, and others). The Mag 1 Portaball is currently very popular (I wouldn't mind owning their 14.5") and a 10" f/5 with Carl Zambuto mirror garners $2100.

Starliner of Tucson, Arizona sold a fine line of reflectors and Cassegrains during the 1960's-80's. They offered two distinct lines called the Standard Series (Econoline) and the Quality Line. The Quality Line is the most sought after as the mountings have oversized RA drives, huge engraved setting circles, a cradle with rings, and a 360-degree azimuth adjustment. These telescopes are seldom offered for sale on the secondary market. 8" Quality Line $900-1100. Rarely just the Quality Line equatorial mount is offered to the astronomical community, and a 1.75" shaft mounting can be sold for as little as $800.

The Quantum Series of telescope made from 1977-1981 by Optical Techniques are prized by collectors of fine workmanship. These Maksutov-Cassegrains sometimes appear on the secondary market, but do not last long. 4" $1200-1600 & 6" $2600-3200.

Questar Corp. of New Hope, PA has sold beautifully crafted telescopes for many decades. The Questar Standard (the one with the star map on the barrel) with drive base, small screw-in legs, leather traveling case, and accessories brings $2200-3500. The Questar Duplex, as do models with Cervit mirrors and Broadband Coatings, get considerably more.

Imported refractors with alt-az and equatorial mountings often become available. Many are of good optical quality. Most were sold with basic 0.965" accessories and were supplied with a wooden case for storage. Since they were imported from optical companies in Japan sometimes the components are interchangeable. Trades names are Tasco (Tasco's best models were 9TE-0, 7TE, 10TE, and 20TE), Sears, Kowa, Towa, Orion, Sans & Streiffe, Soligar, Monolux, Tower, Selsi, Mayflower, Carton, Lafayette Radio, Swift, SPI, Jason, Idai, Celestron, and Meade. 60mm. (2.4") f/11-20 alt-azimuth models sell for $80-160 and equatorials $125-275. The larger 76-80mm. (3") f/10-20 alt-azimuth models catch $145-245 and equatorials $250-425. If you have just the OTA expect to get $30-100 for 2.4" sizes and $140-225 for 3" diameters. Some imports are scarce and valuable, such as GOTO's 60mm. f/20 eq. $400. Tasco's large Observatory Model 20TE (108mm. objective) $1500-2000. Sears has two refractors that are popular with collectors, namely the 76mm. f/15 Discoverer with Unitron optics $425 and its circa 1958 90mm. f/15.5 $700-800. SPI (Southern Precision Instruments) and Starflite, in addition to Optica b/c, sold a line of fantastic quality small refractors and reflectors. Optica's 6" f/8 pier mounted reflector $800 is especially nice.
One of the most heavily produced reflectors with little design change over the decades is the trusty 4.5" f/8 Newtonian. Newer versions are superior optically to the older ones. Price $125-240.

Eyepieces come in 0.965, 1.25, and 2-inch barrel diameters. The apparent field of view (FOV) varies considerably, from a confined 30 degrees to a breathtaking 84 degrees or more. A plethora of designs are available from the basic Huygens and Ramsden to the more advanced Nagler. Many have become collector's items with their current values 4X or more than the original selling price. In general a 1.25" eyepiece is more desirable than a 0.965" one.

TeleVue Plossls combine image fidelity with reasonable price. 7.4-26mm. $55-65 ea. & 32mm. & 40mm. $80 ea. 2" 55mm. $175. 1.8, 2, & 3X Barlows $70 ea. The 2X Big Barlow $90-100 & Barlow Interface $75-90. Radians garner $180-190.

TeleVue Widefields are the predecessor to the now popular Panoptics. They offer a relatively wide 65-degree FOV and tack-sharp imagery. 15, 19, & 24mm. $165 ea., 32mm. $240, & 40mm. $265-360. The eyepieces with the smooth barrels (without the grip ring) are more highly prized. TeleVue Panoptics have a slightly larger FOV of 68 degrees and possibly better image fidelity. 15 & 19mm. $180, 22mm. $220, 27mm. $275, and 35mm. $275-300. The Parracorr can be used in conjunction with the Panoptics to advantage and sells used for $200.

TeleVue Naglers offer 82 degree "Spacewalks" and superb image quality across the entire FOV. The Made in Japan versions are sought after. 4.8mm. $110-125,

(Continued on page 9) Worth

A Northwesterner's View of the Arizona Skies

By Rob King

In January, I spent a week in Arizona and thought I'd pass on a few of the highlights of my viewing while there. I got four good nights out of seven and was satisfied, although the seeing wasn't super from my main hang-out and the view to the west was nearly obliterated by the zodiacal light cone that extended up to nearly the zenith. My scope was a six inch reflector.

One night was probably the best single night I've had. I drove up to the Echo Canyon parking lot in the Chiricahua National Monument. It's at about 6800 ft. and though the seeing still wasn't extremely good - limiting visual magnitude was 6.2 for the faint stars around Polaris and approximately 6.7 at the zenith - the transparency was exceptional with very clear air and humidity under 35 percent. It allowed a view of some interesting objects:

The Rosette Nebula, I was able to see the brighter parts of the nebulosity extending halfway around the impressive central cluster without need of filtration and with an Ultrablock filter in place it was easy to see the entire circle of nebulosity with filamentary structure and the areas of brightness and darkness that stand out so in photos. This is a large object - in an eyepiece that yields a true f.o.v. of 1.44 degrees the nebulosity filled the field and faint wisps extended out of sight in all directions.

NGC 2024, the faint emission nebula just east of Alnitak, or zeta Orionis, the easternmost star in Orion's belt. The best way to find it is to put the star just out of the f.o.v. and the mistiness resolves into a roughly Christmas tree shape that's intersected by dark bands.

I didn't try a nebula filter on this one...has anyone tried using different filtration on this?

NGC 253, Silver Coin Galaxy, what a treat this was, one of the best galaxies for a small scope in the sky. Even my six inch revealed structure in the bright core, looking very "curdled" and intricate. It's a little brother to M31, an elongated oval with high surface brightness that extends about four times as long as wide.

I wonder if anyone has had a good look at this from the N.W? It's about 7 degrees south of beta Ceti, the bright star in the Whales' tail (or is it the head?), and should be far enough off a low horizon to see.

Later in the morning Centaurus rose over the southern horizon and in spite of a brightening sky **Omega Centauri** was obvious naked-eye, impressive in the binocs, and amazing in the scope at any magnification. Use an eyepiece that gives a true f.o.v. of less than 0.5 degrees and it's like looking at the heart of a galaxy of a billion suns! Chains and trails of bright stars dissolve into a glow of unresolved ones...one of the finest sights in the sky.

There's also a failure to report. I entertained delusions of finding the Horsehead Nebula for a while. Since 2024 was so visible I felt that IC 434, the *very* faint emission nebula that runs south of Alnitak and backlights the dust cloud that is the Horsehead, might just show up.

A multiple star that looks to be about mag 6.5 on the Sky Atlas 2000 charts lies just under a degree due south of Alnitak with the brighter edge of IC 434 extending almost in a line between them. I used an eyepiece with a true f.o.v. of 0.93 degrees and placed both those stars at opposite edges of the field and, making sure my eyes were as dark-adapted as they could get, scanned across the field. Moving the scope, using Ultrablock, OIII and h-beta filters didn't help. Orion was highest in the sky during this attempt, l.v.m. approx. 6.7, humidity 33 percent, seeing 8/10, transparency 9.5/10. My scope is probably too small & slow to use the h-beta effectively.

So it'll have to be another time for that little guy.

This night was worth the trip, and not just for the sky...everyone's heard the cliché about the stars looking so close you can almost reach and touch them. On the odd occasion it's true. Being alone in a wilderness area on a night of dead calm and clear skies when the only sounds to be heard are the coyotes and your own breathing is singularly rejuvenating.

This one will last a long time, and from the looks of the weather, it'll probably have to.

Worth (Continued from page 8)

7mm. $145-175, 9mm. $185, 11mm. (collector's item) $395, 12mm. type 2 $230, 13mm. $200-295, 16mm. type 2 $245, and 20mm. $295-350. The newly introduced gargantuan 31mm. is $550.

Meade Ultrawides are similar in design and performance to the Naglers. The FOV is slightly larger at 84 degrees. 4.7mm. $110, 6.7mm. $150, 8.8mm. $180, & 14mm. $225. Meade has sold many different eyepieces over the years, and their Research-Grade eyepieces (4, 7, 10.5, 16.8, & 28mm.) $70 ea. are in popular demand. The rare 2" 32mm. Research-Grade can get $225. The modified achromats (MA) bring only $20 or so. Expect to get one-half of the current selling price for Meade Series 3000 & 4000 eyepieces and about two-thirds the current new price for Meade Superwides. The Series 4000 apo 2X barlow gets $60-70.

Brandon oculars sport superb contrast and are lightweight. The FOV is a somewhat restricted 50 degrees. 8-32mm. $110-140 ea. Dakin 2.4X Barlow $70-120. 2" 48mm. $245-295. Custom brass Brandon's sell at a high $200 ea. Older 50's brass-barrel Brandons are rare collector's items and can cull $150 ea.

Cave Orthostar's are highly collectible and were sold as standard accessories on Astrola telescopes. They are very similar in performance to TeleVue Plossls. They were made in 6.6, 10.0, 16, 20, and 26.6mm. focal lengths. Expect to bring in $70-100 ea. for these beauties.

Gailand Co. oculars (Saturn logo on the eyecup) with Nikon lenses as marketed by Telescopics and others in the 60's and 70's were made in 4 (rare), 7, 10.5, & 28mm. focal lengths. Expect $80-110 for these prizes. The 2 & 3X Barlows sell for as high as $150 ea. The 16.3mm. widefield is popular and brings in $80-110.

In demand by planetary observers is the famed Clave Plossl of Paris, France. They are flawless eyepieces and were relatively expensive when first sold in this country. The early versions had a barrel diameter of 27mm., which was later changed to the standard 1.25". They also sold eyepieces with 1.8 & 2" barrels, but these are scarce. 3-35mm. l.25" $125-250 ea., 30-75mm. 2" $265-400 ea., 2X 1.25" Clave Barlow $95-225, Clave star diagonal $225.

University Optics, Inc. of Ann Arbor, MI has sold thousands of quality eyepieces and accessories over the past thirty years or so. It's difficult to summarize all their products, but the most popular items sold are the Koenig's and Abbe orthoscopic eyepieces. 8-24mm. Koenig's $65 ea. 32mm. $80 (1.25"), Abbe 4-25mm. $45-48 ea., Pretoria 28mm. $200, Koenig 7/70 $175, 2" 55mm. Plossl $85, Professional Series Ortho's (4, 6.8, 10.2, 28mm.) $60 ea., the coveted Widescans $130 ea.

Celestron Vixen Lanthanums $60 ea., Orion Ultrascopics $70 ea., Orion Ultrascans with 77 degree fields (called the poor man's Nagler) $90-120 ea., Unitron 0.965 Kellners & Symmetricals $20 ea., Orion Sirius Plossls $25-40 ea., and Pentax SMC 0.965" Ortho's $l65 ea. (billed as the finest planetary ocular in the world). Edmund RKE modified Kellners realize $25-35 ea. These are wonderfully corrected cheap widefield eyepieces. Generic brand and run-of-the-mill Kellners get $20 and orthscopics $25-45.

Jaegers, Inc. sold a fine line of eyepieces from 4-56mm. in 1.25" format. These can garner $35-50 ea. In addition, Jaeagers was renowned for its large objective lenses. 6-inch lenses that are mounted and coated (f/5-15 with the f/5 focal ratio as the most sought after) sell used for $500 or more. This assumes no chips or bad coatings from age. A 4-inch objective lens will get $225.

This list is by no means complete. Focusers (e.g. Meade's #680 2" $80), mirror sets, mirror cells, mountings, photo accessories, guidescopes, illuminated reticles, setting circles, finders, fiberglass tubing, lenses, secondarys and holders, filters ($7-15 ea.), tripods, artwork (eg. Kim Poor's "*Ladies of the Lake*" $295), books (eg. Peltier's *Starlight Nights* $65), and telescope catalogues all have value.

June 2002

Sun	Mon	Tue	We	Thu	Fri	Sat
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

July 2002

Sun	Mon	Tue	We	Thu	Fri	Sat
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

June

June 1	Sat.	Telescope Making Workshop	Tech Marine Srvc	10-3
June 3	Mon.	Board Meeting	OMSI Classroom 1	7:00 PM
June 8	Sat	Inter-club Star Party—Mary's Peak		
June 10	Mon	Partial Solar Eclipse viewing-OMSI		
June 15	Sat	Summer Solstice-OMSI		
June 17	Mon.	YRCA (ages 13-18)	OMSI Cafeteria	6:30 PM
June 17	Mon.	RCA Kids (ages 4-12)	OMSI Cafeteria	7:30 PM
June 17	**Mon.**	**General Meeting**	**OMSI Auditorium**	**7:30 PM**
June 20	Thurs.	Astrophysics/Cosmology SIG	Linus Pauling House	7:00 PM

July

July 1	Mon.	Board Meeting	OMSI Classroom 1	7:00 PM
July 6	Sat.	Telescope Making Workshop	Tech Marine Srvc	10-3
July 6	Sat.	White River Canyon Star Party		
July 11-13	Fri-Sun.	Table Mountain Star Party—Washington		
July 13	Sat.	Klondike Star Party		
July 15	Mon.	YRCA (ages 13-18)	OMSI Cafeteria	6:30 PM
July 15	Mon.	RCA Kids (ages 4-12)	OMSI Cafeteria	7:30 PM
July 15	**Mon.**	**General Meeting**	**OMSI Auditorium**	**7:30 PM**
July 18	Thurs.	Astrophysics/Cosmology SIG	Linus Pauling House	7:00 PM
July 20	Sat.	Lunar Viewing—OMSI		
July 31	Wed.	Weather SIG, 10175 SW Barbur Blvd, Suite 100		7:00 PM

The RCA General Meeting falls on the third Monday of each month. We usually meet in the Auditorium at OMSI, next to the Murdock Planetarium. Occasionally the meeting is held in Murdock Planetarium. Check here each month for details, or look us up at the RCA web site (http://www.rca-omsi.org).

The Weather SIG address is: Colonial Office Complex, 10175 SW Barbur Blvd, Suite 100-BB, Portland. From downtown, go south on I-5 to the Barbur Blvd. Exit. Cross back over I-5 and the Complex will be on your left.

RCA CLUB INFORMATION

Message Line: (503) 255-2016

Web Site: http://www.rca-omsi.org

Oregon Museum of Science and Industry
Rose City Astronomers
1945 SE Water Avenue
Portland, Oregon 97214-3354

The
Rosette Gazette

Volume 14, Issue 7 | Newsletter of the Rose City Astronomers | July, 2002

In This Issue:

July Speaker

Please join the Rose City Astronomers in welcoming, at the July general meeting, a man that is legendary to amateur astronomy. John Dobson, co-founder of the Sidewalk Astronomers and builder of telescopes, is a groundbreaking thinker and teacher. He was featured in the PBS television series "The Astronomers", has been written up several times in "Sky and Telescope" magazine, twice appeared on the Tonight Show with Johnny Carson, and has been interviewed many times for radio programs on stations such as Oregon Public Broadcasting. His theories in physics and cosmology boldly break new ground and significantly challenge the scientific orthodoxy. John Dobson is perhaps best known for his work in the design and construction of telescopes, however, as most telescopes made today use what is known as a "Dobsonian" mount.

No brief biography of John Dobson would be complete without mentioning the fact that he spent 27 years in a Vedanta monastery. Since leaving the monastery, he continues to live a spartan, unpretentious lifestyle. He is compelled to share the beauty of the universe with others, expecting nothing in return save the joy of sharing, and does so by setting up telescopes in public places beckoning passersby to come look through the telescope, and by conducting classes and public lectures. Mr. Dobson will be speaking on the topic of amateur astronomy.

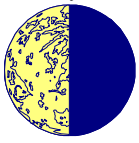
Star Gazers: The Next Generation

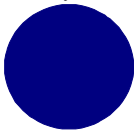
The Young Rose City Astronomers, or YRCA, is our group of astronomers, roughly 13 to 18 years in age. They have an excellent new coordinator, Christina Thompson, who will be teaching at MHCC this fall; and she has an assistant who is studying astrophysics at a collegiate level. However, attendance has been quite low recently. If you have a teenager who would be interested, please encourage them to come. The group meets before the general meetings, starting at about 7 PM, in the OMSI lobby in front of the auditorium. They have involved themselves in some very interesting projects over the years, and have had some 'stellar' members - we'd like to see them continue.

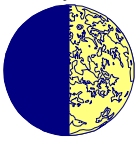
The Junior Rose City Astronomers also has an outstanding coordinator, Jenny Forrester. This is the group of young astronomers between about 5 and 12 years of age. They meet during the general meeting, from 7:30 until 9:00, for directed activities related to astronomy - crafts, games, etc. If your child is interested in expanding their horizons, consider bringing them to these meetings.

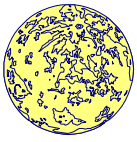
2002-2003 DUE$ RENEWAL

Your RCA membership was active through June 30, 2002. Please renew your membership by July 1st for the year July 1, 2002 through June 30, 2003. You may renew your membership for $24 at the July 15th RCA General Meeting or by mail. Send to: RCA Membership, OMSI, 1945 S.E. Water Ave., Portland, OR 97214. Make checks payable to: RCA. Thank you for your support and participation.

July 2 

July 10 

July 17 

July 24 

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Youth Programs Director	Jenny Forrester	(503) 504-8071	jenny@theforrest.org

President's Message

By
Peter Abrahams
July 2002

Every few years, my interest in the earth's moon is rekindled. After all, there are more nights with a moon than without one, and light pollution has less of an effect on the moon. The changing terminator gives the moon a different aspect every night -- I haven't compared views over a libration period, but I have downloaded some excellent animations of the moon over the course of a few months, and the rocking motion of libration is very obvious, as is the approach & recession of the moon from the earth over the months.

When I obtained a binocular viewer a few years ago, the moon became very interesting again, not only do you feel like you're floating over the surface, but details in the dark, shaded areas become more noticeable. Craters & features that have been viewed before take on a new life with the viewer.

There are hundreds of books on the moon; I don't own any but I like looking at them. The best observing & drawing guide I've seen is: Gerald North, Observing the Moon. I find the variety of lunar maps to be fascinating. Many old maps are fantastic visual artifacts; a good guide to them is: Ewen Whitaker, 'Mapping & Naming the Moon'.

RCA had a lunar observing SIG at one time. I doubt that reviving a SIG is appropriate at this time, but we should use the email list, the Gazette, and the web site to assist any lunar observing or research projects undertaken by members.

RCA

Magazine Subscriptions

One of the main services offered to RCA members is subscriptions to *Astronomy* and *Sky & Telescope* magazines at a much reduced rate from newsstand prices. *Astronomy* $29 for one year or $55 for two years. *Sky & Telescope* is $29.95 for one year.

Checks must be made out to Rose City Astronomers to get the reduced rates.

For further information, see Larry Godsey, Subscription Coordinator, at the Membership Table at General Meetings or check the RCA website. Please note: Allow two months for your subscription to be renewed.

Sky & Telescope Store Discount

RCA members who subscribe to *Sky & Telescope* are entitled to a 10% discount at the *Sky & Telescope* online store at: *http://skyandtelescope.com/shopsky* To get your discount, enter Rose City Astronomers when prompted for your club name during checkout at the *Sky & Telescope* online store.

The "Kids" of Rose City Astronomers

RCA Kids
Children ages 4-12 are welcome to join in fun and educational activities while the grownups attend the monthly general RCA meetings. The kids' meeting takes place in the adjoining cafeteria at OMSI from 7:30 p.m. to 9:00 p.m. If you have any questions, please e-mail Jennifer at jenny@theforrest.org.

The **Young Rose City Astronomers** (ages 13 - 18). This group meets from 6:30 to 7:30 on the third Monday of the month in the OMSI auditorium, before the regular RCA meeting. In addition, the YRCA meets on the first Thursday of the month. Kids with all levels of experience are welcome. There's no need to join - just come to the meetings and have fun. Adult volunteers are always welcome. Call Margaret McCrea, 232-7636, for more information.

RTMC

Imagine a star party with 1700 people held on a 7200-foot tall mountaintop. OK, for those that have been to the Table Mountain Star Party this isn't much of stretch. Now imagine that most of these 1700 people are there to look at the telescopes instead of looking through them, and almost everyone goes to bed at a relatively decent hour and gets a good night sleep.

This is the Riverside Telescope Maker Conference, otherwise known as RTMC.

Held every year on the Memorial Day weekend at Camp Oaks near Big Bear California, it isn't fair to call RTMC a star party because it's really a telescope party. The weather isn't crucial to its success nor is the phase of the Moon. This year coincided with the full Moon, and was no problem. Tons of high cirrus clouds were also of little concern.

There are lots of homemade scopes, but also every manufacturer of commercial scopes and accessories are present and fully stocked. Want to see the latest astro-gizmo? RTMC is the place to see almost every piece of telescope related equipment, and there's a good chance you'll be able to see how well it works. Bring your wallet because it's nearly impossible not to buy something.

The grounds of Camp Oaks, a YMCA camp, are spread out through fir trees and sagebrush. The trees provide shade during the day but since the environment is very much like central Oregon, it is also quite dusty. Tent campers, RV campers and car campers all have plenty of room to mix among the trees. The grounds of the camp have running water, showers, toilets, bunk houses, a large meeting hall and a couple of food vendors. There are even several electrical plugs. Pretty much every convenience you wished every star party had.

RTMC is a 2300-mile round trip drive from the Portland area, and driving at a normal pace will take at least two days one way. I've talked to a few hardy souls who, taking turns behind the wheel, have made the one-way trip in 24 hours.

I went this past May, my second trip in three years. I had a blast, not so much because of the equipment, but because of the people I met. Take away the observing from a star party and you have a party, a big outdoor picnic/camping/cookout party with some of the most interesting and nicest people around – amateur astronomers. Throw in a few interesting presentations in the main hall and maybe a little bit of observing if the weather happens to be clear, and that's RTMC.

And then there's the homemade telescope judging, which was the reason RTMC began, and for many is still the primary reason for attending and participating. The judging committee has been awarding its coveted Merit and Honorable Mention awards for decades to amateur telescopes, and it's the process of entering and participating in the contest that's the heart of the conference for many.

Here's how the process works. A registration area is set up inside the permanent observatory dome Friday morning, where each participant in the contest has to sign up. The process takes about 15 minutes because a short written description of what makes your telescope unique is required on the entry form. Then you're given a small pushpin with your registration number attached like a little flag, which you then place on a detailed aerial photo to show where on the Camp Oaks grounds your scope is set up.

A second sheet is presented for you to choose the general time of day you'd like the judges to come by. The weekend is broken up into two-hour segments to choose from, say from 10am to noon and so on. Then you're given a red tag with your registration number to attach to your scope for identification.

And now you're all set. Except, perhaps to practice your presentation. Once the judges arrive you are expected to give a 30 second overview on what makes your scope special as the judges record your comments on video – which will be played during the awards ceremony if you're selected to win an award. I found that a little practice makes a big difference because 30 seconds isn't much time to communicate much of anything, let alone something as potentially complex as a telescope.

Now all you have to do is enjoy yourself until it's time for the judges to arrive – there's about 6 of them who are accompanied by a several photographers – and to try not to think about what's coming.

Once the judges arrive and have their 30-second video of your intro speech completed you have the opportunity to go into minute detail about everything you feel is important to point out and demonstrate about your scope. There doesn't seem to be a time limit other than that imposed judging schedule. All the while you're talking the photographers are snapping photos and the judges are taking notes, so in a small way this is little taste of celebrity. Although the judges are rather serious throughout, the whole process is really rather fun. For a few minutes you're at the center of a small group of eager and earnest paparazzi.

The awards ceremony is Sunday night and is the final official event of the conference. The main hall is packed with about 200 people and many times more are seated outside watching the proceedings on closed circuit TV monitors. Each judge presents a few awards, with the 30-second video of each winner presented after a short introduction. The judge calls the winner up to the podium, says a few more nice things and presents the award. Huge applause for each winner and smiles all around.

A great experience whether one wins an award or not, and an educational one as well.

If the night is clear there will be some observing, but everyone is thinking about leaving early the next morning, Memorial Day. The drive home looms large. However, if you choose to drive up highway 395 through eastern California the scenery is spectacular and the drive its own reward. Driving north on 395 on Memorial Day is against the flow of vacation traffic so there's little to no congestion contend with, a nice bonus for a such a long drive.

(Continued on page 5) ..Observers Corner

CLASSIFIED ADS

Run your non-commercial astronomy related classified ad in the monthly Gazette. Rates are reasonable (free!)

FOR SALE: 10 inch Meade Schmidt Cassegrain. Model 2120 mount, about 12 years old, very little used, quartz electronic control with hand paddle, RA & dec drives, AC power converter. OTA seems to be very good quality optics & is very clean. 1 1/4 inch visual back. $1,000. Located south of Oswego, 2 miles N. of Stafford exit off 205. Peter Abrahams, telscope@europa.com

IN THE JULY SKY

The window is closing on the planets, with Venus as the sole evening star this month.

2, Last quarter moon
5, Earth is at aphelion (94.5 million miles from the Sun)
10, New moon
17, First quarter moon
24, Full moon

FROM THE EDITOR

RCA currently spends approximately 50% of its annual budget to print and mail the Rosette Gazette. Postage rates have increased as of July 1, which will further increase the cost of the newsletter. We can reduce some of the cost and provide quicker delivery by sending the newsletter to you via email (as a PDF). If you are interested in receiving the newsletter via email instead of regular mail, please send your name to regis_krug@mentor.com, or:

Regis Krug
30613 SW Kensington Dr., Wilsonville, OR 97070. , (503) 682-2547

THE MAKING OF A 6-INCH RFT

By John W. Siple

I had always heard that a 6-inch f/5 A. Jaegers brand richest-field telescope (RFT) could not be beat as far as image sharpness and wide field of view goes. Their factory in Lynbrook, New York closed its doors in the mid-1980s and along with that event went the chance to acquire one of its prime achromatic objective lenses.

As luck had it I stopped at a garage sale several years ago and purchased a matched pair of Jaeger's 6-inch objective lenses, both mounted and coated and still in the original factory wrapping. My quest for a large RFT was well on its way!

I already had a vintage Cave Astrola refractor mounting that was a perfect mate for the 6". When originally purchased used the mounting was in sad shape. All of the paint had flaked off, the counterweights were rusted to the declination shaft, and the engraved Magnusson setting circles were pitted. The motor drive, while still intact in its small case, had seen better days.

I removed the rust, polished up the circles, and repainted the mounting the standard "Cave Grey." I added a pair of Parallax 7-inch rings.

The next step was to find the tubing and focuser/endplate for the lens. Local irrigation and tubing companies did not carry the right size and Hastings Co. (of Nebraska), which is a supplier of tubing for the amateur astronomer, has a $50 minimum order. Focuser possibilities were more hopeful, but a large AstroPhysics, Inc. unit (my first choice) carries a price tag of over $300.

I was browsing the ads on the Internet one day and came across an A. Jaegers 6" f/5 tube assembly (OTA) minus the lens. Fortunately the focuser was the large 2.7-inch version with endplate. My RFT was next to complete!

I had a local machine shop make me a large retaining ring to hold the lens & cell firmly inside the tubing. They also made me a 2.7-2.0" reducing bushing for the use of wide field eyepieces.

Light baffling is extremely important in these fast optical systems. A cone-shaped baffle was included with the purchase of the OTA, and this effectively blocks 100 percent of any stray light.

Performance is superb! The entire telescope can be setup in just a few minutes and I can sit down in most observing positions. Stars are perfect pinpoints of light across the huge field of view (this is in contrast with a RFT reflector, where a Paracorr coma-correcting device is needed—however, the refractor is still clearly superior).

At high power the 6" f/5 shows a textbook Airy disk and diffraction pattern. Chromatic aberration becomes annoying when using a shorter focal length eyepiece than about 20mm., and Jupiter appears pinkish-yellow green at high power. Surprisingly Saturn has only a vague hint of yellow-green secondary color.

The Andromeda Galaxy M31 spans the entire field of a 20mm. Nagler eyepiece. Star clusters are resolved as good as any 8-inch reflector, and the large field and sharp imagery provides vistas that are simply breathtaking!

Observers Corner (Continued from page 3)

I recommend taking 395 into south central Oregon then start cutting west on highway 31 just past Lakeview. This will take you past Summer Lake and connects with highway 97 just south of Bend. Great scenery all the way.

A trip to RTMC is more of an expedition than a trip, more of an experience than a vacation and very much worth the time and effort.

SCOPES AND SENSE

by Gary Lodge

I have no sense of smell. Or virtually none. It's a curse, an emptiness. A blessing at times, sure, but I know deep down inside, it's a curse.

I can smell garlic, or the thick scent of motor oil, and also the yummy smell of baking bread, and sadly, sulfur. But the list of things I cannot smell is vast: flowers, skunks, rotting anything, curry, wine bouquets. Anyway, you get the picture. The point is that one of my senses it vastly underpowered. Much like looking at the skies with the unaided eye. There is a whole universe of experiences that are out of our grasp without telescopes.

Illustrating this are a pair of experiences that completely changed my understanding of the objects in our solar system: the moon and the sun.

When I was a child, my father had a five inch Newtonian and once we projected the sun through it onto paper. I remember watching for a while as the black scars of sun spots swung slowly across the perfectly smooth yellow-white sphere. It fascinated me to know the sun had aberrations like that, a sort of earthly imperfection on such a heavenly object.

I cannot remember which club member--it was probably Mar--but someone had an eight-inch SCT with an H-Alpha filter setup and I took the opportunity to observe the sun. I was expecting something similar to the projection: a smooth yellow sphere with spots, perhaps somewhat whiter at the center. The H-Alpha revealed innumerable ropey threads erupting across the surface of the sun, prominences that arced out and away into space and coils of gas riding magnetic waves. I could almost sense the surface churning and boiling. Gone was the smooth sphere. Gone was the placating yellow color. No more would I ever think of the sun as a gold coin in the sky, a simple disc like a breakfast plate. The sun has a texture, something with dimension and feel. The coils, threads, thin curved fingers of ropey gas all made me think of… a ball of yarn.

Not exactly the most romantic vision one can have of something in the heavens, but it certainly fits because everyone knows what a ball of yarn looks like, and especially what it feels like, complete with an uneven surface and filamentous tufts exploding outward. And that's what's important: an expanded and concrete conception of the sun.

Very recently, I became the happy owner of a nine and a quarter inch Schmidt-Cassegrain from Celestron, having owned a four inch refractor from them for a little over a year. The move up in aperture surprised me, to say the least, with the detail it gave on the moon. I set up on the evening of the 19th and walked the terminator through my apartment window. So many, many features blossomed into view that listing them would be tedious and really miss the point. The point is that my old scope gave me an appreciation for the coarse details of the moon, the shadows and peaks and expansive seas, but the new scope gave me a new moon: one replete with texture and depth.

Before, a crater was a circular feature on the surface of a mottled globe. Now a crater is a dynamic play of light and shadow where, perhaps, the fine silt cast out by the impact has created a fluorescent rivulet along the soft crater floor, or the reflection of sunlight off the rim on one side of a crater brightens the knife-edge shadow falling on the opposite wall. Seas now contain tiny craterlets where cups of dust have been scooped away, or strings of craterlets like footprints. And now peaks cast long finger-like shadows that reach across other formations as the terminator creeps along.

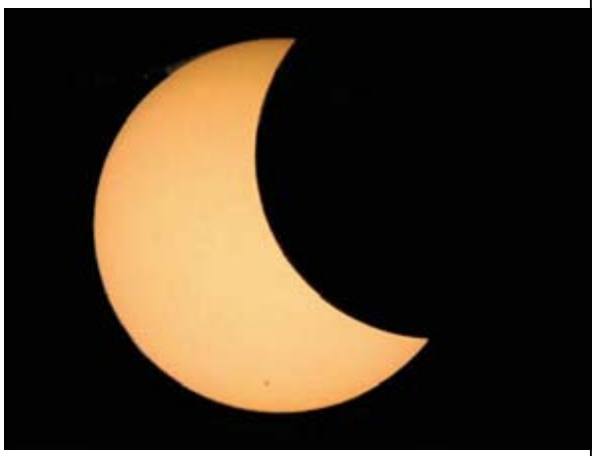
These details give a new depth to the moon for me, a new sense of landscape and animation. And to be sure, I will explore this further; but the more subtle epiphany of texture really brought home how alive the moon is. For me, the moon now has the roughness of rubble or stone in some spots, the feathery feel of bleeding ink on wet paper in others. The new view makes it easy to imagine the texture under your hands: a dried liquid streaked across glass, something like paint or blood, or a giant glob, still fresh, of cold stellar mud.

Sometimes I imagine what the world must be for people blessed with incredibly distinguishing pallets, or a sense of smell that can actually detect different flowers' perfumes in one breath, or a musician's ear that can hear math and harmony and history in a few chords. Those inner worlds must be vast for them, and exploring them must be a rapturous joy.

All of us have inadequate vision to discern the nearly infinite universe. We have only a porthole a few millimeters wide and that really only works during the day. Truly we are all cursed, trapped in a dark well with the sky far, far above. But the mind invents, it overcomes, and now look what we have created: large hunks of cold, tempered sand that gather the universe to us.

So break out the glass, friends, and coax the photons into the empty well. And, by the way, if anyone has an olfactoscope, let me know.

Mid-eclipse. Photo by Jim Girard, June 10, 2002, Central Oregon.



ASTROPHYSICS / COSMOLOGY SIG

TIME: 7:00 PM

DATE: July 18, 2002

TOPIC: Space Optics - John Bloomer
PLACE: Linus Pauling House, 3941 S.E. Hawthorne Blvd.

WELCOME NEW MEMBERS!

Gary Borders
Justin Garofoli
Joe Gymkowski
Dan Lundberg
Mark & Dorcas Manley
John Rees

RCA Photo Gallery

Now that's a solar telescope! The Richard B. Dunn Solar Telescope has an entrance window and two mirrors at the top that guide the light of the Sun down the tower through a 329 foot vacuum tube. The Telescope measures 136 feet above and 228 feet below ground.

After the light hits the two mirrors at the top, it goes straight down the tube at the center until it hits the 64 inch primary mirror 188 feet below ground. The primary mirror focuses the light and sends it backup to ground level, where it exits the vacuum tube and can be guided into the scientists' experiments on optical benches.

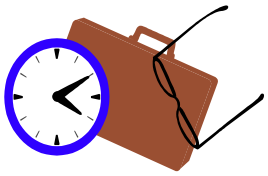
The rotating part of the telescope weighs more than 200 tons. It is suspended at the top from a ring-shaped container holding 10 tons of mercury. The central tube is hanging; it does not sit on anything. Because of the low friction of mercury, it is fairly easy to rotate the 200 tons of tube and instruments.

(Photo by Regis Krug, June 2002 at National Solar Observatory Sacramento Peak, Sunspot, New Mexico)

LIBRARY NEWS

The Rose City Astronomers maintains a comprehensive club library of astronomy related articles, books, CD-ROMs and videos. These items can be borrowed by members through checkout at the general meetings for a period of one month with renewals available by phone or e-mail to the club library director, Jan Keiski (jikeiski@juno.com) - (503) 293-3281. The RCA library is constantly growing through many donations and the purchase of new materials. To keep pace, the RCA library staff is growing too. Welcome Tammy Ross who will be helping with the putting away of library material after the RCA general meeting.

Other library staff include: Larry Froberg - data input & inventory of materials; Rea Young - check in of returned materials & backup for check outs; Richard Labar - set up library. Online access to a list of library materials will be implemented within the next few months, as well as color coding of library materials by category. In the not too distant future, check in & out will be done using a laptop donated by Larry Froberg.
Visit the RCA library web page at:
http://www.rca-omsi.org/library.htm



BOARD MEETING MINUTES

JUNE 3, 2002

Ron Forrester

Present: Regis Krug, Jeff Henning, Ron Forrester, Larry Godsey, Dareth Murray, Dale Fenske, Debra Hirschmann, Scott Turner, Norm Trost, Sameer Ruiwale, Peter Abrahams, Scott Fitzpatrick, Matt Brewster, Carol Huston, Bob McGown, Jan Keiski

Treasurer - Ginny: No Report this month

Programming - Matt: George Taylor (state climatologist) is coming for June. July is John Dobson.

Star Parties - Scott: Salem star party this weekend is all go. OMSI Eclipse, 15th is Summer Solstice.

Sales - Sameer: Nominal

Membership - Doug: 396 Member Families

New Members - Carol: Revised the registration form to gather some additional information, including website sign-up and potential volunteers.

Library - Jan: Nominal

Light Pollution - Bob: Haggard is interested in having a display on light pollution.

SIG's - Scott: Nominal

AL - Dale: 392 member families signed up for AL. Time to pay the AL dues, $1472. AL offers liability insurance to the tune of $2M, we should consider taking out a policy, at $75 a year. Peter motions to authorize Dale to purchase an AL insurance policy if it seems advisable, up to $75 – Larry seconds, passed unanimously.

Editor-Regis: Nominal

JRCA - Ron: Nominal

Community Affairs - Norm: Nominal

OMSI - Peter: Letter of agreement has been handed back with a minor mistake to be corrected, agreement to be in effect for 1 year.

Webmaster - Dareth: Nominal

Telescope Library- Jeff: Nominal

Magazine: Nominal

Phone Line: June 3 to July: Dareth

Standard Insurance donation: Proposal is that we ask for a donation to help cover the cost of renting the OMSI classroom A for the JRCA.

Someone has offered to donate an 18" Dobsonian in unknown condition. Jeff will try and pick up this scope to store until we decide what to do with it.

Budget

Ron proposes to allow members to opt out of a printed newsletter in order to help control club costs. Peter and Regis will define the cost savings and report back.

The board will investigate fund raising activities.

The proposed budget has a $2620 deficit

Jan makes a motion to accept the budget as proposed. Sameer seconds the motion – Motion is passed unanimously.

NASA's Space Place

E-NOSE IS E-NOSE IS E-NOSE

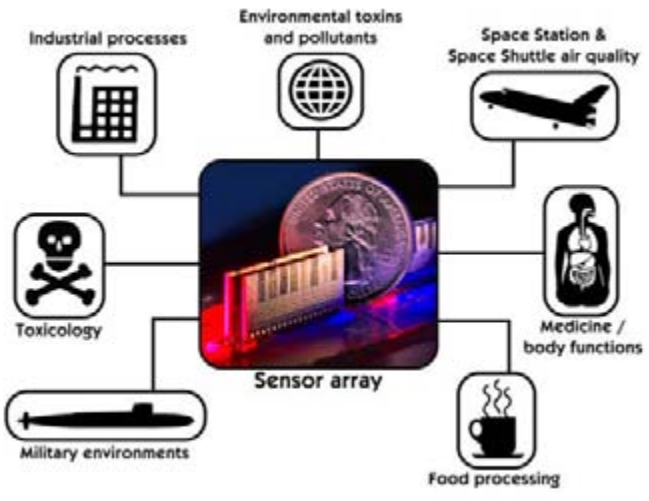
It is very important to keep a "nose" on the air during space missions. Odors from dangerous chemicals in the air must be detected early and fast. One possible danger is hydrazine, the rocket fuel carried on board spaceships. If it leaked into the cabin area, it could do a lot of damage before anyone knew it was there. The job calls for a "super nose" that can detect faint smells far beyond the ability of human beings.

Scientists at Caltech studied the way human and animal noses worked. They thought it might be possible to make a super-nose. NASA thought this was a good idea, so scientists and engineers at the Jet Propulsion Laboratory in Pasadena developed an electronic nose, or "E-Nose." This nose can sniff using a pump, smell using polymer sensors, and decide what's in the air using a minicomputer. E-Nose was developed to monitor the air that the crew in the International Space Station will breathe. It was tried out on the Space Shuttle, and it worked just fine.

E-Nose will also have many uses here on Earth. It can monitor the air inside submarines and in factories to warn people very early if something is making the air unsafe to breathe. It can be used in processing food to tell if food is beginning to spoil. And someday it may be used on another planet or moon to sniff out what's "cooking" up there.

You can find out more about E-Nose and have fun testing your own nose at the Space Place Web site, spaceplace.nasa.gov/enose_do1.htm. The Space Place has fun and educational activities for parents, children, and teachers -- and lots of facts related to many of NASA's space missions.

This article was provided by NASA's Jet Propulsion Laboratory, managed by Caltech in Pasadena.



OMSI SPACE DAY STAR PARTY

The Oregon Museum of Science and Industry will honor the 33rd anniversary of the Apollo 11 moon landing with a day-long celebration.

Space Day, July 20, will begin with space-related events, activities and displays by community groups and NASA, and end with a Star Party in OMSI's east parking lot.

Groups including the L-5 Society and the Rocketry Club from Portland State University will be at the museum 9:30 – 7 p.m. Visitors can participate in space-related labs, learn about current and future space programs, and see some genuine "space junk" - bits and parts from actual space vehicles such as Mir and the Space Lab.

The Omnimax film "Space Station" runs at 1 a.m., 1,3 7 and 9 p.m. "Space Station" documents the construction of the new International Space Station currently orbiting the earth.
At 9:30 p.m., visitors can greet the waxing gibbous moon, star clusters, nebulae and other celestial objects at OMSI's Star Party. Beginning and expert star gazers are invited to join museum staff, the Rose City Astronomers and Vancouver Sidewalk Astronomers Saturday evening to peer into the night sky through a variety of telescopes owned by club members.
Jim Todd, OMSI's Murdock Planetarium manager, will present informal talks on the moon's cycles, visible constellations such as the summer triangle, and the summer night sky. In addition, the museum will provide a large-screen, live image of the moon by connecting a projector to a telescope

Todd said that the moon will be in a perfect position for viewing because of the angle of the sun, which will cast deep shadows on the surface. The moon will be in the tenth day of its cycle of 29.5 days around the earth, and will be visible from 6:05 pm to 2:14 am PDT.

"For astronomers, this is the best viewing opportunity to look at the moon's surface with binoculars and telescopes to see nice details of the craters and highlands," Todd said.
The moon's surface is highly varied. Its nearside is made up of the dark, relatively lightly cratered maria (mah'-ree-ah), which covers about 16% of the surface. These regions are from 3.8 to 3.1 billion years old. The relatively bright, heavily cratered highland areas, also called the terrae, are older, and date to 4.3 billion years.

OTHER MOON FACTS

The moon is 238,857 miles average distance from the Earth.
Its diameter is 2,160 miles which is nearly the width of United States. Both the rotation of the moon and its revolution around Earth takes 27 days, 7 hours, and 43 minutes. This synchronous rotation is caused by an irregular distribution of mass in the moon, which has allowed Earth's gravity to keep one lunar hemisphere permanently turned toward Earth.
The boundary between the day and night portions of the moon's surface is call the terminator.

TIMES AND FEES
Space Day activities are free with OMSI paid admission of $8 for adults age 14-62 and $6 for seniors and youth age 3-13.
The evening Star Party is free.
Tickets to the Omnimax Theater are $8 for adults and $6 for seniors and youth.

OMSI is located at 1945 SE Water Avenue. Visitors are encouraged to call (503) 797-4610 on July 20 after 4:00 PM to learn about possible cancellation of the Star Party due to weather.

Contact: Jim Todd 707-4551
Karen Kane 797-4537 ph, 903-0994 pgr

SUNRIVER NATURE CENTER

The summer season has started at the Sunriver Nature Center & Observatory, located in Central Oregon. We are a non-profit educational organization and are funded by our membership and donations. The observatory will be open everyday 10 am - 2 pm for solar viewing and Tuesday - Sunday from 9pm-11pm for evening programs. The staff is very excited about the summer season. We have added some new equipment and exhibits. Be sure to check out the new meteorite exhibit in the Nature Center and the new displays in the Starport. The meteorite exhibit has over 50 specimens from noted meteorite expert, Richard Norton.

The observatory not only offers first time astronomy buffs a view of the sky, but experienced sky watchers will enjoy all the equipment and clear, dark skies. The observatory has over 15 telescopes, ranging from a 4" refractor to a 20" RC. Many of our guest use our ' dob farm' as their first hands on experience to finding the treasures in the summer sky. Our volunteers come from all over the state, including Portland and Salem. They get a chance to share their telescope with the general public or just use one of our telescopes. Many stay late after the general public has left to enjoy some of the dim objects or do a little astro photography. Some even try some different accessories or telescopes from our retail store before they make the decision to buy.

At the end of the summer, we start to prepare for the Mt. Bachelor Star Party. This years event will be September 5-8th at the Mt. Bachelor Ski Area, located at over 5000 feet and features a paved parking lot, indoor heated bathrooms. All the food service and programs are done indoors. This years speakers include Steve White from TeleVue Optics, Mel Bartels, Richard Norton, John Foster and a few other surprises! The events include Tele Vue Demo Day, Water Rocket Launching, Nature Talks, and a swap meet. Check out the web page (www.mbsp.org) for the most current information including a discount registration for all club members that pre-register.

So, come by the Observatory and say hi. Be sure to check out our web page at www.sunrivernaturecenter.org and get the most current information on the Mt. Bachelor Star Party at www.mbsp.org. I'm very excited about this summer's activities and I hope you can join us.....

ASTRONOMY ISN'T JUST FOR ADULTS ANYMORE!

Photos courtesy Peter Abrahams, March 23 Vernal Equinox Star Party at OMSI

Antares Region Photo courtesy Michael J. Greger

- **Objects:** M4, etc.
- **Instruments:** Pentax 6x7 w/Mirror Lockup, Losmandy G11 mount, Guided with an STV
- **Lens:** Pentax 6x7 165mm f/2.8
- **F/stop:** 4.9
- **Filter:** None
- **Film:** Kodak Elite Chrome 200
- **Exposure:** 60 minutes, pushed +1/3 stop
- **Date:** May 11, 2002
- **Location:** Hancock Field Station
- **Temperature:** About 40° F
- **Dew:** None.
- **Transparency:** 9
- **Seeing:** 7
- **Scanner:** Nikon 8000ED
- **Post-processing:** Curves, Levels

July 2002

Sun	Mon	Tue	We	Thu	Fri	Sat
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

August 2002

Sun	Mon	Tue	We	Thu	Fri	Sat
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

July

July 1	Mon.	Board Meeting	OMSI Classroom 1	7:00 PM
July 6	Sat.	Telescope Making Workshop	Tech Marine Srvc	10-3
July 6	Sat.	White River Canyon Star Party		
July 11-13	Fri-Sun.	Table Mountain Star Party—Washington		
July 13	Sat.	Klondike Star Party		
July 15	Mon.	YRCA (ages 13-18)	OMSI Cafeteria	6:30 PM
July 15	Mon.	RCA Kids (ages 4-12)	OMSI Cafeteria	7:30 PM
July 15	**Mon.**	**General Meeting**	**OMSI Auditorium**	**7:30 PM**
July 18	Thurs.	Astrophysics/Cosmology SIG	Linus Pauling House	7:00 PM
July 20	Sat.	Lunar Viewing—OMSI		
July 31	Wed.	Weather SIG, 10175 SW Barbur Blvd, Suite 100		7:00 PM

August

August 3	Sat.	Telescope Making Workshop	Tech Marine Srvc	10-3
August 5	Mon.	Board Meeting	OMSI Classroom 1	7:00 PM
August 8-11	Thu-Sun	Oregon Star Party—Indian Trail Spring		
August 19	Mon.	YRCA (ages 13-18)	OMSI Cafeteria	6:30 PM
August 19	Mon.	RCA Kids (ages 4-12)	OMSI Cafeteria	7:30 PM
August 19	**Mon.**	**General Meeting**	**OMSI Auditorium**	**7:30 PM**
August 23	Thurs.	Astrophysics/Cosmology SIG	Linus Pauling House	7:00 PM

The RCA General Meeting falls on the third Monday of each month. We usually meet in the Auditorium at OMSI, next to the Murdock Planetarium. Occasionally the meeting is held in Murdock Planetarium. Check here each month for details, or look us up at the RCA web site (http://www.rca-omsi.org).

The Weather SIG address is: Colonial Office Complex, 10175 SW Barbur Blvd, Suite 100-BB, Portland. From downtown, go south on I-5 to the Barbur Blvd. Exit. Cross back over I-5 and the Complex will be on your left.

RCA CLUB INFORMATION
Message Line: (503) 255-2016
Web Site: http://www.rca-omsi.org

Oregon Museum of Science and Industry
Rose City Astronomers
1945 SE Water Avenue
Portland, Oregon 97214-3354

The
Rosette Gazette

Volume 14, Issue 8 | Newsletter of the Rose City Astronomers | August, 2002

In This Issue:

Rocks of the Fourth Kind

Following a trail of evidence leads to the capture of two extraterrestrials in Oregon and Texas

Meteor field research expert **Dick Pugh** has recently retained two rocks, fallen from space, to add to his extensive teaching collection which will be on display at the Rose City Astronomers August general meeting. The public is welcome to participate in Mr. Pugh's presentation on meteorite identification. He draws from 40 years experience in research, and 21 years of teaching.

You will witness –hands on- more than two dozen meteorites, some dated to 4 ½ million years old. You will learn of the exotic nature of these materials produced nowhere on earth.

A slide presentation will take you along the research trail of asteroids, meteorites, fireballs, and impact craters. You are invited also to bring to the meeting any meteors, or thought to be meteors, for professional analysis.

The 2002 Perseids and the Oregon Star Party

By Wes Stone

The Perseid meteor shower is a well-known annual astronomy event. Around these parts, the same can be said for the Oregon Star Party. In 1994, observers who were awake on Friday morning were treated to an exceptional display. I counted 179 Perseids in a single hour at the peak! The next two nights also featured nice activity. Because of this shower, my first OSP remains my favorite.

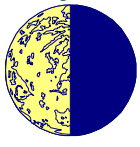
In 2002, circumstances will not be so ideal, but the Perseids should still be worth observing from the dark skies of Indian Trail Spring. The shower should peak on the afternoon of Monday, August 12, with best Oregon rates likely late Monday night into Tuesday morning. During the Oregon Star Party's official dates, rates will be on the rise and observing should be best during the last hour or two before morning twilight. The radiant is high in the sky in the morning. A fine strategy might be to do other types of observing until 2 or 3 am PDT, then cast a sleeping bag under the open sky and relax while observing meteors until twilight.

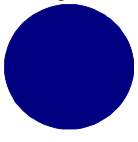
(Continued on page 5) Perseids/OSP

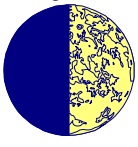
2002 Oregon Star Party—August 8-11 Indian Trail Spring

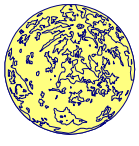
Final Notice 2002-2003 DUES

If you have not renewed your membership—this is your final newsletter and email bulletin board month. RCA membership expired June 30, 2002. Please renew your membership for the year July 1, 2002 - June 30, 2003. You may renew your membership for $24 at the Aug. 19th RCA General Meeting or by mail. Send to: RCA Membership, OMSI, 1945 S.E. Water Ave., Portland, OR 97214. Make check payable to: RCA. Thank you for your support

August 1 

August 8 

August 15 

August 22 

August 30 

Club Officers			
President	Peter Abrahams	(503) 699-1056	telscope@europa.com
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VP Observing	Scott Turner	(503) 788-6484	kings1@attbi.com
VP Community Affairs	Norm Trost	(503) 668-7979	normt@europa.com
VP, Communications	Matt Brewster	(503) 740-2329	brewster@teleport.com
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Media Director	Glenn Graham	(503) 579-1141	sueandglenn@msn.com
IDA Liaison	Bob McGown	(503) 244-0078	r_mcgown@msn.com
OSP Liaison	Chuck Dethloff	(503) 357-6163	telmor@teleport.com
Camp Hancock Liaison	Glenn Graham	(503) 579-1141	the.grahams@verizon.net
Subscription Director	Larry Godsey	(503) 675-5217	larrygodsey@att.net
SIG Director	Scott Fitzpatrick	(503) 669-8243	slfitzpatrick@cs.com
Youth Programs Director	Jenny Forrester	(503) 504-8071	jenny@theforrest.org

President's Message

By
Peter Abrahams
August 2002

Summer Ramblings:

Amateur astronomy is often seen as lacking in participation by youth, and tending to extinction because of the aging population of astronomers. We recently received an inquiry from an Oregonian writer who specifically asked if amateur astronomy was dying; as part of a story on a neighborhood group that was having problems. A few years ago, Sky & Telescope's 'Focal Point' column would regularly dramatize the supposed death of some aspect of amateur astronomy - the demise of star-hopping & of telescope making are examples of columns from the recent past. Astrology's supposed triumph over the science of astronomy has also been featured in S & T, Astronomy, and other magazines. These examples of highly speculative journalism can be dismissed as 'fanning the flames to sell copy', but occasionally we have to note their inaccuracy.

However, it is true that the night sky is extinct for an increasing number of people. Light pollution does in fact make the universe invisible, though in this case I think the loss can sometimes increase appreciation.

I was forcibly reminded of the popularity of observing during the Table Mountain Star Party, July 12-14. On Friday night, a very large number of persons arrived to the already crowded area; and some were turned away. I truly felt sorry for the volunteers who were assigned the job of telling people that there was no place to camp. All of the star parties in the Pacific Northwest have been blessed or cursed by increasing attendance. Likewise, the RCA has about 150-175 people in attendance at

(Continued on page 5) Summer Ramblings

RCA
Magazine Subscriptions

One of the main services offered to RCA members is subscriptions to *Astronomy* and *Sky & Telescope* magazines at a much reduced rate from newsstand prices. *Astronomy* $29 for one year or $55 for two years. *Sky & Telescope* is $29.95 for one year.

Checks must be made out to Rose City Astronomers to get the reduced rates.

For further information, see Larry Godsey, Subscription Coordinator, at the Membership Table at General Meetings or check the RCA website. Please note: Allow two months for your subscription to be renewed.

Sky & Telescope Store Discount

RCA members who subscribe to *Sky & Telescope* are entitled to a 10% discount at the *Sky & Telescope* online store at: *http://skyandtelescope.com/shopsky* To get your discount, enter Rose City Astronomers when prompted for your club name during checkout at the *Sky & Telescope* online store.

The "Kids" of Rose City Astronomers

RCA Kids
Children ages 4-12 are welcome to join in fun and educational activities while the grownups attend the monthly general RCA meetings. The kids' meeting takes place in the adjoining cafeteria at OMSI from 7:30 p.m. to 9:00 p.m. If you have any questions, please e-mail Jennifer at jenny@theforrest.org.

The **Young Rose City Astronomers** (ages 13 - 18). This group meets from 6:30 to 7:30 on the third Monday of the month in the OMSI auditorium, before the regular RCA meeting. In addition, the YRCA meets on the first Thursday of the month. Kids with all levels of experience are welcome. There's no need to join - just come to the meetings and have fun. Adult volunteers are always welcome. Call Margaret McCrea, 232-7636, for more information.

Two ironies of living in Oregon are that the moist climate we're associated with only applies to the western third of our state, where most of us live, and that the prime observing and fire season coincide in the high, often very dry desert where practically none of us live.

Several years ago the OSP came within a whisker of being the starting point of a major wildfire. With the Oregon fire season already at full force, I want to reinforce the danger we present to the high desert environment by our presence there. The following recounts my memory of that fire as a reminder of what we all should be prepared for in a few weeks.

It began quietly and anonymously at the northeastern edge of Indian Trial Spring early on a beautifully clear Sunday afternoon. About a dozen bleary-eyed observers were still left around the main telescope field, slowly packing up their scopes and camping equipment. Pleasant conversation wafted about, mostly about how great this OSP had been and wouldn't it be great to stay one more night. No one noticed the thin plume of smoke rising from the edge of the meadow, at least not right away.

It seemed that about five of us noticed the smoke at once. I remember seeing it and not believing it was from an unattended fire that even though I was irritated that someone thought so little of the OSP regulations to have lit a fire at all. I was about to start packing my extra water but decided to go have a look at the source of the smoke. My shovel was also handy.

Several of us started walking over to the smoke from different parts of the field almost simultaneously. When the closest person was close enough to see no one was attending the source we all ran back to get water and shovels, alerting everyone else on the way. It didn't seem like a big deal to put out – at that point there still weren't any visible flames.

By the time the first people got to the smoke the flames had already spread over a 10-yard square area. This was within maybe three minutes. Only a few of us had shovels and although almost everyone had some water there was probably no more than 10 gallons between us. Logs started burning and the fire was getting hotter.

At first we tried to put out the flames directly but the wind was blowing just enough to push the fire through the undergrowth and into the thick bed of dried pine needles, which was about 10 inches thick. Very dry stuff, and perfect kindling that seemed to prefer burning underneath the surface.

We organized ourselves and began kicking and shoveling a firebreak ahead of the direction the fire was growing. This was sweaty work, and we were edging up on desperation as we faced the realization that if we failed, the fire would reach further into the trees as it grew hotter and would no doubt start burning the Ponderosa Pines themselves. At this point my feet started getting hot from the heat of the ground and the soles of my shoes melted.

Someone called the Forest Service, and they sent out a plane to have a look. We all worked furiously with as much energy as we had for as long as we could. The firebreak worked and the fire was contained within an area about 50 square yards, but the fire was far from being put out. The thick bed of pine needles was still burning in areas that we couldn't easily see because smoke was every where and everything was hot. We had to work in shifts because we all couldn't keep up the pace, and the water was long gone.

I really don't know how long we worked until the fire was out, but by the time the Forest Service plane came over the job was done. Everyone was exhausted. The physical energy expended was considerable but so was the emotional energy – the "what if" was so plain and the consequences of failing to put out the fire so huge that we could practically hear the proverbial bullet whiz by our collective ear.

Looking back, if there were a few less people handy to help, or if the wind had been blowing a little stronger the fire could have easily gotten away. Who knows what would have happened – maybe it would have gone out by itself in a few minutes or maybe it would have become the biggest fire of the season. There's no way to know, but those of us there know for sure that we came too close to finding out.

We sifted around the site looking for a cause but didn't come up with anything definitive. Someone thought they remembered someone camping there during OSP, but wasn't completely certain. We didn't find the remains of a campfire but we did come up with several cigarette butts. But since we had thoroughly trampled over them all it was impossible to tell if they were fresh or had been there since the year before.

Once we were convinced the fire was out, and that the Forest Service would keep their eye on the spot for awhile from the air, we shuffled back to our respective scopes and camps and finished packing up our gear.

So, what's the moral of this story? I propose several:

1. Be prepared. A bit corny sounding maybe but the best possible advice.
    - Bring an extra 5 gallons of water – or more. This is water you will only use to put out fires with, not water you plan on using otherwise.
    - Bring a shovel.
    - Wear sturdy boots.
2. Keep an eye out for any smoke. No need to be paranoid, but with the extreme fire conditions in central Oregon right now we can't afford to be inattentive.
3. Don't be embarrassed to raise an alarm. Time races by faster than you can imagine with a fire in the wild and few minutes can make all the difference.

4.) Obey the rules of the Oregon Star Party regarding no open flames. Incredibly, this actually applies to everyone in attendance.

With enough intelligent caution we have every chance of enjoying another Oregon Star Party memorable only for its great observing, camaraderie, events and speakers. Just like it's supposed to be.

CLASSIFIED ADS

Run your non-commercial astronomy related classified ad in the monthly Gazette. Rates are reasonable (free!)

FOR SALE: 10 inch Meade SCT 2120B, 3 eyepieces, 2 inch 90 degree prism, Nebula filter, solar filter, dew shield, 6.3 Focal Reducer. Contact David at 503-282-7684.

For Sale: Celestron C8, upgraded view finder, wedge mount with electric tracking system, heavy duty tripod. $750 Steve Mock (503) 570-8808

IN THE AUGUST SKY

The Perseid meteor shower makes it's annual spectacular appearance this month. From a dark site you should be able to see 60-100 per hour. The primary peak will occur at 3 PM PST, August 12.

1, Last quarter moon
8, New moon
12, Perseid meteor shower peaks
15, First quarter moon
22, Full moon
30, Last quarter moon

FROM THE EDITOR

We had some production issues with the July newsletter. If you did not receive your newsletter, please let me know and I will make sure that you get a printed copy. You can contact me at regis_krug@mentor.com, or:

Regis Krug
30613 SW Kensington Dr.
Wilsonville, OR 97070.
(503) 682-2547

APERTURE FEVER AT PINE MOUNTAIN OBSERVATORY

By Bob McGown

In the telescope field between the 24-inch (mirror width) and 32-inch Cassegrain telescopes on Pine Mountain summit Danny Hogue (11-year-old astro whiz-kid), other Pine Mountain volunteer guides, amateur astronomers and weekend visitors come to cure serious aperture fever. Pine Mountain Observatory (PMO) is a research site, owned and operated by the University of Oregon Physics Department -- Dr. Greg Bothun, Director. The mission of PMO is to give visitors a visual opportunity to experience authentic space science.

As the sun sets, a group gathers for the evening sky orientation program, with the impressive 32-inch Bolier Chivens Cassegrain telescope as a backdrop. Greg Hogue, PMO Crew Chief and Volunteer Coordinator, gives a presentation on basic astronomy and what's up in the sky at this particular time of year for the interested amateurs and students gathered for the night. The presentation features utilization of Starry Night Pro software, which shows the evening's sky features. Greg is a natural teacher, with the zest and enthusiasm needed to present scientific and astronomical facts in an entertaining way. This is an example of how he makes the distances in space more understandable: "The space shuttle would take about 138,000 years to Alpha Centauri, 4 billion years to cross the galaxy and 90 billion years to reach Andromeda galaxy. Of course that's with no rest stops or refueling!"

After the presentation, the group now has the option to view some of the objects they have been hearing about. They can observe on the 24-inch scope or view through one of the private scopes set up on the deck just outside the dome. If they go up the stairs to the 24-inch, they will find Danny, who with his Dad Greg, is a regular volunteer and expert on the telescope. There are often two people running the 24-inch scope for safety reasons, and many times Danny is one of them. Danny was first certified to run the scope on his own when he was 9. He is the youngest person to ever be qualified to run the scope and the CCD camera. After the nightly tour for visitors is over at midnight, Danny searches for asteroids or Pluto, running blink comparisons. Late night opportunities abound when the scope is available for the darkest viewing of the evening. At the limit of visual acuity, Abell clusters and difficult to find Hickson groups are visible against the very dark sky background. These galaxies are so far away that it takes light 300-400 million years to arrive here. Danny stays the course with the most grizzled galaxy hunter, often spotting galaxies so dim other serious astronomers miss them. This goes on into the wee hours of the morning when we switch to viewing Saturn and Jupiter as the predawn light appears and the birds begin to chirp.

The visitors filter down from observing on the 24 to the deck area and can view through a variety of classical optical instruments operated by the many interesting amateur astronomers who come to PMO. Amateurs coming from Canada to California with refractors up to 7-inches and reflectors of 18 inches are often available for the night sky neophyte. Amateur astronomers

Photo of Danny and Greg Hogue

(Continued on page 5) Aperture Fever

Summer Ramblings *(Continued from page 2)*
an average meeting, and when a popular speaker brings in 200 people, that really strains the limits of OMSI's auditorium.

Given that the RCA has a membership of 400, that the Orange County Astronomers have almost twice as many members (paying $50. 'regular' membership), and that new clubs are continually forming; and adding that the most obscure aspects of observing (the sun, the moon, meteors, planets, asteroids, clusters, nebulae, galaxies, galaxy clusters, etc., etc.) are represented in thriving internet groups -- I don't see that amateur astronomy is dwindling. For this growth, I credit the Dobsonian telescope; the internet, and the incredible images from the Hubble Space Telescope & the huge professional telescopes now in use.

Perseids/OSP *(Continued from page 1)*
What to expect: While actual rates will vary due to sky conditions, personal factors and intrinsic changes in shower activity, reasonable hourly rates would be:

Friday morning, Aug. 9: 10-15 Perseids; ~15 non-Perseids
Saturday morning, Aug. 10: 15-20 Perseids; ~15 non-Perseids
Sunday morning, Aug. 11: ~30 Perseids; ~15 non-Perseids

Non-Perseids, which include sporadics and members of minor showers, tend to be fainter on average. Observed rates are very susceptible to changes in sky conditions. On exceptional nights, I have logged more than 30 non-Perseids per hour. Several minor radiants are active in the Aquarius/Capricornus region. The Kappa Cygnids produce a few slow meteors radiating from an area near the head of Draco. The Northern Apex is a diffuse radiant near the feet of Perseus; meteors from this source can be confused with Perseids.

For casual observing, it is not necessary to distinguish between Perseids and non-Perseids. If one is doing a formal count or pursuing a program such as the Astronomical League's Meteor Club, Perseids must be identified. The Perseid radiant is near Eta Persei, often drawn as the pointy head of the constellation. When a meteor appears anywhere in the sky, mentally project its path backward. If the backward extension of the path passes within a few degrees of Eta Persei, the meteor should be counted as a Perseid. A shoestring or other cord held up to the sky can aid in alignment. Since Perseids can appear anywhere in the sky, it is not necessary to look right at the radiant. When trying to identify Perseids, however, it is best to have the radiant somewhere within your field of view. Your field of view should also be centered high enough that it is not obstructed by the horizon.

Joel Loh pushing glass at the Telescope Making Workshop.
Photo by Jan Keiski

Aperture Fever *(Continued from page 4)*
are usually very happy to share their view of the sky and 'show off' their scopes and eyepieces.

From this telescope field the optical views that may be attained sometimes rival the research instruments because of their high performance eyepieces and the ability to slew their scopes quickly 360 degrees. Sometimes there is good-natured rivalry between various types of scopes and eyepieces for the best observing.

On good dark nights, there is spectacular nebula viewing with Oxygen III filters, stellar Globulars, galaxies and planets with a clear view of the ecliptic. If a visitor happens to wander through a collection of 'light buckets' (Dobsonian telescopes) and captures the view of a magnificent ancient spiral galaxy, it is a Pine Mountain experience not soon forgotten. Occasionally breaking into the soft discussions of the observers below, the sounds of the dome being moved - with its clicks and clanks - can be somewhat eerie, especially when the horizon alarm goes off too! "Old-timers' know that the volunteers who staff the 24-inch have been through a rigorous certification program to operate the telescope and dome and these eerie sounds are a natural part of moving the telescope and dome slit. The horizon alarm sounds when the scope reaches the very lowest limit it can safely still find an object, which might be low on the horizon in Sagittarius, for example.

In the room below the 24-inch is a funky little gift shop, which is destined for greater things in the master expansion plans for a visitor center. The new visitor center will have much improved gift shop that will feature a large selection of clothing items and other astronomical 'must haves'. In addition to the planned visitor center, a 4-meter radio telescope will be added to the landscape, to be located behind the 32-inch dome. Down the hill from the other domes is the 15-inch Cassegrain on its German Equatorial mount. It was the first scope on the mountain and has a viewing deck. Farther down from the 15-inch dome is the caretaker quarters with its blacked out windows and astronomical library. On the roof are a couple of HAM radio/short wave antennas used by Alan Chambers who maintains the telescopes and does research during the week for the University of Oregon.

Leaving PMO late Sunday morning after a fine night of observing, I was rewarded with a stunning view of some hang gliders and parasail pilots who frequently use the Pine Mountain summit as a start for their imitation of the hawks who share their airspace. I watched in amazement as two of the air 'sailors' did loop-de-loops high above the desert floor. It is always a treat to volunteer at PMO, especially when Greg and Danny Hogue are at the helm. And I can't help but wonder just what that lad will grow up to accomplish. His classroom is the universe and his eyes are on the horizon.

Jim Girard works on the collimation for Jan Keiski's scope while Jeff Henning and John DeLacey provide moral support.
Photo by Jan Keiski

ASTROPHYSICS / COSMOLOGY SIG

TIME: 7:00 PM

DATE: August 22, 2002

TOPIC: Ham Radio Overview - Scott Fitzpatrick

PLACE: Linus Pauling House, 3941 S.E. Hawthorne Blvd.

WELCOME NEW MEMBERS!

Bradley Carlson, Diane Chambers
Megan Crawford, Rob Cusson
Karen Halliday, Terrance Hannan
Shannon Hendrickson, Harry Kingston
Choon K. Lim, Andrea Payne
Doug & Renee Saunders, Lance Wright

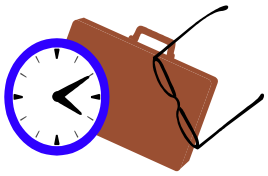
RCA Photo Gallery

LIBRARY NEWS

The Rose City Astronomers maintains a comprehensive club library of astronomy related articles, books, CD-ROMs and videos. These items can be borrowed by members through checkout at the general meetings for a period of one month with renewals available by phone or e-mail to the club library director, Jan Keiski (jikeiski@juno.com) - (503) 293-3281. The RCA library is constantly growing through many donations and the purchase of new materials. To keep pace, the RCA library staff is growing too. Welcome Tammy Ross who will be helping with the putting away of library material after the RCA general meeting.

Other library staff include: Larry Froberg - data input & inventory of materials; Rea Young - check in of returned materials & backup for check outs; Richard Labar - set up library. Online access to a list of library materials will be implemented within the next few months, as well as color coding of library materials by category. In the not too distant future, check in & out will be done using a laptop donated by Larry Froberg.
Visit the RCA library web page at:
http://www.rca-omsi.org/library.htm

M20, the Trifid Nebula, photographed from OMSI's Hancock Field Station, May 02 by Glenn Graham.
12" F/6.6 LX200 SCT
50 Minute Exposure
Kodak Royal Gold 200 hypered at home: 50c, +3psi, 2hrs.
SBIG STV camera as the autoguider. The feedback from the STV showed that it was fighting with the mount and would oscillate in one axis with corrections of more than +/- 2.



BOARD MEETING MINUTES

JULY 1, 2002

Ron Forrester

Present: Ron Forrester, Doug Huston, Carol Huston, Larry Godsey, Jeff Henning, Dareth Murray, Regis Krug, Debra Hirschmann, Peter Abrahams, Matt Brewster, Dale Fenske, Jan Keiski, Scott Fitzpatrick, Sameer Ruiwale, Bob McGown

Treasurer - Ginny: $11,676 in our accounts.

Programming - Matt: John Dobson for this month. August is Dick Pugh on Meteorites.

Star Parties - Scott: Nominal

Sales - Sameer: $130 in June, inventory has been low, Sameer is refilling.

Membership - Doug: 409 Member families – it is renewal time, will be in the newsletter, and Membership will send announcement to e-list and be early to the July meeting.

New Members - Carol: Went to Jackson Bottoms and passed out astronomy info. Continuing with the new member orientations each month.

Library - Jan: Still organizing all the books – staff is incredible.

Light Pollution - Bob: IDA Conference tapes are in production. Boise Idaho is doing a great job with light pollution, Jan estimates half the fixtures are shielded.

SIG's - Scott: Nominal – Weather SIG on July 21st.

AL - Dale: ALCON Convention coming up. Insurance through AL fell through.

Editor- Regis: Nominal

YRCA - Ron: Lots of kids last month, may need to enlist a volunteer helper if attendance stays up. Kudos to Jenny for the OSP packet.

Community Affairs - Norm: Nominal

OMSI - Peter: Successful Star Parties. Space Day is on OMSI's calendar, but we haven't been contacted regarding the event.

Webmaster - Dareth: Nominal

Telescope Library - Jeff: Donated an 18" primary with secondary, and tube, but no mount. Will have the mirror tested. Scott is still working on the Solar scope, it's been borrowed several times, had had to order parts, etc. Perhaps look into getting a second solar filter (Coronado Systems).

Magazine – Larry: Nominal

Copy – Debra: Working on the new IDA brochure, 100 copies.

Phone Line: July 1st through August: Scott F., Dale is August through September

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Discussion on formalizing deposits from Membership, Magazines, Star parties and Sales. New members and Membership do not want to deal with deposit slips (feel that the money should be deposited through the Treasurer). Works for Sales and Magazines.

Proposal for an assistant treasurer to handle funds when the Treasurer is unable to take the funds.

Verizon (foundation.verizon.com) has donated $500 to the club, to be presented by Robert Firth.

Thanks to Scott for updating the phone line message, and for dealing with the solar scope.

Peter had a nice visit out at Sun River, who have an amazing arrangement of scopes and equipment, and a great program. They are starting a Mt. Bachelor star party, but are only getting about 100 people showing up, but there needs to be more people. RCA has agreed to provide some publicity via the Gazette. They also accept volunteers to help out on public nights.

Looking into funds to support purchasing an InFocus project and other items. Issues around storage, security, and maintenance abound. Proposal to purchase an InFocus for OMSI, and in return OMSI would guarantee we could use it at each meeting. OMSI would store and maintain the unit, since it would belong to them. Prices for InFocus like machines are priced from $2000 to $4000.

Printer: We cannot send a full new member database each month, because the printer can only operate on a certified list, which only happens once per 6 months. We can only send changes to the certified list, i.e. for address changes. Regis can request the printers list and compare it to the current full membership to make sure changes are being incorporated. Proposal to give the accumulated delta list to the printer each month. Additional problem is that the address might be too long for the label, causing newsletters to disappear – we have no way of tracking these mailing problems via the bulk rate. Regis requests notification of missed newsletters so he can mail out the missed letters) himself. Doug and Carol will do some investigation when it happens to see if we can troubleshoot this problem further.

Gazette via internet: May be fields in the database which can be used to determine if people get a printed newsletter or not. Regis is putting an article in the newsletter regarding this option.

Greg Jones pushing glass at the Telescope Making Workshop.
Photo by Jan Keiski

PLANETARY NEBULA OBSERVING AT TMSP

By Matt Vartanian

I went up to the Table Mountain Star Party this year with an observing program that mostly consisted of planetary nebulae. Aside from the long drive, bugs, clouds, rain, overcrowding and vehicle problems, this year's TMSP was ideal.

On my observing list were 10 non-Messier Planetary Nebulae, half of which were new to me. Based on the views in my 16" scope I would expect all of these to be worthwhile targets in an 8" scope and most would be fine targets in much smaller scopes. These planetaries were fairly easy to find using only a single chart printed from SkyMap Pro for each object. All were readily recognizable as non-stellar objects at 92x, but planetaries really start to show off at 200x and above. I used filters on these objects, and although they work well I found that the unfiltered views were quite nice. In fact some of the planetaries did not benefit at all from the use of a UHC or OIII filter.

For those who are not familiar with this class of object, the term Planetary Nebula was coined by William Herschel. He used this term because many of these objects looked like the planet Uranus that he had discovered earlier in his career. As planetary nebulae were discovered they were added to a variety of catalogs. In 1967 Perek and Kohoutek compiled all known planetaries into the PK catalog, which was dedicated exclusively to planetary nebulae. The format of this catalog is the prefix PK followed by the galactic coordinates of the planetary to the nearest degree, and an ordinal number if more than one planetary is found at these coordinates. Around ten years ago the IAU recommended yet another Planetary catalog using PN G as a prefix. This catalog is even more comprehensive and provides cross-references to other catalogs. The format is almost the same as the PK catalog but adds another digit of accuracy to the coordinates. This is the catalog used in Uranometria 2000.

Planetary Nebula formation is the most common evolutionary path for stars (up to 8 solar masses). Late in its life a star expels shells of gas, then shrinks down to a white dwarf. During this contraction its temperature increases dramatically generating high-energy radiation. The high-energy UV radiation coming from the star excites the gas shells causing them to fluoresce, producing the glowing planetary nebula that we observe. This description is, of course, an oversimplification of a much more complex process. The glowing gas shells continue outward very rapidly, diffusing in a relatively short time of less than 50,000 years. This is why planetary nebulae, although the most common evolutionary path for stars, are not as common an object as one would expect. There are, in fact, less than 1500 cataloged planetaries.

So without further delay, here is my observing list with brief descriptions of what I saw:

NGC 7009 in Aquarius
The Saturn Nebula, greenish oval that looks a little like Saturn due to material ejected in opposite directions from the star. These ejecta are called ansae or FLIERs. There is currently no consensus on how they are formed.

NGC 6543 in Draco
Cat's Eye Nebula. Obvious bright blue-green shell surrounding visible central star forms a "cat's eye." Shell shows bright regions near the edges of the "eye." A favorite of mine.

NGC 6826 in Cygnus
With direct vision shows a star with little nebulosity, with averted vision shows the PN as a disk, hence the common name The Blinking Planetary.

NGC 40 in Cepheus
Central star visible surrounded by halo that has a mottled characteristic. Dark region immediately surrounding the central star.

NGC 6210 in Hercules
Very small planetary with a striking blue color. Bright.

NGC 6572 in Ophiuchus
Appeared very much like Uranus, green hue and all. Strong color contrast with 6210.

NGC 6369 in Ophiuchus
Looks like a smaller version of M57. The ring itself had a dim side and a bright side and overall appeared translucent.

NGC 6781 in Aquila
Another ghostly object similar to M97 in appearance. Filter helps with this one.

NGC 6818 in Sagittarius
Bright medium sized disk with irregular edge on one side.

NGC 6445 in Sagittarius
Looks like a marshmallow pinched in the middle, or maybe a crushed beer can.

Planetary Nebulae have a couple of good things going for them. First, they are among the few deep sky objects that show color. And second, they have wonderfully creative names like The Blue Snowball, The Bug, The Cat's Eye, the Helix, and The Phantom Streak. But the most interesting thing about observing this list was seeing the incredible variety of structure that these objects possess. If you have not ventured past planetaries on Messier's list, you have a treat awaiting you regardless of your scope size.

M13, the Great Cluster in Hercules, photographed from OMSI's Hancock Field Station May, 2002 by Glen Graham.
12" F/10 LX200 SCT with F/6.7 Lumicon focal reducer
50 Minute Exposure Kodak Royal Gold 200 hypered at home at 50c, +3psi, 2hrs. Autoguided using SBIG STV CCD autoguider.

Note: All other images taken the two nights showed that the guider was fighting the mount and produced egg shaped stars. M13 did not. I'm hoping it was balance or a preferred direction (if so I might be able to improve my guiding average with proper preparation).

RCA MEMBER AWARDS

In recognition of RCA members who complete one of the many observing programs offered by the Astronomical League, we feature those members who have been awarded a certificate of achievement. Dale Fenske, the RCA Alcor to the Astronomical League, has more information if you are interested in an observing program.

Messier Certificates

Vern Weiss #1923
Scott Turner #1926
Rufus Day #1958

Binocular Messier

Dr. Rick Letherer #509
Howard Knytych #511

Urban Club

Margaret McCrae #35

PERSEID METEOR SHOWER STAR PARTY

By Jim Todd

The earth is soon to pass one of the most active meteor showers of the year, and the Oregon Museum of Science and Industry is inviting the public to view the spectacle in the Columbia Gorge on Sunday, August 11. Co-hosted by OMSI, the Rose City Astronomers, Vancouver Sidewalk Astronomers and Oregon Parks and Recreation, the Perseid Meteor Shower Star Party will begin at 9 p.m. at Rooster Rock State Park, located 22 miles east of Portland on I-84 (east of Sandy River) at exit 25.

The event is free to the public, however there is a parking charge of $3 per vehicle or $1.50 for OMSI and RCA Members. For possible cancellation due to weather, call 503/797-4610 that evening. For more information, call the OMSI Star Party Information Line at 503/797-4610; Rose City Astronomers Club at 503/255-2016; or Rooster Rock State Park at 503/695-2261. On Sunday, August 11TH, the annual Perseid meteor shower should reach its peak.

Watching for Perseid meteors is an annual rite for many sky observers, especially families on August vacations at dark, country sites.

This year the new Moon is leaving the sky at its darkest for the prime meteor-watching hours of early evening. Under ideal conditions, you might see a Perseid or two each minute.

If it's cloudy that night, don't give up. Occasional Perseids will streak across the sky for several nights before and after. In fact you may see a lone Perseid or two on any night in early and mid-August.

We see this shower happen because the Earth's orbit carries us through the densest part of the Perseid meteoroid stream every year around August 11th or 12th. The meteoroids are tiny bits of rock and clods of dust just a few millimeters across. Arriving from the direction of the constellation Perseus (the shower's radiant point), they hit our upper atmosphere at a speed of 60 miles per second, vaporizing and creating a brief trail of ionized, glowing air.

We intersect the richest part of the Perseid stream near the place in our orbit. This refers to where we see the Sun on the ecliptic from our viewpoint on the moving Earth. It's a more exact way of identifying where Earth is in its orbit than the date and time, which jitter back and forth by 6 to 18 hours from one year to the next (depending on whether it's a leap year.) As always, the rates you actually see are much less than when the shower's radiant (in northern Perseus near Cassiopeia) is at a low altitude in the sky. Light pollution also greatly reduces the numbers seen. The display won't become good until Perseus rises well up in the northeast after midnight. The meteors themselves appear all over the sky, not necessarily near the radiant.

While Sky Watching on any clear night, you're likely to see an occasional "shooting star" -- a little streak of light that zips across the heavens and vanishes in a second or so. What you have just seen is a meteor. Meteors are caused by little bits of space debris the size of large sand grains or small pebbles, called meteoroids. Countless numbers of them orbit the Sun like tiny planets. When one strikes the Earth's upper atmosphere -- at speeds of many miles per second -- air friction vaporizes it in a white-hot streak. The word meteor refers to this streak of light. Very rarely does a piece of a meteoroid survive to fall all the way to the ground. Then it's called a meteorite.

On a clear, dark night far from city light pollution, you can see several meteors per hour on average. But at certain times of year the numbers increase. When the Earth passes through a stream of meteoroids traveling together through space, we get a meteor shower. Most meteor showers repeat on about the same date year after year -- every time the Earth goes through the same place in its orbit. Other showers are less predictable, producing fine displays in some years and practically nothing in others.

When watching even the best annual showers, however, you need to be patient. You might see one meteor every minute or two on average. And that's under ideal, dark-sky conditions with no moonlight or artificial light pollution. Any skyglow dramatically cuts down the number you'll see. Most meteor showers are active between midnight and dawn. The later you watch after midnight, the better. Bundle up against the cold, bring a reclining lawn chair, and find a dark site with a wide-open view of the sky. Lie back, relax, and gaze up at the stars.

August 2002

Sun	Mon	Tue	We	Thu	Fri	Sat
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

September 2002

Sun	Mon	Tue	We	Thu	Fri	Sat
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

August

August 3	Sat.	Telescope Making Workshop	Tech Marine Srvc	10-3
August 5	Mon.	Board Meeting	OMSI Classroom 1	7:00 PM
August 8-11	**Thu-Sun**	**Oregon Star Party—Indian Trail Spring**		
August 19	Mon.	YRCA (ages 13-18)	Hall in front OMSI auditorium	6:30 PM
August 19	Mon.	RCA Kids (ages 4-12)	OMSI lunchroom	7:30 PM
August 19	**Mon.**	**General Meeting**	**OMSI Auditorium**	**7:30 PM**
August 22	Thurs.	Astrophysics/Cosmology SIG	Linus Pauling House	7:00 PM

September

Sept 7	Sat.	Telescope Making Workshop	Tech Marine Srvc	10-3
Sept 7-8	Sat-Sun	Dark Sky Star Party—Indian Trail Spring		
Sept 9	Mon.	Board Meeting	OMSI Classroom 1	7:00 PM
Sept 14	Sat.	Autumnal Equinox—OMSI		
Sept 16	Mon.	YRCA (ages 13-18)	Hall in front OMSI auditorium	6:30 PM
Sept 16	Mon.	RCA Kids (ages 4-12)	OMSI lunchroom	7:30 PM
Sept 16	**Mon.**	**General Meeting**	**OMSI Auditorium**	**7:30 PM**
Sept 19	Thurs.	Astrophysics/Cosmology SIG	Linus Pauling House	7:00 PM

The RCA General Meeting falls on the third Monday of each month. We usually meet in the Auditorium at OMSI, next to the Murdock Planetarium. Occasionally the meeting is held in Murdock Planetarium. Check here each month for details, or look us up at the RCA web site (http://www.rca-omsi.org).

The Weather SIG address is: Colonial Office Complex, 10175 SW Barbur Blvd, Suite 100-BB, Portland. From downtown, go south on I-5 to the Barbur Blvd. Exit. Cross back over I-5 and the Complex will be on your left.

RCA CLUB INFORMATION
Message Line: (503) 255-2016
Web Site: http://www.rca-omsi.org

Oregon Museum of Science and Industry
Rose City Astronomers
1945 SE Water Avenue
Portland, Oregon 97214-3354

The
Rosette Gazette

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In This Issue:

Meteor Storms

by
Chris Crawford

Join the Rose City Astronomers for the September General Meeting as Chris Crawford relates his 30 years experience of amateur meteor shower observing. He will explain why meteor showers sometimes produce storms, how they are predicted, and show some video of the 1999 Leonid storm.

The Leonid meteor stream has produced a number of storms. There were huge storms in 1833 and 1966, producing rates of perhaps 150,000 meteors per hour. In 1999 and 2001, the Leonids stormed again, but with much lower rates: 4,000 per hour and 2,000 per hour. This year, they are expected to storm again, with rates around 4,000 per hour.

The video was taken from a NASA research aircraft at an altitude of 39,000 feet over the Mediterranean. Chris was on board observing the Leonids and operating the computer system he designed to record the data. He will also talk about some new techniques being developed to watch meteors, such as improved video cameras and real-time computer analysis of meteor video.

RCA Elections for 2003.

RCA members are notified that nominations for officers (board positions for 2003) will be accepted by the nomination committee, represented by Carol Huston, or can be given to any board member to forward. According to the by-laws: "***Requests for nominations for candidates for officers will be announced in the September newsletter and at the September general meeting."***

Camp Hancock Dark Sky Star Party October 4-5, 2002

Scott Turner, VP Observing

The Camp Hancock star party is scheduled for October 4 and 5 (Friday and Saturday night). For those of you who not yet experienced this place, allow me to introduce you to Camp Hancock Field Station located near Clarno, Oregon. Camp Hancock is an OMSI sponsored field station for the promotion of science education. The Camp is located the John Day river in NE Oregon. Directions can be found on the RCA's Web site at: http://www.rca-omsi.org/starpartysites.htm#hancock

To RSVP:

Send an Attendance Form and a check to Larry Deal (address below). Registration is not considered complete until both a check and a registration form is received. This year, Larry has generously offered to coordinate the registration of this event. Please inform Larry as soon as possible if you have special diet needs or have any relevant medical issues that need special attention.

Lodging:

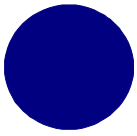
Lodging Options are on a first come basis (there is plenty of space):

Large (14 bunk) A-frame cabins
Small (3 bunk) A-frame cabins
Tipi (5 bunk) with wood frame door
Limited RV parking (w/limited electricity and water hookups)
Tent areas

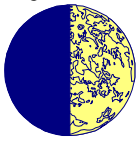
Cost for lodging is $14 per night per person for cabins and
$8 per night for tent or RV parking.

(Continued on page 8) Camp Hancock Star Party

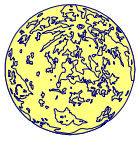
September 6



September 13



September 21



September 29

Club Officers			
President	Peter Abrahams	(503) 699-1056	telscope@europa.com
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VP Observing	Scott Turner	(503) 788-6484	kings1@attbi.com
VP Community Affairs	Norm Trost	(503) 668-7979	normt@europa.com
VP, Communications	Matt Brewster	(503) 740-2329	brewster@teleport.com
Treasurer	Ginny Pitts	(360) 737-0569	vepitts@attbi.com
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Library Director	Jan Keiski	(503) 293-3281	jikeiski@juno.com
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OSP Liaison	Chuck Dethloff	(503) 357-6163	telmor@teleport.com
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Subscription Director	Larry Godsey	(503) 675-5217	larrygodsey@att.net
SIG Director	Scott Fitzpatrick	(503) 669-8243	slfitzpatrick@cs.com
Youth Programs Director	Jenny Forrester	(503) 504-8071	jenny@theforrest.org

President's Message

By
Peter Abrahams
September 2002

The RCA Solar Scope

The RCA hydrogen alpha filter & telescope has been out of commission this summer, and if anyone is wondering why, or in case someone else has been through this & can help, here is the story. The C8 we were using had several disadvantages; it was far bigger than necessary, we could use the C8 in the scope library, and the off axis prefilter meant that the exit pupil was off axis, making the image difficult to find for inexperienced observers.

After much investigation, asking advice from solar observing email lists & dealers; we purchased an 80mm f9 refractor from Stellarvue. We chose Stellarvue because of their good reputation, reasonable price, and the well made focuser (needed to secure the filter). The hydrogen alpha filter requires an f30 optical system, and so we purchased a TeleVue 4x 'Powermate' (an f30 refractor of suitable aperture would be far too long to transport). Various sources told us that this combination would work.

While ordering & fitting the parts together, several requests to use the filter (with the C8) meant that work was delayed. Greg Jones machined a new prefilter cell for us, and deserves our gratitude. We managed to put everything together for OSP; but found a new problem.

We were unable to reach focus with any combination of 4x Powermate, 2x barlow, extension tubes, and various eyepieces. There are quite few combinations to try, but none worked. At this point, we are checking the filter on the C8 to make sure it functions properly, and contacting TeleVue and other sources to determine

(Continued on page 4) RCA Solar Scope

RCA
MAGAZINE SUBSCRIPTIONS

One of the main services offered to RCA members is subscriptions to *Astronomy* and *Sky & Telescope* magazines at a much reduced rate from newsstand prices. *Astronomy* $29 for one year or $55 for two years. *Sky & Telescope* is $29.95 for one year.

Checks must be made out to Rose City Astronomers to get the reduced rates.

For further information, see Larry Godsey, Subscription Coordinator, at the Membership Table at General Meetings or check the RCA website. Please note: Allow two months for your subscription to be renewed.

Sky & Telescope Store Discount

RCA members who subscribe to *Sky & Telescope* are entitled to a 10% discount at the *Sky & Telescope* online store at: *http://skyandtelescope.com/shopsky* To get your discount, enter Rose City Astronomers when prompted for your club name during checkout at the *Sky & Telescope* online store.

THE "KIDS" OF ROSE CITY ASTRONOMERS

RCA Kids

Children ages 4-12 are welcome to join in fun and educational activities while the grownups attend the monthly general RCA meetings. The kids' meeting takes place in the adjoining cafeteria at OMSI from 7:30 p.m. to 9:00 p.m. If you have any questions, please e-mail Jennifer at jenny@theforrest.org.

The **Young Rose City Astronomers** (ages 13 - 18). This group meets from 6:30 to 7:30 on the third Monday of the month in the OMSI auditorium, before the regular RCA meeting. In addition, the YRCA meets on the first Thursday of the month. Kids with all levels of experience are welcome. There's no need to join - just come to the meetings and have fun. Adult volunteers are always welcome. Call Margaret McCrea, 232-7636, for more information.

Catching Meteors

As everyone knows by now, the 2002 OSP was wonderful. I'll write up my observations for another article, but for this month I want to write about the not-so-easy proposition of photographing meteors.

Like many amateur astronomers I've tried photographing meteors since the first time I found out how "easy" it was. The directions usually go something like this:

Put a 35mm SLR camera, loaded with fast film, on a tripod or piggyback on a driven telescope, point the camera at the area of sky you think the meteors will be flying through, focus the camera to infinity and take a time exposure for as long as you want. Piece-of-cake easy.

The astronomy magazines are full of great meteor shots so this process is indeed possible to do well. However, as any astro-imager can tell you, if something can go wrong it usually will. It is a profound understatement that Murphy and I have been buddies for many years when it comes to meteor photography, so at least for me this process has been treacherous.

To stem any potential sympathy for poor old Howard, the inspiration for this article came from my sudden rush of success at capturing a few Perseid meteors on film at the Oregon Star Party last month. This was not only immensely gratifying but it also served to put my past string of poor results into perspective. So with this recent success still fresh, I naturally feel qualified to pass on my accumulated wisdom.

With that in mind, here is my version of a "Murphy's Guide" on how to successful photograph a meteor:

Although the 35mm SLR camera may become obsolete sometime in the next decade or so, for now they're still the least expensive way to take the wide-angle astrophotos that best capture meteors. However, loading one with film can be deceptively simple, and it pays to make absolutely sure the film is being advanced through the camera. I've lost too many great shots by not making sure.

Fast film is great stuff, and don't try to get by with 100 speed film – I've found it doesn't work very well for catching the average meteor. However, using slow film usually guarantees that everything else will go smoothly.

The tripod should be study and solid. Tripod legs that slowly collapse in on themselves not only make for interesting photos but are also a severe test of your patience with supposedly inanimate objects.

Pointing the camera where the meteors will be during your exposure is all luck. If someone had pointed a camera at the Big Dipper Sunday night of the OSP they would probably have caught a good half dozen bright meteors. But who knew that beforehand?

Focusing the camera to infinity – what could be easier? 35mm SLR's all have the sideways figure 8 on the focus ring that indicate the focus is indeed on infinity, but it's surprisingly easy to not quite have the focus ring adjusted all the way to the infinity mark. This is my specialty.

Of course, very often dew will cover up a perfectly focused camera and all you'll get are a bunch of increasingly fuzzy star trails. But they can be pretty… Having a dew gun handy really helps here, as does keeping the lens covered between exposures.

The length of exposure is up to you, but personally I like very long star trails, or guided exposures with round star images. Regardless, it really pays to have a cable release – I've found that even with the patience to hold down "the button" with your finger, there's no way not to shake the camera. No kidding, I've tried…

However, having a cable release is no guarantee of success. Sometimes they lock up and won't end the exposure, and getting it to close the camera shutter can be frustrating. I have several shots that are flooded with red light from my flashlight as I tried to end the exposure. Kind of artsy, but I must say that I've yet to ruin a shot with a meteor streaking through it.

The other evil side of a cable release is that it might not hold the shutter open at all. Did you set the camera to "bulb" or whatever setting will hold the shutter open? Maybe the cable release isn't securely screwed on, or perhaps the locking mechanism wasn't set properly. Could be the thing is no good and you need a new one. I've got lots of completely blank exposures of the night sky for all these reasons.

Guided exposures theoretically give you pinpoint star images no matter how long the lens is open. Well, that's the case if the mount or telescope you have the camera piggy-backed on is accurately polar aligned. If so, you're off to a good start. If not, the star images will end up as unsatisfying ellipses. Either way you'll want to set the f ratio to f/4 or slower to reduce coma and astigmatism in the star images along the edge of each exposure.

Or course, regardless of the type of shot your tying you'll want to chase everyone away while the exposure is going so no one shines a light in the lens or bumps into the camera. If you've ever heard someone at a star party announce they were ready to start an exposure, that's why.

Once your shots are ready to be developed, make sure the 1-hour developer doesn't cut your negatives in the middle of the exposures. It's safest to either shoot a daylight exposure at the beginning of a roll or ask that they don't cut your negatives at all.

Get all this right and you'll probably get a decent shot of the night sky. And if luck is really on your side you might even get a meteor or two.

And as Jim Girard reminded me, don't forget the counter-intuitive approach. Perhaps the most sure-fire way to photograph a meteor is to not want one to streak through your exposure. Hmm, I haven't tried that approach yet.

And now – finally – I get to show off a bit. This is my best ever, by far, astrophoto let alone meteor shot. M31 is the large galaxy at

(Continued on page 4) ..Observers Corner

CLASSIFIED ADS

Run your non-commercial astronomy related classified ad in the monthly Gazette. Rates are reasonable (free!)

FOR SALE: Celestron Firstscope 114, f8, 25 and 10 mm eyepieces, German eq mount, Dec and RA cables, sturdy wood tripod, 6x30 finderscope, Celestron logic motor drive (single axis RA drive). Like new, need the cash for college. $300 OBO. Ray Kaser 503-873-8106, Silverton.

FOR SALE: WW1 U-boat Binoculars for sale 550.00 and a Dan Peterson classic observing chair is available for 70.00. Good observing. Bob McGown 503-244-0078

WANTED: Older 1960s or 70s Tasco pier-mounted 4.25 inch refractor telescope—any condition. Tasco sold this as Model 20TE, their Observatory Model. This scope has a large equatorial mounting and two finders. Pay up to $1500 or have items to trade (13.1" Coulter Dob—red version with fine optics & Telrad, orange C-8 with tripod & wedge, 3" equatorial refractor, etc. & will add cash). And will pick up anywhere in the Northwest. Also want a Tasco catalogue from the late 1960s or early 70s (pay up to $30). Any Unitron 3" parts. John W. Siple, 33230 Primrose Rd., Corvallis OR 97333. (541) 758-8326

Observers Corner (Continued from page 3)

the top right and M33 is at the bottom center. The large open cluster NGC 752 is at the left lower edge – and just look at that beautiful Perseid meteor flashing through the image exactly where I hoped!

IN THE SEPTEMBER SKY

6, New moon
13, First quarter moon
21, Full moon
23 Autumnal Equinox
26, Venus at greatest brilliance (magnitude 4.6)
29, Last quarter moon

RCA Solar Scope *(Continued from page 2)*

where the problem is. This is not an entirely unexpected or unusual problem; I have had similar difficulties fitting a binoviewer to a fast telescope, there is usually a combination that works, but it can take a while to find it. The equipment is now being checked by telescope librarian Jeff Henning, and we hope to have things running soon.

NEW MEMBER ORIENTATION MEETING

All members are invited to a new member orientation meeting to be held on Wednesday, September 18, at 7:00 PM at the home of Doug and Carol Huston. During this informal session, we will explore ways you can get more connected to resources and activities in RCA, equipment, materials, references, star parties, observing programs, getting started observing, general info, and Q&A.

Please come and bring your questions. RSVP at StarsCarol@aol.com or phone 503-629-8809. Directions will be provided at that time.

Hope to see you all there!

Carol Huston
New Member Advisor
Rose City Astronomers

SPACE DAY - JULY 20TH - 2002

A Day To Remember

By Bob McGown

After a couple of months of communicating via e-mail, we stockpiled and loaded up all our equipment the week before the event. Our friends from the Oregon Chapter Mars Society, Oregon L-5, and the PSU Rocketry Club were invited by OMSI to participate in Space Day 2002, Saturday July 20th.

Our assault on OMSI's red turf began at 6:45 a.m. as we unloaded our vehicles with space hardware. With the assistance of Gus Frederick and Dick Steffens, we set up the "Mars Rover" and the Martian landscape diorama with the 10' x 25' tent out on the plaza, in front of the entrance to the planetarium. The tent was occupied by a full-size working mockup of the Sagan Surveyor Mars Rover, two monitors for the rover and two for the lander, as well as related computers and other telemetry equipment.

Bob McGown at the control panels for the Rover Game.

The object of the 'Mars Rover Game' was to navigate the rover remotely over thick carpet and 'find' various rocks labeled like the Pathfinder Landing site. In order to get a "Mars Rover Operator" certificate, the player would manipulate the joystick and watch the remote camcorders on the monitor to see the rocks. Dick and Pat Steffens placed the rocks in the approximate location where the Pathfinder mission had found them on the surface of the Martian plain with the walls displaying the actual Martian landscape with Landing site lamination I provided.

At 9:30 a.m., I set up my C-5 solar scope with a white light filter to do some side walk solar astronomy to show visitors the Suns' fiery disk and the large groups of sunspots. Many passersby were awestruck, because in some cases this was their first real look at the Sun. They went home hoping to catch an aurora borealis after hearing about the recent coronal mass ejection.

The Mars Society, Oregon Chapter, (MSOR) was well represented by President Eric Carlstrom, Secretary Gus Frederick and other members. The CEMSS ("Controlled Ecological Mouse Support System"), a bio-regenerative life-support test bed, designed by Gus was featured. Live examples of sensor and data acquisition work as it relates to Martian life support issues, as well as the 'Portable Mars Garden' greenhouse project exhibited at the annual Mars society meetings and the Oregon Garden on special occasions, were also prominently on view. All the sensors on the CEMMS were in full operation monitoring the CO2 level of the two space mice occupants.

Opposite the Planetarium were information tables filled with Mars Society and Oregon L-5 dioramas and publications, including the thick newly published "Space Robotics 2002 Conference Proceedings". Bryce Walden, Cheryl York, Tom Billings and I were pleased to have had all five of our technical research papers accepted at the conference. The Oregon L-5 group also won the Meritorious Service Award for Lunar Research, awarded by the National Space Society. For more information visit the L-5 website: http://www.oregonl5.org/l5sr2002.html.

Bryce set up a display in the glass case in the lobby of the Fullerton Space Collection from the L-5 archives. Cheryl organized many interesting hands on activities for kids in the foyer.

NASA's representatives were set up with elaborate displays near the Planetarium, with examples of their space equipment, including a moon suit. A young OMSI volunteer wore the Class 3 moon suit most of the day. It was very warm inside that suit! There were talks given all afternoon in the OMSI auditorium by members of MSOR and Oregon L-5. Gus Frederick, Eric Carlstrom and I gave talks on the Mars Desert Research Station, CEMMS II and Martian meteorites. The enthusiastic audience was about half adults and half kids, asking a lot of interesting questions. The PSU Rocketry Club was outside the museum on the south side of the plaza. They had erected a collapsible launch gantry and rocket with supporting computer guidance systems and their components all on display. They had handouts and other interesting information about their club and the rocket launch to be held soon in Brothers, Oregon.

Dareth is looking into the CEMSS during Silcox Hut field research project.

(Continued on page 8) Space Day

ASTROPHYSICS / COSMOLOGY SIG

TIME: 7:00 PM
DATE: September 19, 2002
TOPIC: Lenoid Meteor storm review - Glenn Graham
PLACE: Linus Pauling House, 3941 S.E. Hawthorne Blvd.

WELCOME NEW MEMBERS!

Andrea Anderson, Sharon Byrd
Rebecca Hill, Terry Johnson
Jeff Jones, Theodore King
Jim Knott, Kelley Martin
Kay Perkins, Julie Winslow
Don Wright

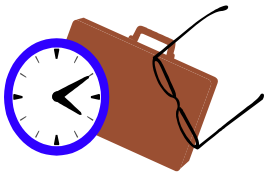
RCA Photo Gallery

LIBRARY NEWS

The Rose City Astronomers maintains a comprehensive club library of astronomy related articles, books, CD-ROMs and videos. These items can be borrowed by members through checkout at the general meetings for a period of one month with renewals available by phone or e-mail to the club library director, Jan Keiski (jikeiski@juno.com) - (503) 293-3281. The RCA library is constantly growing through many donations and the purchase of new materials. To keep pace, the RCA library staff is growing too. Welcome Tammy Ross who will be helping with the putting away of library material after the RCA general meeting.

Other library staff include: Larry Froberg - data input & inventory of materials; Rea Young - check in of returned materials & backup for check outs; Richard Labar - set up library. Online access to a list of library materials will be implemented within the next few months, as well as color coding of library materials by category. In the not too distant future, check in & out will be done using a laptop donated by Larry Froberg.
Visit the RCA library web page at:
http://www.rca-omsi.org/library.htm

M33 through the 4" Tak on the G-11/Gemini mount. Photo by Jim Girard



BOARD MEETING MINUTES

AUGUST 5, 2002

Scott Turner

Present:, Doug Huston, Carol Huston, Larry Godsey, Debra Hirschmann, Peter Abrahams, Matt Brewster, Jan Keiski, Sameer Ruiwale, Bob McGown, Ginny Potts, Dale Fenske.

Treasurer - Ginny: $15,163 in our accounts. Treasurer requests board members to get a copy (white) of the transaction records when making deposits (and turned over to the treasurer). Treasurer also requests that checks be deposited in a timely manner. We have had cashed checks that are older than 90 days. Timeliness of financial transactions is important.

Ginny will investigate the transfer of cash from the money market fund. The current fund situation is not very easy to work with and a new fund might make it easier to transfer funds in and out of the money market account.

There is an IRS report due November 15, 2002. Ginny will work on this and report to the board what is needed.

Programming - Matt: Dick Pugh is speaking at the August meeting on meteorites, he will bring a nice collection in for display. In September Chris Crawford will speak on 1999 Leonids.

Star Parties - Scott T: Larch Mt. was canceled due to weather. OSP is scheduled for next week (August 8-11).

Sales - Sameer: Good sales month $823 for July sales.

Membership - Doug: 427 Member families - it is renewal time, a notice will be in the newsletter, Membership will also send an announcement to e-list and Membership will arrive early to the July meeting.

New Members - Carol: Is planning to put on a new member orientation in September. More news at the August meeting.

Library - Jan: Nominal.

Light Pollution - Bob: Nominal

SIG's - Scott F: Nominal

AL - Dale: ALCON Convention is over. No news on any decisions or issues from AL.

Editor- Regis: New database was sent to printer. The newsletter was produced earlier in the month (August), so it should have arrived the first weekend in August. All members should have received the newsletter by the next general meeting (August 19, 2002). Regis will take a poll to see who hasn't received the newsletter by that time. We are trying to solve the issue of suspected undelivered newsletters.

YRCA - Ron: Nominal

Community Affairs - Norm: OASIS lunar program was canceled due to lack of participation.

OMSI - Peter: Nominal

Webmaster - Dareth: Nominal

Telescope Library - Jeff: Nominal

Magazine - Larry: Nominal

Copy - Debra: Will provide the board members an inventory list of printouts. In addition, she'll start bringing examples to board meeting for disbursement with board members.

Phone Line: August 1 - 31 Dale Fenske. September 1 - 30 will be covered by Matt Brewster

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General discussion:

*Next board meeting is on September 9th (Peter will confirm with OMSI), due to Labor Day. * Ginny reiterated the need for quick turnover of deposits and disbursements. See Treasure re-

"MUSIC OF THE SPHERES" STARS IN MY EYES AND EARS!

By Dareth Murray

It was a perfect night. Wild Gypsy violin virtuoso Kim Angelis brought a shining day into twilight with her impassioned original music inspired by the songs in her soul transformed into wondrous sound. She twirled and played and danced on the stage as her husband Josef Gault accompanied her with his masterful guitar strokes. After the second encore, the audience was surprised to find it was very dark.

Every summer at Lick Observatory the 300-foot hall between the 36" and the 40" telescope domes is transformed into a place of wonder for a concert and lecture series. As the 'Music of the Spheres' brought in the night, we had to decide. Should we view through the 36" (fixed on M57 - the Ring Nebula) or take in the first presentation of Dr. Geoff Marcy, arguably the world's most prolific extra solar planet hunter? Tough choice, but we decided to hear about one of the most exciting discoveries of our time - planets like Jupiter, circling suns out there in other galaxies. So far, Dr. Marcy and his team have found 52. At least one of them indicates an atmosphere. It is pretty hot (about 2,000 degrees) but nevertheless, a planet with an atmosphere. And the possibility exists that there are smaller, hidden planets between that gas giant and it's sun. Geoff Marcy is a wonderful speaker. He brings this possibility to life and makes it seem very likely indeed. Geoff illustrates his presentation with art-

(Continued on page 9) Music

Camp Hancock Star Party (Continued from page 1)

Meals

Camp Hancock offers breakfast, lunch, and dinner for our event (no breakfast or lunch on Friday and no dinner on Sunday). Meals need to be ordered and paid for in advance by September 22nd, Late meal orders will not be available.

Prices for meals are:

Breakfast $3.75
Lunch $3.50
Dinner $4.75

Rules, Rules, Rules:

Guidelines (Per Camp Hancock administration):

- Need to order all meals two weeks in advance Checks need to be received by September 22nd, 2002.
- Camp stoves only, no open fires.
- Last minute sign-ups may not be able to order meals (but will be able to get lodging accommodations)
- NO PETS (this has been an issue in the past, please respect the Camp's rules)
- No Bicycles (insurance/safety rule)
- Children must be monitored at all times
- No camping on the surrounding park service land
- The Staff housing area is off limits to guests.

Larry will need to receive an RSVP and check by Sept. 22nd.
Please make checks out to "Rose City Astronomers".
Send Registration Form to:

Larry Deal
6230 SW Chestnut Ave.
Beaverton, OR 97005-4235

Deal@compuserve.com (if you have questions)
(503) 816-2364

Registration Form

Name: _____
Address: _____
City, State, Zip: _____
Phone Number: _____
E-mail (optional): _____

Lodging:

Friday night cabin lodging: $14 x _____ persons, subtotal $_____.
Saturday night cabin lodging; $14 x _____ persons, subtotal $_____.
Friday night Tent or RV lodging; $8 x _____ tents/RV's, subtotal $_____.
Saturday night Tent or RV lodging; $8 x _____ tents/RV's, subtotal $_____.

Meals:

Friday Dinner: $4.75 x _____ persons, subtotal $_____.
Saturday Breakfast: $3.75 x _____ persons, subtotal $_____.
Saturday Lunch: $3.50 x _____ persons, subtotal $_____.
Saturday Dinner: $4.75 x _____ persons, subtotal $_____.
Sunday Breakfast: $3.75 x _____ persons, subtotal $_____.
Sunday Lunch: $3.50 x _____ persons, subtotal $_____.
Total enclosed $_____.

Space Day (Continued from page 5)

Along with a variety of displays from local space groups, OMSI had a good sampling of interesting displays and activities such as the human gyroscope (very popular) and the shuttle landing simulator near the Omnimax theater.

Space Day 2002 was a great educational adventure for kids of all ages. To top it all off, at the end of the day I received a surprise call from Alan Bean, Apollo 12 Astronaut, fourth human to set foot on the Moon. He called to tell me how much he liked the article that Dareth and I had written for the Rosette Gazette on his visit here last fall in Cannon Beach. After recently chatting with him again last month in Hillsboro for NASA's Artrain, a wonderful history of space flight and artistry, it was the perfect way end to Space Day - to talk to an Apollo Astronaut!

ROOSTER ROCK PERSEID WATCH—AUGUST 11, 2002

By Peter Abrahams

The RCA held a public star party at Rooster Rock, with members of the Vancouver Sidewalk Astronomers & Jim Todd of OMSI. In spite of many members being at OSP, and many of the returned members being too sleep-deprived to come out, there was a couple of dozen scopes set up for the public. A moderately large crowd was aware that this was a meteor watching event, as most brought lounge chairs or blankets; and a few tents were set up as well. The crowd was friendly, the meteors were decent, and it was a very warm evening. Some uninvited mosquitoes were very busy feeding off the crowd, and left me with some amazing bites that I won't describe here. My favorite part of the evening was a quite unbelievable sunset, a photo of which is posted online at: : http://home.europa.com/~telscope/temp/Sunset-RRock-1aug02.jpg

UPCOMING OBSERVING

RCA is hosting an observing session at Indian Trail Springs the weekend of Sept. 7-8.

If you'd rather be up a mountain than in the Ochocos, the Mt. Bachelor star party is the same weekend as the RCA event at the OSP site: http://www.mbsp.org/

If you want to drive farther than Indian Trail Springs, there is a good event out by Boise:
http://www.boiseastro.org/isp2002/isp.htm
Stephen O'Meara will be speaking.

AUTUMNAL EQUINOX

Fall officially begins with the autumnal equinox on Sunday, September 23 at 9:55 pm PST. On Saturday evening, September 14th, OMSI, Rose City Astronomers and Vancouver Sidewalk Astronomers will celebrate the autumnal equinox and the beginning of fall with a free Star Party! Join us as we gaze at the autumn sky at OMSI's east parking lot, located on 1945 SE Water Ave, starting at 7:30 pm. From beginners to experts of all ages, here's your opportunity to view the stars, and other objects up-close and personal through telescopes. Viewing highlights includes the Moon, nebula, star clusters and more! For possible weather cancellation, call (503) 797-4610 on September 14 after 3:00 PM to get the latest information.

DONATION

The Verizon Foundation has donated $500. to the Rose City Astronomers, as part of their 'Verizon Volunteers Volunteer Incentive Program'. RCA member and Verizon employee Robert Firth arranged for this donation. We have not had a chance to consider the appropriate uses for this gift, but we will announce the decision when we reach it. RCA greatly appreciates the efforts of Robert and the generosity of the Verizon Foundation. *Peter Abrahams*

Music (Continued from page 7)
istry by Lynette Cook, who takes his ideas on how the extra solar planets might look and fashions them into fantastic paintings. The gift shop had only one signed print of Lynette Cook's "Starry Nights at Lick" and, advised by fellow traveler Bob McGown, I quickly covered it with plastic! Luck still with me, my credit was good and I have the framed print now hanging in my astronomy room, a reminder of that night. But there was still more to come! Through my connections with the SETI Institute we were able to tour the Optical SETI project, currently being conducted on the 40" reflector scope. Remington Stone, Director of Mt. Hamilton Operations, was a most gracious host and full of interesting information.

Lick Observatory atop Mt. Hamilton

Later, lining up to look at the Ring, who should be in back of us but Dr. Marcy! We had some interesting conversation while waiting to observe on the famous 36" refractor. After a few minutes of trying to find the central star (I am pretty sure I did - AV 4.3), we peeked under the raised platform and saw the tomb of James Lick, founder of Lick Observatory. It reminded me of the Egyptian tomb exhibit at the Rosacrucian Museum in San Jose.

The final treat of the night was witnessing an orange-red laser reaching high into the night sky from the 120" telescope down the hill. This was a very special night, in which the scientists were using the lasers to calibrate sky conditions for the telescope. It was a stroke of luck to see that beam which seemed to reach to the top of the sky to create an artificial star. But now it was midnight and time to drive the twisty turning road down Mt. Hamilton, back to San Jose. The totality of the experience - music, stars and scientific research - is one that will last me - well, until the summer of 2003. I plan to make this a yearly pilgrimage.

FROM THE EDITOR

We are still working on getting the database modified so that we can track online versus printed delivery of the newsletter. Until the database can support this, printed copies will continue to be mailed. For online-only delivery, contact me at regis_krug@mentor.com, or:
Regis Krug
30613 SW Kensington Dr., Wilsonville, OR 97070.
(503) 682-2547

September 2002

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

October 2002

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

September

Sept 7-8	Sat-Sun	Dark Sky Star Party—Indian Trail Spring		
Sept 9	Mon.	Board Meeting	OMSI Classroom 1	7:00 PM
Sept 14	Sat.	Autumnal Equinox—OMSI		
Sept 16	Mon.	YRCA (ages 13-18)	Hall in front OMSI auditorium	6:30 PM
Sept 16	Mon.	RCA Kids (ages 4-12)	OMSI lunchroom	7:30 PM
Sept 16	**Mon.**	**General Meeting**	**OMSI Auditorium**	**7:30 PM**
Sept 19	Thurs.	Astrophysics/Cosmology SIG	Linus Pauling House	7:00 PM
Sept 21	Sat.	Telescope Making Workshop	Tech Marine Srvc	10-3

October

Oct 7-8	Sat-Sun	Dark Sky Star Party—Indian Trail Spring		
Oct 7	Mon.	Board Meeting	OMSI Classroom 1	7:00 PM
Oct 14	Mon.	YRCA (ages 13-18)	Hall in front OMSI auditorium	6:30 PM
Oct 14	Mon.	RCA Kids (ages 4-12)	OMSI lunchroom	7:30 PM
Oct 14	**Mon.**	**General Meeting**	**OMSI Auditorium**	**7:30 PM**
Oct 24	Thurs.	Astrophysics/Cosmology SIG	Linus Pauling House	7:00 PM
Oct 30	Wed.	Weather SIG	Colonial Off. Complex SW Barbur Blvd	7:00 PM

The RCA General Meeting falls on the third Monday of each month. We usually meet in the Auditorium at OMSI, next to the Murdock Planetarium. Occasionally the meeting is held in Murdock Planetarium. Check here each month for details, or look us up at the RCA web site (http://www.rca-omsi.org).

The Weather SIG address is: Colonial Office Complex, 10175 SW Barbur Blvd, Suite 100-BB, Portland. From downtown, go south on I-5 to the Barbur Blvd. Exit. Cross back over I-5 and the Complex will be on your left.

RCA CLUB INFORMATION
Message Line: (503) 255-2016
Web Site: http://www.rca-omsi.org

Oregon Museum of Science and Industry
Rose City Astronomers
1945 SE Water Avenue
Portland, Oregon 97214-3354

The
Rosette Gazette

Volume 14, Issue 10 | Newsletter of the Rose City Astronomers | October, 2002

In This Issue:

From Basement Observatory to First Light?

The Departments of Physics at Portland State University, University of Portland, and Linfield College together with the Department of Chemistry at Portland State University have formed a partnership with the goal of revamping their undergraduate astronomy courses in order to reach a larger segment of the academic and non-academic communities. In particular, we want our students to experience the thrill of discovery for themselves, and to that end, the aim of this project is to create an environment where this can be accomplished conveniently. The Chemistry Department is especially interested in using the facility for involving undergraduates in spectroscopic measurements.

With support from North-West Academic Computing Consortium, we have acquired all the hardware for building an automated observatory at Portland State University. We are developing the software for remote control of the observatory over the internet. At the October RCA general meeting, we will share details about the hardware, software and the design features of the applications. We will discuss the opportunities for the larger astronomical community and the challenges still ahead.

Presenters: Erik Bodegom: PSU Physics Dept Chair, University of Technology Delft, Netherlands, PhD Catholic University of America, research in CCDs, low temperature physics and statistical mechanics.
Albert Bae: senior physics major at PSU.
Martin Cenek: graduate student of Computer Science at PSU.

ELECTIONS 2003
RCA BOARD POSITIONS

There are a number of positions open for the 2002 RCA Board of Directors including VP of Community Affairs (by election only), and Director of Special Interest Groups (volunteer), Media Director (volunteer). If you are interested in getting more involved in the RCA activities, please contact any Board member. Carol Huston and Dareth Murray are the nominating committee.

The November 18th General Meeting will include the annual business meeting and election of officers. Please attend this meeting and participate in the election process. Thank you.

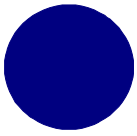
Camp Hancock Dark Sky Star Party October 4-6, 2002

Scott Turner, VP Observing

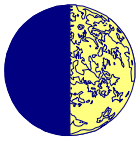
The Camp Hancock star party is scheduled for October 4 and 5 (Friday and Saturday night). For those of you who have not yet experienced this place, allow me to introduce you to Camp Hancock Field Station located near Clarno, Ore-

gon. Camp Hancock is an OMSI sponsored field station for the promotion of science education. The Camp is located the John Day river in NE Oregon. Directions can be found on the RCA's Web site at:
http://www.rca-omsi.org/starpartysites.htm#hancock

October 6



October 13



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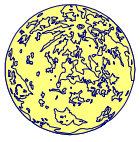

October 29

Club Officers			
President	Peter Abrahams	(503) 699-1056	telscope@europa.com
Past President	Candace Pratt	(503) 296-6758	candace@europa.com
VP Members	Doug Huston	(503) 629-8809	geometer31415@aol.com
VP Observing	Scott Turner	(503) 788-6484	kings1@attbi.com
VP Community Affairs	Norm Trost	(503) 668-7979	normt@europa.com
VP, Communications	Matt Brewster	(503) 740-2329	brewster@teleport.com
Treasurer	Ginny Pitts	(360) 737-0569	vepitts@attbi.com
Secretary	Ron Forrester	(503) 504-8071	rjf@skyhackers.org
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Alcor, Historian	Dale Fenske	(503) 256-1840	fenskedf@juno.com
Library Director	Jan Keiski	(503) 293-3281	jikeiski@juno.com
Telescope Director	Jeff Henning	503-656-3041	j42h@aol.com
Media Director	Glenn Graham	(503) 579-1141	sueandglenn@msn.com
IDA Liaison	Bob McGown	(503) 244-0078	r_mcgown@msn.com
OSP Liaison	Chuck Dethloff	(503) 357-6163	telmor@teleport.com
Camp Hancock Liaison	Glenn Graham	(503) 579-1141	the.grahams@verizon.net
Subscription Director	Larry Godsey	(503) 675-5217	larrygodsey@att.net
SIG Director	Scott Fitzpatrick	(503) 669-8243	slfitzpatrick@cs.com
Youth Programs Director	Jenny Forrester	(503) 504-8071	jenny@theforrest.org

President's Message

By
Peter Abrahams
October 2002

RCA Stuff. Over the years, the RCA has accumulated a lot of 'stuff'. Especially since we became a 501-C-3 organization & began issuing tax deduction forms, we have been receiving telescopes, books, and assorted accessories, with some regularity. We've been grateful for all of it.

Most of the books have gone into the library, most of the telescopes are now being used through the telescope library, and we've found good homes for the things we couldn't keep -- giving magazines & books to RCA members, and a couple of telescopes to other astronomy clubs. One of the main benefits to meeting at OMSI, as opposed to a public hall or university, is that we can keep things there.

However, we have very limited storage space at OMSI, and there are complications (such as the secure, locked area is behind the planetarium, where smoke machines can coat optics with haze.) That is why we often give stuff away at our meetings, and occasionally sell items. Just keeping track of all these things, moving scopes to get at the books, fixing scopes, recording & tracking books, etc., takes a lot of time for board members.

So far, no one has offered to donate property to the RCA for use as an observing site. That would be a wonderful gift, though someone would have to maintain the property & keep track of the chores like taxes, zoning & development, etc. There's nothing like owning property to complicate your life.

RCA

Magazine Subscriptions

One of the main services offered to RCA members is subscriptions to *Astronomy* and *Sky & Telescope* magazines at a much reduced rate from newsstand prices. *Astronomy* $29 for one year or $55 for two years. *Sky & Telescope* is $29.95 for one year.

Checks must be made out to Rose City Astronomers to get the reduced rates.

For further information, see Larry Godsey, Subscription Coordinator, at the Membership Table at General Meetings or check the RCA website. Please note: Allow two months for your subscription to be renewed.

Sky & Telescope Store Discount

RCA members who subscribe to *Sky & Telescope* are entitled to a 10% discount at the *Sky & Telescope* online store at: *http://skyandtelescope.com/shopsky* To get your discount, enter Rose City Astronomers when prompted for your club name during checkout at the *Sky & Telescope* online store.

The "Kids" of Rose City Astronomers

RCA Kids

Children ages 4-12 are welcome to join in fun and educational activities while the grownups attend the monthly general RCA meetings. The kids' meeting takes place in the adjoining cafeteria at OMSI from 7:30 p.m. to 9:00 p.m. If you have any questions, please e-mail Jennifer at jenny@theforrest.org.

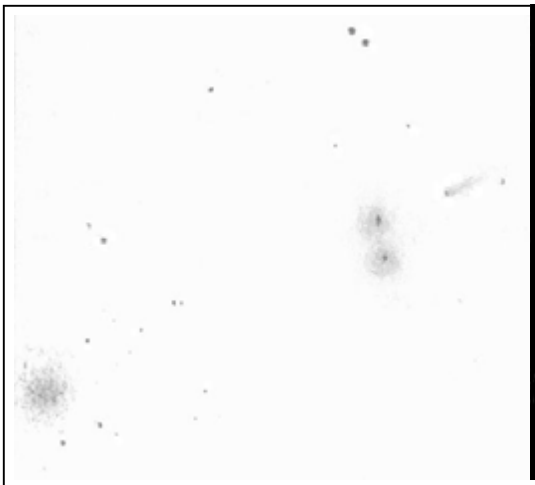
My OSP Observational Highlights

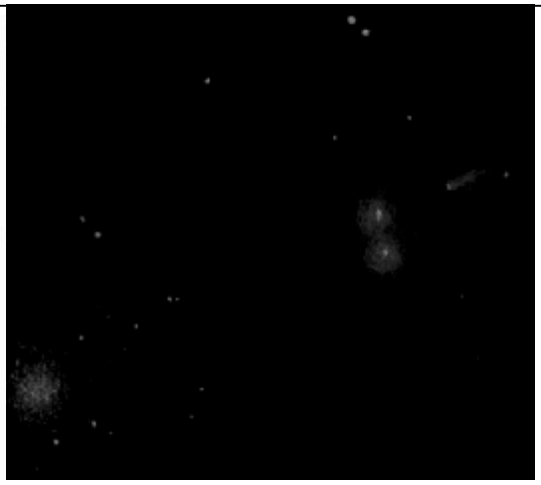
I don't need to write a word about the excellent organization, staging, socializing and most particularly the superb skies of the 2002 Oregon Star Party. I'm sure everyone has heard how this years event was the best ever, so I thought I'd share a few of my observational highlights in this month's article. There is way too much to even briefly touch on so I'll concentrate on just these few:

The NGC 6723 area
I had seen a photo of this area in the August issue of Sky & Telescope magazine and was intrigued by what could be seen visually, especially since at best it would be 8 degrees above the southern horizon at Indian Trial Springs. It seemed worth the effort to dig it out of the thick atmosphere because of the variety and number of objects within a one-degree field of view:

NGC 6723 is a bright globular cluster
NGC 6726/7 are bright reflection nebulae surrounding a bright, widely separated double star.
NGC 6729 is a comet shaped reflection nebula with the variable star R Corona Australis embedded in its brightest end.
IC 418 is a faint reflection nebula surrounding the bright double star Brisbane 14.
Bernes 157 is a large dark nebula intertwined around all the above.

Wow, how could I not give this a try!? My first go at all this was on the night of Aug. 6. Overall the seeing was pretty steady, and I rated it at 7/10 and the transparency at 9/10, but this was for the sky much higher than the –36 degrees declination of this group. The ratings this low were more like 4/10 for seeing and 7/10 for transparency which I considered excellent at the time. Here's what I saw:





What I found most interesting about this field of view was that I was able to see everything that was in the Sky & Telescope photograph so well. Well, everything but the dark nebula, which I could detect by the lack of stars between the globular and the reflection nebulae. Sure that's how a dark nebula is always seen, but the effect in this case was rather mild.

This was through my 20" f/5 scope at 93x, but I was able to zoom in up to 261x and retain decent image sharpness. I am sure that a much smaller scope could see all this in similar dark sky conditions, and it would be a great area for imaging. If you have a clear southern horizon and can see the brighter naked-eye stars of Corona Australis below Sagittarius then have a look at this great area.

(Continued on page 4) OSP Observing Highlights

CLASSIFIED ADS

Run your non-commercial astronomy related classified ad in the monthly Gazette. Rates are reasonable (free!)

FOR SALE: Celestron Firstscope 114, f8, 25 and 10 mm eyepieces, German eq mount, Dec and RA cables, sturdy wood tripod, 6x30 finderscope, Celestron logic motor drive (single axis RA drive). Like new, need the cash for college. $300 OBO. Ray Kaser 503-873-8106, Silverton.

FOR SALE: Meade ETX Astro 90 mm scope with 26mm Super Plossl, #126 2x Barlow, 932 45-deg Erecting Prism, #64 T Adapter. The scope is in like new condition. Only marks are a few set screw divots on the viewfinder barrel. Asking $495.00. Other offers will be considered. Contact Edward Meyer at 503-641-8661, evenings.

FOR SALE: Celestron micro guide eyepiece #94171-brand new, never used! I am asking $120 or I will trade for 2 Plossls. Contact Steve Dearborn at gr8fl2b1@msn.com or (503)261-0377

OSP Observing Highlights (Continued from page 3)

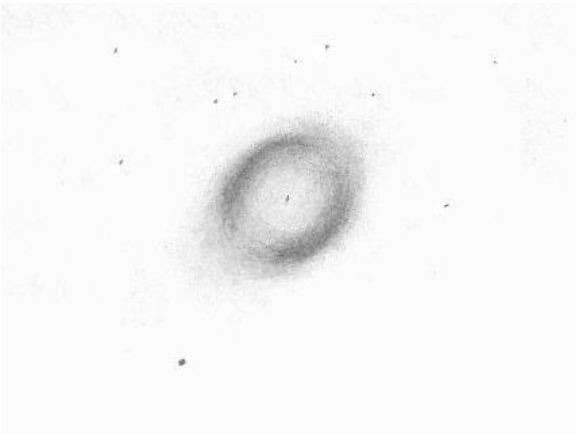
The Trifid Nebula, M20

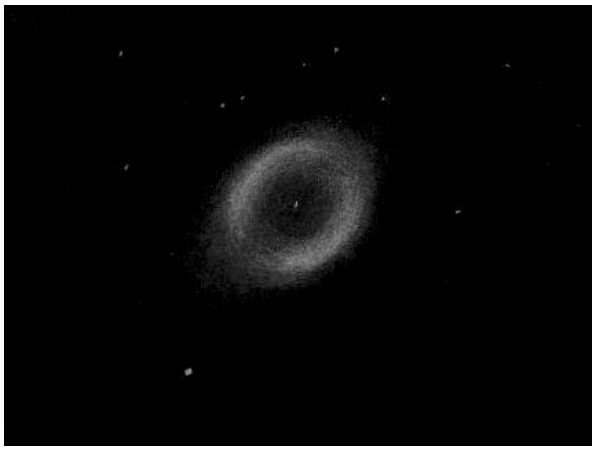
I associate two deep sky objects most closely the OSP. The first is the Trifid Nebula. Situated just north of the Lagoon Nebula in one of the brightest parts of the Sagittarius Milky Way, I've been fascinated with the Trifid since I first became interested in astronomy. I've had most of my best views of this famous object from the OSP and this year was most memorable because I finally decided to sketch it:
What an undertaking this turned it out to be – I needed about two hours at the eyepiece spread out over two nights to complete the sketch! However, it's not really finished because the more I sketched the more I saw and I wasn't able to capture every detail. Time goes by too quickly when drawing something like the Trifid, especially because it begins to set so quickly in the southwest sky. Note the quadruple star near the center of the Trifid – this is something most images don't show well and is part of the visual magic of observing this subtle nebula in a truly dark sky. By the way, I used magnifications from 93x to 170x and no filters with the 20" for this sketch.

The Ring Nebula, M57

My second OSP-esque object is the Ring Nebula. I think many of us have had our best view of the Ring from Indian Trial Springs because the Ring is near the zenith in the early evening, perfectly placed to take best advantage of the clear, dark and steady skies we're often blessed with at the OSP. Combined with its aesthetic appeal and easy to find location it's a favorite on everyone's list. I know it's a crowd pleaser because at every star party when I point my 20" at it, a line will form almost instantly! Kids especially seem to love it and often describe it as "Gray Doughnut".

This year I decided to sketch it too, especially since it happened to be on the joint observing program with the Argentina group, GAMA. Here's my sketch:





The Ring is also the first deep-sky object I saw as a teenager, so I've been familiar with for a long time. But while sketching it, for the first time I noticed that the central hole is round as compared to the oval shape of the outside diameter of the Ring. That's a pretty basic thing to take so long to notice, but aside from illustrating that sometimes I miss the obvious, it also shows that there can be some surprises left in old favorites. The sketch was made with magnifications up to 1250x, but mostly around 720x and without filters.

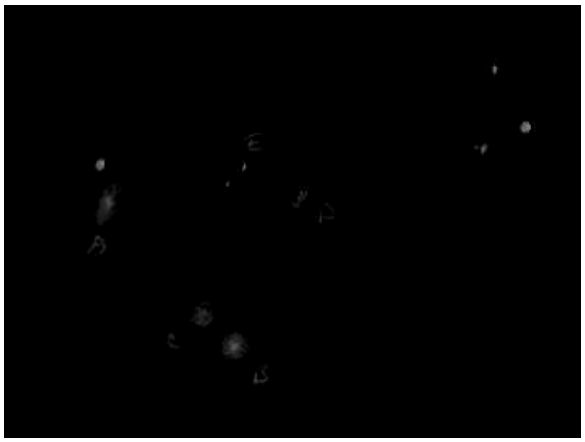
I have two other great memories from this year's OSP centering on the Ring. The first is being able to show the central star to an experienced observer for the first time. The second involved a family that joined the line while I was showing the Ring to a small group. There were three young children, and one boy, probably about 8 or 9 years old who asked "who does the big telescope belong to?". I replied that "it belonged to some goofy guy", and without missing a beat the young lad queried back "are you that goofy guy?". We all enjoyed a good chuckle and he had his first look at the Gray Doughnut.

(Continued on page 5) OSP Observing Highlights

OSP Observing Highlights (Continued from page 4)

Hickson Galaxy Group 99

Early on the morning of August 10, around 3:30am, I had tracked down the faint galaxy group, Hickson 99. My main observing project for the past year has been the Hickson groups and I came to Hickson 99 with no reason to expect anything beyond the ordinary, which is most often a small collection of barely seen faint fuzzies in the same high power field of view. What make this a special memory for me is that Hickson 99 contains the faintest object I know I've seen.



At magnitude 17.3, the "E" galaxy component was an exceedingly faint dot I could barely detect at 500x. Very cool – a barely detectable dot that is actually a galaxy with billions of stars:

I've found that sketching objects like the Hickson galaxy groups helps me detect fainter objects simply because I'm giving my attention more fully to observing. When I detected galaxy "E" I called several experienced observers over for a look as well – some could see it and some couldn't. It was interesting that the observers who did see it are the ones that normally sketch everything they observe. That's not to say that individual differences in visual acuity didn't come in to play but I noted it as an interesting occurrence nonetheless.

There are many more highlights, such as observing with Chuck Dethloff, Tom Osypowski, Tom Polakis, the Swayze Gang, Candace Pratt and Jim Reilly, but I've run out of room to go into each of those experiences this time. But since the 2002 OSP was the best ever that's not surprising – almost everything was a highlight!

SHARE EYE-CANDY ON HALLOWEEN.

Sig Peterson III

When weather permits, Halloween is a good time to share your astronomy hobby with children and your neighbors. Just set up a telescope on the driveway near the street and show the sky to the trick-or-treaters and their escorts as they pass by. Generally you will not have their attention for more than ten minutes at a time. After all - looking through a telescope is not the reason that they are on the street! Remember to fill your pockets with the treats you usually hand out. Then after you give them the telescope eye-candy, you can hand out the sugar candy as they continue on their way.

Plan ahead and pick bright and easily seen objects to view through the telescope. The best choice is a first quarter moon. Unfortunately, you will have to wait for Halloween 2003 for that. This year it will be a last quarter moon - setting before the sun. Since the bright planets will not be available this year, I plan on starting with either M13 or Albireo. Then, maybe move on to M31 later in the evening. Be sure to read up on whatever objects you plan on observing so that you can answer the inevitable questions.

I found that my 8" Celestron classic has proven to be well suited for Halloween viewing. It has a sidereal tracking motor and the orange tube looks very pumpkin-like. Like most star parties open to the public, it is a good idea to protect your scope. A dew-shield can keep little fingers away from a refractor objective or SC corrector plate. Don't use your best eyepieces. There is a good chance that small sticky fingers will be trying to grab a better view. Safety is important so dress any power cord so that it will not be stepped on or tripped over. Since your visitors will come in a wide range of sizes, have boxes or step ladders ready to allow viewing by short 3ft ghosts or 6ft escorts. I also like to keep my backup reserve of candy close, by storing it in my telescope case.

You will be more approachable if you are set up near (but not under) a street light. Parents will be delighted that you are providing an educational experience for their children. A view through a good telescope of something that they have heard about will usually knock their socks off. This is supposed to be fun for you too. If you are not comfortable because your guests are too unruly - just shut it down. I have never had anything but good experiences passing out eye candy on Halloween, and you probably will too.

Special Interest Groups

Astrophysics / Cosmology
Date/Time: October 24, 2002, 7:00 PM
Topic: Leonid Meteor storm review - Glenn Graham
Place: Linus Pauling House, 3941 S.E. Hawthorne Blvd.

Weather
Date/Time: October 30, 2002, 7:00 PM
Place: 10175 SW Barbur Blvd, Suite 100-BB

Telescope Making Workshop
Date/Time: October 5, 2002, 10 AM—3 PM
PLACE: Technical Marine Services Inc, 6040 N. Cutter Circle, Swan Island

RCA Photo Gallery

Summer Milky Way from Sagittarius to Aquila, 28mm lens, scanned from Fujicolor 800 color print and converted to gray-scale. Photo by Todd Leen, Larch Mountain, July 2, 02. (Extensive light pollution gradients removed in PhotoShop.)

Library News

The Rose City Astronomers maintains a comprehensive club library of astronomy related articles, books, CD-ROMs and videos. These items can be borrowed by members through checkout at the general meetings for a period of one month with renewals available by phone or e-mail to the club library director, , Jan Keiski (jikeiski@juno.com) - (503) 293-3281.

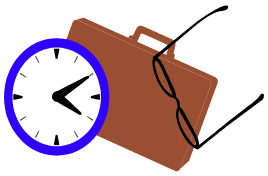
With the library materials growing in size, the staff also has been increasing to keep up. I would like to thank all of them for their time and enthusiasm. The library staff includes: Rea Young - checking in of returned materials & backup for check outs; Richard Labar - setting up of library materials; Larry Froberg - data input & inventory of materials; Tammy Ross - assisting at library table and putting away library materials after the meeting; and Meg Grace - assisting as a backup to help at the library table during meetings.

Color coding of library materials by category has been completed. Online access to a list of library materials will be implemented hopefully by January 2003. Visit the RCA library web page at: http://www.rca-omsi.org/library.htm

RCA MEMBER AWARDS

In recognition of RCA members who complete one of the many observing programs offered by the Astronomical League, we feature those members who have been awarded a certificate of achievement. Dale Fenske, the RCA Alcor to the Astronomical League, has more information if you are interested in an observing program.

Galaxy Groups and Clusters
Robert McGown #3
Messier Certificates (more than 70)
Timothy Glynn #1979
Robert Williams #1990
Meg Grace #1989
Messier Certificates (all 110)
Dareth Murray #1984
Robert King #1987
Don Peckam #1988
Binocular Messier Awards
Ken Hose #515



BOARD MEETING MINUTES

SEPTEMBER 9, 2002

Ron Forrester

Present: Ron Forrester, Doug Huston, Carol Huston, Jeff Henning, Dareth Murray, Regis Krug, Peter Abrahams, Scott Fitzpatrick, Bob McGown, Larry Godsey, Norm Trost, Jan Keiski
Treasurer – Ginny: Nominal
Programming - Matt: This month is Chris Crawford on meteor storms.
Membership - Doug: 440 member families, 174 who haven't renewed.
Star Parties - Scott: Nominal
Community Affairs - Norm: An organization in Newberg would like a presentation.
Sales - Sameer: Nominal
New Members - Carol: New member meeting at the Huston house on the 18th.
Light Pollution - Bob: There is a baseball diamond being built near Haggard which has an elaborate lighting system, and some good policies on use of the lights (9:30pm shutoff), shielded lights.
AL - Dale: Nominal
SIG's - Scott: Nominal
Magazine - Larry: Nominal
Editor - Regis: Will start looking for a new print vendor. Want to submit an issue of the RCA newsletter for the Mabel Sterns Newsletter Award, Dareth will take the initiative on this, with Carol's help. Need to arrange how to determine which members want printed newsletters.
Library - Jan: Wants her own rolling cart.
YRCA - Ron: Nominal
Webmaster - Dareth: Nominal
OMSI - Peter: Jim Todd has 2003 OMSI schedule prepared, will present in October.
Telescope Library - Jeff: Getting a large collection of "stuff", we need to find homes for it all. Jeff is looking at a possible trade of a 10" Dob for the 17" mirror we have.
Copying - Debrah: Nominal
Phone Line: Matt Sept 9th to Next meeting

Dareth will send out an email to help people manage the larger volumes of email present on the RCA list, via filtering on topic, sender, etc. Will also reinforce that if anyone is getting personally offensive email from ay member to notify her of this fact.

Dareth has proposal (provided written copy) regarding removing hosting of web pages for users. Carol motions to accept the written proposal to eliminate member web pages, Norm seconds the motion. Motion passes unanimously.

September is the cutoff for non-renewals. After this month, they are dropped from the membership list.

Board positions known to be open for 2003 are: VP of Community Affairs (by election only), Director of Special Interest Groups (volunteer), Media Director (volunteer).

Newsletter to announce candidate slate and open volunteer positions in October.

Carol proposes that we should make clear that the Board allocates the majority of funds for the upkeep of membership as opposed to Administrative costs.

Discussion of funding a scholarship, the YRCA room rental, etc, using donated funds which RCA receives.

NEW MEMBERS

Jack Evans, Sandra and John Alfredo
Narjala Bhasker, Paul Drews
Steve Eichenberger, George Kerovecz
Yogen Mankikar, Al Marino
Siddhartha Mitra. Stephen Sturges
David Wallace

IN THE OCTOBER SKY

6, New moon. Moon is at perigee (221,779 miles from the earth)
9, Venus is stationary (2 A.M. PDT)
11, Saturn is stationary (6 A.M. PDT)
13, First quarter moon.
20, Moon is at apogee (252,500 miles from the earth)
21, Full moon. Orionid meteor shower peaks
29, Last quarter moon

NGC253 taken at ARGO Sept. 7 by Jim Girard.

REACHING FOR THE STARS - IN 1895

by Murray & McGown

Portrait of Francis Jacobs

Francis Jacob's 170-page handwritten astronomical diary is a unique example of a time in early Portland history, illustrating the mind of a young woman who was interested in science and astronomy. Reflected in her diary are the discoveries and mention of leading astronomers of the day like Emerson Bernard and Edward Pickering. On the front page of the diary is an inscription that indicates the following records and sketches are 'Field Notes' for an Astronomy class at Portland High School (near where Portland State University is today) from October 1898 to June 1899. These notes could have been taken from the blackboard word for word, or more likely, jotted down while observing and then carefully copied into the meticulous diary the young woman made for her class. The original diary is carefully preserved at the Museum of the Oregon Territory in Oregon City.

Francis Jacobs lived in an era of the great refractors. University of California's Lick Observatory, located in the Diablo Range east of San Jose, saw first light in 1888. University of Chicago's Yerkes Observatory was dedicated in 1897. "The Leviathan", built by Lord Rosse in Ireland was completed in 1847, after the Great Potato Famine had ended. In this 72-inch telescope, stars of 18th magnitude could be seen. The first spiral nebulae to be revealed was M51 – known today as the Whirlpool Galaxy. The Earl was the first to suggest that these spirals could actually be rotating masses of stars.

At the turn of the century, study of observational astronomy was especially rooted in naked eye observing and study of binary stars. In her diary, Francis was particularly interested in the color of the stars, even more so than modern amateur astronomers. Star colors ranging from indigo to gold and violet are vivid in this young woman's observation of the stars. It isn't clear whether she observed with a pair of French binoculars, a captain's spyglass or an achromatic refractor. Without the glorious photographs we now have from the Hubble Space Telescope, amateurs of those days had to rely upon Henry Draper's photographs and pencil sketches for their research and inspiration. This was a time when women were becoming interested in the sciences and had begun to play an important role in science and astronomy. At Harvard College Observatory, astronomer William C. Pickering and Henry Draper had the dream of creating an all sky catalogue. To facilitate their astronomical research they recruited women as number crunching 'computers'. These Harvard women researchers are said by some to have 'changed the cosmos'

It was an incredible inspiration for other women across the country to hear what was happening on the astronomical frontiers at Harvard. Two of the 'computers' that attained stellar heights were Annie Jump Cannon and Henrietta Swan Leavitt. Annie was known for her study of the spectra of stars and created a new temperature classification.

Example of a sketch from the diary.

Her colleague, Henrietta Swan Leavitt was nominated posthumously for a Nobel Prize for her astronomical discovery of the period/luminosity relationship of Cepheid variable stars.

Some constellation asterisms used in Francis Jacob's diary were different than they are today. One asterism in particular, the Egyptian Cross, is relatively unknown now. One of the popular twentieth century asterisms, the constellation Sagittarius, or the 'teapot'

(Continued on page 9) Francis

Francis (Continued from page 8)
was originally said to be seen by Magellan on his southern journeys as an upside down teapot. It is never mentioned as the 'teapot' in Jacob's diary. The summer triangle and winter circle asterisms were used in her notes and obviously popular in her era, as today. Her written comments included some Messier catalogue numbers and in some case written on her sketches and diagrams nicknames, such as the 'Dumbbell' nebula. She also referred to M99 as 'St. Katherine's Wheel', a nickname that is not in common use today.

At the turn of the century, the scientific nature of astronomy that Francis Jacobs studied was an observational one rather than a physics-based study. Today the amateur astronomer studying a similar observational astronomy course would be thoroughly challenged to recreate this written and artistic reflection of the constellations, asterisms, stars and deep sky splendor.

Jim Girard's first go at the moon with the ST-8 through the 4" Tak on September 27.

NASA's Space Place

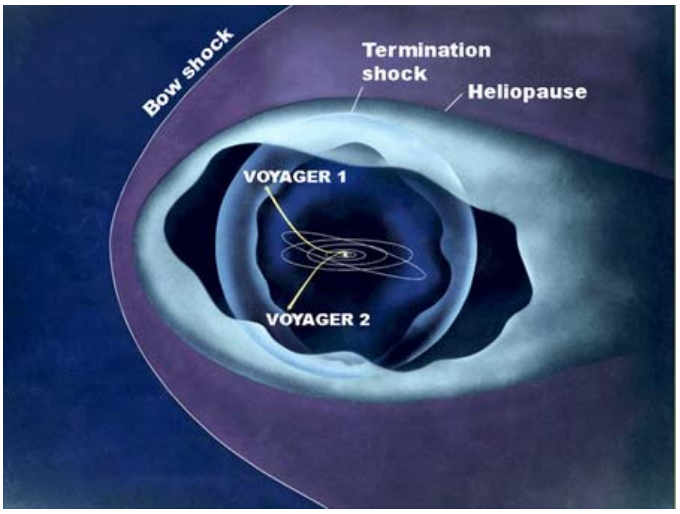
SEEKING THE EDGE OF THE SOLAR SYSTEM

In September and August, respectively, 2002, the Voyager 1 and 2 spacecraft will observe their 25th anniversaries in space, continuing to perform long after their original mission to visit the Jupiter and Saturn systems. After Voyager 1's encounter with the two gas giants, it was aimed upward out of the plane of the ecliptic. Voyager 2, after its visit at Jupiter and Saturn, was given two more planetary destinations, Uranus and Neptune. It completed its "grand tour" of the outer planets in 1989. It was then aimed downward out of the ecliptic plane.

Now, at about 85 AU, Voyager 1 is the most distant human-made object. Round-trip light time is 24 hours. Voyager 2 is at about 68 AU. Their mission now is to study the heliosphere, the vast bubble of space within the Sun's influence, and the heliopause, the boundary of the solar system with interstellar space. At the heliopause, the outward pressure exerted by the solar wind balances the inward pressure of the interstellar wind. The region where solar wind particles begin piling up against the heliopause is the termination shock, where the solar wind should drop from about 1,500,000 kilometers (nearly 1,000,000 miles) per hour to 400,000 kilometers (250,000 miles) per hour. Voyager 1 is already detecting a slowing of the solar wind from the pressure of inbound interstellar particles leaking through the heliopause.

No one knows exactly how much farther Voyager 1 must travel to reach the termination shock or the heliopause. Dr. Ed Stone, Voyager Project Scientist since mission inception, estimates that the spacecraft could reach the termination shock within three years. Once there, Dr. Stone predicts it will still have about 5 billion to 8 billion kilometers (3 billion to5 billion miles) and 10 to 15 years to go before actually crossing the heliopause into interstellar space. Because the heliosphere expands and contracts with the level of solar activity and the inward pressure of the interstellar wind is uncertain, it is very difficult for scientists to estimate the actual extent of the heliosphere.

Read more about the Voyager mission to find the heliopause at http://voyager.jpl.nasa.gov/ . For children, go to http://spaceplace.nasa.gov/vgr_fact1.htm to read about the Voyagers' grand tour of the outer planets and find out the secret code they use to send pictures back from space.



Voyagers 1 and 2 are headed out of the solar system in search of the heliopause, the region where the Sun's wind stops and interstellar space begins.

This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.

October 2002

Sun	Mon	Tue	We	Thu	Fri	Sat
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

November 2002

Sun	Mon	Tue	We	Thu	Fri	Sat
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

October

Oct 5	Sat	Telescope Making Workshop, Swan island		
Oct 4-6	Fri-Sun	Dark Sky Star Party—Camp Hancock		
Oct 7	Mon.	Board Meeting	OMSI Classroom 1	7:00 PM
Oct 12	Sat	Dark Sky Star Party—Klondike		
Oct 21	Mon.	RCA Kids (ages 4-12)	OMSI lunchroom	7:30 PM
Oct 21	**Mon.**	**General Meeting**	**OMSI Auditorium**	**7:30 PM**
Oct 24	Thurs.	Astrophysics/Cosmology SIG	Linus Pauling House	7:00 PM
Oct 30	Wed.	Weather SIG	Colonial Off. Complex SW Barbur Blvd	7:00 PM

November

Nov 2	Sat	Telescope Making Workshop, Swan island		
Nov 2	Sat	Larch Mountain Star Party		
Nov 4	Mon.	Board Meeting	OMSI Classroom 1	7:00 PM
Nov 18	Mon.	RCA Kids (ages 4-12)	OMSI lunchroom	7:30 PM
Nov 18	**Mon.**	**General Meeting**	**OMSI Auditorium**	**7:30 PM**
Nov 21	Wed.	Astrophysics/Cosmology SIG	Linus Pauling House	7:00 PM

The RCA General Meeting falls on the third Monday of each month. We usually meet in the Auditorium at OMSI, next to the Murdock Planetarium. Occasionally the meeting is held in Murdock Planetarium. Check here each month for details, or look us up at the RCA web site (http://www.rca-omsi.org).

The Weather SIG address is: Colonial Office Complex, 10175 SW Barbur Blvd, Suite 100-BB, Portland. From downtown, go south on I-5 to the Barbur Blvd. Exit. Cross back over I-5 and the Complex will be on your left.

RCA CLUB INFORMATION
Message Line: (503) 255-2016
Web Site: http://www.rca-omsi.org

Oregon Museum of Science and Industry
Rose City Astronomers
1945 SE Water Avenue
Portland, Oregon 97214-3354

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The
Rosette Gazette

Volume 14, Issue 11 | Newsletter of the Rose City Astronomers | November, 2002

In This Issue:

Early Instruments of Astronomical Spectroscopy.

Visual and photographic instruments of spectroscopy were developed in the 19th century and were used for the chemical analysis of starlight. The development of spectroscopy in astronomy is the history of astrophysics, and to trim it to more manageable size, presented here will be the highlights of 19th century spectroscopy, which consisted of exhaustive collecting, cataloging, and classifying of data. Theory mostly came later, with the notable exception of Norman Lockyer, and so the development of the understanding of spectra will not be considered. Instead, we will focus on the instruments that were attached to 19th century telescopes and the more interesting phenomena they revealed.

Peter Abrahams is a writer on the history of optical instruments, with articles in "Amateur Telescope Making Journal", the Smithsonian's "Rittenhouse: Journal of the American Scientific Instrument Enterprise", and the "Journal of the Antique Telescope Society". The experience of publishing on the internet has been very productive & rewarding, and recent work has been posted to his web site at http://home.europa.com/~telscope/binotele.htm

Please join Peter at the RCA General Meeting on November 18th in the OMSI Auditorium.

You're Invited! Please Spread the Word!

Imaging the Sky 2002, the Pacific Northwest's premier annual digital imaging conference, takes place November 8th and 9th in Salem, Oregon, at the Tokyo International University campus of Willamette University.

The theme this year is Imaging from the Urban Environment. Several of our guest speakers will also touch on associated topics such as Doug George discussing the production of the new all-sky imaged planetarium software, Paul Boltwood talking about imaging the very faintest objects, plus several hardware oriented talks such as Dr. Morley Blouke about CCD chip developments. Richard Berry and Jim Burnell will do several

(Continued on page 6) Imaging the Sky 2002

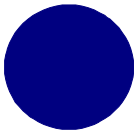
Silent Auction at December Meeting

The telescope library will hold a silent auction at the December general meeting on December 17th in order to dispose of excess equipment in the telescope library.

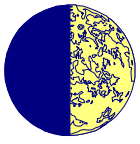
Information will be available on the RCA web site Index section under "auction" and complete information will be in the December newsletter. If you have any donations that we may put up for auction please contact either Jeff Henning or Larry Godsey. All money raised from the auction will go to purchasing equipment to enhance the telescope library.

For further information contact either Jeff Henning or Larry Godsey.

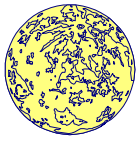
November 4



November 11



November 19



November 27

Club Officers			
President	Peter Abrahams	(503) 699-1056	telscope@europa.com
Past President	Candace Pratt	(503) 296-6758	candace@europa.com
VP Members	Doug Huston	(503) 629-8809	geometer31415@aol.com
VP Observing	Scott Turner	(503) 788-6484	kings1@attbi.com
VP Community Affairs	Norm Trost	(503) 668-7979	normt@europa.com
VP, Communications	Matt Brewster	(503) 740-2329	brewster@teleport.com
Treasurer	Ginny Pitts	(360) 737-0569	vepitts@attbi.com
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OSP Liaison	Chuck Dethloff	(503) 357-6163	telmor@teleport.com
Camp Hancock Liaison	Glenn Graham	(503) 579-1141	the.grahams@verizon.net
Subscription Director	Larry Godsey	(503) 675-5217	larrygodsey@att.net
SIG Director	Scott Fitzpatrick	(503) 669-8243	slfitzpatrick@cs.com
Youth Programs Director	Jenny Forrester	(503) 504-8071	jenny@theforrest.org

President's Message

By
Peter Abrahams
November 2002

The International Space Station might be the next Great Thing for astronomy, or a money sink drawing funds from basic research. But it certainly is visible, and getting more so. It must be visible from any inner city. The fact that there's people scurrying about in that orbiting tin can makes it much more interesting. So, I'd guess that it will be attracting more attention and getting more people to look upwards.

As I write this, a few days of clouds are forecast, but it has been an unusually clear season in Portland. There have been some amazingly clear & steady pre-dawns, with the planets very bright in the sky; and I especially like seeing Orion high in the morning sky. Although I don't like cold, the winter skies from our northerly latitude are really much more interesting than summer skies, and more accessible in the evening & morning.

Observing might slow down in winter, but skygazing is only the central activity of RCA members. There's much more going on, with telescopes, books, computing, the internet, and meetings. Please let RCA members know what you're doing with regard to astronomy, using the e-mail list, the Gazette, or displays at meetings.

RCA

Magazine Subscriptions

One of the main services offered to RCA members is subscriptions to *Astronomy* and *Sky & Telescope* magazines at a much reduced rate from newsstand prices. *Astronomy* $29 for one year or $55 for two years. *Sky & Telescope* is $29.95 for one year.

Checks must be made out to Rose City Astronomers to get the reduced rates.

For further information, see Larry Godsey, Subscription Coordinator, at the Membership Table at General Meetings or check the RCA website. Please note: Allow two months for your subscription to be renewed.

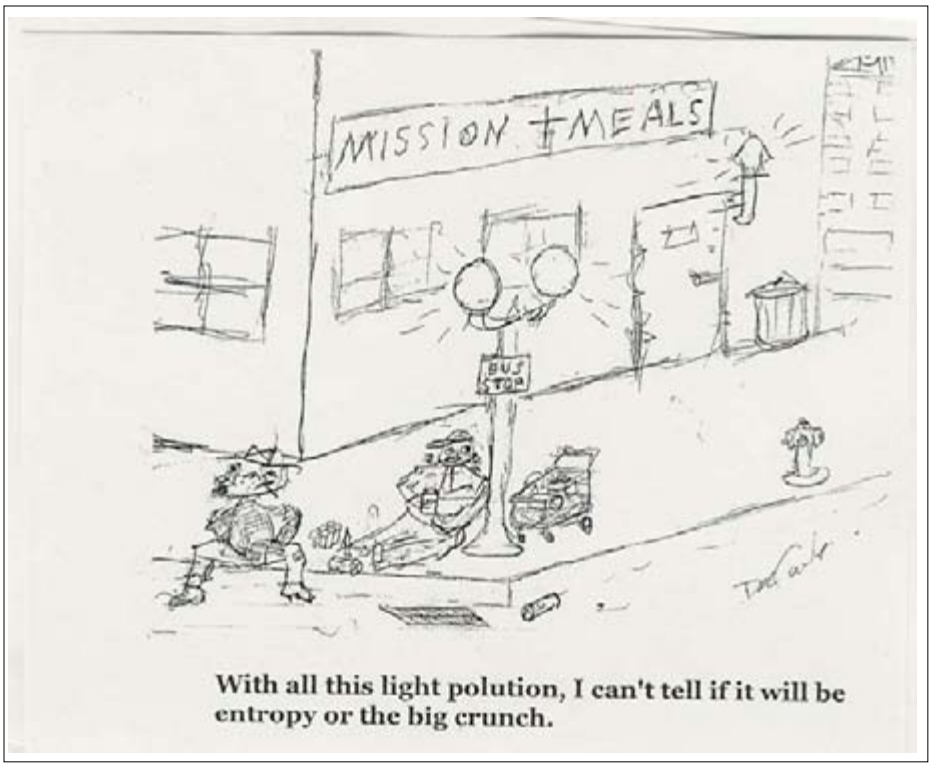
Sky & Telescope Store Discount

RCA members who subscribe to *Sky & Telescope* are entitled to a 10% discount at the *Sky & Telescope* online store at: *http://skyandtelescope.com/shopsky* To get your discount, enter Rose City Astronomers when prompted for your club name during checkout at the *Sky & Telescope* online store.

The "Kids" of Rose City Astronomers

RCA Kids

Children ages 4-12 are welcome to join in fun and educational activities while the grownups attend the monthly general RCA meetings. The kids' meeting takes place in the adjoining cafeteria at OMSI from 7:30 p.m. to 9:00 p.m. If you have any questions, please e-mail Jennifer at jenny@theforrest.org.



Camp Hancock telescope fields—October 5, 2002—Photo by Regis Krug

CLASSIFIED ADS

Run your non-commercial astronomy related classified ad in the monthly Gazette. Rates are reasonable (free!)

FOR SALE: 8" Meade SCT with a heavy-duty field tripod. Fantastic optics. Excellent condition. Lots of accessories: custom-made storage case, custom-made dew shield, dew ring, custom-made eyepiece holder, polar alignment tool, one eyepiece, Telrad, plus more. Easy to use, easy to haul, easy to set up, and easy to store. A complete set-up ready to go. $1,000 OBO. (I completed the Herschel 400 observing program with this scope.) Call Carol at 503-629-8809 or email StarsCarol@aol.com -- or see me at the general meeting on Monday.

FOR SALE: 12-1/2" f/5 Suitcase Dobsonian. $1600 OBO. Built in 1998 and has traveled to Hawaii and back successfully. Travels as two boxes - a carry-on mirror box and the rest in a suitcase that checks as luggage. For details and pictures please visit www.flyingscopes.com/12scope.htm. Optics figured to 1/10 wave or better. For more information please call Ed Stevens at (503) 203-8603, email: ed@flyingscopes.com.

FOR SALE: Coulter red-tubed 13.1" F/4.5 Dobsonian telescope (made in 1993). Excellent high-contrast optics. It ranks as one of the finest Coulters that I have looked through and used. Resolution of globulars is a breeze with this scope! Telrad is included. $590 and will accept as partial trade Gailand Co. oculars in 4, 7, & 10.5mm focal lengths (these were sold by Telescopics and others in the 60s and 70s and have a Saturn logo on the eyecup). Contact john Siple, 33230 Primrose Rd., Corvallis, OR 97333. (541) 758-8326

WANTED: TASCO 108mm F/14.8 Model 20TE Observatory Model refractor as sold in the 1960s and 70s. See November 1969 issue of Sky & Telescope magazine (under Starflite) for a complete description. Scope has two-part pier, large focuser, two finders, and equatorial mount w/drive. Pay up to $1800 cash.). Contact john Siple, 33230 Primrose Rd., Corvallis, OR 97333. (541) 758-8326

2003 RCA BOARD OF DIRECTORS SLATE OF OFFICERS

In accordance with our bylaws, the November General Meeting is the annual business meeting of our organization. As a 501-C-3 organization, a Club officer is required by law to report our activities and financial condition. This meeting also includes the election of officers for the following year. The vote will commence at the onset of the general meeting at 7:30 PM, Monday, November 18th in OMSI's Auditorium. The elected positions will assume their roles January 1.

The slate for the election of officers for the year 2003 is (asterisk indicates incumbent position holder):

President: Peter Abrahams *
Vice President, Star Parties: Scott Turner *
Vice President, Membership: Doug Huston *
Vice President, Communications: Matt Brewster *
Vice President, Community Affairs: Padraic Ansbro
Treasurer: Ginny Pitts*
Secretary: Ron Forrester*

In addition to elected officers, RCA has many non-elected appointed positions that serve the membership. These positions and their holders are:

Alcor/Historian: Dale Fenske
Newsletter Editor: Regis Krug
Sales Director: Sameer Ruiwale
Library Director: Jan Keiski
Telescope Librarian: Jeff Henning
Special Interest Group Director: Matt Brewster
Media Director: Ron Forrester
Webmaster: Dareth Murray
Youth Director: Jenny Forrester
New Members Advisor: Carol Huston
IDA Liaison: Bob McGown
OSP Liaison: Chuck Dethloff
Camp Hancock Liaison: Glenn Graham
Subscription Director: Larry Godsey

With your support, this group of volunteers will continue to offer the membership of the RCA a wide range of services and activities throughout 2002.

Many thanks to all those who assist the Board members in carrying out the many programs and projects we are involved in throughout the year.

Our organization also thanks Jim Todd, OMSI Planetarium Manager, for his continued support of our organization. We are able to conduct these activities in large part due to the generosity of Jim and OMSI.
Thanks to ALL!

RCA Photo Gallery

Below—Cocoon Nebula (IC5146 in Cygnus) —Photo by Terry Johnson, 092202.

Right—Jan Keiski at Keck observatory in Hawaii (October 6, 2002)

Special Interest Groups

Astrophysics / Cosmology
Date/Time: November 21, 2002, 7:00 PM
Topic: Oregon Team SETI—Is Anyone Out There?
Speaker: Dareth Murray
Place: Linus Pauling House, 3941 S.E. Hawthorne Blvd.

Weather
Date/Time: No meeting in November

Telescope Making Workshop
Date/Time: November 16, 2002, 10 AM—3 PM
PLACE: Technical Marine Services Inc, 6040 N. Cutter Circle, Swan Island

Lost and Found

Camera—found on the trail at the Camp Hancock star party the weekend of Oct. 4-6. Contact Rod Harris at (503) 397 6538.

RCA Member Awards

In recognition of RCA members who complete one of the many observing programs offered by the Astronomical League, we feature those members who have been awarded a certificate of achievement. Dale Fenske, the RCA Alcor to the Astronomical League, has more information if you are interested in an observing program.

Binocular Messier Certificate
Gene Schaffer #527

Lunar club certificates
Andrea Payne #323
Meg Grace #324

Library News

The Rose City Astronomers maintains a comprehensive club library of astronomy related articles, books, CD-ROMs and videos. These items can be borrowed by members through checkout at the general meetings for a period of one month with renewals available by phone or e-mail to the club library director, Jan Keiski (jikeiski@juno.com) - (503) 293-3281.

With the library materials growing in size, the staff also has been increasing to keep up. I would like to thank all of them for their time and enthusiasm. The library staff includes: Rea Young - checking in of returned materials & backup for check outs; Richard Labar - setting up of library materials; Larry Froberg - data input & inventory of materials; Tammy Ross - assisting at library table and putting away library materials after the meeting; and Meg Grace - assisting as a backup to help at the library table during meetings.

Color coding of library materials by category has been completed. Online access to a list of library materials will be implemented hopefully by January 2003. Visit the RCA library web page at: http://www.rca-omsi.org/library.htm

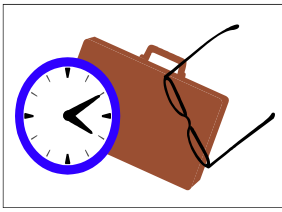
Happy Holidays from the RCA Library Staff

Imaging the Sky 2002 (Continued from page 1)
presentations, as will new popular author, Ron Wodaski. Dave Kenyon will do his usual introductory session at the beginning of the conference. There should be several sessions for everyone at all levels of expertise and interests.

See all the details, and registration info ($65 by Nov. 6th, $75 at the door) at
http://home.teleport.com/~argo/its2002/its2002.html
This isn't a star party, but rather, an opportunity to learn from and informally bend the ear of imaging gurus. There will be a CD-ROM of conference talks distributed.

Please invite your fellow astronomers to check out the URL and to attend the conference. We really appreciate pre-registration as that enables us to plan the meals and facility details to provide optimal service for you.

See you at ITS2002! Rick Kang - Co-Chair



BOARD MEETING MINUTES

OCTOBER 7, 2002

Ron Forrester

Present: Ron Forrester, Carol Huston, Larry Godsey, Jeff Henning, Dareth Murray, Regis Krug, Matt Brewster, Bob McGown, Scott Fitzgerald, Ginny Pitts, Sameer Ruiwale

Guests: David Wallace , Padraic Ansbro, Jim Todd

Treasurer – Ginny: $15,774 in bank. Moved money to local accounts.

Programming - Matt: October Eric Bodegom, November Peter on Antique Telescopes (expected)

Membership - Doug: 452 member families, 154 will drop off for non-renewal.

Star Parties - Scott: Jim is here to present the 2003 star party schedule. No major issues found. Would like to vote via the email list for the schedule approval.

Community Affairs - Norm: Nominal

Sales - Sameer: September sales were $183. Dareth will fill in for Sameer in November, as he will be out of town.

New Members - Carol: Had a new member meeting at Carol's house last month. 15+ people attended, and went very late and was generally a success. Have about 6 people who have signed up for another one, perhaps mid-November.

Light Pollution - Bob: Call from Jeff Kaechele, who is a teacher in Clackamas county, discussed a light pollution ordinance in Clackamas county. Dareth and Bob wrote letters about light pollution in said county, mentioned Haggard Observatory. Extended invitation to speak for a few minutes at a general meeting about his efforts in light pollution.

AL - Dale: Nominal

SIG's - Scott: Cosmology SIG went well, Leonid Meteor Storm this month.

Magazine - Larry: Nominal

Editor - Regis: Nominal

Library - Jan: Nominal

YRCA - Ron: Nominal

Webmaster - Dareth: Still working on removing the members pages. Renewal with EasyStreet is coming up, $120. Our domain name registration is coming up too.

OMSI - Peter: Nominal

Telescope Library - Jeff: New 10" coulter from Brian Richardson. Getting lots of component donations. Suggestion is to have a silent auction for this equipment at the Holiday Party.

Copying - Debrah: Nominal

Phone Line: October 7th to November, Larry; November to December is Carol

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Holiday Party: Auditorium is reserved – if café is unreserved we can use it as usual. Same plan as last year, including additional food to supplement. Carol volunteers to maybe do Messier (or other) trivia contest at the party (Ron volunteers to help her). Get member slides for observing memories of the year. Suggestion to put more tables together, need more volunteers to help with that process. Lets brainstorm some ideas for the Holiday party via the email list. Regis volunteers to put together a slideshow if members will email him pictures with 1 paragraph descriptions. Regis suggests we have the attendee's vote for the best picture, perhaps award the winner?

Auditorium is booked for 2003 for general meetings as presented by Jim.

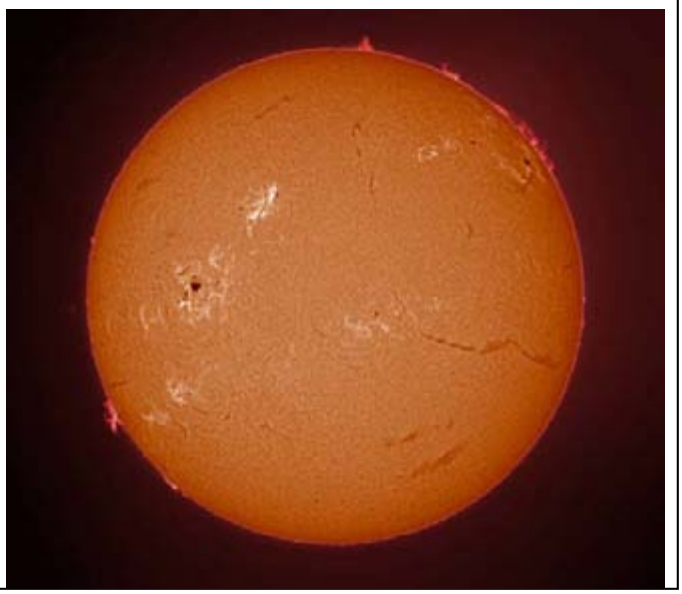
Board meetings for 2003 are 1st Monday of each month, except September which will be the second Monday (the 8th) due to a holiday, as presented by Jim.

Elections Process:

- VP of Community Affairs (by nomination) -- Padraic Ansbro has volunteered
- Media Director (an appointment) – Ron Forrester
- SIG Director (an appointment) – Matt volunteers
- Election before general meeting will occur in November.

Annual Financial Reporting: Start thinking about what kinds of things the club should report on an annual basis regarding our financial activities, including a yearly checklist to make sure we are keeping our obligations regarding our non-profit status. We may want to update the list of officers annually for the State.

An AP130mm telescope, SBIG CCD camera, and SM90 Coronado filter were used to capture this photo of the Sun in August 2002 by Peter Ward



SOUL OF THE ESKIMO
BALLAD OF THE GREENLAND METEORITES

by Murray & McGown

Ages past, a silver ghost crossed the cold Greenland skies
And a fireball landed near igloos standing by the northern shore
Inuit hunters found the landing place with ever-watchful eyes
And that rock became the 'Soul of the Eskimo' forever in their lore.

Word was spread by those who wandered near and far
That a great strange iron stone lay nearby the shore
It seemed to have the power coming from distant star
Which could make a spear magic, with powers to soar.

Gathering at the polar field where fell the great iron rock
Natives crafted mighty spears from the meteorite they had tamed
Believing that the stones' spirit, coming from the sky of the Ruk
Could grant them better hunting luck and aid their aim.

Seeking out the stone from the stories they had sown
Came by a white man, Peary, of whom they had been warned
The magic spirit rock, Ahnighito, he was shown
Saw it as a 'celestial demon', he took it and they mourned.

Peary crossed the Greenland tundra with dogs and sled
And doing so he earned the trust of the native sons
He thought the Eskimo iron was wasted where it lay, so instead
He claimed it all to take away - sailing into the midnight sun.

'Hope', his arctic vessel, came to shore one night
With his trusty crew, he slid the stone onto the deck
Groaning with the heavy burden, the ship still made its flight
The 'celestial demon' had tried and failed to make the ship a wreck.

The white men robbed ancient relics from Inuit graves
In Peary's quest of Eskimo iron, he left no stone unturned
Not caring about the native people or their ways
He stole their children onto his ship and never returned.

Of the native children stolen only one strong boy survived
His story was told to one who wrote for all the world to read
The lost heritage, which burned inside his soul, was revived
In a book so all would know of Peary's cold and heartless deed.

Years passed and the boy died having left his people in the north
After trying to teach them the ways of the New World he had found
Admiral Peary spent his later years recounting his great worth
But not the true story of the rock that he took from Greenland ground.

This is a true story of Admiral Peary's relentless quest for three massive meteorites weighing 34 tons found in Greenland and what happened to them and the people he used so heartlessly. The Ruk is a polar seabird.
Picture taken by Peary, courtesy of Dartmouth College collection.

In The November Sky

4, New moon.
11, First quarter moon.
19, Leonid meteor shower peaks
19, Full moon.
27, Last quarter moon

New Members

Todd and Tim Bauman
Tom Lakovic
Randy Lee
Barry and Pauline Mogus
Patricia and Niles Seifert
Arnie Sonnitzer
Dennis Vanassche

NASA's Space Place

Satellites to the Rescue!

A ship on the ocean is swamped by a giant wave. A small airplane loses power and crash lands on a mountain field. A snowmobiler in Alaska breaks a tread and is lost far from civilization. How do the brave people who rescue folks in peril find out where they are?

Search and Rescue Satellite-Aided Tracking, called SARSAT for short, uses two types of satellites to help people (and their pets!). Geostationary Operational Environmental Satellites, nicknamed "GOES," fly in place. They never stray from their spots above Earth. Polar Orbiting Environmental Satellites, called "POES," are in constant motion. They orbit Earth several times a day. The main job of these spacecraft is to track environmental conditions around the world. But GOES and POES also hear special distress signals from ships, planes, and individuals. The satellites send the information to a control center in Suitland, Maryland. The National Oceanic and Atmospheric Administration, an agency of the U.S. Government, operates the center. They learn who's in danger and where the emergency is. Then they send the Coast Guard or the Air Force to save the day!

Ships, airplanes and people use different kinds of equipment to transmit emergency signals. All these devices broadcast distress messages to GOES and POES. Personal Locator Beacons for individuals are available only in Alaska, but soon may be sold in the rest of the United States. Backpackers and others who travel to remote areas could carry these devices in case they get into trouble.

NASA provided the satellites used for SARSAT and the National Oceanic and Atmospheric Administration operates them. SARSAT has helped to locate and rescue more than 12,800 people worldwide and 4,300 people in the United States. The Air Force and Coast Guard also rescued dogs and other pets that were traveling with their families when disaster struck!

Find out more about SARSAT at http:// www.sarsat.noaa.gov. Also check out The Space Place Web site at http://spaceplace.nasa.gov/goes/orbits.htm to learn how these satellites orbit Earth and how GOES can hang over one spot all the time!

Search and Rescue Satellite Aided Tracking (SARSAT) system helps find people in trouble and send rescuers to help.

This article was written by Eric Elkins and provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.

November 2002

Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

December 2002

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

November

Nov 2	Sat	Larch Mountain Star Party		
Nov 4	Mon.	Board Meeting	OMSI Classroom 1	7:00 PM
Nov 16	Sat	Telescope Making Workshop, Swan island		
Nov 18	Mon.	RCA Kids (ages 4-12)	OMSI lunchroom	7:30 PM
Nov 18	**Mon.**	**General Meeting**	**OMSI Auditorium**	**7:30 PM**
Nov 21	Wed.	Astrophysics/Cosmology SIG	Linus Pauling House	7:00 PM

December

Dec 2	Mon.	Board Meeting	OMSI Classroom 1	7:00 PM
Dec 14	Sat	Telescope Making Workshop, Swan island		
Dec 16	Mon.	RCA Kids (ages 4-12)	OMSI lunchroom	7:30 PM
Dec 16	**Mon.**	**General Meeting (Holiday Potluck)**	**OMSI**	**7:30 PM**

The RCA General Meeting falls on the third Monday of each month. We usually meet in the Auditorium at OMSI, next to the Murdock Planetarium. Occasionally the meeting is held in Murdock Planetarium. Check here each month for details, or look us up at the RCA web site (http://www.rca-omsi.org).

The Weather SIG address is: Colonial Office Complex, 10175 SW Barbur Blvd, Suite 100-BB, Portland. From downtown, go south on I-5 to the Barbur Blvd. Exit. Cross back over I-5 and the Complex will be on your left.

RCA CLUB INFORMATION
Message Line: (503) 255-2016
Web Site: http://www.rca-omsi.org

Oregon Museum of Science and Industry
Rose City Astronomers
1945 SE Water Avenue
Portland, Oregon 97214-3354

The
Rosette Gazette

Volume 14, Issue 12 | Newsletter of the Rose City Astronomers | December, 2002

In This Issue:

RCA CHRISTMAS HOLIDAY BUFFET

December 16th

In keeping with annual tradition, the December meeting of the Rose City Astronomers will be a holiday buffet and social gathering for all family members.

Please note this event will be held the **third Monday of December**, December 16h at 7:30 PM in the OMSI **Cafeteria.**

In addition to the pot luck dinner, we will also have a swap meet, silent auction, holiday door prizes and sharing time for astronomy photos and astro-equipment. Save time to shop at the RCA Sales Table for your favorite holiday astronomy gifts.

Each member is asked to bring a dish to serve 10-12 people. PLEASE BRING PLENTY!

If your last name begins with please bring:

A to H Main dishes
I to P Appetizers/Side Dishes
Q to Z Desserts

Plates, silverware and beverages/ice will be supplied by the club. Just bring your dish (and a serving utensil) and enjoy the holiday spirit of the RCA membership.

The **Swap Meet** will be back by popular demand! There will be ample empty tables around the room for everyone who is interested in displaying items for the Swap Meet. There will be excellent holiday deals!

If you have taken any astronomy pictures this year and want to share them, email them to regis_krug@mentor.com. Regis will compile a running slide show of submitted astronomy photos. Include a short paragraph that describes equipment used, object, and conditions. Members can also bring their latest in new astro-'stuff.' If you have a fun gadget/item/tool—bring it!
The RCA Library will be open during the December potluck.

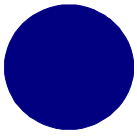
ROSE CITY ASTRONOMERS SILENT AUCTION MONDAY, DECEMBER 16TH, 2002 7:00 TO 8:45PM.

Due to limited storage space at OMSI and an excess of astronomical equipment that we currently cannot use, we will be auctioning off items in the Telescope Library that are not needed for the RCA club scopes.

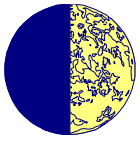
The purpose of the silent auction is to give everyone a fair chance at any item and to make some money for the telescope library for future purchases of needed equipment.
The auction will held be from 7pm until 8:45pm. Some items will close as early as 7:45 and others will close as late as 8:45. The time that bidding will close on items will be clearly marked.

(Continued on page 8) Silent Auction

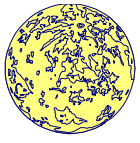
December 3, 11:34 PM



December 9, 7:49AM



December 19, 11:10 AM



December 26, 4:31 PM

Club Officers			
President	Peter Abrahams	(503) 699-1056	telscope@europa.com
Past President	Candace Pratt	(503) 296-6758	candace@europa.com
VP Members	Doug Huston	(503) 629-8809	geometer31415@aol.com
VP Observing	Scott Turner	(503) 788-6484	kings1@attbi.com
VP Community Affairs	Norm Trost	(503) 668-7979	normt@europa.com
VP, Communications	Matt Brewster	(503) 740-2329	brewster@teleport.com
Treasurer	Ginny Pitts	(360) 737-0569	vepitts@attbi.com
Secretary	Ron Forrester	(503) 504-8071	rjf@skyhackers.org
Sales Director	Sameer Ruiwale	(503) 681-0100	sameer_ruiwale@hotmail.com
Newsletter Editor	Regis Krug	(503) 682-2547	regis_krug@mentor.com
New Member Advisor	Carol Huston	(503) 629-8809	StarsCarol@aol.com
Web Master	Dareth Murray	(503) 656-1293	dareth@cablerocket.com
Alcor, Historian	Dale Fenske	(503) 256-1840	fenskedf@juno.com
Library Director	Jan Keiski	(503) 293-3281	jikeiski@juno.com
Telescope Director	Jeff Henning	503-656-3041	j42h@aol.com
Media Director	Glenn Graham	(503) 579-1141	sueandglenn@msn.com
IDA Liaison	Bob McGown	(503) 244-0078	r_mcgown@msn.com
OSP Liaison	Chuck Dethloff	(503) 357-6163	telmor@teleport.com
Camp Hancock Liaison	Glenn Graham	(503) 579-1141	the.grahams@verizon.net
Subscription Director	Larry Godsey	(503) 675-5217	larrygodsey@att.net
SIG Director	Scott Fitzpatrick	(503) 669-8243	slfitzpatrick@cs.com
Youth Programs Director	Jenny Forrester	(503) 504-8071	jenny@theforrest.org

President's Message

By
Peter Abrahams
December 2002

Local history.

A quiet & overcast winter evening, a good time to recollect some of our worthy predecessors.

George Croston of Aloha, Oregon, was featured in the article 'Mirror Making', by Albert G. Ingalls, in the June, 1950 Scientific American, pages 60-63. He was (or is) a telescope maker, who took a pitch lap devised by John Brashear and adapted it for use in one step of the mirror making process, the final polishing of a sphere, when any tiny imperfections left by earlier procedures or tools are removed, preparatory to parabolization. The special tool is useless for polishing from fine grinding, or for figuring to a parabola, but it is useful for final polishing of flats.

To make the tool, Croston hardened his pitch by adding rosin, and poured it onto a Pyrex or metal disc, then cooling it under water, and cutting into the pitch a zigzag of narrow, parallel rows, to a profile like a coarse toothed rip saw, with one side of each V to be vertical, to effectively wipe away the thin slurry of rouge he used. The tool was formed to the mirror by slightly warming under tepid water, laying on top of the mirror with soapy water, and using short gentle strokes in a direction parallel to the rows until full contact across the tool was reached. To polish, the tool was cooled, and used on top of the mirror, pushing with pressure at right angles to the lines of rows, using strokes about one sixth the diameter of the mirror. The mirror was rotated 90 degrees after 10 strokes, and another 10 strokes were usually sufficient. If the mirror still showed irregularities, all surfaces were washed and the lap slightly

(Continued on page 6) Peter Abrahams

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Run your non-commercial astronomy related classified ad in the monthly Gazette. Rates are reasonable (free!)

FOR SALE: 6" f/8 telescope mirror kit, Foucault knife-edge tester, and grinding/polishing stand. The kit is complete, and the mirror blank has already been ground to a spherical surface. Everything you need to complete the polishing is included. The tester is homemade of good materials and is quite accurate. $65. Contact John Wyatt at 360-256-5593

FOR SALE: TeleVue TV-102 880mm f/8.6 apochromatic refractor (ivory color) with the following: 2" star diagonal, TV Gibraltar mount (walnut), TeleVue Starbeam finder w/mirror, TeleVue Plossl 20mm eyepiece, TeleVue Radian 3mm eyepiece, rugged storage case, and all accompanying papers. I purchased this package from www.Astronomics.com in January 2002 for $3800.00. Pristine condition. My sale price is $3000.00. Contact **Santosh Pandipati, M.D.,** santoshpandipati@hotmail.com (206) 851-7941

FOR SALE: Complete Celestron C11 setup. It is fully functional and in good condition. THere are no scratches that I can see on the glass. Both motors work great as well as the tracking (if you get it polar aligned right). The wedge and tripod were made for an 80's C14 and are very sturdy. As you can see from the pictures there is some paint ships on the tripod and on the scope where the fork mount attaches but nothing major. I have no time to go out and view so I am putting my hobby on hold until my kids get old enough to enjoy it. For specific details on this scope, go to:
http://home.attbi.com/~koden/scope.htm
Or Contact Mark Payne 503-803-8320

2002 LEONIDS SIZZLE—Again!

After a month of solid rain, we were blessed with fabulous clear skies all day, and I went up to Larch Mountain along with dozens of others. Arriving just short of midnight, I was immediately treated to several long grazing bolides, in a display that lasted about 1/2 hour. I recall that one grazer split into two about halfway through its burn, leaving a long, forked trail that glowed for a few minutes.

Later, about 1 - 2:30 am, as Leo rose above the treelike, we were seeing hundreds of meteors per hour, and it was easy to notice that the trails got shorter as the radiant rose higher. The shower seemed to peak around 2am, and I could easily pick out the radiant as the meteors were coming in groups of three to five at once. The shower began to dwindle, and I was getting very tired, so I headed back down at 2:30.

Arriving at the Women's Forum Overlook, I decided I had to see more, because it was getting dangerous driving with my eyes in the sky instead of on the road. And I was treated to a fabulous display, which was easily as good as what I saw earlier. Then, the amazing happened: It seemed that a flash bomb went off over our heads! The ground lit up as though someone flashed a camera, we looked up and there was this huge glowing cloud! It slowly faded and grew, very slowly, and I stayed for 30 minutes watching it! Then, I packed it in. I knew I had just seen the meteor display of my life, and that even though 2002 was predicted to be similar, my chances were very slim of having another one like this.

Turns out I was right about those odds! **Rob Brown** (and if you haven't realized it by now, that's LAST year's report!)

Form in your mind this picture: At 2:00 A.M. in the sparsely settled areas east of Bend, Oregon, many cars are seen racing back and forth. Either they are crazy astronomers like me looking for small openings in the clouds as the magical time fast approaches or this part of Bend is a good place to party on a Monday night.

I was one of those seekers. My son and I did find a small opening in the clouds that lasted for about a half hour. The opening extended perhaps 120 degrees east-west by 50 degrees north-south at its best (roughly centered on Orion).

During two brief intervals (maybe a minute or two in length) we could see 6-8 Leonids per minute but mostly it was one or two Leonids per five minutes. It seemed to stop quite suddenly at around 3:00 A.M. Our window shut down about then too. **John C. DeLacey**

Not wanting to barrel up the Columbia to an unknown ridge, I contacted some star friends in Oregon City who thought it would be a hoot to drive around Clackamas County looking for sucker holes.

We found a rather nice one near a private airstrip near Canby and settled in from 12:30 a.m. to 2:30 a.m. We could see Polaris clearly most of the time as well as Castor and Pollox, plus Jupiter. The sharper eyed duo in our foursome counted five small Leonids and one spectacular one that lit up the cloud cover about 1 a.m. By 2:30 a.m., the hole closed up and our popcorn was a memory. But, hey! We gave it a shot. **Don Wright**

After a late start out of Scappoose, and a couple of missed turns into Dufer, we towed the trailer up to the intersection of Tygh Ridge Rd and Easton Canyon Rd., where we "set up shop" about 6 pm. We followed Robin up there, actually, and that site looked better than the originally suggested site a mile further where the pavement ends.

First impression was the wind, which was buffeting the trailer all night. We could barely see the man in the moon. At least the temperature was warm for this time of year. So while Darla made hot chocolate, I called Scott at the meeting and passed on a report from "Tygh Station". Then the three of us just stayed cozy in the trailer, receiving numerous calls from caravaners finding their way up to us. About 11:15 people started to arrive. Round 'bout midnight, a big hole opened up above us, portending a good night. I quickly set up a couple of chaises for Darla and me in the lee of the trailer, which also shaded us from the moon. Didn't have to wait long before a long, bright grazer shot across Orion. This was indeed looking good. Alas, that's as good as it got. After that, the hole blew off to the south, and everyone spent their time gazing around the edges of the clouds scudding by, and speculating as to the prospects for the rest of the night. By 2:40, the predicted magic hour, Tygh Ridge was completely socked in. All totaled, I think I counted seven Leonids for the entire night.

Oh well, the company was superb, the trailer was cozy toasty, and at least it didn't rain.

Next morning, Darla and I woke up to find ourselves alone up there, except for the wind, which stayed the night. Tygh Ridge is sure stark in the morning. We mozied down to the local restaurant/bar in Dufer and ordered breakfasts we could not finish. These hummers were designed either for folks that put in a full day's work on the ranch, or for someone intent on adding coronary bypass surgery to their list of personal accomplishments. **Howard Knytych**

With the forecast deteriorating as of 11pm, I took off for the south and reputedly clear skies. I drove for over 2 hours before I saw

Leonids (Continued on page 6)

THE OBSERVERS CORNER .....Howard Banich

There are times when everything seems to come together. I had one of those rare moments at Steens Mountain this past October – on Tuesday, October 8th, from about 9:00pm to 10:45pm to be precise.

The sky had been beautifully clear all day. There was little moisture in the remarkably clear air giving the sky a deep blueness we seldom see in the Willamette Valley. The deep blue went right up to the Sun; also something rare around here and signaling the night would at least be exceptionally transparent. The previous two nights had featured bright auroral displays, which were wonderful, but they spoiled the overall darkness of the sky. It seemed unlikely we'd have three nights in a row with a bright aurora, but who could say? More unlikely things happen all the time.

One of the reasons to make the 8-hour drive to Steens Mountain is the hope of catching observing conditions at their peak. The Fish Bowl area near the Fish Lake campground at 7400 feet is perhaps the highest altitude and totally non-light polluted site one can comfortably observe from in Oregon, and it always holds the potential of super great skies. But catching the perfect moment is rare when only a few nights a year are available to be there.

But this year luck smiled upon us for a little over an hour and half. There was no aurora. The sky was incredibly dark, clear and transparent. And God bless us, for that small window of time the seeing was nearly perfect too.

Around 8:30pm I was having another look at the NGC 6723 area with my trusty 20" f/5 scope and immediately noticed it surpassed my views of this area from the OSP this past August. The dark nebula surrounding the globular and nearby reflection nebulae was much more obvious and more faint stars were visible. Hmmm, the stars actually looked pretty sharp at 170x – and this is only a few degrees above the southern horizon. Right away that little light bulb in my head came on and I pointed the scope more nearly straight up. I was curious if those low power pretty sharp stars on the horizon translated to really sharp stars at higher powers nearer the zenith.

My first targets were a couple of faint and small planetary nebulae that weren't all that impressive because they weren't all that bright and couldn't take high magnification well. So then I was off to NGC 6543, the bright Cat's Eye planetary nebula that would be a better test, and sure enough the quality of the sky then became apparent. At low and medium power, 6543 is an obvious and lovely bluish green color, but this color had always faded when I pushed the magnification above 400x. But not tonight, the color remained as I pushed the power to 575x, then 721x and all the way to 1000x – wow!

6543 has a subtle semi-helix shape that's usually difficult to see, but tonight is jumped right out at me. It has a bright outer rim that tonight looked like a circle that had been cut in half and put back together with a slight offset. An internal ring that closely surrounds the bright central star is decidedly oval although dimmer than the outer rim. The major axis ends of the inner oval nearly contact the inside edge of the outer rim giving the overall impression of a bluish-green cosmic pretzel. In the center of this lovely sight was a sharp and surprisingly bright central star. It barely wavered.

After everyone had a look I shot over to the Ring Nebula, now well down from the meridian but still high enough that it promised an exceptional view. I've tried to see the second star within the Ring a few times when conditions were really good but I'd never had even a glimmer. I thought I might have my best chance yet and I was only a little disappointed. I was able to get a couple of hints of the second star but nothing definite enough to say I've seen it. But what the heck, I'd never even suspected anything so I was pretty pumped. The primary central star was an obvious although still subtle direct vision sight, and it tickles me no end any time I get a good look at it. It is such a tiny little spark of a star and being able to see it at all in the middle of the bright donut of the Ring Nebula is very cool.

I was looking at 1000x and thought, what the heck – more power! So I piled on 1250x and yes indeed, the view was just as sharp. Now we're talking, the Ring takes on an epic size in the eyepiece at this power as it nearly fills the field of view. The subtle variations in brightness of the Ring are a bit more apparent than at the lower powers and the central star is still a direct vision spark in the middle of it all. When I think of this years trip to Steens, this is the image that comes to mind first. I called everyone over for another look and we all soaked it in for a while…

I was pumped up and ready for Saturn and Jupiter, but they hadn't risen yet – where's a good planet when you need one?!! So I was off to another bright planetary, NGC 7027 in Cygnus. As luck would have it, by the time I had found it and pushed the power up to 1000x the seeing had begun to soften but I was still treated to a spectacular view. 7027 is a surprisingly bright bipolar planetary with one lobe much brighter than the other. There is a thin dark gap between them but it takes excellent seeing for it to be seen well. I could watch it disappear as the seeing became less steady – dang. Even so, the entire nebula had a delightful electric blue tint that I don't recall seeing in any other planetary.

The rest of the evening was just an ordinary night at 7400 feet with exceptional transparency and darkness, but that was it for the steady seeing. By the time Saturn and Jupiter were up high enough to observe the seeing had become rather poor. It seems we know why, too.

The Fish Bowl area near Fish Lake is a natural depression that's probably a seasonal pond, and on this very still night it acted as a stable catch basin for cold air. Chuck Dethloff measured a 20-degree temperature difference between the observing site and the ridge that rims the area – about 40 meters away. It was 18 degrees F at the scopes and 40 degrees F at the rim. So it seems we had a very local temperature inversion that slowly dissipated as the night progressed. We were surprised that the atmosphere immediately above us had such a dramatic impact of the steadiness of the seeing. Who knows what else was going on above us, but this was something we measured and felt.

Those few hours of near perfection go a long way with me and

(Continued on page 7) The Observers Corner

COSMIC GAMBLE PAYS OFF! LEONIDS 2002

By Bob McGown

Our 2002 Leonid adventure began with a drive over the mountains to Smith Rock to meet up with friends. When we got there at 1:15 a.m. they were looking down & depressed. It was socked in to the north, misting slightly and we could see nary a glimpse of the full, bright moon that we knew was there. They had been faithfully waiting there for the skies to clear since 11:30. Craig said he had to get back to Portland and reluctantly left. John Foster decided to trust his luck with us, as he was determined to get some good camera shots. We kicked around Smith Rock for about 30 minutes and then decided to head south. It just didn't seem likely the weather would clear and it looked more promising to the south and west.

With all of John's photography gear (3 tripods, 5 cameras & various other equipment), we piled into the truck and headed south toward Bend. John was peering out the passenger window and started noticing some stars in holes opening up to the west. Soon we were in Redmond and decided to take 138 west to Sisters. We found Cline Falls Park about 4 miles out of town and drove in to take a look. Perched behind the Cascades, the park is in the rain shadow of the Three Sisters and Cline Buttes. As we were getting ready to move on, I slammed on the brakes and shouted "Holy Smokes" (or something like that!) It was about 2:25 a.m. and this bolide was so bright it screamed through the cloud deck to the north and exploded on the horizon.

This was the place! Sure enough, we started seeing them. About 45% of the sky was visible, mostly to the north and west of the 360 degree view. We could see the Big Dipper, Cassiopeia and Leo as well as the Winter Circle. Of course the Moon was in full shine and so bright it hurt to look at it. With our backs to the Moon we started counting. We figured it was about 300 per hour at the peak. Zenith per hour (ZHR) calculations did not apply to our sky conditions because it is factored for 6.5 magnitude. Only when the Moon was blocked by clouds did the limiting magnitude drop to 4.5-5.5. In Oregon, we also have another whimsical factor like the ZHR which we called the CHR (cloud hourly rate)!

There were some memorable fireballs, one with a three bladed tail. Many sporadics came dropping through the sky, mostly headed north to southwest toward the Moon, it seemed. There was a constant scintillation at the boundary of the obscured portion of the sky but the radiant was still visible. These meteors were coming in so fast, we counted 4 within a second, all in the same patch of sky. For fun, we called out the magnitudes of the meteors as they zipped through. There were some 'Yippees' and 'Yahoos' and just plain screams of delight at some of the –2 mag or better fast moving Leonids.

John had set up his camera and was taking pictures like a man possessed. He was determined to get a shot of the full Moon, with a tree in the foreground and a meteor streaking down past the Moon. Lady luck was with him as he captured at least two meteors in the same frame as the Moon. Crossing our fingers, we hoped the picture would turn out the way we saw it. At about 4:15 a.m. the Moon was surrounded with an iridescent halo like an circular aurora, a breathtaking sight. But as the upper level southwest wind blew more clouds toward the north, we began to lose our viewing.

About 4:30, the entire sky had clouded over and we decided to head for home. Pulling into Sisters about 5:05 a.m., we found a bakery open. What heavenly smells! We had mochas, coffee and pastries as we discussed the great meteor show we had observed. Still feeling lucky, we decided to show John some lava tube caves located on the Santiam Pass road. He was intrigued about the opportunity to finish off his roll of film with shots of the underground rather than the sky above. Fortune found us at Sawyer's Ice Cave system and we led John to the second cave with the collapsed skylight. He immediately set up his camera, grinning with delight. Dareth and I hiked about 350 meters up the hill and found the main cave, a double with a bridge separating the two halves. These caves looked very deep and interesting but would require a ladder or rope to descend down about 15 feet to the floor of the opening, so we were content to shine the flashlight into the many crevasses. Dawn seemed to take forever to find us, as it slowly grew light. With the thickness of the cloud cover, it grew dark again and we had a second sunrise. We started on the trip back to Portland about 6:30, tired but triumphant. We had gambled on a meteor show, found it and then peered deep into the earth below as well.

RCA Photo Gallery

Bubble Nebula (NGC 7635) taken on 9-12-02 by Terry Johnson (Image taken with an AP130F6 scope with an ST10-XE CCD camera.)

Special Interest Groups

Astrophysics / Cosmology
Date/Time: No meeting in December

Weather
Date/Time: No meeting in December

Telescope Making Workshop
Date/Time: December 14, 2002, 10 AM—3 PM
PLACE: Technical Marine Services Inc, 6040 N. Cutter Circle, Swan Island

Peter Abrahams (Continued from page 2)
warmed in water or using a heat lamp, barely softening the edges of the ridges, pressed on the mirror very briefly without rubbing (cold pressing transfers any irregularities to the tool), and the process was repeated. This tool needed to be used right after it was made so that it did not flow.
Ingalls continued by describing a pitch lap devised by Walter Puderbaugh of Richland, Washington, called the 'sintered pitch lap'. Walter refrigerated his pitch and smashed it to a powder using a steel rolling pin. He built a paper dam around the edge of his tool, and poured the cold powder to make a disk of loose particles. The mirror was painted with rough slurry and laid on top, and the sandwich was set in barely warm water for a time. Puderbaugh said that this lap worked faster, cold pressed better, and was more easily cut with channels, than a standard pitch lap. The particles stuck to each other without fusing, leaving much air in the mass, and the critical factor to success was the temperature of the warm water, which would melt the pitch if too warm. Other telescope makers in the Richland area were reported to be very happy with the qualities of the sintered lap.

Library News

The Rose City Astronomers maintains a comprehensive club library of astronomy related articles, books, CD-ROMs and videos. These items can be borrowed by members through checkout at the general meetings for a period of one month with renewals available by phone or e-mail to the club library director, Jan Keiski (jikeiski@juno.com) - (503) 293-3281.

With the library materials growing in size, the staff also has been increasing to keep up. I would like to thank all of them for their time and enthusiasm. The library staff includes: Rea Young - checking in of returned materials & backup for check outs; Richard Labar - setting up of library materials; Larry Froberg - data input & inventory of materials; Tammy Ross - assisting at library table and putting away library materials after the meeting; and Meg Grace - assisting as a backup to help at the library table during meetings.

Color coding of library materials by category has been completed. Online access to a list of library materials will be implemented hopefully by January 2003. Visit the RCA library web page at: http://www.rca-omsi.org/library.htm

Happy Holidays from the RCA Library Staff

RCA Library Will Be Open during the December potluck.

Leonids (Continued from page 3)

my first break in the clouds, near Dunsmuir, CA. I quickly saw several brightish Leonids around the Winter Hexagon at around 2:00am, but then nothing further even though about 1/3 of the sky was clear (not the best 1/3). The hole closed up, and I drove on and stopped again when I saw another hole. Again, several Leonids and then a drought. By 2:40, this hole had closed, and I drove northward. There was generalized partial clearing near Weed, and I stopped and saw rates of several meteors per minute. There was a very pretty -6 fireball, blue with a reddish core and a convoluted train. That was at about 3:00am. I repeated the pattern up US97, catching occasional Leonids on the fly. At Dorris, around 4:30am, rates still looked pretty consistent. Even taking into account the obstructed view, it looked like observed rates were a small fraction of last year's display. **Wes Stone**

And the Weather Channel is a winner!!! Along with actually quite a few people I observed at least one very nice fireball from the corner of Easton Canyon Rd & Center Ridge Rd. near Dufur. We had clearing directly overhead until 3 a.m. or so when it really got serious with clouds, but no rain.

The Moon was brilliant, but beautifully lit up the incredible countryside around us. The wind was much blowing faster I understand earlier in the evening, but by the time I and my 4 other caravan friends arrived it had moderated some. From a local I understand that wind is what helps blow the clouds away. Darla Knytych served hot chocolate and cookies to all who knocked on the Knytych trailer door. It was like nirvana. Great astro-friends; a beautiful night sky even with the clouds and Moon; and hot cocoa.

I made a few flashes of light as I captured some very cool pictures of true astronomers ready for a night of meteoric activity. I'm sure if a couple of my subjects could have moved quicker they would have pounced on me, but luckily for me they were wrapped up in so many layers and quite comfy in there chairs, so I was quite safe!

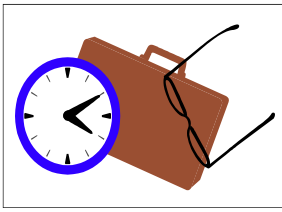
Thank you Howard & Darla for being our hosts.—**Jan Keiski**

No luck last night. The family and I drove from Portland to Madras to Bend and 1/2 way to LaPine and back and over towards Pine Mountain. We never even saw the moon until about 3:15AM. Disappointing evening. **John Rees**

I was sure disappointed by the turn of the weather last night and this AM. I experienced the rain in Portland on my way to and from a visit to a friend. Still hoping for some kind of clearing, I monitored the situation hourly, sometimes more.

When I heard the rain stop, out I went to view what I could from my

Leonids (Continued on page 7)



BOARD MEETING MINUTES

NOVEMBER 4, 2002

Ron Forrester

Present: Ron Forrester, Larry Godsey, Jeff Henning, Dareth Murray, Peter Abrahams, Matt Brewster, Dale Fenske, Jan Keiski, Scott Fitzpatrick, Bob McGown, Scott Turner, Norm Trost

Treasurer – Ginny: Nominal

Programming - Matt: November meeting will be Peter speaking on 19th Century Spectroscopy. December is Holiday Party. January is the information fair.

Membership - Doug:

Star Parties - Scott: OMSI star party schedule will be finalized with Jim Todd over the next week or two. Larch Mt. star party was very successful. Will work with Matt V. on the RCA 2003 Star Party Schedule.

Community Affairs - Norm: Bob will make a Lunar presentation in the Lake Oswego school system.

Sales - Sameer: Nominal

New Members - Carol: Nominal

Light Pollution - Bob: IDA Conference tape has a lot of raw material, will be a challenge to get a polished tape out of it.

AL - Dale: Need an updated membership to send in, will contact Doug.

SIG's - Scott: Dareth giving a SETI talk this month.

Magazine - Larry: Nominal

Editor - Regis: Nominal

Library - Jan: Has key to the back. Attended the annual "What Will The Winter Weather Be Like" Oregon Chapter of the American Meteorological Society meeting on October 25, 2002 and picked up two autographed books on the weather for the library, "Pacific Norwest Weather" by George R. Miller, and "Oregon Weather Book" by George H. Taylor and Raymond R. Hatton.

YRCA - Ron: Great article on Portland Parent discussing the RCA's work with the young.

Webmaster - Dareth: Still have to decide on the domain name which is up for registration renewal

OMSI - Peter: Nominal

Telescope Library - Jeff: Solar scope is working fairly well (not as well as hoped). Matt will pick the scope up from Jim. The plan is to try and obtain a 2x Powermate.

Copying - Debrah: Nominal

Phone Line: Carol for November. December-Scott Turner.
Science of Toys: A good display of science related toys and inventions on December 7th and 8th.

Galileo award: To be awarded by committee, involvement of the RCA board is budgetary. Approximate budget is $200 to cover the four possible nominee's. Bob makes a motion to allocate $200 to cover 4 Galileo awards. Matt seconds the motion. Dale calls for Question. Motion passes by majority.

Peter motions to substitute Chuck with Dareth as the OSP liaison to the RCA Board. Ron seconds. Norm calls for Question: Passed unanimously.

Election slate will be presented for a vote at the November general meeting.

Larry will publish the silent auction list on the web, on November 15th for the general membership.

The Observers Corner (Continued from page 4)
will be a treasured memory during the cloudy nights to come. Going all the way to Steens is worthwhile just for the day time scenery but going to the extra effort to get there and observe makes the memory all the more special. Although a perfect night can be found in many places, having one at Steens Mountain is hard to beat.

Leonids (Continued from page 6)

front step. The clouds seemed to be thinning and blowing away. This raised my hopes and kept me awake late. That was around 10:30pm.

I spoke to Jan out at Tygh around 11:30 and she detailed a sporadic view - "we can almost see all of Orion!" That was not enough for me to start a 2-hour drive.

Jan called at 12:30, just as I was getting in to bed, resigned to no Leonids for 2002. Her report then was more encouraging, but I was already in my toasty bed!

I set the alarm for 2:15am and kept my window shades open. As I tossed in those next two hours, I would glance out the window to view white skies. Very bright, too. At 2:15, I turned the alarm off and rolled over. <sadness> **Meg Grace**

We made it to Frederick Butte about 8:30 last night. We could not see the moon at all at this time through the cloud deck, only a lighter glow to the area where the moon was. A few lighter patches could be seen in several directions but nothing remotely resembling even a small bit of clear sky. On the way over Judy noted the presence of the jet stream in the cloud structure, not a good omen. But we held out hope that things would improve over the next few hours.

About an hour later the transparency actually improved as we could make out the disk of the moon. Problem was we were looking up in amazement as rain drops started splattering our truck's windshield. Estimated ZHR of 1000. <g>

We drove around the area a little and could see nothing other than

(Continued on page 8)

Silent Auction (Continued from page 1)

Those who cannot make the meeting can bid via proxy and items with a proxy bid will be clearly marked.

We're happy to accept donations of astronomical equipment to put up for auction to benefit the telescope library

Rules

All decisions by the Auctioneer are FINAL and the Auctioneer can refuse ANY bid.
Items up for bid will be placed on the tables with a sheet that shows:
The starting bid, the minimum raise for each succeeding bid, the closing time of bidding, if there is a proxy bid on the item, the current bid amount. Closing times will vary for different items and the bidding sheets will be clearly marked as to closing time for each item.

Bids must be raised by at least the minimum raise shown on the bidding sheet. Any bid not meeting the minimum raise will be removed.
The winner is the highest bidder shown on the bidding sheet, UNLESS there are two or more bidders are actively bidding at the closing time shown, then the auctioneer will conduct a live auction with the bidders. There may be some proxy bids that will be effected at the closing time as if they were live bidders. Any item with a proxy bid will be clearly marked.

We will accept cash or checks, but not credit or charge cards. All items must be paid for and picked up by 9:00pm or they will be sold to the next highest bidder.

Proxy Bidding

If you cannot make the December meeting and still wish to bid via proxy on any particular item, you can make a proxy bid indicating your maximum bid with Larry Godsey at 503-675-5217 or email at larrygodsey@att.net. This MUST be done before 9AM on Monday, December 16th.
These proxy bids will be held without the amount being disclosed until the closing of the item at which time the bid will be raised for the proxy by the minimum bid increase amount over the highest bid on the sheet at closing unless the highest bid already exceeds the maximum proxy bid. Any item with a proxy bid will be appropriately marked. The amount of the proxy bid will not be disclosed to anyone at any time until the amount is exceeded, at which time the proxy indication will be crossed off the bidding sheet.

In the case where there is a live bidder still bidding on the item at closing and there is a proxy bid in excess of the current bid, a live auction will be held between the live bidder and the proxy bidder until either the live bidder drops out or the amount of the proxy bid is exceeded.
It will be the responsibility of the proxy bidder to make arrangements with Larry Godsey within 96 hours for payment and delivery of any item won at the auction. Any item with no such arrangements within 96 hours will be sold to the next highest bidder. Proxy winners will pay all shipping and delivery costs.

Leonids (Continued from page 7)

scattered thinner cloud patches in any direction. We had been prepared to head a good bit further either towards northern California south of Lakeview or towards southeastern Oregon. But given the earlier forecast of ptcldy skies was not even close to correct (along with the very "regional" look to the cloud deck) we suspected that it was likely that driving another 200 miles might not be of much help and only leave us further from home at dawn.
Having made the decision to stay put we hung out at Frederick Butte till close to 2am. The light showers that lasted for about an hour moved off. At times things would look like it was getting better and we could actually again see the moon as a fuzzy glowing disk. A couple very small vague murky windows appeared that allowed us to see a few stars, Jupiter, and also Saturn through. But no meteors were seen. It was obvious to us that no magic was going to happen here and so we reluctantly opted to start heading back towards Bend where we had noticed somewhat of thinner area in the clouds had been persistently visible for a while.

That proved to be a wise/lucky decision as we encountered some small but completely clear patches about 14 miles east of Bend. We pulled off the road at a spot with lots of room along the road, several other vehicles were parked there for the same reason. The wind was more noticeable and the patches were small. One larger one to the west-southwest spanned about 70 degrees wide by 20 degrees tall, but most were 5 to 20 degree fast moving ovals that would at some point just fill in with clouds again. We pulled off

(Continued on page 9)

2003 RCA BOARD OF DIRECTORS ELECTED AT NOVEMBER MEETING

In accordance with the RCA bylaws, the following members were elected as the 2003 Board of Directors of the Rose City Astronomers at the annual meeting on November 18th:

President Peter Abrahams
VP Membership Doug Huston
VP Observing/Star Parties Scott Turner
VP Community Affairs: Padraic Ansbro
VP Communications Matt Brewster
Past President Candace Pratt
Treasurer Virginia Pitts
Secretary Ron Forrester

The following members have been appointed to perform the following roles for 2003:

Sales Director Sameer Ruiwale
Newsletter Editor Regis Krug
Webmaster Dareth Murray
ALCOR (AL Representative) Dale Fenske
Historian Dale Fenske
Library Director Jan Keiski
Telescope Director Jeff Henning
IDA Liaison Bob McGown
Magazine Coordinator Larry Godsey
SIG Director Matt Brewster
Media Director Ron Forrester
OSP Liaison Dareth Murray
Camp Hancock Liaison Glenn Graham
Youth Programs Director Jenny Forrester

Best Wishes to the 2003 Board of Directors!

Leonids (Continued from page 8)

at about 2:35 and spent the next 25 minutes there. I counted six Leonids, one that was probably magnitude minus 3. Even though we at best only had 15 percent of the sky open at any time it did not seem that there was a storm going on.

Walking into the lobby of an east side motel in Bend, we bumped into RCA member Rick Olson and his son Elliot. They had been on there way to Frederick Butte, but stopped short as it was clearly socked in to the east. They also been catching a few through scattered holes east of Bend. A few minutes later we saw the full moon shining brightly over the motel roof and it had an interesting double ring each showing rainbow coloration through a full circle. The inner circle was only a few degrees in diameter, the outer circle about twice that size. Coolest thing we saw all night unfortunately.

We enjoyed reading the experiences of those that gave it a try either from the back yard or some place else. We too share in the disappointment of others in not seeing the shower. It was the least amount of clear skies and Leonids that we had seen in the last five years. But that is weather in the northwest in November. The ridging that is happening today came one day too late. Imagine most of central Oregon will be clear at 2am Wednesday morning. **Chuck & Judy**

NEW MEMBERS

Jason DuVal
Leslie Kazzinik
David Martin

NASA's Space Place

Enlightened by the Darkness

By Diane K. Fisher

On the clearest of nights, I may see a dozen stars from my suburban backyard near Los Angeles. Unfortunately, my studies of space and astronomy have been confined to books and the pictures taken by others. Seldom have I experienced for myself a truly dark, clear, moonless sky.

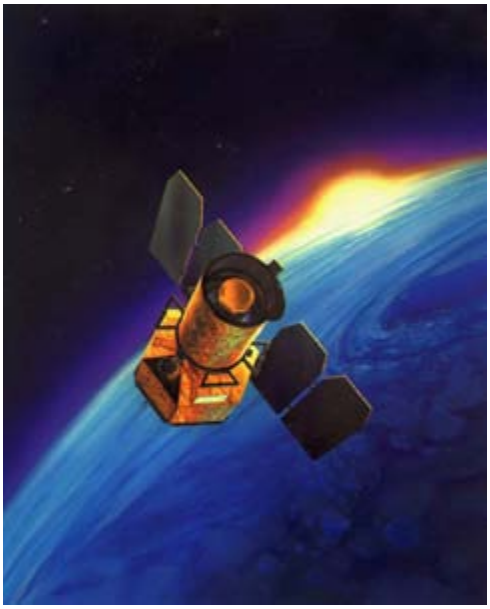
One of those rare times was a summer camping trip in Bryce Canyon, Utah. I lay on my sleeping bag in an open area away from trees. I saw millions of stars (so it seemed) and the cloud of the Milky Way streaking across the sky. Nothing of planet Earth was in my view. It was then I glimpsed my true situation in the universe, a speck of dust clinging to a tiny stone hurtling through the darkness of a cold, infinite universe. I was awestruck by the beauty of the stars and the darkness-and terrified!

In the light of day and a more "down-to-Earth" state of mind, I wondered: With around 100 billion galaxies out there, why is it still so dark out there?

Until the 20th century, astronomers thought the universe was infinite. They were perplexed though, because in an infinite universe, no matter where you look in the night sky, you should see a star. Stars should overlap each other and the sky should be blazing with light and hot as the sun. This problem became known as "Olber's Paradox."

Astronomers now realize that the universe is not infinite. A finite universe-that is, a universe of limited size-even one with trillions of stars, just wouldn't have enough stars to light up all of space.

Although a finite universe is enough to explain the darkness, the expansion of the universe also contributes. As light travels from a distant galaxy to us, the space through which the light is traveling is expanding. Therefore, the amount of energy reaching us dwindles all the time, thus causing the color of the radiation to be "redshifted." (The wavelength is stretched out due to cosmic expansion.) The more distant the galaxy, the more redshifted the light. The largest redshift astronomers have measured comes from radiation that was emitted when the Universe was only 300,000 years old. This radiation has taken over 12 billion years to reach us and although it began as infrared radiation, it is now seen as the microwave background radiation.



The GALEX (Galaxy Evolution Explorer) mission will do a broad survey of galaxies in various stages of evolution and identify interesting objects for further study by the Hubble Space Telescope.

GALEX (Galaxy Evolution Explorer) is a NASA space telescope that will survey the universe, including galaxies with redshifts that indicate their light has been traveling for up to 10 billion years (or 80% of the history of the universe). Read about GALEX at www.galex.caltech.edu/ . For budding astronomers, print out The Space Place New Millennium Program calendar at spaceplace.nasa.gov/calendar.htm to identify great sky watching opportunities. (Diane K. Fisher is the developer and writer for The Space Place web site.)

*This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administrat*ion.

December 2002

Sun	Mo	Tu	We	Th	Fri	Sat
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

January 2003

Sun	Mo	Tu	We	Th	Fri	Sat
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

December 2002

Dec 2	Mon.	Board Meeting	OMSI Classroom 1	7:00 PM
Dec 14	Sat	Telescope Making Workshop, Swan Island 10:00-3:00		
Dec 16	Mon.	RCA Kids (ages 4-12)	OMSI lunchroom	7:30 PM
Dec 16	**Mon.**	**General Meeting (Holiday Potluck)**	**OMSI**	**7:30 PM**

January 2003

Jan 6	Mon.	Board Meeting	OMSI Classroom 1	7:00 PM
Jan 18	Sat	Telescope Making Workshop, Swan Island 10:00-3:00		
Jan 20	Mon.	RCA Kids (ages 4-12)	OMSI lunchroom	7:30 PM
Jan 20	**Mon.**	**General Meeting**	**OMSI**	**7:30 PM**

The RCA General Meeting falls on the third Monday of each month. We usually meet in the Auditorium at OMSI, next to the Murdock Planetarium. Occasionally the meeting is held in Murdock Planetarium. Check here each month for details, or look us up at the RCA web site (http://www.rca-omsi.org).

The Weather SIG address is: Colonial Office Complex, 10175 SW Barbur Blvd, Suite 100-BB, Portland. From downtown, go south on I-5 to the Barbur Blvd. Exit. Cross back over I-5 and the Complex will be on your left.

RCA CLUB INFORMATION
Message Line: (503) 255-2016
Web Site: http://www.rca-omsi.org

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