The
Rosette Gazette

Volume 21, Issue 1 | Newsletter of the Rose City Astronomers | January, 2009

RCA JANUARY 19 HOLIDAY POTLUCK!

As weather prevented the December holiday meeting from taking place the January meeting of the Rose City Astronomers will be a holiday potluck and social gathering for all family members to be held in the OMSI Cafeteria.

Each member is asked to bring a dish to serve 10-12 people.

If your last name begins with . . .

- A to K, please bring a main dish
- L to Q, please bring an appetizer or side dish
- R to Z, please bring a dessert

Plates, silverware, and beverages/ice will be supplied by the club. Just bring your dish along with a serving utensil and enjoy the holiday spirit of the RCA membership.

The Holiday Social is a great event to pick up some excellent holiday deals! Save time to shop at the RCA Sales Table for your favorite astronomy gifts. In addition, the Swap Meet will be back by popular demand and there will be ample empty tables around the lobby for everyone who is interested in displaying items for the Swap Meet.

There will also be tables provided for interesting celestial displays. If you have taken any astronomy pictures this year and want to share them, this is your ideal opportunity. Members also bring their latest inventions and "astro stuff." If you have a fun gadget, item, or tool, please bring it in and show it off to the rest of the membership!

Note that January 19 is the THIRD Monday of the month which is the evening of our normal general meeting. We hope to see everyone there!

All are Welcome! Monday January 19

Festivities Begin: 6:30 pm.

Location: OMSI Cafeteria

In This Issue:

RCA is a member of the Astronomical League.
http://www.astroleague.org

First Quarter Moon	Full Moon	Last Quarter Moon	New Moon
January 4	January 10	January 17	January 25

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RCA MAGAZINE SUBSCRIPTIONS

One of the benefits of RCA Membership is a reduced rate subscription to Sky & Telescope and Astronomy magazines. The RCA member rate for Sky & Telescope Magazine is $32.95 for one year or $65.95 for two years. The RCA member rate for Astronomy magazine is $34 for one year or $60 for two years. For more information go to the RCA web site index and click on any of the links for magazines. Larry Godsey, Treasurer, 503-675-5217, will be taking renewals and new subscriptions at the Magazine Table before General Meetings. Please make checks out to "RCA" and allow two months for your subscription to be renewed.

RCA LIBRARY

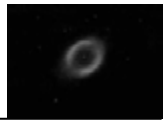
The Rose City Astronomers maintains a comprehensive club library of astronomy related articles, books, CDs and videos. These items can be borrowed by members through checkout at the general meetings for a period of one month with renewals available by phone or e-mail to the club library director, Jan Keiski.

The RCA library is constantly growing through many donations and the purchase of new materials. A listing of library materials (PDF format) can be found at the library web page: http://www.rca-omsi.org/library.htm

Jan Keiski (jikeiski@comcast.net) 503-539-4566

THE OBSERVER'S CORNER

Howard Banich



M42, a retrospective

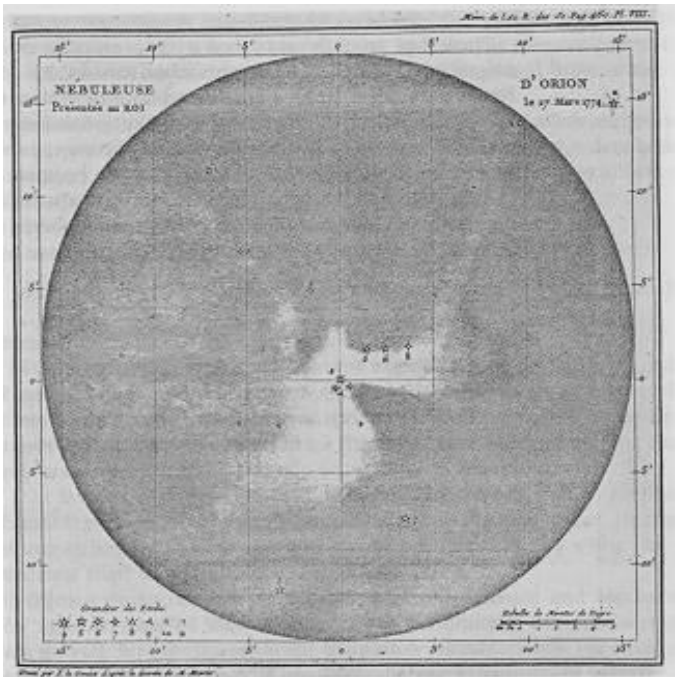
My first look at M42, the Great Orion Nebula, was with a 3 inch f/15 Tasco refractor in a brightening dawn from my front yard in Arvada Colorado. I think it was early October because I got up just before dawn and M42 was just about due south, plus it was pretty darn cold.

I expected to see all the wonderful swirls of nebulosity I'd seen in photographs but because I hadn't gotten up early enough the bright sky had washed out all but the very brightest portion around the Trapezium. This is a quadruple star known more prosaically as Theta Orionis, which was the most prominent object in my Tasco. They were four tiny stars very close together and were wrapped in a fading mist of nebulosity and backlit by an increasingly blue sky. Pretty cool, but it was several years before I was motivated to get up early for an astronomical observation again.

With that first look I unknowingly bettered Galileo's 1617 observation in which he discovered Theta was a multiple star – he saw three – but he never saw the nebula surrounding them. He didn't see any in 1610 either when he first observed this area, so the telescopic discovery of M42 is credited to Nicholas-Claude Fabri de Peiresc, a French lawyer, in 1610 and was independently discovered by several others in the coming years. Unfortunately all these observations were forgotten for a couple hundred years, and Christian Huygens 1656 observation was credited as the telescopic discovery of M42 until 1854 when he did discover the forth star of the Trapezium.

The Orion Nebula has long been recognized as a naked eye fuzzy star which makes writing of its discovery rather like discussing the discovery of the Moon. Even so, given that Galileo looked at it at least twice (1610 and 1617) without noticing the nebula comments on the light grasp of his telescopes and that perhaps his observing environment was light polluted or he observed during a bright Moon. Or maybe his eyes weren't dark adapted enough.

Regardless, Charles Messier made the first decent sketch of M42 in 1769 to *"help to recognize it again, provided that it is not subject to change with time"* and published it in the 1771 "Memoires de l'Academie". Because M42 is obviously nebulous to the unaided eye it belongs to a small group of objects in Messier's list that don't need telescopic aid to be seen. One conjecture is that he included these objects (M42, M44 and M45 – not to mention M31) along with calling out M43 as a separate object from M42 in order to publish the first version of his list with 45 objects. This would clearly beat the 42 objects on Nicholas Louis de la Caille list of southern objects that was published in 1755. Given human nature this seems likely enough to be true.



Messier's 1769 sketch of M42, complete with the Trapezium. I have yet to attempt a sketch of this inspiring object.

Messier used a surprising variety of telescopes through his career, but his favorite was reportedly a 7.5 inch Gregorian reflector that typically operated at 104x. Reflecting scopes of this era had metal speculum mirrors which had much lower reflectivity than today's telescope mirrors so it's likely that the light grasp of this instrument was more like a modern 3.5 inch telescope.

In 1754 William Herschel observed M42 as his first deep sky object, and in 1789 he described it as "an unformed fiery mist, the chaotic material of future suns." as seen through his 48 inch scope, which also sported a speculum mirror. He was quite right, but it would be about a hundred and fifty years before his description could be shown to be the true.

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The Observer's Corner *(Continued from page 3)*

Unfortunately Herschel didn't make sketches at the eyepiece so we can't compare what he saw through his scope, but he clearly saw much more than Messier – or most of us for that matter. Although his 48 inch scope also used a speculum primary mirror he did away with the diagonal to improve image brightness. I'll guess it was equivalent to a modern 32 inch scope, given that speculum was at best around 70% reflective.

Henry Draper's 1880 image of M42 taken with the 15 inch Harvard refractor.

Jumping to the 19th century, Henry Draper used the 15 inch Harvard refractor to take the first photograph of M42 in 1880, which interestingly shows about as much as Messier's drawing. This says as much about the state of photography in 1880 as it does about Messier's observational and sketching ability. Messier's sketch is something of an anomaly in that it's easy to recognize the object, setting it apart from most of the other astronomical sketches I've seen from the 18th and 19th centuries.

Although I couldn't locate exposure data for Draper's photo it was no doubt a long one given the low sensitivity of his photographic plates, so the minimal amount of trailing in the star images shows remarkable tracking accuracy and perhaps represents a stiff neck for Draper's patience at the guiding eyepiece.

Sketching and astrophotography have come a long way since Messier and Draper but both attempts are impressive and give credit to their creators. A fast forward to today brings us to the Hubble Space Telescope's image of M42, but in my searches there are precious few modern era sketches. I attribute this to the enormous complexity and detail seen through even modest size scopes, making a representative drawing an huge undertaking even for a skilled sketcher. But not impossible.

Although stunning, the detail in the HST photo below isn't surprising given its amazing track record, but the 1983 sketch by Janis Romer is a work that strikes me as particularly impressive. Anyone that's attempted an eyepiece sketch can appreciate how difficult it is to capture wispy detail, and the tangled profusion of M42 is admittedly intimidating to tackle with paper and pencil. I've avoided sketching M42 because it's always seemed like an overwhelming project, but after seeing Janis' sketch I'm inspired to give it a shot. How about you?

Left, Janis Romer 1983 sketch though a 17.5 inch scope. Right, the HST mosaic of M42.

INTERACTING GALAXIES IN THE SOUTHERN SKY

by Leo Cavagnaro

The observation of galaxies, specifically compact groups, chains and interacting galaxies are one of the most enjoyable and exciting activities for those amateur astronomers who carry out detailed observations.

There are some well known catalogues which list these kinds of deep-sky objects. The Vorontsov-Velyaminov Catalogue of Interacting Galaxies, the Atlas of Peculiar Galaxies of H. Arp and the Shakbhazian Catalogue are some examples. Most of the galaxies included in them are only visible using telescopes with big apertures (18" or more).

Working at my desk, using software and articles I have in my computer, I was studying the southern sky centered in Right Ascension 22 hours and found some interesting groups and chains of galaxies mostly situated in constellation Grus and also in constellations Pisces Austrinus (the southern fish), Sculptor, Phoenix, Sagittarius, Indus, Telescopium and Pavo. I was reading the paper written by Arp & Madore "**A Catalogue of Southern Peculiar Galaxies and Associations**", where galaxies from the South Celestial Pole to a declination of –22 degrees are catalogued in different categories according to the type of interactions.

This photograph was taken by Jan Keiski at Paramillos, an observing site around 9,000 feet high where I went to finish my observations. The picture shows constellations Grus, Indus, Tucana and Pavo, the zone where the galaxies in this article are situated. You can see Venus (lower right) and also the glow from Santiago, Chile, situated about 106 miles away in a straight line (lower center).

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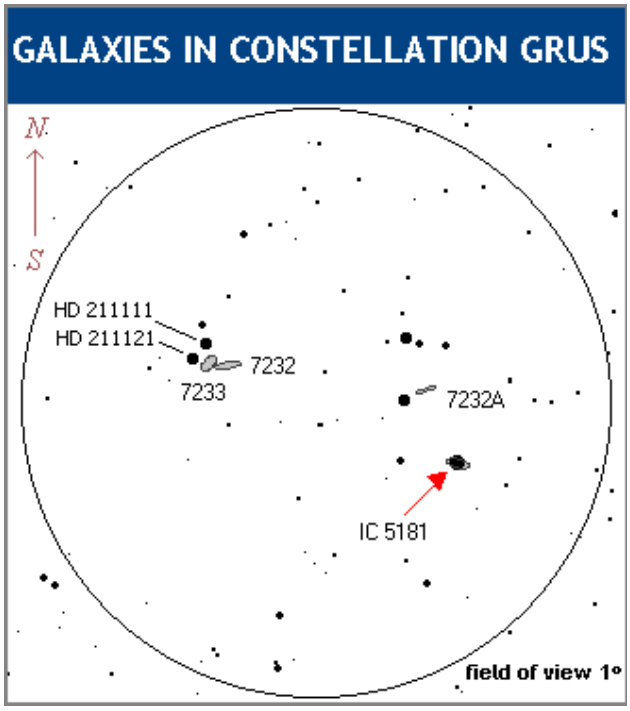
Southern Interacting Galaxies *(Continued from page 5)*

I made an observing program which includes a sample of galaxies that are visible in the spring southern sky. In this article I have included my comments and reports about the observations of some of those galaxies through my 8" telescope.

On Saturday, December 20, I had a chance to set up my telescope in a nearby observing site (Canota) to begin the program. The Summer Solstice for those who live here in the Southern Hemisphere occurred on Sunday, December 21 at 12:04am UT, so that made for a short night for observing. The astronomical twilight (Sun is 18 degrees below horizon) occurred at 10:26pm local time. This night was clear but very warm even at the mountains. A hot wind and turbulent air in the atmosphere did not help much to get good seeing, so I think I could get even better views of the faint associations and interacting galaxies I saw that night if I observe them under a more steady sky. One week later, on Saturday, December 27, I went to Paramillos 9,000 feet above sea level to finish the observations. From this last place I observed the Pavo Group and a group of three galaxies in Grus. Both nights the region of the sky where these galaxies are situated was at low altitude because of the time of the year. I could not observe that region earlier this year because of bad weather during some New Moon weekends.

The Pair NGC 7232 / NGC 7233 and the Galaxy IC 5181 in Constellation Grus

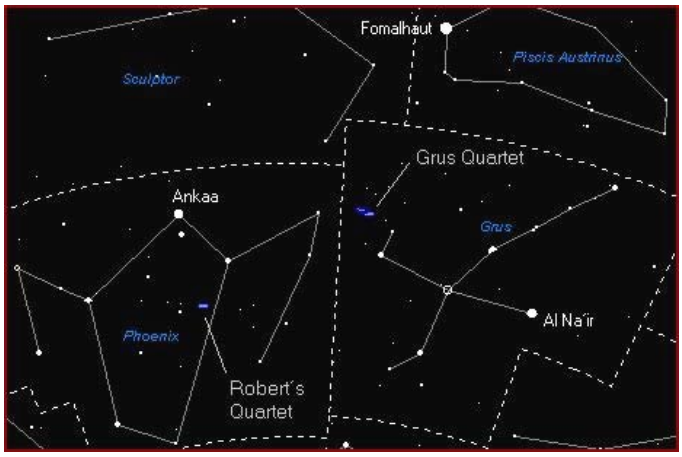
Not so far from the bright star Al´Nair in the southern constellation Grus, are found galaxies that are visible in the same 1 degree field of view.



I began the observation at 11:20pm local time with the zone at about 28 degrees of altitude toward the west. The first attempt to observe these galaxies was using low power (42x). At that magnification you can see an interesting star field with some stars forming interesting shapes like the pair of stars HD 211111 and HD 211121 (see picture lower left on this page) that is useful to use as a guide to find and see the galactic pair close to them (NGC 7232 & NGC 7233). At this magnification IC 5181, a lenticular galaxy (S0), is the only galaxy I could see, and it looked very small. At 78x I could improve the view. Now IC 5181 is visible showing an elongated shape and a very small and brighter core, as it appears in the DSS image. Where the galactic pair lies, very close to the pair of stars of magnitude between 8 and 9, a very faint and little elongated hazy patch is visible using averted vision. The view was very difficult and it was impossible to discern the galaxies.

At higher magnification (106x) the galaxy IC 5181 looks interesting, with its bright core showing better. The view of NGC 7232 & NGC 7233 is similar to the one I got with the lower magnification. NGC 7232A, the faintest of the four galaxies was not visible through my 8-inch telescope.

A Couple of Southern Quartets



The Grus Quartet

In constellation Phoenix, R.A. 23h 18m 53s Dec –42.3 degrees, resides a small group of four galaxies. This is a good example of a galaxy quartet in the southern hemisphere. The brightness of its members makes it possible to observe them properly with a small telescope like 8-inch dobsonian. The first observation of this object was at local Midnight, when the group was 30 degrees high in the western sky. Using low magnification (42x) the galaxies are very well detected in the same field of view. All the galaxies show a smooth appearance and are elongated. Three galaxies are very close to each other. Some minutes apart you can see NGC 7552 that also looks smooth and not so elongated.

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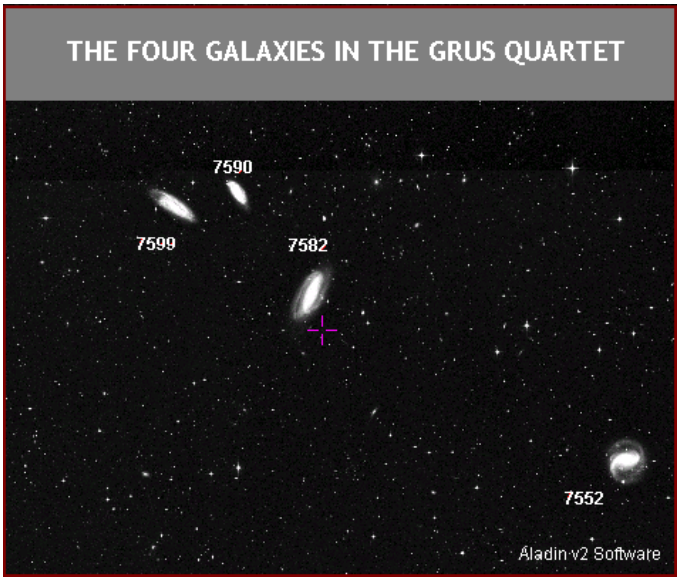
Southern Interacting Galaxies *(Continued from page 6)*

Using a little higher magnification (53x) and observing in detail the group of three galaxies, NGC 7582, 7590 and 7599 (see picture below that I made using Aladin v2 software). You can see that NGC 7582, a SBab galaxy according to the Revised NGC Data by Wolfgang Steinicke, is the brightest member, and starburst activity is observed in this galaxy and also in NGC 7552. A very few faint foreground stars are visible superimposed on the galaxy NGC 7590.



On the other hand, NGC 7552, situated at about ….arc minutes from the interacting triple, looks more round in shape and with a brighter core. At 106x the view of this galaxy is excellent. You can clearly see its bright and small core and also its elongated and smooth disk. The core is better viewed at 156x. Again at 106x, a 12.9 magnitude star is visible just on the border of NGC 7590, the smaller galaxy of the quartet. Some bright spots seem to be present in the elongated galaxy NGC 7582 when you observe it using averted vision. The galaxy NGC 7599 looks a little bigger and with more smooth brightness.

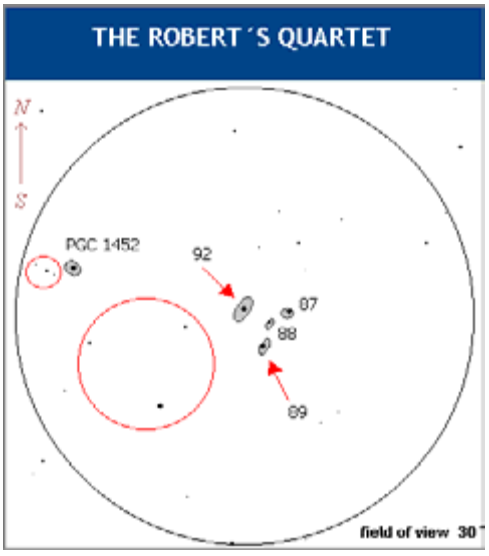
The Robert´s Quartet. A Challenging Compact Galaxy Group

At the center of the constellation Phoenix (R.A 00h 22m 00s Dec -48.5 degrees), resides a small and faint group of four galaxies (NGC 87, NGC 88, NGC 89, NGC 92) discovered by John Herschel in 1830s and nicknamed "Robert´s Quartet" after the astronomer Robert Freedman who generated many of the updated positions of galaxies in the Arp & Madore Catalogue. It is about 160 million light years from Earth. It is a group of four galaxies included in the NGC catalogue, NGC 87, NGC 88, NGC 89 and NGC 92.

It is classified as a category 4 "Interacting Quartets" in the **Catalogue of Southern Peculiar Galaxies and Associations** by H. Arp, B. Madore and W. Roberton (Cambridge University Press). I used a bigger telescope to observe this group, a 16-inch telescope observing at 72x.

To find this group was not easy because the galaxies are very small and faint. As shown in the eyepiece field picture (see below) I used some stars to recognize the zone where this small group lies. The triangle of stars, with magnitudes between 10.7 and 12.5, indicated with a red circle in the eyepiece field, is easy to identify and it is useful to use as a guide. Also the chain of three faint stars to the left in the field (also indicated with a red circle) was useful to find the extremely faint PGC galaxy.

Some members of the quartet are visible, NGC 89 and NGC 92, the brightest members with magnitudes 13.3 and 12.9. They look faint even in telescope of this size, like round and fuzzy clouds with smooth brightness. Being not a member of the group, the faint galaxy PGC 1452 is barely visible with averted vision like an irregular and smooth patch.



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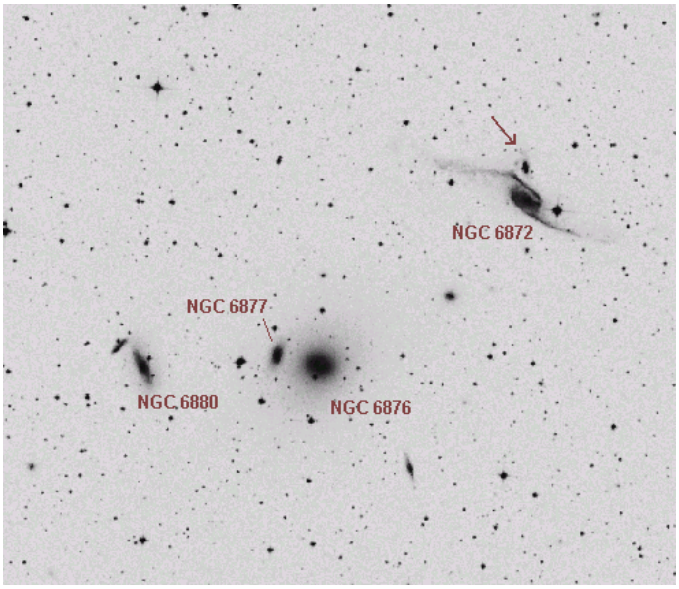
Southern Interacting Galaxies *(Continued from page 7)*

Two Superb Cases in Constellation Pavo

NGC 6769/NGC 6770 is a good example of an interacting triple, with three galaxies of any type which appear disturbed. This group is very low in the southwest sky from here in December so I will observe it in detail in coming months and will include it in the second survey of this zone of the sky next year.

The Pavo Group



NGC 6876	E3 Galaxy	Magnitude	10.7
NGC 6877	E6 Galaxy	Magnitude	12.2
NGC 6880	SB0-a Galaxy	Magnitude	12.3
NGC 6872	SAB(rs)c Galaxy	Magnitude	11.7

In the eastern part of the southern constellation Pavo, about 180 million light years, you can find an interesting group of galaxies named the Pavo Group. NGC 6876, an E3 galaxy, and NGC 6872 are the dominant members of this moderately massive and dynamically young group (see the paper: "**A Multi-wavelength View of Star Formation in Interacting Galaxies in the Pavo Group**" by M. Machacek et. al. published in The Cornell University e-library on October 20, 2008).

Observing this group with an 8-inch reflector working at low power (42x) the most prominent galaxy is the elliptical NGC 6876. Situated in a relatively rich starry field, it looks small and shows an increasing brightness toward its center. At this magnification, the galaxies NGC 6872 and NGC 6880 are very hard to see. They are barely visible using averted vision, like small and fuzzy patches.

Using higher magnification (78x), NGC 6876 looks a little elongated and may have an irregular shape. To the east, NGC 6880 is better viewed with a smooth brightness. NGC 6872, a gas-rich spiral galaxy which forms a tidally interacting pair with the spheroidal companion IC 4970 (indicated with an arrow in the picture above) and visible only in bigger telescopes. This pair is the VV 297 object (Vorontsov-Velyaminov). NGC 6872 is seen very close to the star of magnitude 10.4 TYC 9311-418-1. This faint galaxy also shows a smooth appearance.

I observed in detail the main galaxy NGC 6876 using higher magnification (148x). On its southeast border a star is clearly visible This galaxy shows a little brighter inner part. Observing with averted vision, a star-like brightness much smaller than that shown in the picture to the left is visible for brief moments inside the most prominent part of the galaxy. The star-like brightness and the star on its border are indicated with arrows.

At first glance, the small galaxy NGC 6877 (to the left in the picture) was not visible. However, a more accurate observation made possible a glimpse of a very small, round (in spite of its classification as E6 galaxy) and faint cloud.

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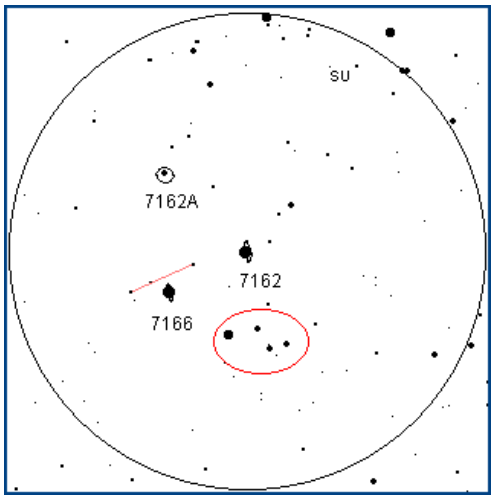
Southern Interacting Galaxies *(Continued from page 8)*

Another Galaxy Group in Grus

There exists a group of galaxies in the southern constellation Grus, not too far from the pair NGC 7232/NGC 7233. That group is listed in the paper "**Dynamics of the Pavo-Indus and Grus Clouds of Galaxies**" by P. Fouqué et. al. The brighter members of the group are NGC 7162, NGC 7162A and NGC 7166. However, they are too faint to be observed through an 8-inch mirror working at low magnification.

To find the field where these galaxies lie was easy because you can see an asterism of four stars (red circle in the picture to the right). They are actually the brighter stars in an eyepiece field poor in stars. Once in the correct field, NGC 7166 is found without a problem using the line of three stars indicated with the red line. Working at low magnification (42x) this galaxy is seen as very small and faint.

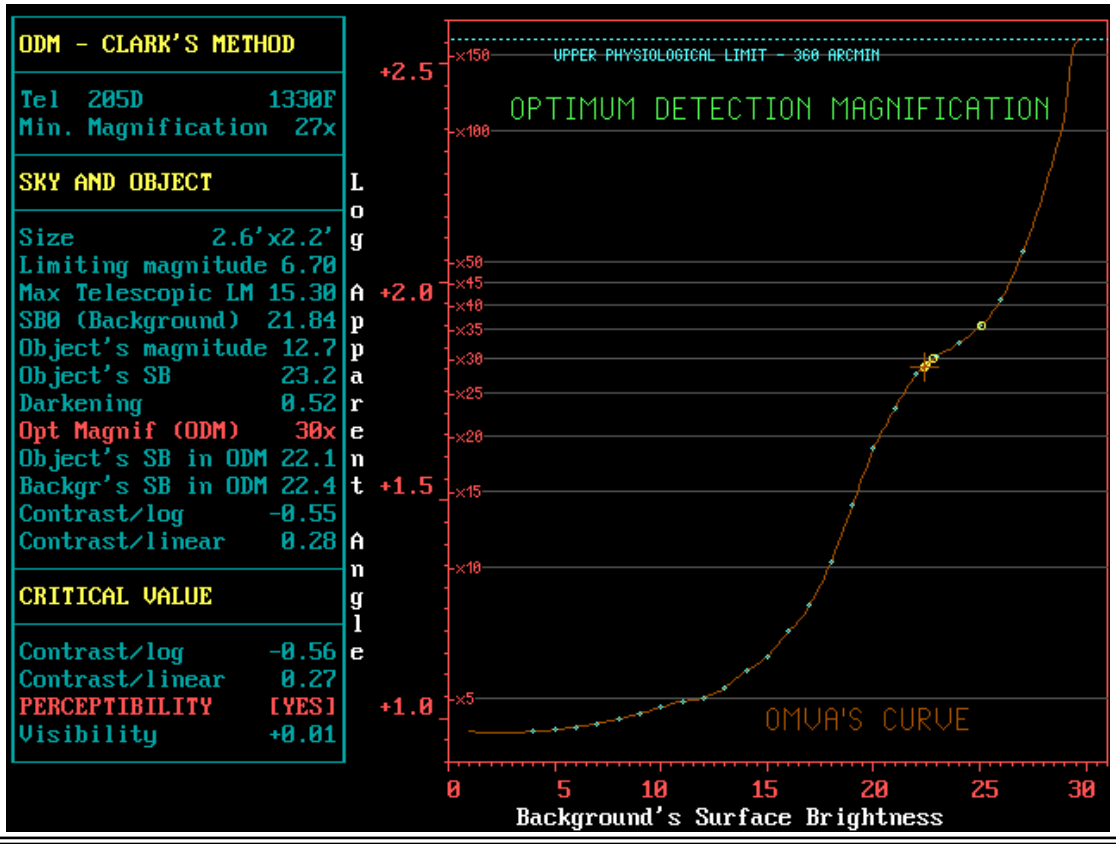
Using the same eyepiece and a barlow lens, thus reaching higher magnification (83x), NGC 7166 is easily seen, appearing more elongated and with a bright stellar-shape core. NGC 7162 is barely visible but it is there if you use averted vision.



Applying Optimum Detection Magnification Methods

I tried to observe the very faint galaxy NGC 7162A (for an 8-inch telescope at least!). It is a galaxy of morphological class SBm. Its magnitude is 12.7 and its surface brightness jump to 14.4. It was not visible through my telescope.

The day after observing I was working on the application of the Clark´s Method of Optimum Magnification to this case (the galaxy NGC 7162A). According to this method, this galaxy should be visible through a telescope like mine (8-inch) under a 6.7 limiting magnitude sky. There exists another method called "Size and Contrast". According to this method, we also need a 6.7 limiting magnitude sky to get a view of NGC 7162A. I don´t know if these methods take into account the altitude in the sky of the target as one of the main factors. I tried to observe NGC 7162A under not favorable conditions (low altitude). I will try again next year when this galaxy is at higher altitude and from a very dark sky.



BOARD MEETING MINUTES

December 1, 2008
OMSI Classroom 1
Margaret Campbell-McCrea

Attending: David Nemo, Larry Godsey, Tom Nathe, Margaret Campbell, Ken Hose, Greg Rohde, Jan Keiski, Sameer Ruiwale, Dawn Willard, Matt Brewster.

The meeting was called to order at 7:15 p.m.

Officer Reports:

- Secretary: Ten people attending; quorum met.
- Treasurer: Larry Godsey reported that we have $18,342.25 in the RCA general account, and $19,014.95 in the Site Fund, for a total of $37,357.20.
- Programming: There was considerable discussion about the set-up and organization of the December potluck, since neither Matt nor Jan will be there. The final decisions were: Greg Rohde will bring coolers and ice; Dawn will pick up drinks, plates and napkins at Winco (Matt will tell her the budget, about $120), and can also bring a cooler and ice; Matt will order the ham and perhaps side dishes and Ken will pick them up; Greg, Dawn and Ken will arrive about 4:30 p.m. Others will try to get there early too to assist with set up. Matt will contact Paul and Deb Hirschmann for music.
- Awards: (an Old Business item that we discussed at this time.) Matt has talked to Dareth twice about presenting a certificate to Chris Lee at the banquet. The awards were to be made by Carol. Sameer will check with Carol about this.
- There was also some discussion about Programming going over budget this year. But Programming has been under budget for three years, and costs have gone way up - - especially hotel and airfare. The quality of the speakers has been very good. Our honorarium is $100 and has been for five or six years.
- Observing: No report.
- Community Affairs: No report. Dawn has not heard back from Patton Echols. Sameer spent some time sketching out what the job might entail.
- Media Director: No report.
- Membership: Ken Hose reported that we had our second PayPal membership. Ken set up some new fields for family members, and for cash, check or PayPal. In November there were six new members and five renewals. We took in $224 in dues. We are up to 287 member families. We were at 256 last year and 280 two years ago. One of the people who joined via PayPal was in Florida.
- New Member Advisor: No report. There was some discussion about refining our new member services. Sameer discussed having a new member advisor at every meeting, plus orientation sessions and practice nights, and parallel sessions in the planetarium learning how to star hop. Ken and Tom are both interested in getting a new something going for next year.
- Sales: $853.25 sales in November. Sameer has been searching for free software to use for sales. He has found some shareware that looks promising. It's $40 to unlock it. His barcode scanner is now working.
- Book Library: Jan reported that the book sale took in about $40, and there is almost enough money for a new cart.
- Telescope Library: We took in one more donation this month: a 130 mm short tube f/4 reflector, but we have already sold it to one of Dan Grey's co-workers for $50. Greg has started to advertise scopes for sale on the Forum.
- IDA: No report.
- Magazines: Nominal.
- Webmaster: Larry sent out a request for comments on the new proposed "members only" area of the website. One Board member replied. Larry will send out a new request.
- Site Committee: Nominal.
- Youth Director: No report. Jean is working on a survey for the youth program.
- SIGS: After some discussion, the Board decided to post a search for a new Cosmology SIG director on the Forum.
- ALCOR: No report.
- OMSI: January and February meetings are in the Planetarium. Jan is our Information Fair organizer. There was some discussion of having the January event in the cafeteria. If we can't, we'll have to do it in the hallway outside the planetarium, so we have room to move around.

Old Business:

- Filming project: Seems to have been dropped.
- Article for Reflector: It was accepted for the March or June 2009 issue and the editor asked for some photographs to include.
- Starlight Parade: Andy Phelps agreed to pull together a planning committee for the parade. He posted a message on the Forum, but so far no one has answered. Margaret will send a broadcast message looking for members of that committee.
- Laptop computer: Sameer spent $389 for a laptop for RCA use.
- All other action items had been completed.

To Do List:

1. Tom will look into getting to use the planetarium during our meetings for new member sessions.
2. Ken Hose will seek input via the Forum about what members want.
3. Sameer will call Carol to see if the awards have been made. He may have an awards template on his computer.
4. Sameer will post message on Forum seeking new Cosmology SIG director.
5. Sameer will talk to Patton Echols about communicating with Dawn Willard.

(Continued on page 11)

Board Meeting Minutes *(Continued from page 10)*

6. Tom Nathe will send an email to Chris Lee to tell her we're planning an acknowledgement of her award.
7. Matt will order food for the potluck and will send a list to Larry Godsey for the website regarding what to bring to potluck.
8. Larry will resend the request for comments on the new "members only" web pages.
9. Margaret will send broadcast message regarding the starlight parade, and will send pictures to editor of Reflector.

Telescope Workshop

When: Saturday, January 10, 10:00 AM - 3:00 PM
Place: Technical Marine Service, Inc.
6040 N. Cutter Circle on Swan Island
For more information contact:
Director: John DeLacy johncdelacy@comcast.net
Assistant: Don Peckham don@dbpeckham.com

Science Special Interest Group (SCI-SIG)

Next meeting is January 10 at 3pm. Following the Telescope Workshop at Technical Marine Services.

This group is for people who would like to advance their skills in astronomy beyond casual observing. Various projects that some group members are involved in include; variable and double star observing, occultations, photometry and astrometry. A science background is not required, however a curious mind does help.

Location of TMS -

http://www.rosecityastronomers.org/sigs/science.htm

Tom Nathe <sigs@rosecityastronomers.org>
RCA SIG coordinator

Astro-Imaging Special Interest Group

The "AI-SIG" is about advancing the skills of beginner, intermediate and advanced astro-imagers. We rely on the skills of our members to bring each other along as we image the beautiful night sky and its many wonders. Whether you use a CCD, DSLR, point-and-shoot or film camera, members of this group can help you achieve better images with less effort and frustrations. Please join us as we learn together to produce "stellar" images!

Next Meeting: Monday, January 12, 2009, 6:30pm
Beaverton Public Library
In the Conference Room
12375 SW 5th St, Beaverton

- Considerations for Successful Urban Imaging – Can't seem to pack it up and get your equipment out to a dark sky site? AI-SIG members will discuss equipment, technique and other considerations for overcoming the more prevalent challenges associated with urban imaging of the night sky.
- RCA Astro-Imaging Guidelines – The group will review and comment on the DRAFT guidelines. Final formatting issues will be managed.
- "Astrophoto Help Session" – RCA members interested in receiving critique and assistance with their astro-images are encouraged to bring their image files either on a USB flash or CD/DVD-ROM, or their laptop computer. LCD projector and standard serial connector will be provided on-site.

RCA 'Downtowner's' Lunch

Join us on the first Friday of each month for lunch at a great downtown restaurant (Holidays and such may push us to the second Friday of some months, check the calendar at http://www.rosecityastronomers.org).

The location is announced on the RCA general forum discussion list. at http://www.rosecityastronomers.org/forum under special interest groups.

Always great conversation and food.

For more information contact: Margaret Campbell at mmcrea@nwlink.com

Photo by Jan Keiski

Oregon Museum of Science and Industry
Rose City Astronomers
1945 SE Water Avenue
Portland, Oregon 97214-3356

January 2009

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

January 2009

Jan 2	Fri	Downtowner's Luncheon	TBD	Noon
Jan 5	Mon	RCA Board Meeting	OMSI Parker Room	7pm
Jan 10	Sat	Telescope Workshop	Swan Island	10am-3pm
Jan 10	Sat	Science SIG	Swan Island	3pm
Jan 12	Mon	Astro Imaging SIG	Beaverton Public Library	6:30pm
Jan 19	Mon	Holiday Potluck!	OMSI Cafeteria	6:30pm

February 2009

Feb 2	Mon	RCA Board Meeting	OMSI Classroom 1	7pm
Feb 6	Fri	Downtowner's Luncheon	TBD	Noon
Feb 7	Sat	Telescope Workshop	Swan Island	10am-3pm
Feb 7	Sat	Science SIG	Swan Island	3pm
Feb 9	Mon	Astro Imaging SIG	Beaverton Public Library	6:30pm
Feb 16	Mon	General Meeting	OMSI Planetarium	7pm

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 CLUB INFORMATION

Web Site: http://www.rosecityastronomers.org

The
Rosette Gazette

Volume 21, Issue 2 Newsletter of the Rose City Astronomers February, 2009

In This Issue:

RCA is a member of the Astronomical League.
http://www.astroleague.org

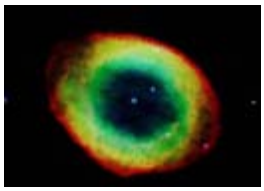
RCA FEBRUARY 16 GENERAL MEETING
The Messier Marathon
Presented by Howard Knytych

Groundhogs notwithstanding, spring is just around the corner. For amateur astronomers, that means the observing season will soon be upon us! In particular, spring also means Messier Marathon time! This year the new moon occurs on Thursday the 26th of March. That means we will have two great weekends before and after the new moon to "do" the marathons. Indeed, the first two star parties this year will be a Messier Marathon at Kah•Nee•Ta, March 20-22, and the following weekend at Camp Hancock, March 27-29.

WHAT! You DON"T know what a Messier Marathon is? The February general meeting will feature information about the upcoming observing season, and in particular, Messier Marathons. Long-time member and newly-appointed new member advisor Howard Knytych will give an in-depth presentation on the maddening methodical missions to mark the menu of objects first mentioned by Monsieur Messier.

Although this presentation is more or less aimed at new members, anyone who has not attended a star party will find this to be a good source of information. And for those of us who haven't been to a star party recently (probably all of us), it'll be an entertaining review. And who knows, you may even be inspired to "do" a Messier Marathon as a result!

All are Welcome! Monday February 16



New Member Orientation 6:15 pm
Social Gathering: 7 pm
Meeting Begins: 7:30 pm.
Location: OMSI Planetarium

First Quarter Moon	Full Moon	Last Quarter Moon	New Moon
February 2	February 9	February 16	February 24

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RCA MAGAZINE SUBSCRIPTIONS

One of the benefits of RCA Membership is a reduced rate subscription to Sky & Telescope and Astronomy magazines. The RCA member rate for Sky & Telescope Magazine is $32.95 for one year or $65.95 for two years. The RCA member rate for Astronomy magazine is $34 for one year or $60 for two years. For more information go to the RCA web site index and click on any of the links for magazines. Larry Godsey, Treasurer, 503-675-5217, will be taking renewals and new subscriptions at the Magazine Table before General Meetings. Please make checks out to "RCA" and allow two months for your subscription to be renewed.

RCA LIBRARY

The Rose City Astronomers maintains a comprehensive club library of astronomy related articles, books, CDs 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.

The RCA library is constantly growing through many donations and the purchase of new materials. A listing of library materials (PDF format) can be found at the library web page: http://www.rca-omsi.org/library.htm

Jan Keiski (jikeiski@comcast.net) 503-539-4566

CLASSIC TELESCOPES

A walk through Hodierna's Auriga with an Asahi Pentax refractor.
By John W. Siple

AURIGA THE CHARIOTEER, a conspicuous pentagon-shaped constellation immersed in the Milky Way's winter quarry of suns, is found directly overhead on cold February nights. The northwestern corner is marked by the colorful radiance of the star Capella, referred to by the ancient Peruvians as 'Colca' and known amongst the Romans as 'Little She-Goat.' From northerly latitudes it is visible to skygazers every clear night throughout the year. Immediately to the southwest of golden Capella are three 4th-magnitude stars in the form of an acute right triangle—ε, ζ, and η Aurigae; the famous 'Kids.' Both Epsilon *(Al Ma'az)* and Zeta *(Sadatoni)* are eclipsing variable stars of great interest.

A walk through the dense star fields in Auriga was undertaken by calling upon the help of a 2.4-inch telescope, possessing outstanding optical and mechanical characteristics. The Asahi Optical Co., Ltd. (later 'Pentax') alt-azimuth refractor from the 1950s and '60s is an ideal grab-and-go

M37 (NGC 2099) is considered the finest of the three Messier open star clusters in Auriga and ranks as one of the all-time favorites for telescopic observation. In this view (south is toward the top) its richness is readily apparent, where a total of 150 or more 9th to 12.5 magnitude stars completely fill the field.

The illustrated foldout that is included along with the 60mm telescope. By courtesy of the PENTAX Imaging Co.

scope; an easily transportable classic instrument furnished with great optics. This popular telescope (D=60mm F=800mm) from Japan was "designed and assembled by the same craftsmen who produce the world-famous Asahi Pentax single-lens reflex cameras." It was also marketed as 'Jupiter' and could be seen in local camera shops and astronomical outlets that carried quality Pentax imaging equipment. (The elaborate engravings by MISCO/Clinton Corp. of Ann Arbor, Michigan, or the plain white lettering of the Science Materials Center sometimes appear on examples from the past.)

Since Auriga lies across the galactic plane, a pleasing amount of sparkling open star clusters can be found there along with a handful of wispy emission nebulae. Three of the constellation's best and brightest star clusters were first studied by the 17th century Italian astronomer Giovanni Hodierna (a devout follower of Galileo) and then later included in Messier's famous catalog. Tracking down the rich star castles of M36, M37, and M38—Hodierna's legacy—is remarkably easy for the small telescope owner. Because of the sheer number and relative brightness of their stars, they do not require massive amounts of light-gathering power to be seen in full glory.

Positive comments have always been associated with M37, Auriga's finest. Astronomer Heinrich Ludwig D'Arrest (1822-75) saw "wonderful loops and curved lines of stars," while tireless deep-sky hunter Thomas W. Webb (1807-85) encouraged telescope users to "gaze at it well and long!" Novices as well as seasoned observers have pointed out the remarkable similarity in appearance of M37 to the 'Wild Duck Cluster' M11 in Scutum, an astute observation that is quickly confirmed by looking through the 2.4-inch telescope. It also has a pronounced triangular shape, which is obvious from an examination of photographs (see the image at left). The dazzling magnitude 5.6 open star cluster measures approximately 20' from base to apex.

Modern day observers such as Sue French, author of *Celestial*

(Continued on page 4)

Classic Scopes *(Continued from page 3)*

Sampler and regular contributor to *Sky & Telescope*, gave a wonderful description of M37 that mimics the view through the vintage Asahi Pentax telescope:

> My [4.1-inch] refractor at 87x reveals an extremely rich flurry of faint stars gathered in clumps scattered around a central, orangish magnitude-9.1 star. Dark lanes and patches abound, threaded among the teaming swarms of stars.

A spacefarer traveling at the speed of light would need 25 years to transverse this cluster of stars. M37 is at a distance of 4,400 light-years, whereas M36 and M38 are 4,000 and 4,300 light-years away, respectively.

Aiming the 2.4-inch instrument about 3.3° north-northwest of M37 brings us to M36 (NGC 1960), a relatively loose confederation of some sixty 9th to 14th-magnitude stars. This memorable wealth of glittering starlight is a worthwhile stop during a Messier Marathon or when viewing deep-sky objects at slower-paced star parties. M36, shining with the combined light of a magnitude 6.0 star, is a commanding sight in the Asahi Pentax glass at 31x, but all powers provide a nice view of this scattered 12' diameter grouping. It is one of the few easily accessible deep-sky objects that take on an almost 3-D effect when seen in small aperture telescopes.

This coarse collection of stars has an overall shape resembling a twisted 'X' in amateurs' telescopes, but has often been cited in the literature as reminding astronomers of the constellation Perseus in miniature. Swirls and spirals of fainter stars occupy the pretty open star cluster, glowing against the dark, ebony sea of deep space. The easily resolvable double Σ737, a neat pair of 9th-magnitude stars with components 10.7 seconds of arc apart, is offset east-southeast of the cluster's center. Also near the middle of M36 is the slightly dimmer but wider binary Sei 350. Both sparkling pairs are marvelous in the 2.4-inch scope at 53x and add to the beauty of the scene.

The galactic cluster M36, a beautiful assemblage of 9th-magnitude and fainter bluish-white suns. North is up and east at left in the photo. All of the star cluster images displayed throughout this article are by courtesy of NOAO/AURA/NSF.

One of Auriga's showpieces is M38 (NGC 1912), a rich swarm of over 100 stars. It lies in a congested portion of the winter Milky Way about 2.3° northwest of M36. A splendid sight through amateurs' telescopes, its brightest members are arranged in a pattern resembling an inverted letter 'Pi.'

Lying in a rich starry neighborhood just slightly north of the midpoint of a line joining ι and θ Aurigae is the attractive open star cluster M38. (Hodierna's trio of clusters can be found plotted all in a row on star charts, with M38 anchored deep in the heart of Auriga.) It boasts an apparent diameter just under that of M37 and is a tad dimmer at magnitude 6.4, and therefore can easily be spotted in binoculars and finders.

In the 2.4-inch Asahi Pentax refractor, M38 has the shape of an oblique cross enclosed by a square, a geometric form that makes this admirable deep-sky object instantly recognizable through the eyepiece. It is a populous splash of lucid light with an irregular outline and displaying many gaps and star chains. Voted by amateur astronomers as only slightly inferior to M37 in appearance, the stunning aggregate of stardust stands out well from the crowded Milky Way background.

For those who treasure the performance of their Asahi Pentax telescopes, they can go beyond Messier and explore deep-sky objects in Dreyer's New General Catalog. An easy side trip after visiting M38's rich harvest of suns is to slew your 2.4-inch telescope 30' toward the south. The hazy blob of unresolved stars known as NGC 1907, much diminished in appearance than its spectacular neighbor, then crawls into the center of the eyepiece field. This deep-sky denizen shines at magnitude 8.2 and is 6' across. (Further recommended targets in Auriga are NGC's 1664, 1857, and 2281.)

Space Art

An exhibition by master illustrators opens an otherworldly adventure.

By John W. and Diane A. Siple

Imagine for just a moment that you are watching sunrise over a deep chasm on ruddy Mars, standing knee-deep in hoarfrost on one of Saturn's major moons, or viewing an ice geyser on Triton with Neptune hanging over the curved horizon. All of this and more is made possible through the remarkable talent of astronomical artists, those creative individuals who for decades have been providing a surrealistic look into the worlds of our Solar System and beyond.

Paintings of far flung places and events have always held a fascination for those with an adventuresome spirit. Space art received a tremendous boost in the 1950s under the direction of Chesley Bonestell (1888-1987), a highly-gifted

draftsman regarded by the mainstream media and his colleagues as the dean of all such illustrators.

His awe-inspiring works appeared in hundreds of major magazines, including *Life* and *Popular Mechanics*, and his drawings became the impetus for the US space program. Willy Ley's classic *The Conquest of Space* (1949), a landmark publication in space science, displayed 16 color plates by Bonestell. A

Above: Galilean Moons *by Oregon illustrator Frank Hettick. Left: Portrait of Chesley Bonestell by Cedric Braun. All artwork copyright the individual artists.*

thorough account of his life can be found in the incomparable *The Art of Chesley Bonestell* by Ron Miller and Frederick C. Durant III, published in 2001 and now a collectable volume.

A contemporary of Bonestell was Jack B. Coggins (1911-2006), a British-born illustrator, author, and artist who is most remembered for his exquisite maritime oil paintings. He was also exceptionally good at portraying alien landscapes and spaceships. Coggins' rough-hewn but plausible renderings can be found as cover art on such popular 1950s pulp science fiction magazines as *Galaxy Science Fiction, The Magazine of Fantasy & Science Fiction*, and *Thrilling Wonder Stories.*

Often discovered among the pages of today's top magazines and books is artwork by members of the IAAA (International Association of Astronomical Artists). Readers who have picked up copies of *Scientific American, OMNI, Astronomy,* or *Sky & Telescope* plus countless other astronomy, meteorology, space, rocketry, and related publications have noticed the omnipresence of paintings by this versatile genre.

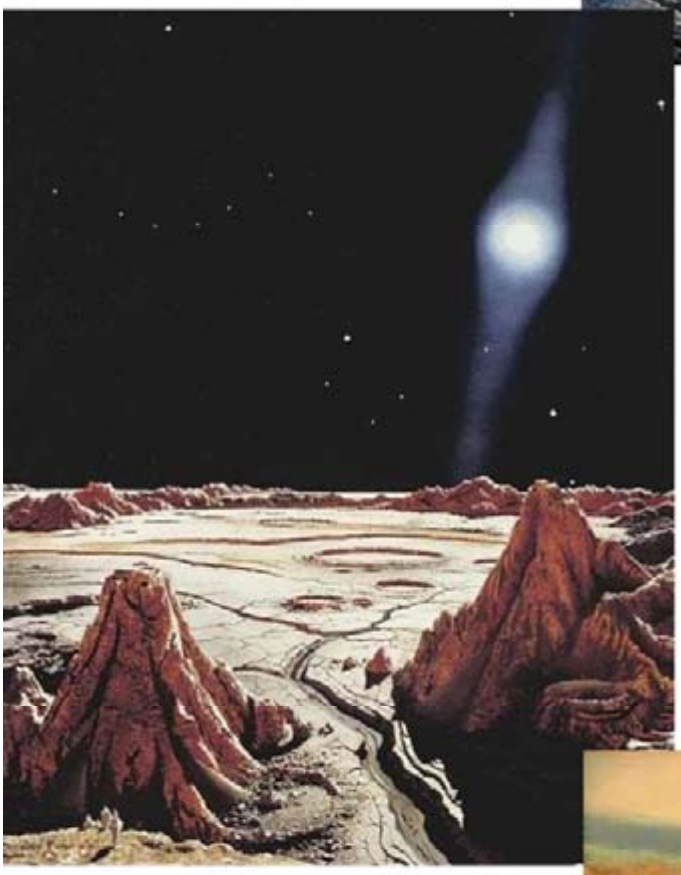
Many of the listed artists are professional engineers and respected scientists. The league also includes pilots and former astronauts, and some on the membership roster are astronomers with thousands of hours of observing time under their belt. Still others are authors and educators. All are dedicated to bringing an inner vision of the universe, from the ordinary to the bizarre, to tangible reality.

Artist's commissioned works can be executed using a wide variety of media, including oils, watercolor, ink, gouache, graphite, pastels, acrylic, or combinations thereof. The 'magic lantern' of image manipulation is digital or computer-generated graphics and enhancement, an advanced technique that adds greatly to the artist's arsenal of methods. Whether by sound speculation or from 'realistic artwork' based on actual photographic evidence, their dramatic murals have an almost hypnotic effect on the psyche.

(Continued on page 6)

Space Art *(Cont'd from page 5)*

(right) Don Dixon's *Pluto at Perihelion*. The superb rendition of this dim, icy member of the Outer Solar System (now relegated to 'Minor Planet' status along with its moon Charon) was originally published in his 1981 book *Universe.* In it he explains, "As Pluto reaches perihelion, the methane frost that has been detected on its surface may thaw to provide a tenuous and temporary atmosphere. Crystals suspended high in the atmosphere may produce prismatic halos about the Sun, which, viewed from Pluto, is merely a very bright star."



(above) The Surface of Mercury by Chesley Bonestell. The Sun appears three times as large as it appears to us on the Earth in this famous oil painting by the grandmaster of the art trade. It was first pictured in Ley's *The Conquest of Space.* An inhospitable environment filled with huge cracks and sintered plains, this strange world is alternately scorched and frozen during its 88-day journey around the Sun.

Fire and Ice, a Grand Tour of the Solar System in Art, Inspires and Delights the Traveler.

(below) Martian Sunrise Over Noctis Labyrinthus by Norm L. Siegel. A rhapsody of colors plays across the Martian landscape in this spellbinding illustration of 'the labyrinth of the night.' A once geologically active region of Mars between the Valles Marineris and the Tharsis upland of towering volcanoes, it is characterized by deep, maze-like valleys and canyons. The radiantly ethereal painting has a profound sense of locale and expresses clearly the tumultuous past of that fracture-laden section of the Red Planet.

(Continued on page 7)

Space Art *(Cont'd from page 6)*

Saturn, that glorious ringed planet so often studied in detail through the telescope, is regularly depicted in prints and drawings. Its astonishing beauty is elegantly captured in artist Ron Miller's *Saturn Seen from Rhea* (top right), a cryptic blend of classical style and current scientific thinking. (The alluring nature of Sol's sixth furthest planet is best remembered in Bonestell's *Saturn as Seen from Titan* (1944), a remarkable triumph of art that "launched a thousand careers" throughout the sciences.)

Spatial depth and structure characterizes Frank Hettick's meticulous rendering called *Uranus Flyby (*center right). His refined illustration of the 'sideways planet' carries to the eye a powerful sense of 'being there' in the minutely divided patterns of paint. Uranus' soft, jade green reflected sunlight—a result of the spectral hue of methane in its atmosphere—takes the form of a horned crescent in the flyby. The tactile abstraction also accurately portrays the planet's nine narrow rings, which were discovered in 1977 after Uranus occulted a star.

"What I try to do is go beyond Hubble. I go to places the Hubble (telescope) hasn't seen."

—Bob Eggleton

Rich with opulent imagery and psychological insight is Bob Eggleton's *Blues for Neptune*. In the painting (bottom right), a gibbous Neptune is a colossal azure ball hugging the horizon of its largest moon Triton, where an ice volcano spews forth its contents into the vacuum of space. An inventor of dramatic scenes, his rigorous composition is imbued with a luminist's use of light, and is pervaded by an intense bluish aura that gives the landscape an almost chromatic brilliance.

Space artists are fundamental in synthesizing the novelties of the unknown universe and they effectively bridge the division that often separates reality from science fiction. A lifetime of energy combined with natural talent has led to some of the world's greatest paintings. In the words of Henry David Thoreau, "The world is but a canvas to the imagination."

RON Miller

Saturn Seen from Rhea.

FRANK Hettick

Uranus Flyby.

BOB Eggleton

Blues for Neptune.

Observing M42

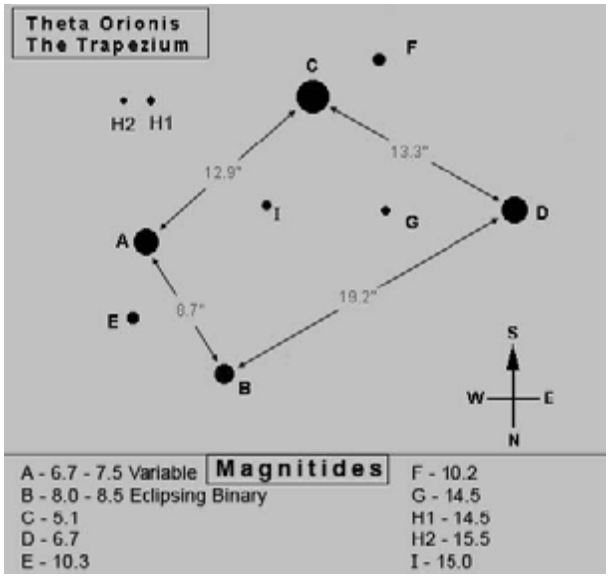
M42 and M43 region with labels, north is to the left. Note the much fainter nebulosity that pervades the area, in this photo. Image by Hunter Wilson, http://en.wikipedia.org/wiki/Orion_Nebula

M42 is possibly the most rewarding deep sky object observable from the northern hemisphere. Whether you look at it through heavy light pollution or under a pristine mountain sky it's always worth a look. Even during a full moon through an 8 inch scope there can be a surprising amount of detail in the bright central region, and in steady seeing the multiple star Theta Orionis, otherwise known as the Trapezium, can be a fabulous sight.

The photo above shows M42 and the brightest nebulae nearby. The fainter background nebulosity isn't visible in amateur scopes, but in long exposures this faint nebula pervades the entire constellation of Orion, and indeed all the well known nebulae in the Orion area are merely bright portions of this huge nebulous region.

Located about 1600 light years away, the one degree angular size of M42 makes it about 30 light years in diameter. Its +5 integrated magnitude is a good indication of its naked eye visibility, which is surprising easy to see even through moderately bright light pollution. Located in the middle of Orion sword, and situated in the middle of the sky's brightest and most appealing constellation, M42 practically begs for telescopic observation. Here are a few things to look for the next time you point your scope in this direction:

Trapezium



A chart showing the main stars of Theta Orionis. The four brightest are by far the easiest to see.

(Continued on page 9)

Observing M42 *(Continued from page 8)*

Even if multiple stars hold no intrinsic interest for you, the Trapezium is still worth a look. Immersed in the brightest part of M42's most detailed, electric green nebulosity it still commands center stage, especially when the seeing is steady. Through an 8 inch scope, the A through D stars will be obvious and the E and F stars will glimmer into view, with the E star being the easier of the two. The F star has a tendency to blend into the C star when the seeing is a little soft.

Increasing aperture improves the visibility of the E and F stars but it takes a scope in the 20 to 24 inch range to start to have a chance to see the G and H stars from Oregon. Further south the odds improve as the Orion climbs higher in the sky, with better chances for steady seeing. I've only seen the G star once through a 28 inch scope (at the 2008 OSP) but Chuck and Judy Dethloff have seen the G and H stars from Arizona through Chuck's 24 inch scope. Regardless of your success with the fainter Trapezium stars the search for them is always enjoyable and you may see some of the other faint stars imbedded in the bright nebulosity nearby.

The stars of the Trapezium are only a few hundred thousand years old and are still radiating extra energy from their continuing gravitational collapse. They're representative of many of the stars seen in and around M42.

Central M42

The brightest area of M42 surrounds the Trapezium, and even without the focal point of this multiple star the fantastic detail of the nebula here would still make this area the center of attention. John Herschel coined the phrase "like the breaking of a mackerel sky" when describing this area.

The central area of M42, HST image.

This is the part of M42 that's visible even through fairly bright light pollution, and even if it made up all of M42 it would still rank as one of the finest sights in the sky. Direct vision reveals intricate folds and billows of the cloud-like nebula, which averted vision makes even more dramatic. The electric green color is most obvious under a dark sky and through larger scopes, but it can be detected under most sky conditions. Doubly ionized oxygen creates this distinctive hue.

The straight, bright line of nebula seen in the right side of the above image is a shock front moving through M42 and can be seen fairly well at medium powers. I never noticed it until I looked for it so it doesn't command attention, but it's one of those things that's easy to see if you look for it, but is just as easy to overlook if you don't.

M42's "Wings"

Perhaps the most beautiful part of M42, the wings curve outward from the central area to the southeast and northwest. They're nearly bisected by the dark nebula dubbed the Fish Mouth, which also separates M42 from M43. The southeast wing is especially ethereal as it's shaped somewhat like a ghostly scimitar sword. In larger instruments is has an obvious dull, brick-like color which is nearly as easily seen as the electric green of the central M42 region. The northwest wing has much the same color but has a more amorphous shape.

There's a third wing, but it's pointing pretty much right at us and we see it as the dark nebula that overlaps the central M42 area. Once you can see it as pointing toward us, you'll be begin to appreciate some of the three dimensional shape of M42.

HST image showing the "wings" of M42. The Fish Mouth is almost lost in the detail of this high resolution image, but the mouth is still well seen as the dark nebula on the bottom edge of

(Continued on page 10)

Observing M42 *(Continued from page 9)*

M42's Red Interior

When you read or hear reports of seeing red in M42, this is the area people are referring to. It's also the red area that's seen in photographs. The most noticeable area of red surrounds the bright central region and along the inside of both wings, but make no mistake, this is a subtle and unsaturated hue that takes a big scope and sensitive low light color vision to detect under a true dark sky. Averted vision won't help because color is detected only with direct vision, so you'll detect it right away or not at all. I've seen it best through a 28" scope at Steens Mountain when M42 is nearly at the meridian but I've also seen it through a 12.5 inch as well. Sometimes it can be detected as a warm hue rather than a subtle red.

Ultra high energy ultraviolet photons from the Trapezium stars, mostly from star C, knock loose electrons from the neutral hydrogen that makes up most of the nebula, and when the free electrons recombine with the hydrogen ions one of the wavelengths of light that's emitted is the red we see and photograph.

M43

Although cataloged as a separate object, M43 always appears to me as an obvious part of M42. At medium powers some details start to become apparent as does a star in its center. The Fish Mouth provides its eastern border and even though this a bright and interesting nebula I find it completely overshadowed by everything else.

Everything Else

All the nebulosity, the swirls, colors and the glorious Trapezium in the center of it all is turned into magic by the bright blue stars scattered around and the various faint stars within the nebula that look like diamonds sitting in whorls of cotton. To the immediate north is the NGC 1973-75-77 nebula that to my eye seemingly flows around a scattered group of bright blue stars like icy water around rocks in a mountain stream.

Superimposed on these nebulae and essentially making them separate objects is the dark nebula often called the Running Man. It can be seen in the image at the beginning of this article but you'll need to stretch your imagination a little for it to become obvious.

Under the darkest skies the full loop of M42 can be seen, in which the two wings continue their respective arcs with fainter wisps of nebula to enclose the entire 30 light year expanse of the nebula. Look for low surface brightness swirls of nebula all through the interior of the full loop.

Observing Tips

Nebula filters not only help bring out the fainter areas of M42 under a light polluted sky they also can highlight different areas when viewed under a dark sky. The UHC, OIII and h-beta filters all provide their own version of M42. The h-beta version is especially interesting.

Low power views are great but also use magnifications as high as the atmosphere will allow, especially in steady seeing conditions. This is not only to bring out the fainter stars in the Trapezium region but also the smaller nebular details.

If you have a scope that can take in this entire scene at once under a dark and steady sky I highly recommend long and leisurely looks. Try to imagine the 3D shape of these beautiful nebulae and new born stars.

Take your time and come back often. There's much to see and appreciate in and around M42 that it's difficult to take in all the subtleties in one observation.

If someone has a big scope nearby make sure you borrow a view, but beware that it may lead to an expensive case of aperture fever.

Camp Hancock Outing March 27-29, 2009

OMSI's Camp Hancock with meals and cabins fits the bill for a great outing for on cool Spring weekend. Dark skies, warm cabins, real bathrooms, hot showers, good meals and great friends top off the first outing of the year for RCA. There are electrical outlets on both Astronomy Hill and the Ridge for those who need power for their scopes, ccds and computers and wireless internet service is also available at Hancock.

We will be taking registrations at both the February 16th and March 16th meetings, or you can mail in your registration. The Registration and Payment Deadline is Tuesday, March 17th. We do expect to get permission again to use the "Dob Valley"

(Continued on page 11)

Camp Hancock *(Continued from page 10)*

which will increase our capacity. Lots of information for our outing, including pictures, downloadable Camp Hancock information, Clarno Fossil bed information, Driving maps and instructions, etc. can be found on the RCA website under Star Parties.

Camp Hancock is an OMSI sponsored field station for the promotion of science education. It is located about 150 miles from Portland and is 2 miles east of the John Day River in Eastern Oregon in the Clarno Fossil Beds. Camp Hancock is NOT a resort hotel; it is a rustic kid's camp with 16 bunkhouses that sleep up to 14 people each in A-frame buildings. The bunkhouses are one room with bunks, mattresses, limited electricity and heaters on a 60 minute timer. You will be sharing the bunkhouse with others in our group, but it's never crowded and we usually average less than 3 people per cabin.

Lodging: The bunkhouses are not reserved, except by prior arrangement for medical necessity. Bring your own warm sleeping bag (it will be cold at night) and whatever else you need, especially warm clothes. One of the cabins will be set aside as a "ladies only" bunkhouse. The remaining bunkhouses are shared with others. There is a limited area for Tents, RVs and trailers. We've been usually able to provide limited electricity to most of the RVs and trailers, but bring your own power cord, and be prepared to be self sufficient in case there is not enough power available.

> RVs, Trailers and Tents are $20 per night per person.
>
> Bunks in the A-frame bunkhouses are $25 per person per night.

Meals: Camp Hancock offers breakfast (Saturday and Sunday) and a sack lunch (Saturday only), and dinner (Friday and Saturday). The meals are served family style and everyone is expected to help with setting up, clearing the tables and doing dishes. Breakfast is served at 9am Saturday and Sunday, with fixings put out for making a sack lunch at 10am both days. Dinner will be at 6pm on both Friday and Saturday. Everything must be paid for with your registration before March 25th.

> Breakfast - 9am - is $5 per person per day (Saturday & Sunday)
>
> Sack Lunch - 10am - is $4 per person per day (Saturday & Sunday)
>
> Dinner - 6pm - is $6 per person per day (Friday & Saturday)

Registration: Mail-in registration and payment deadline for the March outing is March 17th.

More Information: There is more information on the web, including an order form you can fill out on-screen. The information, including pictures, downloadable Camp Hancock information, Clarno Fossil Bed information, driving maps and instructions, etc. will also be found on the RCA website.

We have been asked again not to enter camping area until after 3pm, because there is a school group that will be leaving shortly before we arrive.

Dark Sky Star Party and Messier Marathon at Kah•Nee•Ta

March 20-22, 2009

Known for its clear, dark skies this time of year, the Kah•Nee•Ta Resort offers a family retreat atmosphere with many amenities and activities. Come and observe your favorite objects under Central Oregon's clear dark skies, spend a wonderful weekend with other astronomers swapping observing stories and exchanging information, or even just spend a relaxing weekend with your family, all in comfortable accommodations that offer various other activities.

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.

Kah-Nee-Ta affords a warm bed and hot shower (a great benefit in March), good food, and a giant fireplace. 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.

There is no formal registration for the event itself, but you must make your own room reservations directly with Kah-Nee-Ta and you are responsible for your own charges.

See the RCA website for more information: http://www.rosecityastronomers.org/sp/kahneeta.htm

BOARD MEETING MINUTES

January 5, 2009
OMSI Classroom 1
Margaret Campbell-McCrea

Attending: Officers: Tom Nathe, Matt Vartanian, Margaret Campbell, Ken Hose, Dawn Willard, Jan Keiski., Jean London, Sameer Ruiwale, Dave Nemo, Larry Godsey, Matt Brewster, Greg Rohde. Club members: Jim White, Art Morris

The meeting was called to order at 7:24 p.m.

Officer Reports:

- Secretary: Quorum was met with twelve voting members present.
- Treasurer: Larry Godsey reported that we have $19,275.71 in the RCA general account, and $19,055.39 in the Site Fund, for a total of $38,331.20. Larry will be moving $1,000 from the Site Fund into Site Fund CD.
- Larry also suggested expanding the budget for speakers for 2009 by $1,500 for quality programs. The current budget is $1,000; the new total would be $2,500 which ends June 30. Motion made by Larry Godsey; seconded by Greg Rohde; passed unanimously.
- Programming: Our holiday potluck will be held in January. There will be no auction. After some discussion, the Board decided to hold the Information Fair in May; we will publicize the Information Fair during Astronomy Day activities.
- Observing: There was some discussion of some details of dates and places; Matt Vartanian has been working with Jim Todd; he will have the new star party schedule for 2009 finalized within the next two weeks.
- Community Affairs: Dawn Willard and Sameer Ruiwale will have an email exchange about what she can be doing to improve the activities of the position.
- VP Membership: Ken Hose reported that we have three new members via PayPal, two by check. Our total is 292 member families. We had 267 last year, 281 the year before.
- New Members: See New Business below.
- Sales: There were no sales in December, because the regular meeting was canceled because of snow.
- Library: Nominal
- Scopes: The online auction has been started on the Forum under "stuff for sale," but there hasn't been much response. Some discussion of ways to increase visibility: sticky the auction so it will always be at top, linking the telescope library page from website to the Forum, send out broadcast message.
- IDA: We need a new liaison; Sameer will make the announcement to the club.
- Magazines: Nominal.
- Webmaster: Only one person responded to Larry's test message. Some discussion about the videos on the Forum site. They don't work well now. Larry and Jan are still working on improving the quality.
- Site: Nominal
- Youth: Jean London passed out the proposed survey for the youth program. There was lengthy discussion about how to do better outreach to kids. Jeannie will finalize the survey and bring them to the potluck. Some discussion about creating an online survey, with results available for the February board meeting.
- SIGS: This will be Tom Nathe's last board meeting while he focuses on long-term goals; Sameer will look for a new SIG director.
- ALCOR: None.
- OMSI: Nominal.

Old Business:

- Starlight Parade: Margaret will continue to try to reach Andy for the rest of this week. We need a budget and plan for the parade by February, or we will have to drop the idea.

New Business:

- New members: Two visitors from the club came to discuss ways to make new members and visitors feel more welcome at the general meetings and at the SIG meetings. After considerable lively discussion, we agreed that we need to have a more active New Member Advisor. We also need a consistent and structured new member program, and perhaps a mentorship program
- Cosmology SIG: We have two volunteers for the Cosmology SIG position. Jim White came to the meeting and discussed why he is interested in being the SIG director. We decided to discuss a joint chair position with both volunteers.
- Sister Club: Jan presented the signed documents from GAMA to the Board.
- Last Minute Potluck Details: Tom will talk to Chris Lee or Sameer will contact her about coming to the potluck to have her award recognized; we also need to contact Dan Grey and Mike Rasmussen to come to the meeting for their awards. Jan will do slide show of RCA and Argentina. Howard Knytich will sing a good song. The dinner begins at 6:30 p.m.

To Do:

1. Sameer: Search for new IDA liaison, new SIG director, and new New Member Advisor; talk to Lamont and Jim about a joint position for Cosmology; invite Dan Grey and Mike Rasmussen to the potluck.
2. Dave offered to help find an internet site that will host Jean's youth survey for free.
3. Jean will finalize the survey.
4. Matt V. will finalize star party schedule.
5. Margaret: Work with Andy on getting the Starlight Parade committee up and running, or close it down.
6. Larry and Jan and Dareth: work on improving video capabilities on our website.

(Continued on page 13)

Board Meeting Minutes *(Continued from page 12)*

7. Dawn and Sameer: work on defining the Community Affair position.
8. Margaret: Create RCA Board meeting template so minutes are all but complete at the end of the meeting, then commit herself to getting the minutes finalized and out to the Board within five days.

The meeting adjourned at 9:10 p.m.

Telescope Workshop

When: Saturday, February 7, 10:00 AM - 3:00 PM
Place: Technical Marine Service, Inc.
6040 N. Cutter Circle on Swan Island
For more information contact:
Director: John DeLacy johncdelacy@comcast.net
Assistant: Don Peckham don@dbpeckham.com

Science Special Interest Group (SCI-SIG)

Next meeting is February 7 at 3pm. Following the Telescope Workshop at Technical Marine Services.

This group is for people who would like to advance their skills in astronomy beyond casual observing. Various projects that some group members are involved in include; variable and double star observing, occultations, photometry and astrometry. A science background is not required, however a curious mind does help.

Location: Technical Marine Service, Inc
6040 N. Cutter Circle on Swan Island

http://www.rosecityastronomers.org/sigs/science.htm

Tom Nathe sigs@rosecityastronomers.org
RCA SIG coordinator

Astro-Imaging Special Interest Group

The "AI-SIG" is about advancing the skills of beginner, intermediate and advanced astro-imagers. We rely on the skills of our members to bring each other along as we image the beautiful night sky and its many wonders. Whether you use a CCD, DSLR, point-and-shoot or film camera, members of this group can help you achieve better images with less effort and frustrations. Please join us as we learn together to produce "stellar" images!

Next Meeting: Monday, February 9, 2009, 6:30pm
Beaverton Public Library
In the Conference Room
12375 SW 5th St, Beaverton

ASTROPHYSICS / COSMOLOGY SIG

Date/Time: Wednesday, February 18, 7 PM.

Topic: "An informal discussion in the areas of cosmology, astrophysics, space exploration and more! "

Place: Linus Pauling Complex,
3945 S.E. Hawthorne St., Portland.

Sig Directors: Lamont Brock 503-235-5893
Jim White 503-236-7802

Email: cosmology-sig@rosecityastronomers.org

www.rosecityastronomers.org/sigs/cosmology.htm

RCA 'Downtowner's' Lunch

Join us on the first Friday of each month for lunch at a great downtown restaurant (Holidays and such may push us to the second Friday of some months, check the calendar at http://www.rosecityastronomers.org).

The location is announced on the RCA general forum discussion list. at http://www.rosecityastronomers.org/forum under special interest groups.

Always great conversation and food.

For more information contact: Margaret Campbell at mmcrea@nwlink.com

Photo by Jan Keiski

Oregon Museum of Science and Industry
Rose City Astronomers
1945 SE Water Avenue
Portland, Oregon 97214-3356

February 2009

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

February 2009

Feb 2	Mon	RCA Board Meeting	OMSI Classroom 1	7pm
Feb 6	Fri	Downtowner's Luncheon	TBD	Noon
Feb 7	Sat	Telescope Workshop	Swan Island	10am-3pm
Feb 7	Sat	Science SIG	Swan Island	3pm
Feb 9	Mon	Astro Imaging SIG	Beaverton Public Library	6:30pm
Feb 16	Mon	New Member Meeting	OMSI Planetarium	6:15pm
Feb 16	Mon	General Meeting	OMSI Planetarium	7:30pm
Feb 18	Wed	Cosmology Sig	Linus Pauling Complex	7pm

March 2009

Mar 2	Mon	RCA Board Meeting	OMSI Parker Room	7pm
Mar 6	Fri	Downtowner's Luncheon	TBD	Noon
Mar 9	Mon	Astro Imaging SIG	Beaverton Public Library	6:30pm
Mar 14	Sat	Telescope Workshop	Swan Island	10am-3pm
Mar 14	Sat	Science SIG	Swan Island	3pm
Mar 16	Mon	General Meeting!	OMSI Auditorium	7pm
Mar 27-28	Fri-Sat	Dark Sky Star Party!	Camp Hancock	3pm

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 CLUB INFORMATION

Web Site: http://www.rosecityastronomers.org

The
Rosette Gazette

Volume 21, Issue 3 Newsletter of the Rose City Astronomers March, 2009

RCA MARCH 16 GENERAL MEETING
Two Small Pieces of Glass

For the next General RCA Meeting on Monday, March 16 at 7:30 pm in OMSI's Kendall Planetarium will have a special full-dome, ***Two Small Pieces of Glass,*** presentation by Jim Todd and OPB. The show traces the history of the telescope from Galileo's modifications to a child's spyglass-using two small pieces of glass-to the launch of NASA's Hubble Space Telescope and the future of astronomy.

While attending a local star party, two teenage students learn how the telescope has helped us understand our place in space and how telescopes continue to expand our understanding of the Universe. Their conversation with a local female astronomer enlightens them on the history of the telescope and the discoveries these wonderful tools have made. The students see how telescopes work and how the largest observatories in the world use these instruments to explore the mysteries of the universe. While looking through the astronomer's telescope, the students, along with the planetarium audience, explore the Galilean Moons, Saturn's rings, and spiral structure of galaxies. During their conversation with the astronomer, they also learn about the discoveries of Galileo, Huygens, Newton, Hubble and many others.

Visuals will include actors green screened into a computer graphic star party environment with a variety of telescopes used by amateur astronomers. As the program progresses the show uses video and full dome imagery to present the story of the telescope and the astronomers who used them to make their dramatic discoveries. All skies and full dome video will transport the planetarium audiences to some of the largest observatories in the world, as well as places of historical significance. The soundtrack was recorded by the London Symphony Orchestra.

For more information on the ***400 Years of the Telescope*** project visit http://www.400years.org

All are Welcome! Monday March 16

Social Gathering: 7 pm

Presentation Begins: 7:30 pm.

Location: OMSI Planetarium

In This Issue:

RCA is a member of the Astronomical League.
http://www.astroleague.org

First Quarter Moon	Full Moon	Last Quarter Moon	New Moon
March 3	March 10	March 18	March 26

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RCA MAGAZINE SUBSCRIPTIONS

One of the benefits of RCA Membership is a reduced rate subscription to Sky & Telescope and Astronomy magazines. The RCA member rate for Sky & Telescope Magazine is $32.95 for one year or $65.95 for two years. The RCA member rate for Astronomy magazine is $34 for one year or $60 for two years. For more information go to the RCA web site index and click on any of the links for magazines. Larry Godsey, Treasurer, 503-675-5217, will be taking renewals and new subscriptions at the Magazine Table before General Meetings. Please make checks out to "RCA" and allow two months for your subscription to be renewed.

RCA LIBRARY

The Rose City Astronomers maintains a comprehensive club library of astronomy related articles, books, CDs 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.

The RCA library is constantly growing through many donations and the purchase of new materials. A listing of library materials (PDF format) can be found at the library web page: http://www.rca-omsi.org/library.htm

Jan Keiski (jikeiski@comcast.net) 503-539-4566

Banner shows new GAMA observing site north of Uspallata looking southeast towards Mendoza.

Two wonderful star parties!

THE LAST OFFICIAL GAMA STAR PARTY OF 2008 AT CANOTA SITE

Leo Cavagnaro, Jan Keiski, Carlos Gutierrez surrounded by members and friends of GAMA.

On Saturday, December 20, 2008, GAMA, carried out the last observing night of the year in their nearby site in Canota. This is a place located about 25 miles north of Mendoza.

They go to this place once a month to observe the sky and carry out different observing projects. Each year, Leo sends GAMA members a proposed schedule including the observation dates for the entire observing year (February to December). They go to the mountains even during winter months in spite of low temperatures.

On this day it was a warm and we could enjoy a dark and clear sky with excellent weather.

Carlos Calvo, a member of GAMA, carried his new Schmidt-Newtonian telescope and was working on the motorized system all night long. A brand new member attended the star party, so he was really amazed with the view, through the telescopes, of the bright gems in the southern skies, like the nebulae complexes in the Magellanic Clouds and the most beautiful globular cluster (in Leo's of course and my opinion now too) 47 Tucanae.

The zone of the nebula Eta Carina rises close to 11pm local time in December, reaching a good altitude in the sky near local midnight. Several observers aimed their telescopes to that zone to enjoy the rich field of the Milky Way. If you want so spend hours tracking marvelous deep-sky objects that are in that zone, just aim your telescope and begin to explore it. Not only is the Eta Carinae nebula a southern highlight, also some open clusters like the Southern Pleiades (IC 2602), the NGC 3532 and NGC 3293 clusters, all of them visible with the naked eye under a dark enough sky.

(Continued on page 4)

Star Parties in Argentina *(Continued from page 3)*

On this day it was a warm and we could enjoy a dark and clear sky with excellent weather. Around 20 people went to Canota. Nicolás, a young amateur astronomer, brought his new 12-inch reflector for its “first light”.

On the other side of the observing site there were a few observers working with a 16-inch telescope and also their own instruments. Leo was observing interacting galaxies and identifying the members of the Robert's Quartet. He invited Carlos to observe and identify these faint and challenging galaxies and they were talking about these NGC galaxies for a long time that night.

Some GAMA members also showed him more constellations using laser pointers.

The last quarter Moon rose about 2:30am local time giving a nice show to the observers who were still at the observing site. The dark and steady sky and very good temperatures that night invited observers to stay here until very late.

Rising Moon. Photo taken from Canota by Jan Keiski

AN OBSERVING NIGHT AT PARAMILLOS

Paramillos is a site in the Andes Mountains located at an elevation of nearly 9,000 feet. You can reach this site from Mendoza City and also from Uspallata, a small village in the valley of the same name. It is a very good place to observe from. A faint

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The road as it passes by the Canota observing site. The Andes ahead and Paramillos observing site. Photo by Jan Keiski

glow from Mendoza City is visible from there, but it doesn't cause problems with the observation of deep-sky objects. A very small and faint glow from Santiago, Chile (the capital of Argentina's neighbor country to the west) is also visible behind the Andes. A very few lights from Uspallata Valley are visible far away to the northwest but they don´t interfere either. It is definitely a very good site to carry out detailed observations.

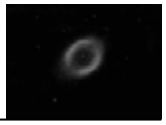
A group of about 10 people went to this site Saturday, December 27, 2008. It was not an official activity of GAMA but an "Astronomical Expedition". It consisted members of Carlos Gutierrez's family, and friends of theirs. Also Elias of GAMA, myself and Leo and Carlos. Usually, we need about 2 hours to reach that place. This time Leo decided to go using the road from Mendoza through Canota and past Villavicencio. I really enjoyed the trip in spite of the road, which was very winding, and in a short time climbed very high in a few kilometers. The sheer drop-offs were very exciting, and scary!

We arrived to Paramillos about 10pm local time. In order to get a very dark sky we set up the telescopes and waited for the astronomical twilight which occurred at 10:30pm,. As soon as the sky got dark enough I began to take a lot of photos of the southern sky. The northern constellations that are usually seen very high in the sky from your country are visible at low altitude toward North from here, so they are an interesting target for my digital camera. I took some photos of the constellations visible at this time, like Gemini, the twins (upper right in the picture below), and Auriga and the brightest star Capella (upper left in the picture).

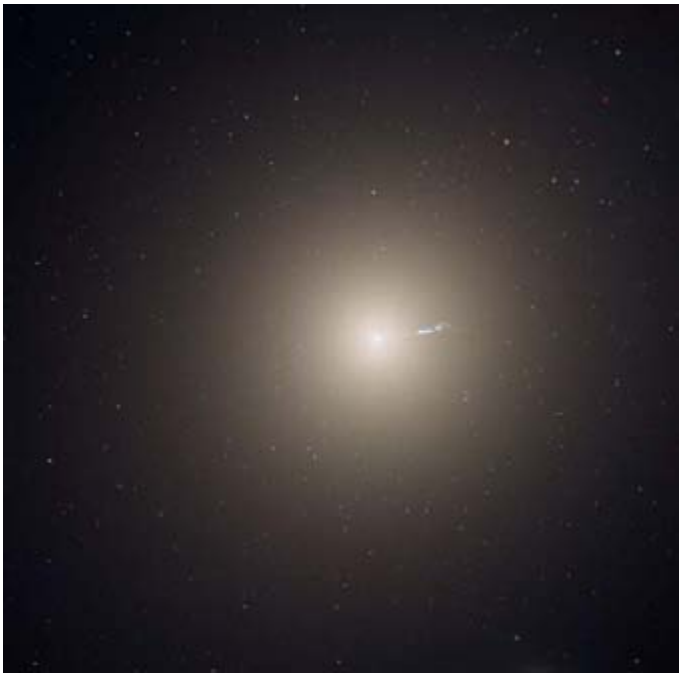
Weather conditions were exciting with lightning visible to the east. It is very usual to have big storms in east Mendoza during the summer. It was a hot day (around 96F) in Mendoza. The temperature however at the observing site was very low, and it was also a windy night. The very cold wind caused some problems to all of us. I did not have problems because I remembered OSP last August that also experienced a very cold summer Saturday night. I had brought gloves, a hat and the Rose City Astronomers hooded sweatshirt, plus a blue winter jacket! Leo and the rest didn't have that much cold weather clothing along. It is very unusual to use them in December!!! I loaned Leo my gloves, and used my extra socks as mittens!

December is a good time of the year to observe galaxies from here. Also, it is a good month to observe the Messier objects situated in the northern constellations, the Open Clusters M36, M37 and M38 in Auriga, M34 in Perseus, the galaxy M33 in Triangulum and the open clusters M35 and NGC 2158 in Gemini, both visible in the same field of view.

Elias showing the sky with his telescope to some Gutierrez family friends. Photo by Jan Keiski



M87 – more than meets the eye.



This Hubble Space Telescope image of M87 shows the relativistic jet much more clearly than you have any chance of detecting visually.

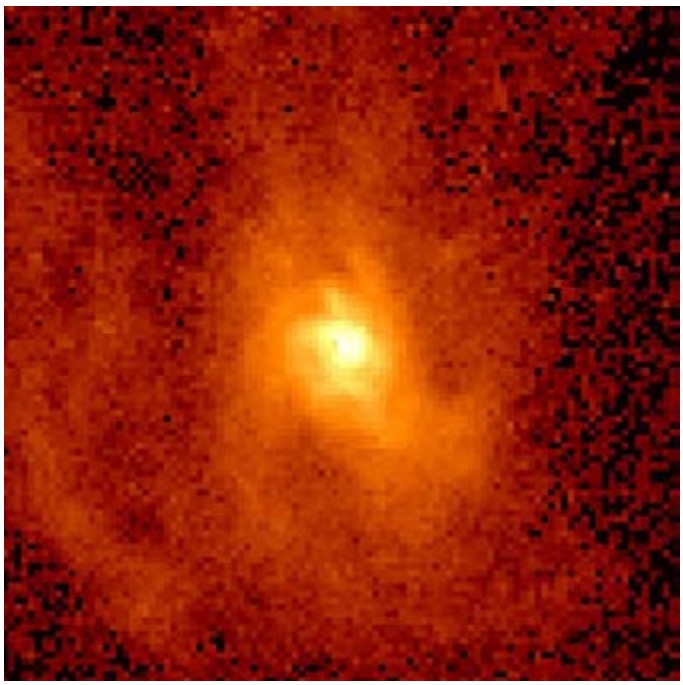
Imagine an elliptical galaxy 50 million light years away that contains several trillion stars, is 120,000 light years in diameter, has 13,000 globular clusters, a super massive black hole in its center that's surrounded by a swirling accretion disk of matter, which somehow generates a jet of sub atomic particles shooting from it at nearly the speed of light. What a sight that would be!

Whether or not you can imagine this as a real object, M87 does exist and is the dominant elliptical galaxy in the Virgo galaxy cluster.

Unfortunately, in addition to its staggering physical properties M87 is exhibit "A" for the large class of deep sky objects that show practically no detail at all to visual observers. Its description is far more impressive than its visual appearance. At magnitude 8.6, its oval shape very gradually brightens towards its center and has a perimeter that's blends imperceptibly into intergalactic space. This is all you'll see. Now it's true that a few observers with larger scopes have detected the jet, but it takes skill and steady seeing to have any hope for a sighting, and even then the odds are slim. I've not heard or read of any visual observations of any of M87's globulars.

However, don't let this stop you from having a look. Observing with the mind's eye is one of the great pleasures of amateur astronomy and M87 is a great object to observe this way. The visual observer also has the opportunity to navigate to M87 by galaxy hopping through the Virgo galaxy cluster, another pleasure not to be missed. Sweep through Markarian's Chain with M84 and M86 first and then jump a couple degrees to the southeast to find M87.

Observing with the mind's eye needs information, and the more you know about an object the more remarkable the observation can be. In this spirit, let's delve deeper into the center of M87.

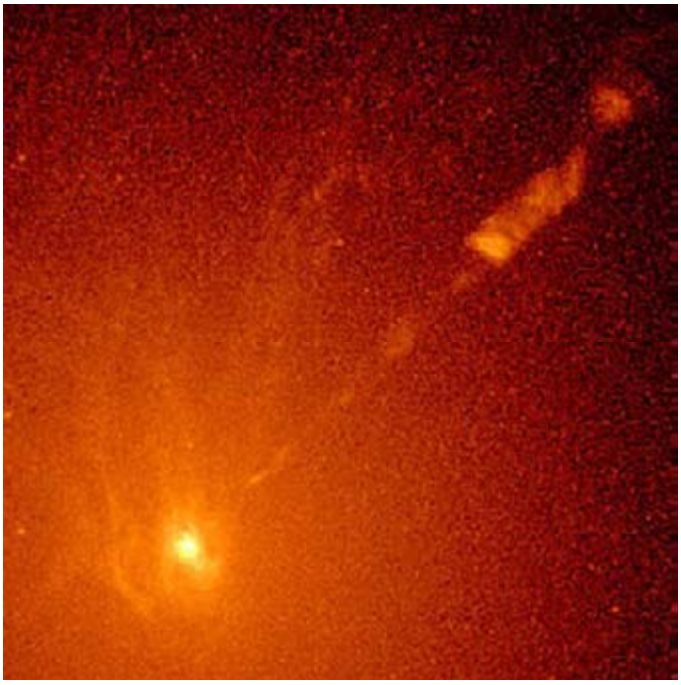


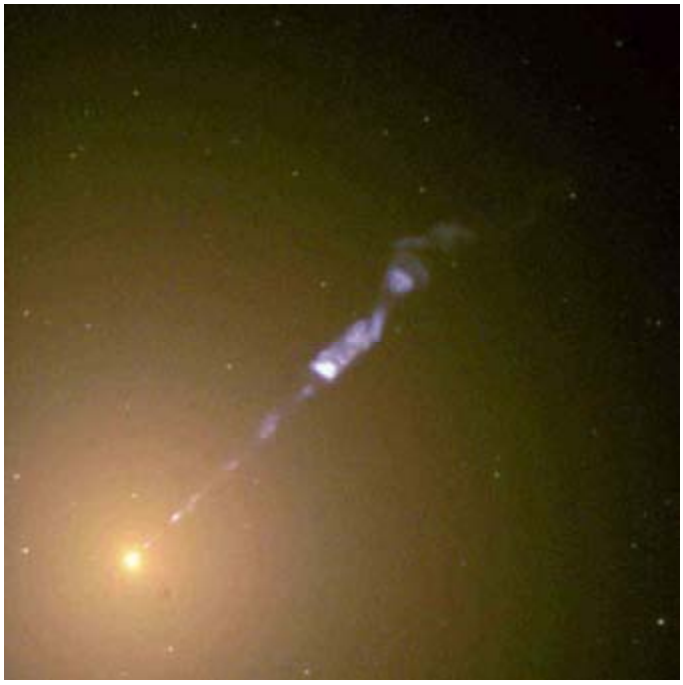
An image assembled from HST data that uses red and blue shifts around the center of M87. It shows the outer area of the super massive black holes accretion disk.

The super massive black hole at M87's heart weighs in at approximately two billion solar masses. The image above shows that it's surrounded by a rotating disk of hot gas, the fuel of the relativistic jet.

(Continued on page 7)

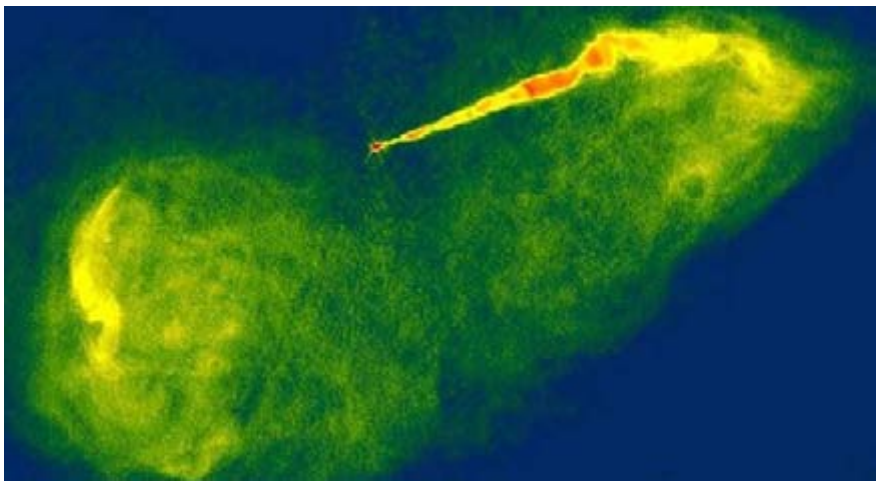
The Observer's Corner *(Continued from page 6)*





HST images of M87's relativistic jet – the image on the left has been enhanced to show the hot gas surrounding the two billion solar mass black hole. The image on the right is in mostly optical wavelengths.

The jet is a stream of sub atomic particles with a total mass of one solar mass. It's somehow powered and collimated by the central black holes' incredible magnetic fields. The exact mechanism is unclear but is a topic of active research.



On the left, a NASA combination of optical, radio and x-ray images that show M87's jets. On the right is a VLA radio image. Note that the second jet is not seen as it shoots away from us but its effects can be seen in these two images.

The jet – or more accurately, jets – are best seen in x-ray and radio images that show them in their full extant. Too bad our eyes aren't sensitive to these wavelengths.

While you have M87 in your eyepiece and you find yourself thinking that there really isn't much to see, remember a few of these facts and remarkable images that show the greater reality of this monster galaxy.

Camp Hancock Outing March 27-29, 2009

There's still lots of room left at OMSI's Camp Hancock the Weekend of March 27-29. With hot meals and rustic cabins it fits the bill for a great outing for on cool Spring weekend. Dark skies, cabins, real bathrooms, hot showers, good meals and great friends top off the second outing of the year for RCA.

Camp Hancock is an OMSI sponsored field station for the promotion of science education. It is located about 150 miles from Portland and is 2 miles east of the John Day River in Eastern Oregon in the Clarno Fossil Beds. Camp Hancock is NOT a resort hotel; it is a rustic kid's camp with 16 bunkhouses that sleep up to 14 people each in A-frame buildings. The bunkhouses are one room with bunks, mattresses, limited electricity, and heaters on a 60 minute timer. You will be sharing the bunkhouses with others in our group, but it's never crowded and we usually average less than 3 people per cabin.

There are electrical outlets on both Astronomy Hill and the Ridge for those who need power for their scopes, ccds and computers. Plus, wireless internet service is also available at Hancock. We do expect to get permission again to use the "Dob Valley" which will increase our capacity.

Lodging: The bunkhouses are not reserved, except by prior arrangement for medical necessity. Bring your own warm sleeping bag (it will be cold at night) and whatever else you need, especially warm clothes. One of the bunkhouses will be set aside as a "ladies only" bunkhouse. The remaining bunkhouses are shared. There is a limited area for Tents, RVs and trailers. We've been usually able to provide limited electricity to most of the RVs and trailers, but bring your own power cord, and be prepared to be self sufficient in case there is not enough power available.

RVs, Trailers and Tents are $20 per person per night.

Bunks in the A-frame bunkhouses are $25 per person per night.

Meals: Camp Hancock offers breakfast (Saturday and Sunday) and a sack lunch (Saturday only), and dinner (Friday and Saturday). The meals are served family style and everyone is expected to help with setting up, clearing the tables and doing dishes. Breakfast is served at 9am Saturday and Sunday, with fixings put out for making a sack lunch at 10am both days. Dinner will be at 6pm on both Friday and Saturday, Breakfast at 9am and lunch fixings set out at 10am. There is no food available outside of these times.

Breakfast - 9am - is $5 per person per day (Saturday & Sunday)

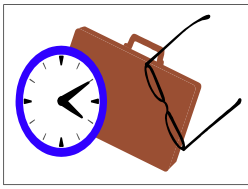
Sack Lunch - 10am - is $4 per person (Saturday only)

Dinner - 6pm - is $6 per person per day (Friday & Saturday)

Registration: Mail-in registration and payment deadline for the March outing is March 17th. We will be taking registrations at the March 16th meeting, or you can mail in your registration before then. Everything must be paid for with your registration.

More Information: There is more information on the web, including an order form you can fill out on-screen. The information, including pictures, downloadable Camp Hancock information, Clarno Fossil Bed information, driving maps and instructions, etc. will also be found on the RCA website.

PLEASE NOTE: We have been asked again not to enter camping area until after 3pm, because there is a school group that will be leaving shortly before we arrive.



BOARD MEETING MINUTES

February 2, 2009
OMSI Classroom 1
Margaret Campbell-McCrea

Attending: Tom Nathe, Margaret Campbell, Dawn Willard, Jan Keiski., Jean London, Sameer Ruiwale, Dave Nemo, Larry Godsey, Greg Rohde, Matt Brewster, Ken Hose.

Visitors: Art Morris, Howard Knytych, Lamont Brock

The meeting was called to order at 7:11 p.m.

Officer Reports:

- Secretary: Quorum was met with 11 voting members present.
- Treasurer: Larry Godsey reported that we have $18,829.24 in the RCA general account, and $19,096.12 in the Site Fund, for a total of $37,925.36.
- Larry also pointed out that we have a CD maturing today. We decided to keep it in the same bank, still in a CD, as long as we are able to "bump up" the interest rate in case it should increase during the year.
- Programming: Matt thanked everyone for helping out with the January banquet. Plans for the February meeting are not complete. The Board made several suggestions for back-up in case we can't get a speaker. In March, the program will be "400 years of the Telescope." This is anOPB production that Jim Todd has helped create. There may be some OPB people at the meeting to make the presentation. Our April speakers are a team that runs the Chandra telescope, and in May, Lawrence Doyle will speak regarding quantum physics. The SIG Fair can be in June, still using Astronomy day to publicize it.
- Membership: In January there were five new and two renewals. There are now 299 member families. There were 278 last year and 288 the year before at this time. We brought in $213 in dues. There was considerable discussion about the new Forum thread regarding what information to ask and track for the members. It has impact on issues such as using the library, getting membership prices for magazine subscriptions, checking out telescopes and being on the Forum. We noted that in a future meeting we will visit the question of defining what "family membership" means.
- Community Affairs: Dawn Willard reported that we have a daytime OMSI star party on the 15th. She asked for volunteers via the Forum and got several positive responses, including one of the PSTs from the club.
- Greg Rohde reported that El Monica school in Beaverton is having a star party Feb. 3rd in the early evening and is looking for volunteers. It will go on Forum and website.
- New Members: Jim Reilly has officially stepped down; Howard Knytych has volunteered. Greg nominated Howard; Jan seconded him. The vote was unanimous. Howard Knytych reported that he and Jim Reilly are going to meet at the next RCA general meeting and hand off the New Member Advisor responsibilities, though Jim is planning on doing one last new member presentation. [See New Business.]
- Sales: Margaret Campbell reported that there were $271.00 in sales in January.
- Library: Jan Keiski reported that she's going to meet with Daniel Browning about making his videos of the OSP speakers available to the library.
- Scopes: Greg Rohde reported that we sold two of the older scopes, 6" Criterions for $250. We have received a new donation of a 10" Hardin Dob last month. Greg may retire one of the 8" scopes in favor of the new scopes.
- IDA: Art Morris has stepped up to volunteer for this position. RCA is a member of IDA and Larry Godsey talked to them today. He will establish Art as the contact person. Sameer nominated him, Howard seconded, vote unanimous.
- Magazines: Nominal.
- Youth: Jean London reported that there were 13 responses to the survey. She discussed some of the results of the survey, which she will post to the Forum and try to solicit more responses. She will email Larry Deal to get something in the newsletter. Also, she will send out another broadcast message reminding members of the survey and soliciting more responses.
- Webmaster: Dareth Murray asked to step down, but continues to want to be the assistant to Larry Godsey. This is a switch in their relative positions. Sameer nominated Larry Godsey as our webmaster; Jan seconded him. After a little discussion, the vote was unanimous.
- Site: Nominal
- SIGS: Tom Nathe resigned last month, but his situation changed and he wants to be back on the Board. Greg nominated him; Sameer seconded; unanimous vote.
- Cosmology SIG: Lamont Brock attended the meeting. He and Jim White are now co-directors of the Cosmology SIG. Lamont asked Matt Brewster to keep him informed about upcoming RCA programs so they can co-ordinate the same topic at the Cosmology SIG meeting, which will continue on Wednesdays after RCA at 7:00 p.m. Lamont and Jim have talked about keeping the SIG accessible. The next meeting, on February 18th, will discuss venues, speakers and will create a calendar.
- ALCOR: None.
- OMSI: Nominal.
- Sister Club: Leo Cavagnaro, GAMA, reported that two separate visitations to Mendoza for star gazing have come about by visiting our website. Jan reported our Newsletter, already nationally acclaimed, now has a Southern Hemisphere reporter. His articles have been well received.

Old Business:

- Starlight Parade: Margaret reported that seven people have responded to the call for volunteers, and we have both a truck and a trailer. Dawn and Margaret will call a meeting. Greg will talk to Steve Jaynes about pulling the trailer.

(Continued on page 10)

Dark Sky Star Party and Messier Marathon at Kah•Nee•Ta

March 20-22, 2009

Known for its clear, dark skies this time of year, the Kah•Nee•Ta Resort offers a family retreat atmosphere with many amenities and activities. Come and observe your favorite objects under Central Oregon's clear dark skies, spend a wonderful weekend with other astronomers swapping observing stories and exchanging information, or even just spend a relaxing weekend with your family, all in comfortable accommodations that offer various other activities.

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.

Kah-Nee-Ta affords a warm bed and hot shower (a great benefit in March), good food, and a giant fireplace. 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.

There is no formal registration for the event itself, but you must make your own room reservations directly with Kah-Nee-Ta and you are responsible for your own charges.

See the RCA website for more information: http://www.rosecityastronomers.org/sp/kahneeta.htm

Board Meeting Minutes *(Continued from page 9)*

- Star Party Schedule: Kah-Nee-Tah has been signed for March 20 – 22. Sameer will contact Matt to make sure the final schedule is ready for the next general meeting.
- Video: There was some lively discussion about improving the quality of speaker videos on our website, and the amount of space they use up on our server.

New Business:

- New member program in the Planetarium: Howard has spoken to Jim Todd about having new member meetings from about 6:15 – 7:00 in the Planetarium, and Jim is open to it. There was some discussion about what kind of programs to offers new members. Ken Hose has also offered to have something at his house. Howard, Tom and Ken will work on developing this aspect of our program.
- SIGs: The question of whether non-members could attend SIG meetings had arisen last month. Sameer clarified that SIG guidelines say that non-members can come. It's a way to encourage people to join the club.
- Buying a PST: A club member has a PST to sell to the club. He is asking $450. There is possibly another one for sale at Camp Hancock. We decided that since the two PST scopes we have are checked out constantly, we would consider getting another one. Greg will negotiate with the club member; Larry will confirm with Camp Hancock and pass the information on to Greg.
- Goals: Sameer spent some time discussing the goals that he would like the club to work on this year, including better new membership mentoring and celebrating International Astronomical Year. We agreed to make this the primary agenda item for the next meeting, and to create a timeline and task list to accomplish them.

The meeting adjourned at 9:11 p.m.

To Do:

1. Sameer will contact Matt Vartanian to make sure the star party schedule is complete by the next general meeting.
2. Jean will notify Larry Deal to get an announcement about the youth survey and youth program into the newsletter. She will also resend the survey and ask for more responses.
3. Margaret will send out an email to the Starlight Parade committee about meeting soon - - probably at the next Downtowners meeting.
4. Dawn will find more volunteers for the OMSI event on the 15th.
5. Jan will meet with Daniel Browning about donating copies of his OSP videos to the RCA library.
6. Matt Brewster will send program information to Larry Deal and Larry Godsey. Note to Matt: it will be a good idea to talk to our speakers about their being video-taped and getting their permission to be on the website.
7. Larry Godsey will update the officer information on the website, announce the El Monica star party, update IDA about Art Morris' new role, repair the online survey regarding youth programs, and renew the CD.
8. Greg will put the El Monica star party on the Forum. He will talk to Steve Jaynes about pulling the trailer (hitch, wiring, etc.), and continue to prepare his trailer.

Telescope Workshop

When: Saturday, March 14, 10:00 AM - 3:00 PM
Place: Technical Marine Service, Inc.
6040 N. Cutter Circle on Swan Island
For more information contact:
Director: John DeLacy johncdelacy@comcast.net
Assistant: Don Peckham don@dbpeckham.com

Science Special Interest Group (SCI-SIG)

Next meeting is March 14 at 3pm. Following the Telescope Workshop at Technical Marine Services.

This group is for people who would like to advance their skills in astronomy beyond casual observing. Various projects that some group members are involved in include; variable and double star observing, occultations, photometry and astrometry. A science background is not required, however a curious mind does help.

Location: Technical Marine Service, Inc
6040 N. Cutter Circle on Swan Island

http://www.rosecityastronomers.org/sigs/science.htm

Tom Nathe sigs@rosecityastronomers.org
RCA SIG coordinator

Astro-Imaging Special Interest Group

The "AI-SIG" is about advancing the skills of beginner, intermediate and advanced astro-imagers. We rely on the skills of our members to bring each other along as we image the beautiful night sky and its many wonders. Whether you use a CCD, DSLR, point-and-shoot or film camera, members of this group can help you achieve better images with less effort and frustrations. Please join us as we learn together to produce "stellar" images!

Next Meeting: Monday, March 9, 2009, 6:30pm
Beaverton Public Library
In the Conference Room
12375 SW 5th St, Beaverton

ASTROPHYSICS / COSMOLOGY SIG

Date/Time: Wednesday, March 18, 7 PM.

Topic: "Dark Matter / Dark Energy"

Presented by: Dr. Ethan Siegel
Astrophysicist

Place: Linus Pauling Complex,
3945 S.E. Hawthorne St., Portland.

Sig Directors: Lamont Brock 503-235-5893
Jim White 503-236-7802

Email: cosmology-sig@rosecityastronomers.org

www.rosecityastronomers.org/sigs/cosmology.htm

Awards

Congratulations to ten year old **Anna Napolitano** for completion of the Sky Puppy observation program. Certificate number 12!

David Powell received the Astronomical League's Outreach Award at the Stellar level, for more than 60 hours of volunteer time spent in the promotion of astronomy. Certificate number 0072-S!

2009 STAR PARTIES!

Date	Day of Week	Event	Location	Notes
March 20-22	Fri-Sun	Messier Marathon Weekend	Kah•Nee•Ta	3
March 21	Saturday	OMSI-RCA Vernal Equinox Celebration	Rooster Rock & Stub Stewart	2
March 27-29	Fri-Sun	RCA Dark Sky Camp Weekend	Camp Hancock	5
April 18	Saturday	OMSI-RCA Planet Parade	Rooster Rock & Stub Stewart	2
April 24-26	Fri-Sun	RCA Star Party Weekend	Maupin	1
April 25	Saturday	RCA Star Party	Stub Stewart	2
May 2	Saturday	OMSI-RCA Astronomy Day	TBA	1
May 16	Saturday	Prineville Reservoir Star Party	Prineville Reservior	1 & 6
May 22-24	Fri-Sun	RCA Star Party Weekend	Maupin	1
May 23	Saturday	RCA Star Party	Stub Stewart	2
June 13	Saturday	OMSI-RCA Summer Solstice Celebration	Rooster Rock & Stub Stewart	2
June 19-21	Fri-Sun	RCA Star Party weekend	Maupin	1
June 20	Saturday	RCA Star Party	Stub Stewart	2
July 15-19	Wed-Sun	Mt Bachelor Star Party	Bend Oregon	4 & 6
July 18	Saturday	OMSI-RCA Summer Night Sky	Rooster Rock & Stub Stewart	2
July 23-26	Thu-Sun	Table Mountain Star Party	Ellensburg Washington	5 & 6
July 24-26	Fri-Sun	Trout Lake Star Party Weekend	Trout Lake Washington	1
Aug. 11	Tuesday	OMSI-RCA Perseid Meteor Shower Watch	Rooster Rock & Stub Stewart	2
Aug. 14-16	Fri-Sun	RCA Star Party Weekend	Maupin	1
Aug. 19-23	Wed-Sun	Oregon Star Party	Indian Trail Spring	4 & 6
Sept. 12	Saturday	OMSI-RCA Autumnal Equinox Celebration	Rooster Rock & Stub Stewart	2
Sept. 18-20	Fri-Sun	RCA Dark Sky Camp Weekend	Camp Hancock	5

1 No Fees, No Registration.

2 Note that there is a $3 day use charge at this Oregon State Park.

3 Advance Reservations are Highly Recommended & No Camping at the Viewing Area.

4 Pre-Registration and Pre-Payment Recommended, but you can register and pay on site.

5 Pre-Registration and Pre-Payment required, no on-site registration.

6 These are regional Star Parties put on by other groups, not RCA sponsored events.

Star Party Driving Directions

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 west 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, turn south on 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.

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.

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).

To get to the viewing area from Kah-Nee-Ta resort: Drive west on Warm Springs Rd 0.9 miles and take a right on 210 - Charley Canyon Rd. The road is not marked when heading westbound. Also note the first 100 yards of this road is rougher than the rest. The road is marked ‘no trespassing’ however we do have permission to use it. Reset your trip meter.

Proceed to the second cattle grate at 3.4 miles (the first grate is at around 2.7 mi). Immediately after the second cattle grate take a right into the observing area which will be marked with red lights. There is a slight hump to drive over which should not be a problem. After that, access and the observing site is smooth and free of obstacles.

ROOSTER ROCK STATE PARK

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 nonmember / $1.50 OMSI member per vehicle at Rooster Rock State Park.

STUB STEWART STATE PARK

Head West on US 26 from Portland for approximately 30 miles. Exit Northbound on Highway 47 to Vernonia. The park is 4 miles from 26 on the Right (East) side.

TROUT LAKE

From Hood River head north on the Hood River Bridge (Toll $0.75 per Axle). Proceed West on Highway 14 for 1.5 Miles. Turn North on Highway 141 for approximately 23 miles (1.7 Miles beyond Trout Lake). Turn right on Trout Lake Creek Road and proceed 4.6 miles. Turn left on Forest Road 88 and proceed 1.2 miles to Flattop Snow Park.

MAUPIN SITE

Take Hwy 26 east over Mount Hood. About 12 miles beyond Government Camp turn left onto Hwy 216, towards Pine Grove and Maupin. About 6 miles east of Pine Grove at the intersection of Reservation Road and Hwy 216 there is a small gas station and Quick Mart. Here you'll turn left onto Old Wapinitia Road and continue 2 miles. You will see the airstrip on the right hand side of the road, just past the Kelly Cutoff Road.

Oregon Museum of Science and Industry
Rose City Astronomers
1945 SE Water Avenue
Portland, Oregon 97214-3356

March 2009

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				

March 2009

Mar 2	Mon	RCA Board Meeting	OMSI Parker Room	7pm
Mar 6	Fri	Downtowner's Luncheon	TBD	Noon
Mar 9	Mon	Astro Imaging SIG	Beaverton Public Library	6:30pm
Mar 14	Sat	Telescope Workshop	Swan Island	10am-3pm
Mar 14	Sat	Science SIG	Swan Island	3pm
Mar 16	Mon	General Meeting!	OMSI Planetarium	7pm
Mar 20-21	Fri-Sat	Dark Sky Star Party	Kah•Nee•Ta	
Mar 21	Sat	OMSI Star Party	Stub Stewart and Rooster Rock S.P.	
Mar 27-28	Fri-Sat	Dark Sky Star Party	Camp Hancock	

April 2009

Apr 3	Fri	Downtowner's Luncheon	TBD	Noon
Apr 6	Mon	RCA Board Meeting	OMSI Classroom 1	7pm
Apr 11	Sat	Telescope Workshop	Swan Island	10am-3pm
Apr 11	Sat	Science SIG	Swan Island	3pm
Apr 13	Mon	Astro Imaging SIG	Beaverton Public Library	6:30pm
Apr 18	Sat	OMSI Star Party	Stub Stewart and Rooster Rock S. P.	
Apr 20	Mon	General Meeting	OMSI	7:30pm
Apr 24-25	Fri-Sat	Dark Sky Star Party	Maupin	
Apr 25	Sat	RCA Star Party	Stub Stewart State Park	

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.rosecityastronomers.org).

RCA CLUB INFORMATION

Web Site: http://www.rosecityastronomers.org

The
Rosette Gazette

Volume 21, Issue 4 Newsletter of the Rose City Astronomers April, 2009

RCA APRIL 20 GENERAL MEETING

"Everything You Always Wanted to Know About Gravity, But Were Afraid to Ask"

Presented By Terry Matilsky

Our ideas about the ultimate fate of the Universe have changed drastically in the past decade. Dark Energy and Dark Matter seems to dominate over visible material. But does the emperor have any clothes on? Is it possible that we have been fooled into believing that almost all of what comprises the Universe is invisible, and can be detected only by its gravitational influence on everything else? We will review the current state of affairs in cosmology, examine how we know what we know, and take a critical look at the prospects of finding out answers to some of the questions concerning where the Universe is heading, and how it might get there.

Terry is a Professor in the Department of Physics and Astronomy at Rutgers, the State University of New Jersey. He is also a member of the Education Staff for the Chandra X-RAY Project.

Black Hole Outflows From Centaurus A

Composite of three telescope images with Chandra image in blue. Learn more at: http://chandra.harvard.edu/photo/2009/cena/
Credits: X-ray: NASA/CXC/CfA/R.Kraft et al.; Submillimeter: MPIfR/ESO/APEX/A.Weiss et al.; Optical: ESO/WFI

In This Issue:

RCA is a member of the Astronomical League.
http://www.astroleague.org

All are Welcome! Monday April 20

Social Gathering: 7 pm

Presentation Begins: 7:30 pm.

Location: OMSI Auditorium

First Quarter Moon	Full Moon	Last Quarter Moon	New Moon
April 2	April 9	April 17	April 24

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SIG Director	Tom Nathe	sigs@rosecityastronomers.org	503-641-3235
Youth Programs Director	Jeannie London	youth@rosecityastronomers.org	503-642-4831

RCA MAGAZINE SUBSCRIPTIONS

One of the benefits of RCA Membership is a reduced rate subscription to Sky & Telescope and Astronomy magazines. The RCA member rate for Sky & Telescope Magazine is $32.95 for one year or $65.95 for two years. The RCA member rate for Astronomy magazine is $34 for one year or $60 for two years. For more information go to the RCA web site index and click on any of the links for magazines. Larry Godsey, Treasurer, 503-675-5217, will be taking renewals and new subscriptions at the Magazine Table before General Meetings. Please make checks out to "RCA" and allow two months for your subscription to be renewed.

RCA LIBRARY

The Rose City Astronomers maintains a comprehensive club library of astronomy related articles, books, CDs 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.

The RCA library is constantly growing through many donations and the purchase of new materials. A listing of library materials (PDF format) can be found at the library web page: http://www.rca-omsi.org/library.htm

Jan Keiski (jikeiski@comcast.net) 503-539-4566

CLASSIC TELESCOPES

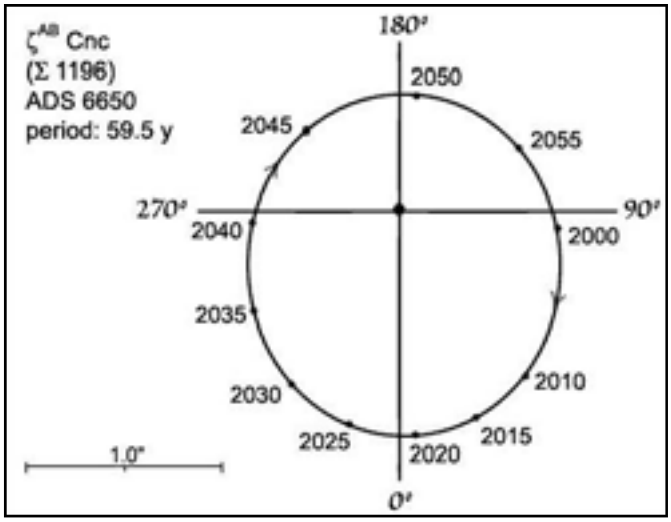
Star-hopping in Cancer's kingdom with a Unitron 2.4-inch refractor.

By John W. Siple

THE EVENING SKY OF SPRING offers a perfect opportunity to explore the deep-sky wonders of Cancer, the Crab, a Y-shaped zodiacal constellation located between Gemini and Leo. According to Greek legend, Zeus placed the crab among the stars as a reward for attacking Hercules during his battle with the nine-headed monster Hydra. Millennia ago, the Sun appeared in Cancer on the summer solstice (hence the "Tropic of Cancer"), but as a result of precession that celestial reference point has shifted westward to the Taurus-Gemini border. Guarded within the crustacean's inner domain is the famous "Beehive Cluster," a coarse collection of bright stars that is a popular target for small telescopes.

Unitron's Model 114, a 2.4-inch F/15 alt-azimuth refractor telescope, was chosen for exploring Cancer's territory. Introduced in October 1951 and discontinued four decades later, this classic instrument was the company's bestselling telescope. Unitron expended considerable resources to publicize its telescopes; *Sky & Telescope* during the 1950s and '60s often had full-page advertisements displaying their wide selection of products. Many beginning astronomers, attracted by Model 114's obvious quality and special features, saved every hard-earned penny to garner one of the prized marvels. Unitron's 60mm refractor received high marks for its precision engineering and consistently good, sharp images.

An advertisement from the UNITRON ASTRONOMICAL TELESCOPES *Including the New* OBSERVER'S GUIDE, published in 1958 by Unitron Instrument Co. The cost of the Model 114 remained at $125 throughout the 1950s and '60s.



The apparent orbit of Zeta Cancri, where the separation of the AB pair ranges from a minimum of 0.6" to a maximum value of 1.2" (reached next in 2020). Courtesy of Richard Dibon-Smith.

The northern claw of the Crab is represented by Iota[1] (ι^1) Cancri, a colorful double star also called the "Albireo of Spring." This outstanding telescopic duo is a "must-see" when visiting Cancer's starry realm. The strikingly beautiful celestial binary consists of contrasting pale orange and clear blue stars of magnitudes 4.2 and 6.6 separated by a wide 30.5". At magnification of 47x in the Unitron 2.4-inch refractor, Cancer's most brilliant of doubles justly earns its nickname—a flaming pair of orange "Arcturan" and blue-tinted "Sirian" suns that rival Albireo in grandeur.

The constellation's other main attraction, and worth a special look during a star-hop, is the triple star Tegmine, or Zeta (ζ) Cancri. It is located on the rear edge of the Crab's shell, forming a right triangle with Delta (δ) and Beta (β). Tegmine's yellow components shine at magnitudes 5.6, 6.0, and 6.2, and the separations are currently 1.1" and 5.7". The most distant member of this phenomenal grouping is cleanly split in the Unitron telescope at medium power. However, the much more difficult and closer AB pair (see the orbital diagram above) cannot be resolved in the small 2.4-inch refractor, where the two diffraction disks are merged into a single point of light. In 5-inch and larger telescopes, where all three stars are resolved, Zeta is probably the finest triple star in the entire night sky.

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Classic Scopes *(Continued from page 3)*

Messier 44 is a famous open star cluster known since antiquity as Praesepe or the "Manger." The bright stellar grouping lies at the heart of the constellation, and is framed on its respective north and south sides by the 4th-magnitude stars Asellus Borealis (γ) and Asellus Australis (δ). Its true nature was discovered by Galileo in 1609. In small telescopes, M44's appearance suggests a swarm of bees over a pot of melted honey. The "Beehive Cluster" is one of the nearest open star clusters, located only a scant 520 light-years away. The cluster's age has been determined as 400 million years. This detailed image was taken by Richard A. Bennion using a Takahashi FSQ-106N refractor telescope.

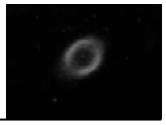
Messier 67 is a rather faint but rich swarm of stars found in spring skies about eight degrees south of the Beehive. The Unitron 2.4-inch refractor telescope partially resolves the ancient galactic star cluster, where it appears as a conical mass of dim stars. Messier 67 is 2,600 light-years away and 12 light-years in diameter with hundreds of identified members. This fine photograph is courtesy of Greg Parker and Noel Carboni.

M44 (NGC 2632), or the "Beehive Cluster," is a very loose, irregular open star cluster visible to the naked eye as a fuzzy grayish patch of light. The cluster spreads out over 1½° and glows with an integrated magnitude of 3.1. It shows best in wide field instruments operating at low power, but all telescopes will give a memorable view of this magnificent stellar beehive. In the 2.4-inch refractor at 18x, M44 is a spherical collection of over 60 dazzling suns, with many multi-hued doubles and triples randomly scattered throughout the field. Also obvious through the eyepiece and from an examination of photographs is a distinctive V-shaped asterism of 7th-magnitude stars located near the center of the cluster.

A short star-hop 1.7° west of Alpha (α) Cancri, the Crab's southern pincer, brings us to the rich compressed cluster of stars M67 (NGC 2682). This Messier object is one of the Milky Way's oldest known open star clusters, tracing its galactic genealogy back roughly four billion years. It shines at magnitude 6.9 and is 30' across. The 2.4-inch glass at 100x shows a partially resolved haze of about three dozen stars in the shape of a cornucopia or sheaf of corn. Admiral Smyth, a prominent 19th century astronomer, gave a more imaginative description of M67: "Rich but loose cluster, consisting principally of a mass of 9 and 10 mag. stars, gathered somewhat in the form of a Phrygian cap; followed by a crescent of stragglers." What shape do you see in your Unitron 2.4-inch refractor telescope?

THE OBSERVER'S CORNER

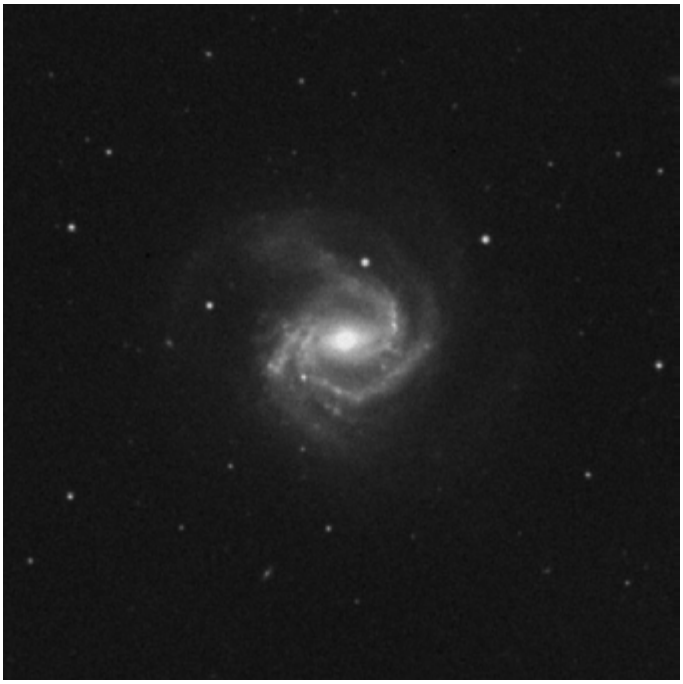
Howard Banich



Three Spring Spirals

Who gets excited when they see spiral arm structure within a faint galaxy? Pretty much everyone, and yet with all the galaxies in the Virgo Galaxy Cluster they mostly seem to be either huge elliptical galaxies or are angled so their spiral arms are not visible.

However, there are three Messier galaxies – M61, M99 and M100 - that show varying degrees of spiral structure to those with a modest size scope, dark skies and some patience. Located in a one degree wide by 11 degree long strip of Right Ascension that runs through Virgo and Coma Berenices, it would require an equatorially mounted scope to move only in declination to pick them all up at low power. Let's take a look.



M61, DSS image. Note the central bar with the two main arms coming off each end. The third arm is stubby but rather distinctive through the eyepiece.

The southern most of these Virgo spirals is M61 and has probably the easiest and most interesting spiral arms of the three. Before getting into the details of M61, it's good to note that spiral structure is a subtle and often elusive feature. Only in very large amateur scopes will they be readily apparent and even then the arms will be on the subtle side.

With that stated most observers will be able to discern the general spiral structure of M61 with a 16 to 18 inch scope, and no doubt those with more sensitive vision or especially good observing conditions will be able to see the arms with a smaller scope.

The first thing you'll notice is M61's mostly round glow that is significantly brightest in the center. Letting your eye relax and your gaze wander off to the side and you'll begin to see the central bar and some spiral arm detail, perhaps the short stubby one on the left in the above photo. The bottom arm in the photo will be next and look for the rather acute angle it makes with itself about half along its length. The top arm will be the faintest. Altogether these spiral arm features make M61 a fascinating sight in a 12 to 16 inch scope, and in 20 inch and larger scopes M61 will look rather similar to its photos.

An interesting historical fact about M61 is that when Messier first observed it he thought he was observing the already discovered comet of 1779. It took him several days before realizing it was just another one of those pesky things that only looked like comets.

A general note about observing face-on spiral galaxies like M61: They lose their detail quickly in mediocre skies and the spiral arms are the first thing to go. A good thing to remember is that higher powers will often help bring out these faded details so don't be shy about trying a barlow or a higher power eyepiece.

Moving due north about 10 degrees into Coma Berenices you'll find M99, a beautiful asymmetrical spiral with one big obvious arm. Although the other two arms are more subtle they are at least seen as a fairly apparent glow around the core of the galaxy. Scopes in the 8 to 10 inch range may be able to pull out the main spiral arm, and 12 to 14 inch scopes may be able to pull in one more arm.

M99, DSS image. The image scale is the same as the M61 image above showing their similar apparent size. The main spiral arm is on the right and the overall asymmetry is reminiscent of M101.

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You may also notice that M99 is a barred spiral and that its core doesn't have a brighter center – its rather muted. Even so it's the brightest part of M99 and will be the first and maybe the only part of this galaxy you'll see in moderately light polluted skies.

Somewhat ironically, consider how much easier M99 – or any of these three face on galaxies - would be to observe if they were presented edge on to us, like NGC's 4565 or 5746 (another must see-galaxy in Virgo).

It would have a considerably higher surface brightness, and brings up the point that spiral galaxies are actually rather transparent when viewed face on.

An interesting fact about M99 is that it has one of the largest red shifts in the Virgo Cluster - so don't wait too long for your next look…

Among this trio of face-on galaxies the spiral arms of M100 are the most difficult to see. You'll probably detect a mottled texture within the glow of the galaxy's disk with scopes smaller than 12 inches, but the arms will start to glimmer into view with 16 to 18 inch scopes. Again, that's assuming fairly dark and transparent skies. Lord Rosse was the first to detect spiral arms in M100 with his 72 inch reflector, but don't let that scare you from trying – if you can see spiral arms in M51 you should be able to detect them in any of these three galaxies in good conditions.

The core is fairly bright with a nearly star-like center, and intriguingly the spiral arms seem to surround it at a distance rather than appear directly connected to it. Photos tend to show this arrangement as well – like M100 is a barred spiral without the bar.

Something that's true of any particular galaxy in the Virgo Cluster is that there are bound to be other galaxies nearby. I found it especially true with M100. Less than one galaxy diameter away are two small puff balls of galaxies that look nearly identical and both are NGC objects. About three M100 diameters to the south is the bright, nearly edge-on galaxy NGC 4312. All these galaxies fit nicely in a moderate power field of view.

M100, DSS image, also at the same scale as the M99 and M61 images. Notice the bright central area and how the spiral arms seem to begin a considerable distance from the core.

I should note that it's a fairly easy star hop between M99 and M100 and that you will undoubtedly see a galaxy or two along the way.

BOARD MEETING MINUTES

March 2, 2009
OMSI Classroom 1
Margaret Campbell-McCrea

Attending: Ken Hose, Dawn Willard, Jan Keiski., Sameer Ruiwale, Dave Nemo, Larry Godsey, Greg Rohde, Howard Knytych, Matt Brewster, Jean London, Margaret Campbell. Non-voting: Lamont Brock, Peter Abrahams

The meeting was called to order at 7:10 p.m.

Officer Reports:

- Secretary: A quorum was met with 11 voting members present.
- Treasurer: Larry Godsey reported that we have $18,963.13 in the RCA general account, and $19,138.11 in the Site Fund, for a total of $38,101.24.
- Programming: Matt Brewster reported that the OPB presentation of the 400 Years of the Telescope will be shown in the auditorium for the March meeting, with visitors from OPB attending also. In April, from one to three speakers from the Chandra Project will be coming. In May the program will be Lawrence Doyle from SETI, and June is our information fair.
- Observing: No report.
- Community Affairs: Dawn Willard reported that she has signed us up for the Nightsky Network, and has received a lot of materials from NASA for public star parties. One high school star party is coming up this week. April 5 is the 100 hours of astronomy. She reported that thirteen people from RCA come to Galileo's birthday and about 200 public, and there were four to five scopes set up for solar viewing.
- VP Membership: Ken Hose reported that we have 7 new members, 2 via PayPal, and 3 renewals. Our total is 308 member families. We had 285 last year, and 280 the year before. We took in $252 in dues in February. He has also dropped several non-members from the mailing list, which is going to help cut the costs for the newsletter.

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Board Meeting Minutes *(Continued from page 6)*

- New Members: Howard Knytych reported that he sent an email to all members who have been in the club for less than a year regarding the new member orientation, which had a very good turnout. He plans to repeat it about every two months. We discussed several ideas for topics for future beginners' sessions.
- Sales: Margaret reported that there were $401 in sales in February.
- Library: Nominal.
- Scopes: Nominal.
- IDA: No report.
- Magazines: Nominal.
- Webmaster: Larry reported that the website is doing fine. There was not much comment on members' only section and he was not sure if we want to go ahead with it or not. This would put pages with personal information, videos of speakers, directions to observing sites, telescope library checkout, and other items of this sort into a section of the website for members only. We will continue the discussion via email.
- Site: Nominal.
- Youth: Jean London reported on the results of the youth survey. We heard from 36 families regarding 38 kids. The survey has been taken down, and she is making plans to have designated youth facilitators at our public star parties and to have more programs available. Dawn Willard offered some of the NASA materials she has been getting.
- SIGS: No report. Lamont mentioned that Dr. Ethan Siegel will talk about dark matter and dark energy at the next Cosmology SIG meeting. He is also thinking of organizing a field trip to LIGOS in Washington. The one we had about ten years ago was very successful.
- ALCOR: No report.
- OMSI: Nominal.
- Sister Club: Jan suggested that we put something on the Forum for southern hemisphere news. GAMA has started a newsletter and will send us a monthly copy, and Leo writes a Sky-at-a-Glance column for GAMA members that he will add to the Forum.

Old Business:

- Starlight Parade: Margaret reported that the first workshop was held on Saturday, February 28 and several decisions were made regarding the design and materials for the float. There is another work party on Saturday, March 21 and a final one on Friday, May 29th. She received a $250 check for our application fee, which is due March 6th.
- Speaker videos on website: Larry has been able to get the file size down to 8 megs but it still takes 20 minutes to upload, so he is working on getting them down even further.
- PST scope: We decided to buy the scope from Camp Hancock for $300. Larry will pick it up from them at next star party. It has no tripod, but we can get one. Greg will email John Harris regarding this decision.
- Daniel Browning's videos: Jan emailed him. He will donate copies to the library.

New Business:

- Locking down the Forum: David and Larry locked it down about two weeks ago to cut back on spam. No one has complained. The website is still available to the public, but the Forum is not. We did this to make the Forum safer for our users, as we were getting up to 150 spamming attempts on the Forum every day.

International Year of Astronomy activities:

1. Globe at night: March 16 – 28. It's a reporting of your star count in Orion and logging your results to a website. Dawn will do the publicity.
2. 100 hours of astronomy: April 2 – 5. The purpose is to get as many people as possible to look through telescopes. OMSI is planning on a day and night party on Sunday the 5th. Again, Dawn will do the publicity.
3. Galileo scope: Sameer thinking of purchasing some and using them for IYA activities, then maybe sell them. They are $15 each. We will discuss this more after Larry gets his order and we see what they are like.
4. Astronomy Day: Saturday, May 2nd. Jim is planning something, and we will help him out. Jan is coordinating with Jim for OMSI astronomy day. We might also have a table set up at Pioneer Place, or other shopping malls, with a solar scope outside. Sameer will talk with Pioneer Place and other shopping malls about their costs. Dave Nemo suggested going to some of the other community festivals during the summer.
5. Adopt a school: We can ask people to speak to their local schools about having an event or speaker. Dawn will co-ordinate any responses we get.
6. GAMA live video-conferencing for joint viewing. It can be done in the city. Jan will contact Carlos about this.
7. Earth to Universe: Art work display of cool Hubble images. Is OMSI going to do this?
8. Public star parties: Promote as IYA events. Get a couple more IYA banners?

The meeting adjourned at 9: p.m.

To Do:

1. Sameer will talk with Pioneer Place about setting up a display on Astronomy Day.
2. Dave will set up a topic for GAMA on the Forum.
3. Jean will design a children's program based on the survey results.
4. Margaret will send out a broadcast message regarding Star Pro. She will write up and deliver the RCA application to be in the Starlight Parade.
5. Dawn will connect up with Jean London to share the NASA Nightsky Network materials. Prepare flyers regarding the IYA activities, and make announcements at the next meeting. Send Larry the information for putting on the website. Ask Nightsky Network for more banners and pins if we can get them.
6. Jan will talk to Matt Vartanian about adding more east side star parties to the RCA Star Party calendar this year. Contact Carlos about joint viewing via live video-conferencing.
7. Larry will continue discussion re. Members' Only section of website via Board email.
8. Greg will email John Harris about us getting the PST scope from Camp Hancock.
9. Lamont will look into the possibility of a field trip to LIGO.

IDENTIFYING RCW NEBULAE IN CONSTELLATION CARINA

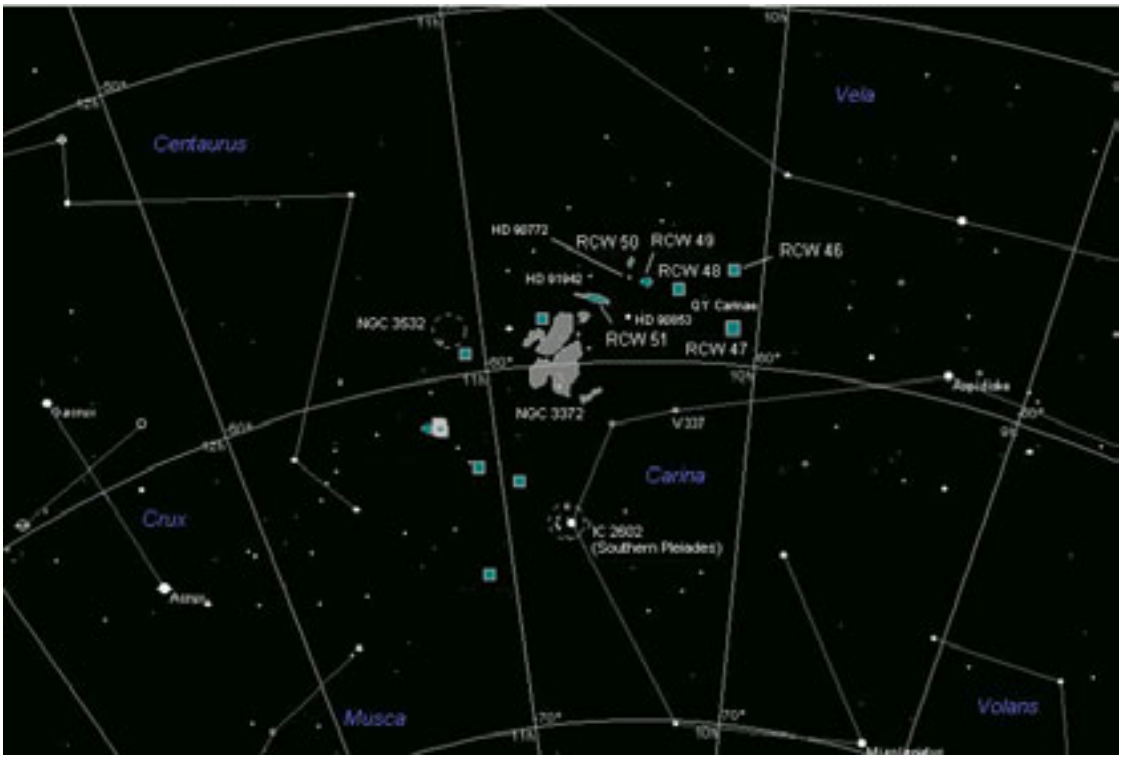
by Leo Cavagnaro

Part 1 - A Group of Nebulae to the West of Eta Carinae Nebula

The Eta Carinae Nebula

Early autumn in Mendoza is a good time to drive to Los Andes Mountains to enjoy the stars from there. The temperatures are nice, and there are some places where you can find a dark enough sky to carry out detailed observations.

From this latitude, the famous and conspicuous Eta Carinae Nebula (NGC 3372) is clearly visible to the naked eye, among other bright objects in the same region, when you observe from a dark sky site. In March, you can see it very high on the sky in the evening as a bright spot immersed in the bright lane of our Milky Way. Also, some open clusters like NGC 3532, NGC 3114, IC 2602 (nicknamed "The Southern Pleiades") and NGC 2516 are easily visible to the naked eye. But, is Eta Carinae the only nebula you can observe there?



Not really. There exist some other nebulae "hidden" between those objects which lie to the east and to the west of the "great nebula" as the map above indicates with green color.

Working with detailed sky charts and data from SIMBAD and other information from some specific web pages, I could made an observing program which contains up to 13 nebulae, all of them catalogued in the RCW (Rodger, Campbell, Whiteoak) catalogue. This is an expansion of the Colin Gum´s Catalogue, the first major survey of HII regions in the southern sky published in 1950s. All the objects in this observing project are situated in constellation Carina, surrounding the Eta Carinae Nebula. In fact, this is also an RCW object (RCW 53) but it is not included in my list.

In this first part I make reports about four RCW nebulae situated to the west of Eta Carinae Nebula, from RCW 46 to RCW 49. The map on the first page shows the distribution of RCW nebulae in the southern constellation Carina. This is a very rich part of the sky to observe even with binoculars. If you are a nebulae hunter you should keep in mind this area when you have a chance to visit the southern skies.

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Carina Nebulae *(Continued from page 8)*

As I said, I observed four RCW nebulae (RCW 46, RCW 47, RCW 48 and RCW 49) on Saturday, March 21st, from a dark sky site where stars up to visual magnitude of 6.2 or 6.3 were visible.

If you see the map on the first page, surely you will agree with me that QY Carinae is a good star to use as "starting point" to find at least three of the four nebulae. This star has a visual magnitude of about 5.8 and is a faint star, but is visible from a dark sky site so you can identify it without any problem.

The Faint Nebula RCW 46

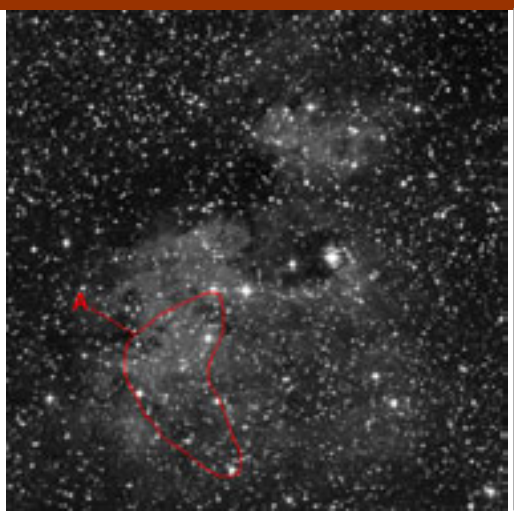
Situated at about 0.8 degree to the northwest of the star QY Carinae lies a faint nebula.

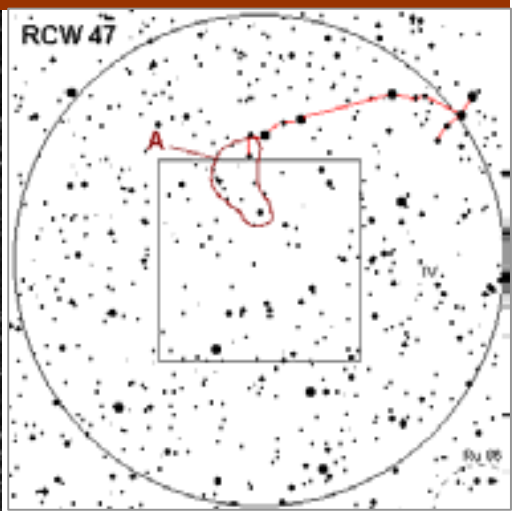
This object does not appear in some planetarium software like Skymap Pro 6 (C. Marriot) or Skychart by P. Chevalley, and in guides like SkyAtlas 2000.0 (W. Tirion). This is for sure an object to try to observe using big mirrors. However, I wanted to aim my telescope and to have my own experience about the visibility of this nebula through an 8-inch telescope.

Using 42x I found the zone where this nebula is situated. I spent several minutes to find it. The eyepiece field is rich in stars and the brighter ones have a mean magnitude of 8.5. I could identify and I focused my attention on the zone surrounding the stars HD 88068 and TYC 8607-194-1 (indicated in the picture here) where images of RCW 46, specially the DSS image, show a more prominent nebulosity. The nebula was not visible with this magnification and without a filter. Even the use of the UHC filter did not help with the view and a higher magnification showed "nothing". The H-Beta and OIII filters used at different range of magnifications did not help too. I hope to have a chance to aim a bigger telescope to this place.

The RCW 47 Nebula

This is the westernmost RCW nebula in this constellation. This object was about 62 degrees of altitude at the moment of the observation, 1 hour before its transit, so it was at good altitude in order to get a good view.





The nebula lies in a rich field where stars show interesting shapes. In the northern side of the 1 degree field of view (up in the first picture in next page) some stars form a shape that remind me a small version of constellation Scorpius (indicated with a red line). This helped to find the zone where the nebulosity should be. This is another faint nebula to observe with an 8-inch telescope. A bigger telescope would help with an easier observation.

Observing with low magnification (42x) and UHC filter, an extremely faint nebulosity appears to be in the zone indicated with **A**, both in the eyepiece field picture and in the DSS image.

Observing with higher magnification (78x) and using again the same filter, this nebulosity seems to surround the line of stars situated at the south end of the indicated zone. I got a similar view using the H-Beta filter.

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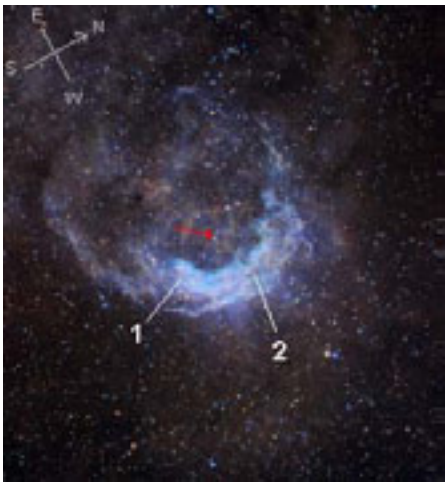
RCW 48 A Superb Nebula



This is by far the brightest nebula of the observed group. It is also included in the very well known NGC catalogue as NGC 3199 (also Gum 28). This nebula, discovered in 1834 by John Herschel, lies about 0.76 degrees east-northeast of the star QY Carinae. It is one of fifteen ring nebulae found to be closely associated with galactic Wolf-Rayet stars (Chu, 1981). You can read more about this nebula in "The Nature of the Wolf-Rayet Nebula NGC 3199" by M. J. Whitehead, J. Meaburn and C.D. Goudis (1987).

I observed this nebula about 11:15pm local time (UT-3 hours) when it was close to 64 degrees of altitude. It is visible even without a filter as a smooth cloud in a starry field, showing an elongated shape suggesting its curved shape showed in the picture to the left. For some observers it is the "kidney-shaped nebula".

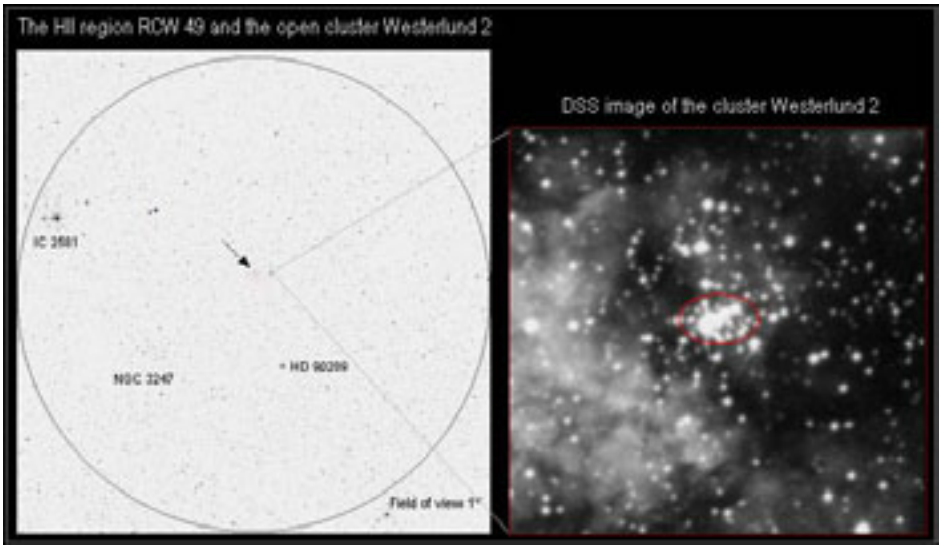
The view using low magnification (42x) and UHC filter a wonderful arc shape is revealed. Its southeast end (indicated by 1 in the picture) looks brighter and a faint star appears to be embedded there. Actually, if you see this region with higher magnification you can see the star to the side of the nebula. Moving to the northwest (right in the picture) the nebula looks wider and a little fainter when you observe it using averted vision. At 78x, a chain-shaped group of stars to the northeast appears surrounded by nebulosity. If you observe carefully the region indicated by 2 in the picture at high magnification (106x) and UHC filter, some dark small zones and filaments seem to be there.

The use of other nebular filters gave me different views. I got a bad view working with low magnification and H-Beta filter. This filter was useless, the nebula looked better without filter. On the other hand, at the same magnification (42x) but this time using the Orion Ultrablock filter, the view of the nebula was excellent (maybe a little better than that obtained with the UHC filter!!), the stars are visible a little better and the image was a little brighter.

The star indicated with the red arrow in the picture is HD 89358 (also WR 18), a Wolf-Rayet star exciting the nebula. It has a magnitude of about 10.6 so it should be visible even with smaller telescopes under good conditions.

The Star Forming Region RCW 49 and the Open Cluster Westerlund 2

RCW 49 is a luminous and massive HII region in our galaxy. Star formation is ongoing in this nebula (**A Glimpse of Star Formation in the Giant HII Region RCW 49**, B.A. Whitney et. al.).



It lies in the east part of constellation Carina (R.A. 10h 23m 54.0s Dec. -57° 45' 00" J2000.0 – coordinates for the associated cluster). You can use the star QY Carinae to find it but even better is the 4.7 magnitude star HD 90772 (a circumpolar star from this latitude –32.9 degrees). You must aim your telescope just 0.5 degree to the west of this star to find this object associated with the open cluster Westerlund 2.

The Open Cluster Westerlund 2

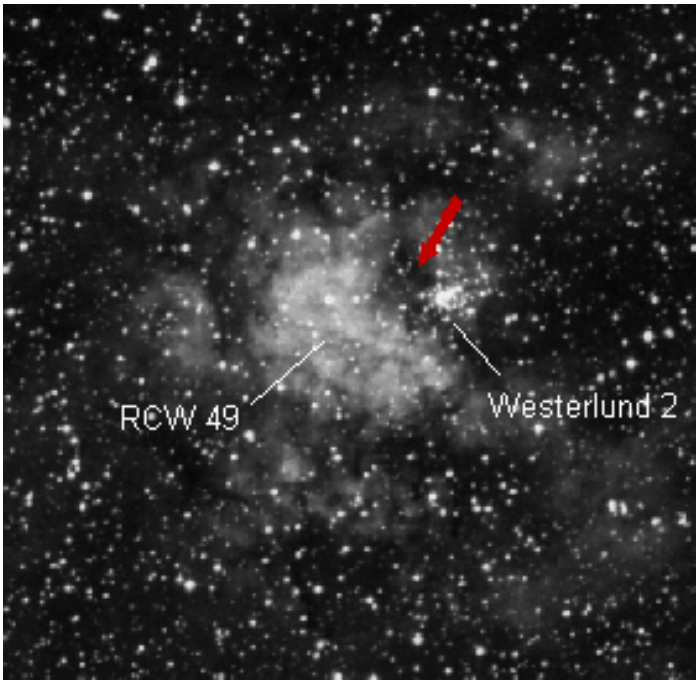
According to the paper "Early-type Stars in the Core of the Young Open Cluster Westerlund 2" by G. Rauw et. al. (Dec 2006), this is a young stellar cluster situated in a blowout region of the HII region RCW 49. The stellar winds and ionizing radiation of the early-type stars in Westerlund 2 have evacuated the dust in the central part of RCW 49 and filled the cavity with very hot low density gas. The Trumpler classification is I,3,p,n and the magnitude of the cluster 10.5.

(Continued on page 11)

Carina Nebulae *(Continued from page 10)*

This object (nebula and cluster) is an elusive target not because of its brightness but for its small angular size, the angular size of the open cluster is about 1.5 arc minutes. Thus, you must observe the zone carefully if you try to find them using low magnification.

The field surrounding RCW 49 and Westerlund 2 is very interesting. At 42x the open cluster IC 2581 (also Cr 222) is visible to the east-northeast in the field (see left hand picture bottom of previous page). Actually, the brighter star is HD 90772, the star I used to find RCW 49. Another stellar cluster is visible in the field, NGC 3247 (classified as II,2,p,n). It looks like a not very well detached group of stars with similar brightness. Once I identified these two clusters I moved my eye to the region where the nebula and the small cluster lie. Two very small and faint hazy spots are visible there. In the picture above I have indicated with an arrow the position of RCW 49. Very close toward the west you can see the cluster.



The nebula through an UHC filter at 42x appears like a fan-shape smooth cloud with a faint star just in its vortex. Higher magnification is necessary in order to have a better analysis of its structure. At 78x plus UHC filter the real shape of the nebula is better viewed (more similar to the shape showed in pictures). A couple stars are visible embedded in the nebula. The red arrow in the picture to the right shows a dark region that was clearly visible through my telescope. On the other side of this region the cluster Westerlund 2 is situated, appearing like a defocused star surrounded by a very small nebulosity. The observation at the same magnification using the UltraBlock filter was very similar, however showed the two immersed stars a little better, and with a more contrasted dark lane.

Observing the cluster at 156x, I could see a very small aggregation of faint stars. A line of three stars is the more prominent feature (marked by the red circle in the picture on page 10).

In a future issue of the Rosette Gazette: Part 2 – RCW 50, RCW 51, RCW 52 and RCW 54.

Leo Cavagnaro, mcava@ciudad.com.ar

NASA's Space Place

Apollo Upgrade

The flight computer onboard the Lunar Excursion Module, which landed on the Moon during the Apollo program, had a whopping 4 kilobytes of RAM and a 74-kilobyte "hard drive." In places, the craft's outer skin was as thin as two sheets of aluminum foil.

It worked well enough for Apollo. Back then, astronauts needed to stay on the Moon for only a few days at a time. But when NASA once again sends people to the Moon starting around 2020, the plan will be much more ambitious—and the hardware is going to need a major upgrade.

"Doing all the things we want to do using systems from Apollo would be very risky and perhaps not even possible," says Frank Peri, director of NASA's Exploration Technology Development Program.

(Continued on page 12)

Space Place *(Continued from page 11)*

The Chariot Lunar Truck is one idea for a vehicle equal to the lunar terrain. Each of the six wheels pivot in any direction, and two turrets allow the astronauts to rotate 360°.

So the program is designing new, more capable hardware and software to meet the demands of NASA's plan to return humans to the moon. Instead of staying for just a few days, astronauts will be living on the Moon's surface for months on end. Protecting astronauts from harsh radiation at the Moon's surface for such a long time will require much better radiation shielding than just a few layers of foil. And rather than relying on food and water brought from Earth and jettisoning urine and other wastes, new life support systems will be needed that can recycle as much water as possible, scrub carbon dioxide from the air without depending on disposable filters, and perhaps grow a steady supply of food—far more than Apollo life-support systems could handle.

Next-generation lunar explorers will perform a much wider variety of scientific research, so they'll need vehicles that can carry them farther across the lunar surface. ETDP is building a new lunar rover that outclasses the Apollo-era moon buggy by carrying two astronauts in a pressurized cabin. "This vehicle is like our SUV for the Moon," Peri says.

The Exploration Technology Development Program is also designing robots to help astronauts maintain their lunar outpost and perform science reconnaissance. Making the robots smart enough to take simple verbal orders from the astronauts and carry out their tasks semi-autonomously requires vastly more powerful computer brains than those on Apollo; four kilobytes of RAM just won't cut it.

The list goes on: New rockets to carry a larger lunar lander, spacesuits that can cope with abrasive moon dust, techniques for converting lunar soil into building materials or breathable oxygen. NASA's ambitions for the Moon have been upgraded. By tapping into 21st century technology, this program will ensure that astronauts have the tools they need to turn those ambitions into reality.

Learn more about the Exploration Technology Development Program at www.nasa.gov/directorates/esmd/aboutesmd/acd/ technology_ dev.html. Kids can build their own Moon habitat at spaceplace.nasa.gov/en/kids/exploration/habitat.

This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.

Telescope Workshop

When: Saturday, April 11, 10:00 AM - 3:00 PM
Place: Technical Marine Service, Inc.
6040 N. Cutter Circle on Swan Island
For more information contact:
Director: John DeLacy johncdelacy@comcast.net
Assistant: Don Peckham don@dbpeckham.com

Science Special Interest Group (SCI-SIG)

Next meeting is . April 19 - 4pm
Note the change to Sunday

Location is still at Technical Marine Service

SPECIAL MEETING - Chandra Telescope Project Software with the Chandra Team.

Space and ground-based telescopes rely on computers almost exclusively to collect data and analyze cosmic sources of radiation. The Chandra X-Ray Observatory downloads gigabytes of information to Earth relating to to the nature of X-ray sources in the sky. To organize, process, and analyze this flood of data, scientists rely on computer programs, not only to do calculations, but also to change numbers into pictures. Participants will learn how to access and use image analysis software that turns their computer into a virtual Linux machine capable of performing analyses in the exact same way as scientists. They will access archived Chandra X-ray data, and use the DS9 imaging system to investigate supernovae, galaxies and stars using analysis tools to generate light curves, energy spectra and examine time variability for various exciting objects in the sky.

Download the software, load it into your computer and bring your computer with you.
http://hea-www.harvard.edu/RD/ds9/.

We will be learning how to use the software to process the Chandra data.

We will follow the program with a BBQ.

This group is for people who would like to advance their skills in astronomy beyond casual observing. Various projects that some group members are involved in include; variable and double star observing, occultations, photometry and astrometry. A science background is not required, however a curious mind does help.

Location: Technical Marine Service, Inc
6040 N. Cutter Circle on Swan Island

http://www.rosecityastronomers.org/sigs/science.htm

Tom Nathe sigs@rosecityastronomers.org

RCA SIG coordinator

Astro-Imaging Special Interest Group

The "AI-SIG" is about advancing the skills of beginner, intermediate and advanced astro-imagers. We rely on the skills of our members to bring each other along as we image the beautiful night sky and its many wonders. Whether you use a CCD, DSLR, point-and-shoot or film camera, members of this group can help you achieve better images with less effort and frustrations. Please join us as we learn together to produce "stellar" images!

Next Meeting: Monday, April 13, 2009, 6:30pm
Beaverton Public Library
In Meeting Room B
12375 SW 5th St, Beaverton

ASTROPHYSICS / COSMOLOGY SIG

Date/Time: Wednesday, April 22, 7 PM.

Topic: "Planetary Environments"

Presented by: Lamont Brock

Place: Linus Pauling Complex,
3945 S.E. Hawthorne St., Portland.

Sig Directors: Lamont Brock 503-235-5893
Jim White..... 503-236-7802

Email: cosmology-sig@rosecityastronomers.org

www.rosecityastronomers.org/sigs/cosmology.htm

Congratulations to 10 year old <u>Anna Napolitano</u> for completing the LUNAR CLUB program with her father Marcello. Certificate number 635.

Oregon Museum of Science and Industry
Rose City Astronomers
1945 SE Water Avenue
Portland, Oregon 97214-3356

April 2009

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		

April 2009

Apr 3	Fri	Downtowner's Luncheon	TBD	Noon
Apr 6	Mon	RCA Board Meeting	OMSI Classroom 1	7pm
Apr 11	Sat	Telescope Workshop	Swan Island	10am-3pm
Apr 13	Mon	Astro Imaging SIG	Beaverton Public Library	6:30pm
Apr 18	Sat	OMSI Star Party	Stub Stewart and Rooster Rock S. P.	
Apr 19	Sun	Science SIG	Swan Island	4pm
Apr 20	Mon	General Meeting	OMSI Auditorium	7:30pm
Apr 22	Wed	Cosmology SIG	Linus Pauling Complex	7pm
Apr 24-25	Fri-Sat	Dark Sky Star Party	Maupin	
Apr 25	Sat	RCA Star Party	Stub Stewart State Park	

May 2009

May 1	Fri	Downtowner's Luncheon	TBD	Noon
May 4	Mon	RCA Board Meeting	OMSI Parker Room	7pm
May 9	Sat	Telescope Workshop	Swan Island	10am-3pm
May 9	Sat	Science SIG	Swan Island	3pm
May 11	Mon	Astro Imaging SIG	Beaverton Public Library	6:30pm
May 16	Sat	Non RCA Star Party	Prineville Reservoir	
May 18	Mon	RCA Information Fair	OMSI Auditorium	7pm
May 20	Wed	Cosmology SIG	Linus Pauling Complex	7pm
May 22-23	Fri-Sat	Dark Sky Star Party	Maupin	
May 23	Sat	RCA Star Party	Stub Stewart State Park	

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.rosecityastronomers.org).

RCA CLUB INFORMATION

Web Site: http://www.rosecityastronomers.org

The
Rosette Gazette

Volume 21, Issue 5 Newsletter of the Rose City Astronomers May, 2009

RCA MAY 18 GENERAL MEETING

Quantum Astronomy: Modern Physics at Cosmic Scales

Presented by Dr. Laurance Doyle PhD.

Dr Doyle is a Principle Investigator for SETI in Los Gatos CA. His recent submittal to a professional astronomy journal is presently being refereed for legitimacy of scientific principles and experimentation, and validation as a new field of astronomical observation. This process has required referees comprehending fully the Uncertainty Principle, or their education of. In explaining quantum astronomy to the Rose City Astronomers the following questions are addressed:

- Are the weird aspects of quantum physics confined to the microscopic?
- By decreasing what can be known of an attribute can one actually learn something new that could not have been learned with less ignorance?
- Does quantum physics recognize time as defined by general relativity, and vice versa?
- Can one trade off information at the detector/observer, thereby changing events that should have already taken place in the past?

Virgo Galaxy Cluster Abell 1689's "Gravitational Lens" Magnifies Light of Distant Galaxies
Hubble Image Courtesy NASA, et al.

In this talk we'll discuss how to use the uncertainty principle as a quantum eraser in a cosmic-scale double-slit experiment -- the double-slits being gravitational lenses millions to billions of light years distant.

Hopefully by the time of the seminar, his first official paper will have been accepted by a professional astronomy journal. Anyway, if history can be changed, it won't matter.

All are Welcome! Monday May 18

Social Gathering: 7 pm Presentation Begins: 7:30 pm.

Location: OMSI Auditorium

In This Issue:

RCA is a member of the Astronomical League.
http://www.astroleague.org

First Quarter Moon	Full Moon	Last Quarter Moon	New Moon
May 1	May 8	May 17	May 24

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RCA MAGAZINE SUBSCRIPTIONS

One of the benefits of RCA Membership is a reduced rate subscription to Sky & Telescope and Astronomy magazines. The RCA member rate for Sky & Telescope Magazine is $32.95 for one year or $65.95 for two years. The RCA member rate for Astronomy magazine is $34 for one year or $60 for two years. For more information go to the RCA web site index and click on any of the links for magazines. Larry Godsey, Treasurer, 503-675-5217, will be taking renewals and new subscriptions at the Magazine Table before General Meetings. Please make checks out to "RCA" and allow two months for your subscription to be renewed.

RCA LIBRARY

The Rose City Astronomers maintains a comprehensive club library of astronomy related articles, books, CDs 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.

The RCA library is constantly growing through many donations and the purchase of new materials. A listing of library materials (PDF format) can be found at the library web page: http://www.rca-omsi.org/library.htm

Jan Keiski (jikeiski@comcast.net) 503-539-4566

Sun Myths

May, 2009

By Tom Koonce

The International Year of Astronomy theme during May is "Our Sun"

The closest star to the Earth has inspired awe, a sense of supreme power and acted as the first clock for mankind since the dawn of our existence. It was 1610 when the first telescopic observations were made of sunspots, it has only been within the last 400 years that we've been able to determine the Sun's true nature. Rudimentary observations had been made millennia before this time, with the earliest recorded solar observation being made by the Babylonians of a solar eclipse on 5 May 1223 BC. The observation was written on a clay tablet uncovered in the ancient city of Ugarit, in what is now Syria. The spectacle of the Sun being covered by the face of the Moon was a phenomenon that occurred with some regularity and could be observed with the naked eye by early civilizations. Incomprehensible astronomical events such as these led to the creation of mythologies that sought to offer explanations of what was happening in the heavens. Interestingly, there are several similarities among the mythologies around the world even though cultural exchange between some of the societies hadn't occurred.

Within Egyptian culture, the Sun-god "Re" was the creator. Re was portrayed as having a hawk's head with a fiery red disk on top. Sometimes there was a cobra surrounding Re that symbolized how the Sun could bring death. Re had power over Osiris, ruler of the underworld. Light vanquished darkness. It was said that humans sprang forth from Re's tears and that his children were the air and clouds, and his later descendants became the Earth and the stars, a mythological explanation of the belief that light brought life to the world.

In Greek and Roman mythology, Apollo was the son of Zeus (Jupiter) and Leto (Letona) and was the twin brother of the goddess Artemis. He was the god of the Sun, logic and reason. He was also a fine musician and healer. His most famous sacred place was at Delphi, site of the Oracle of Delphi. The Romans also believed Apollo was the god of light, music, and healing.

Leto travelled all over Greece to find a place to give birth to Apollo. She finally came upon an island named Delos. The island agreed to allow the birth of Apollo if he in turn founded a temple on the island. Leto agreed, and when Apollo grew up, he changed Delos into a beautiful island. Apollo was known as the god who could foretell the future.

The regular, predictable rising of the Sun each day instilled a faith in the future in most cultures. The Sun's morning light swept back the darkness and fear of the night, shone onto crops giving life, and brought the joy of light and life, replacing the despair of evil spirits and death.

Picture from the "Book of the Dead". One of the two figures with an orange disk is Re-Harakhti, the other may be Re. The other two figures are pharaohs.

Image courtesy James Wasserman, The Egyptian Book of the Dead, Chronicle Books.

1995 Solar Eclipse above the Temple of Apollo in Turkey

In West African lore, the Sun was a harsh, fierce entity called Liza who was inseparable from his twin sister Mawu, the Moon. Together they represented universal order and harmony. Liza resided in the east (where the Sun rises) and Mawu resided in the west (where the Moon's phases begin). Liza was the god of light, heat, work and strength. Mawu was the goddess of darkness, fertility, rest and motherhood. When there was an eclipse, it was said that Mawu and Liza were making love.

In very few mythologies, the Sun was portrayed as taking feminine form. For instance the oldest Japanese religion, Shinto, regards the Sun as a goddess named Amaterasu. When she was in her cave the darkness allowed evil, despair, grief and destruction to reign over the Earth, but when she was enticed to come out and the brilliant light of Amaterasu finally illuminated and colored the world.

(Continued on page 4)

Sun Myths *(Continued from page 3)*

These examples can be distilled down into common themes such as light triumphs over darkness, good triumphs over evil, the Sun represents supreme order in the universe, and it is the Sun which brings life to the Earth. We can see that the cultural mythologies were explanations for astronomical behaviors ancient peoples observed every day. We may have different explanations for these observations today, but underlying truths remain. Without the Sun, we would die. The Sun will rise tomorrow.

Symbol for Shamash, Ancient Sumerian Sun God

Three thousand years ago the Sumerians' mythology named Shamash as a Sun god in Mesopotamia, between the valleys of Tigris and Euphrates rivers. Since he could see everything on Earth, he represented also the god of justice; the triumph of good over evil. It was said that every morning without fail, the scorpion-men of the East Mountain would open the gate and allow Shamash to come out. He was pulled across the sky in a chariot. At the end of the day, Shamash would enter the West Mountain, and begin his travel through the Underworld. The next day, he would begin yet another journey across the sky.

Clear Skies! Tom.

References:
http://www.san-julian.co.uk/solar_eclipse_2006.htm
http://www.windows.ucar.edu/tour/link=/mythology/planets/sun.html&edu=high

RCA will be entering a float in the May 30th, 2009 Starlight Parade!

The parade begins at 8:30 p.m. Live television coverage starts at 9 p.m. on KGW channel 8.

The float will be honoring our club and the International Year of Astronomy. Our "Celebrity" on the float will be RCA member Christine Lee who was the 2007 Astronomical League Jack Horkheimer Award winner. Please help prepare for the parade with any of the following tasks:

- Build a float. We will have a work party on Saturday, May 9th at Technical Marine Services (6040 N Cutter Cir Ste 302, Portland, OR 97217) from 10:00 a.m. to who knows when? Anyone who wants to help make this thing terrific is welcome to come and help out.

2007 Starlight Parade photo courtesy:
http://www.flickr.com/photos/christinas_play_place

- Help get lots and lots and LOTS of lights. The Starlight Parade people want us to be seen a block away. So we're looking for strings of Christmas lights…icicle and otherwise. We prefer white, but may use other colors for some of our decorative touches. If you want to loan us some lights, please bring them to the May 9th work party at Technical Marine Services. Not tangled please, but nicely looped up, and with a tag with your name on each string so we can return them. Please bring the kind that doesn't die if one bulb in the string is out. If you've got some bright flashers that are red LED and star shaped, that would be great. We can dream, can't we?

- If you are particularly clever with electricity and want to help us make this dazzling, we can use you. Like ideas for extra energy sources, and perhaps how to use real lights on a float.

For more information contact project leaders David Nemo <david@nemoworld.com> or Margaret Campbell-McCrea <campbellm101@gmail.com>.

PRODUCT REVIEW

Tele Vue's 13mm Ethos eyepiece gets a workout.
By John W. Siple

Tele Vue Optics, the established leader in eyepiece innovation and design, has done it again by introducing a stylishly sleek ocular with a whopping 100° apparent field of view. The 13mm Ethos has been on the market now for well over a year. During that time it has grown into a phenomenal bestseller for the parent company. As of May, Tele Vue's latest crown jewel can be purchased for a price of about $620, often with free shipping.

The 13mm Ethos has gone through one slight design change since first released to the astronomical public—the girth was reduced from 63.5mm to 62mm (about 1.5mm) in the early spring of 2008. This allows the use of two matched 13mm Ethos oculars in a binoviewer, providing the proper interpupillary distance. Optically there is no difference in performance between the two styles. The Ethos is made in Taiwan by expert opticians, and now includes 6, 8, 10, and 17mm focal lengths.

After reading nothing but rave reviews about the 13mm Ethos eyepiece, and hearing only positive comments from users, I decided to go ahead and purchase one of the hyper-wide field marvels. The eyepiece's popularity can be judged by how fast it has been flying off of dealers' shelves; a few were out of stock, plus some mega wholesalers of optical goods, such as OpticsPlanet, when called had only several remaining samples left in their inventory.

As a first effort, I placed a wanted advertisement in the classified section of a popular online astronomy discussion forum, and promptly received two positive hits. I was somewhat surprised (and delighted) at this. Both encouraging responses were from dedicated astrophotographers, where imaging the night sky was their primary area of interest.

One seller had the original 63.5mm version—he needed the funds from the sale of the eyepiece to purchase additional camera equipment for his telescope. He had some flattering comments about the performance of the Ethos, saying "you are going to love this eyepiece."

The second seller had received the 13mm Ethos as a Christmas gift from his wife last year. He already had a 13mm Nagler in his eyepiece chest, and sadly felt that the new Tele Vue item would get little use. His wife had attempted to return the unused TV product, but several months had already elapsed, and the astronomical distributor would not give her a full refund.

I went ahead and purchased both of the pre-owned 13mm Ethos eyepieces. Remarkably, they arrived together in the same FedEx van. The 63.5mm model was obviously well-cared for and looked almost new. The other ocular, never taken out of its wrapping, was in pristine condition. All of the original tags and labels were still intact. It had the slightly smaller but subtly changed 62mm barrel diameter.

First light was through a vintage Jaegers 6-inch F/5 Rich Field Telescope. This particular achromatic refractor is one of my favorite instruments, providing a wide, well-corrected field. I decided to test just the Ethos with the 63.5mm barrel diameter, leaving the unused companion ocular as a backup for future use. The night air was unusually calm, where very high power could be used without any image breakdown.

The Great Globular Star Cluster in Hercules, M13, was targeted as a test object. After acquiring the famous deep-sky object with a low power eyepiece, I put the 13mm Ethos into the telescope's 2-inch Lumicon star diagonal. Contrary to expectations, star images were blurry and appeared like streetlights seen at a distance through thick fog.

To my relief, the solution to the problem soon presented itself. In my haste to try out the 13mm Ethos, I had foolishly forgotten to remove the slip-on protective cover at the end of the eyepiece. Once the opaque cover was removed from the light path, I jumped with joy. THIS IS THE BEST EYEPIECE THAT I HAVE EVER USED! And I have used plenty of them over my lifetime.

Looking through the 13mm Ethos eyepiece is a *grand* experience, like peering out the round portal of a spaceship as you sail past globular star clusters, remote island universes, and other cosmic phenomena. The sightseer has to roll his or her eye around to take in all of the view, where the optically perfect field is studded with star images that are tack sharp from edge-to-edge. The ultimate observing experience. A masterfully designed eyepiece that is worth every penny. **The author's rating: A+**

BOARD MEETING MINUTES

April 6, 2009
OMSI Classroom 1
Margaret Campbell-McCrea

Attending: Tom Nathe, Matt Vartanian, Margaret Campbell, Ken Hose, Jan Keiski, Sameer Ruiwale, Dave Nemo, Larry Godsey, Dawn Willard, Art Morris, Howard Knytych, Dale Fenske, Jean London.

The meeting was called to order at 7:12 p.m.

OFFICER REPORTS:

- Secretary: A quorum was met with 13 voting members present.
- Treasurer: Larry Godsey reported that we have $22,505.34 in the RCA general account, and $19,319.07 in the Site Fund, for a total of $41,824.41. Even with upcoming expenses, we are slightly ahead of where we were at this time last year. Larry asked for another $50 in his budget to cover the cost of another batch of RCA checks. Larry handed out the first quarterly profit and loss statement for Board members to look at in detail later. There was some discussion about where to take the expenses of printing for the public outreach that we're doing this year.
- Programming: Matt Brewster reported that in April will have Terry Matilsky from the Chandra X-Ray Project. In May the program is Lawrence Doyle from SETI, and June is our information fair.
- Observing: Matt Vartanian reported that he's talked to the new manager at Stub Stewart about having RCA star parties there, in addition to the OMSI star parties which will be held at both Stub Stewart and Rooster Rock. We will agree to make them public, but not advertise them much, since Stub Stewart will probably do the advertising. Probably these will turn into a kind of hybrid event - - part public and part private. We're thinking of having three events there. Matt will discuss the parameters before he commits to this. He will post information through the Forum as he finds out. The first one is scheduled for Saturday, April 25.
- Community Affairs: Dawn Willard reported that we had a good turnout at OMSI for 100 Hours of Astronomy. The weather was very good, which meant there is light attendance at OMSI. We had solar scopes in the plaza during the day, and about a dozen scopes and a dozen visitors in the evening. We have a public party at Reed College on Thursday, May 7th. She'll put out a request for volunteers. She also has an email from Cooper Mountain for an August 1st star party. She'll call them back.
- There was some discussion about creating a form on the website for reporting volunteer hours for reporting to the IRS. Dawn and Larry will work on that.
- Media Director: Sameer will call Patton about Diana. Dawn will send her an email.
- VP Membership: Ken Hose reported that we have 6 new members and 5 renewals. Our total is 350 member families. We had 294 last year and 292 the year before. We took in $314 in dues.
- New Members: Howard Knytych reported that he will try every other month to have a new-member meeting with different presenters each time. He's asked Dale Fenske for the next one (April) to discuss ALCOR observing programs. Howard will inform Larry Godsey for the website.
- Sales: Margaret Campbell reported that there were $214.00 in sales in March. The order of SkyTools was completely sold out.
- Library: Nominal.
- Scopes: Tom Nathe reported for Greg for April only, since Greg is out of town. He looked at a 6" f10 to be donated with, on condition that we not change the optics. The Board decided not to accept the 6" until we understand more about the restrictions. We'll be donating an 8" DOB to OSP for the youth mentoring section. A recently donated 10" DOB will replace the 8" one.
- IDA: Art Morris has talked to Washington County about their light pollution ordnance, and to several smaller towns (Newberg, Sherwood, Tualatin, etc.). He contacted Bernie Kuehn about making a presentation to the Wildlife people in Washington County but hasn't heard back. He also called the City of Newberg about their new hotel which has nice lighting, recommended by IDA, to thank them.
- Dawn forwarded a letter from a state senator looking for support on a light pollution bill. Dawn offered Art a kit which he can use for public speaking. They will connect. Sameer gave him a contact from Lake Oswego.
- Magazines: Nominal.
- Webmaster: Nominal.
- Site: Nominal.
- Youth: Jean London suggested having a youth astronomy resource page on the website, which would link events and programs like Saturday Academy, OMSI events, etc. She will talk to the Stub Stewart people about having family-friendly events at the OMSI star parties, and perhaps at the RCA star parties. She'll give information about kids and family-friendly to Larry Godsey and he'll get it on the website.
- SIGS: Tom reported that on the 19th the Chandra people will be coming to TMS for a pizza party and a software presentation, how to access their data library for the Chandra data sets. That will be on Sunday, the day before the RCA meeting. And of course, David Haworth is hosting the Astrophotography workshop on April 18th.
- ALCOR: Dale Fenske will renew the roster for the June reflector.
- OMSI: Jan will send me the materials for this. May 4th Board meeting is time to renew our contract with OMSI.
- Sister Club: GAMA is working on getting their own website set up.

OLD BUSINESS:

- 2009 Starlight parade: We've been accepted. We also will have a letter with some ideas. Margaret will set up the

(Continued on page 7)

Board Meeting Minutes *(Continued from page 6)*

next work party and order decorations. David Nemo will advertise for outwalkers.

- Posting speaker videos on website: Larry has uploaded them and they work.
- Purchase of PST: Camp Hancock's is gone. John Harris is not sure he wants to sell his. Larry is going to put a new one in the budget for next year.
- Astronomy Day at Pioneer Place – Sameer Ruiwale has attempted to contact the person but has not heard back.
- GAMA on the Forum – Done.
- NASA Nightsky Network materials for Youth Program: – Dawn Willard sent Jean London the materials, with the password to Nightsky network.
- Joint viewing with GAMA – Jan Keiski talked to Carlos and GAMA has the laptop and is working toward doing sharing. We need to pick a date, publicize it, preferably toward mid-summer.
- Members' Only section of website – Larry Godsey is going to go ahead and go with it at the next meeting, giving a common password and login for all RCA members.

NEW BUSINESS:

- Astronomy Day: It's going to be before our next meeting, so this will have to be done via call for volunteers via Forum. It's going to be in two places: OMSI and Pioneer Place or other location.
- OMSI: Jan Keiski reported that Jim Todd will get with us about his plans. Sameer asked Dawn to get some of Jim's materials for giving out. Other sources: Nightsky Network, IYA, IDA.
- Pioneer place / other locations – a work in progress.
- Listing Board member phone numbers: This was a discussion that had come up via the Forum. After some discussion we decided to remove personal telephone numbers from the newsletter. Also, articles submitted to the newsletter should not have email addresses on them. We agreed to have phone numbers listed in the member's only section of the website. Larry will ask board members whether they want their phone / email published.
- Mirror making machine purchase: Greg had put this agenda item on the Forum. It would cost $200 and can make up to 14" mirrors. We decided we need more information about where it's going to be kept, who has access to it, who takes care of it, whether it's transportable, etc. Tom Nathe will speak to Dan about keeping it at TMS, and will also drop a note to John DeLacey about it.
- Having RCA swap meets at general meetings: This was another discussion that began in the Forum. We decided to have two a year: in December, as usual, and in June, with the SIG Fair. We'll advertise the big ones, but allow people to sell things at other meetings. We need to find out where the June meeting is going to be and if we can have a few extra tables. Sameer will inform Matt about this.
- Vendor's policy: Dave suggested putting together a policy for vendors. After some discussion we agreed that if they're RCA members and they give advance notice and it's astronomically related, it's okay. Jan Keiski will ask Jim Todd about OMSI's policy about vendors at RCA meetings.
- The trip to LAIGO. Lamont Brock is supposed to be working on it for the Cosmology SIG. Sameer will ask him about it.
- 2009-2010 RCA budget: Larry Godsey handed out a proposed budget for the coming fiscal year for us to discuss next month, and asked Board members to bring proposals for the budget for next year.
- Signing of the annual contract with OMSI: Jim Todd will have the contract ready for the May Board meeting.

The meeting adjourned at 9:00 p.m.

TO DO:

1. Matt Vartanian will discuss the parameters of Stub Stewart star parties before he commits us to them. He will post information through the Forum as he finds out.
2. Dawn will put out a request for volunteers for the Reed College S.P. She will also contact Diana about media contacts. She will work with Larry about having a form on the website for reporting volunteer hours. Dawn will send Art Morris a kit for IDA presentations.
3. Larry will work with Dawn about creating a form on the website for reporting volunteer hours. He will also prepare a proposed budget for next year. He will publicize the members' only section of the website, giving everyone a common password and login. Also, will talk to Larry Deal about removing personal telephone numbers from the list of officers in the newsletter, and from any newsletter article, and will contact Board members to ask if they want to publicize their telephone numbers and/or email addresses.
4. Sameer will talk to Patton about the Media Director position. Contact Matt Brewster about getting more tables for the June SIG meeting so we can include a Swap Meet. Contact Lamont Brock about the trip to LIGO.
5. Howard will keep Larry Godsey informed when he has new-member orientations for publicity.
6. Jean will connect with Larry Godsey about putting a kids' section on the website, and about advertising family-friendly star parties at Stub Stewart.
7. Art will contact the state senator about the light pollution bill he's sponsoring.
8. Dale will update the member list for the Reflector.
9. Margaret will set up the next Starlight Parade work party, and order float decorations.
10. David will advertise for outwalkers and order costume elements.
11. Jan will continue to work with GAMA for joint viewing via laptops. She also will ask Jim Todd about OMSI's policy about vendors at RCA meetings.
12. Tom will talk to Dan Grey about storing the mirror-making machine. Also will talk to John DeLacey.

The Swiss Army Knife of Weather Satellites

Spotting volcanic eruptions, monitoring the health of crops, pinpointing distress signals for search and rescue teams.

It's not what you might expect from a weather satellite. But these are just a few of the abilities of NOAA's newest polar-orbiting weather satellite, launched by NASA on February 6 and turned over to NOAA for full-time operations on February 26.

Formerly called NOAA-N Prime and now renamed NOAA-19, it is the last in its line of weather satellites that stretches back almost 50 years to the dawn of the Space Age. Over the decades, the abilities of these Television Infrared Observation Satellites (TIROS) have gradually improved and expanded, starting from the grainy, black-and-white images of Earth's cloud cover taken by TIROS-1 and culminating in NOAA-19's amazing array of capabilities.

"This TIROS series has become quite the Swiss army knife of weather satellites, and NOAA-19 is the most capable one yet," says Tom Wrublewski, NOAA-19 Satellite Acquisition Manager at NASA's Goddard Space Flight Center in Greenbelt, Maryland.

The evolution of TIROS began in 1998 with NOAA-K. The satellites have carried microwave sensors that can measure temperature variations as small as 1 degree Celsius between Earth's surface and an altitude of 40 kilometers—even through clouds. Other missions have added the ability to track large icebergs for cargo ships, monitor sea surface temperatures to aid climate change research, measure the amount of ozone in Earth's protective ozone layer, and even detect hazardous particles from solar flares that can affect communications and endanger satellites, astronauts in orbit, and city power grids.

The new NOAA-19 is the last and most capable in the long line of Television Infrared Observation Satellites (TIROS).

NOAA-19 marks the end of the TIROS line, and for the next four years it will bridge the gap to a new series of satellites called the National Polar-orbiting Operational Environmental Satellite System. NPOESS will merge civilian and military weather satellites into a single system. Like NOAA-19, NPOESS satellites will orbit Earth from pole to pole, circling the planet roughly every 100 minutes and observing every location at least two times each day.

NPOESS will have yet more capabilities drawn from its military heritage. Dim-light sensors will improve observations of the Earth at night, and the satellites will better monitor winds over the ocean — important information for ships at sea and for weather and climate models.

"A lot more capability is going to come out of NPOESS, improving upon the 161 various environmental data products we already produce today," Wrublewski says.

Not even a Swiss army knife can do that many things, he points out.

For more on the NPOESS, check out http://www.npoess.noaa.gov. Kids can find out about another NOAA satellite capability—tracking endangered migrating species—and play a fun memory game at: http://spaceplace.nasa.gov/en/kids/poes_tracking.

This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.

RCA 'Downtowner's' Lunch

Join us on the first Friday of each month for lunch at a great downtown restaurant (Holidays and such may push us to the second Friday of some months, check the calendar at http://www.rosecityastronomers.org).

The location is announced on the RCA general forum discussion list. at http://www.rosecityastronomers.org/forum under special interest groups.

Always great conversation and food.

For more information contact: Margaret Campbell at secretary@rosecityastronomers.org

Photo by Jan Keiski

Astro-Imaging Special Interest Group

The "AI-SIG" is about advancing the skills of beginner, intermediate and advanced astro-imagers. We rely on the skills of our members to bring each other along as we image the beautiful night sky and its many wonders. Whether you use a CCD, DSLR, point-and-shoot or film camera, members of this group can help you achieve better images with less effort and frustrations. Please join us as we learn together to produce "stellar" images!

Next Meeting: Monday, May 11, 2009, 6:30pm
Beaverton Public Library
In Meeting Room B
12375 SW 5th St, Beaverton

Science Special Interest Group (SCI-SIG)

Next meeting is May 9 at 3pm. Following the Telescope Workshop at Technical Marine Services.

This group is for people who would like to advance their skills in astronomy beyond casual observing. Various projects that some group members are involved in include; variable and double star observing, occultations, photometry and astrometry. A science background is not required, however a curious mind does help.

Location: Technical Marine Service, Inc
6040 N. Cutter Circle on Swan Island

http://www.rosecityastronomers.org/sigs/science.htm

Tom Nathe sigs@rosecityastronomers.org
RCA SIG coordinator

Observing Site Committee

To lead and coordinate efforts of the Rose City Astronomers (RCA) in securing and managing a variety of observing sites for private use by members, and for community outreach and special events organized by the RCA.

Please Check
http://nemoworld.com/RCA/sitehome.htm
for more information.

Or Contact: David Nemo <david@nemoworld.com>

Telescope Workshop

When: Saturday, May 9, 10:00 AM - 3:00 PM
Place: Technical Marine Service, Inc.
6040 N. Cutter Circle on Swan Island
For more information contact:
Director: John DeLacy johncdelacy@comcast.net
Assistant: Don Peckham don@dbpeckham.com

ASTROPHYSICS / COSMOLOGY SIG

Date/Time: Wednesday, May 20, 7 PM.

Topic: "*To be determined*"

Presented by: Matt Brewster

Place: Linus Pauling Complex,
3945 S.E. Hawthorne St., Portland.

Sig Directors: Lamont Brock 503-235-5893
Jim White..... 503-236-7802

Email: cosmology-sig@rosecityastronomers.org

www.rosecityastronomers.org/sigs/cosmology.htm

Oregon Museum of Science and Industry
Rose City Astronomers
1945 SE Water Avenue
Portland, Oregon 97214-3356

May 2009

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						

May 2009

May 1	Fri	Downtowner's Luncheon	TBD	Noon
May 4	Mon	RCA Board Meeting	OMSI Parker Room	7pm
May 9	Sat	Telescope Workshop	Swan Island	10am-3pm
May 9	Sat	Science SIG	Swan Island	3pm
May 11	Mon	Astro Imaging SIG	Beaverton Public Library	6:30pm
May 16	Sat	Non RCA Star Party	Prineville Reservoir	
May 18	Mon	RCA Information Fair	OMSI Auditorium	7pm
May 20	Wed	Cosmology SIG	Linus Pauling Complex	7pm
May 22-23	Fri-Sat	Dark Sky Star Party	Maupin	
May 23	Sat	RCA Star Party	Stub Stewart State Park	

June 2009

Jun 1	Mon	RCA Board Meeting	OMSI Classroom 1	7pm
Jun 5	Fri	Downtowner's Luncheon	TBD	Noon
Jun 6	Sat	Telescope Workshop	Swan Island	10am-3pm
Jun 6	Sun	Science SIG	Swan Island	4pm
Jun 8	Mon	Astro Imaging SIG	Beaverton Public Library	6:30pm
Jun 13	Sat	OMSI Star Party	Stub Stewart and Rooster Rock S. P.	
Jun 15	Mon	General Meeting	OMSI Auditorium	7:30pm
Jun 17	Wed	Cosmology SIG	Linus Pauling Complex	7pm
Jun 19-20	Fri-Sat	Dark Sky Star Party	Maupin	
Jun 20	Sat	RCA Star Party	Stub Stewart State Park	

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.rosecityastronomers.org).

RCA CLUB INFORMATION

Web Site: http://www.rosecityastronomers.org

The
Rosette Gazette

Volume 21, Issue 6 Newsletter of the Rose City Astronomers June, 2009

RCA JUNE 15 GENERAL MEETING

The RCA general meeting in June 2009 features our annual Information Fair. Come visit us and get acquainted with RCA activities and members.

There will be several tables set up in OMSI's Auditorium with information on RCA programs and activities. Learn about the following:

- Learn about membership benefits.
- Learn about RCA star parties & regional star parties.
- Learn about Astronomical League amateur observing programs such as the Messier, Caldwell and Herschel programs and how to earn observing certificates and awards for these.
- Find out about RCA special interest groups (SIGs) such as Cosmology, Astrophysics, Astrophotography, Amateur Telescope Making and others.
- Find out about our Telescope Library where members can check out a variety of telescopes to try out.
- **RCA swap meet to be held, where members have the opportunity to trade their astronomy related items.**
- The RCA library will be open with hundreds of astronomy related books and videos.
- The RCA Sales table will feature a large assortment of Astronomy reference books, star-charts, calendars and assorted accessories for purchase.

The fair begins at 7:00 PM, Monday June 15th 2009, in the OMSI Auditorium.

There will be a short business meeting at 7:30 PM. Enter at the Planetarium Entrance right (north) of the Main Entrance. Proceed to your right to the Auditorium.

All are Welcome! Monday June 15

Location: OMSI Auditorium

In This Issue:

RCA is a member of the Astronomical League.
http://www.astroleague.org

Full Moon	Last Quarter Moon	New Moon	First Quarter Moon
June 7	June 15	June 22	June 29

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SIG Director	Tom Nathe	sigs@rosecityastronomers.org
Youth Programs Director	Jeannie London	youth@rosecityastronomers.org

RCA MAGAZINE SUBSCRIPTIONS

One of the benefits of RCA Membership is a reduced rate subscription to Sky & Telescope and Astronomy magazines. The RCA member rate for Sky & Telescope Magazine is $32.95 for one year or $65.95 for two years. The RCA member rate for Astronomy magazine is $34 for one year or $60 for two years. For more information go to the RCA web site index and click on any of the links for magazines. Larry Godsey, Treasurer, 503-675-5217, will be taking renewals and new subscriptions at the Magazine Table before General Meetings. Please make checks out to "RCA" and allow two months for your subscription to be renewed.

RCA LIBRARY

The Rose City Astronomers maintains a comprehensive club library of astronomy related articles, books, CDs 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.

The RCA library is constantly growing through many donations and the purchase of new materials. A listing of library materials (PDF format) can be found at the library web page: http://www.rca-omsi.org/library.htm

Jan Keiski (jikeiski@comcast.net) 503-539-4566

CLASSIC TELESCOPES

A popular Swift 3-inch refractor highlights the finest deep-sky objects in Libra.

By John W. Siple and Jerald D. Kovacs

Observers facing south on clear May and June nights will notice a faint trapezoidal figure lying on the zodiac between Virgo and Scorpius. Libra, the Scales, was once the location of the autumnal equinox—equal day and night—and therefore associated with balance. The ancient Greeks considered the stars of Libra to be part of Scorpius, in particular forming the Scorpion's claws.

The constellation does not have any Messier objects, but as a member of the zodiac plays regular host to the Sun, Moon, and planets. The celestial treasure trail in Libra leads the amateur astronomer to the "Gateway Stars," and then deeper into interstellar space to the globular cluster NGC 5897. A good selection of colorful double stars also awaits the patient observer. Swift's Model No. 831, a 3-inch F/13 refractor telescope, was chosen for tracking down Libra's diverse collection of deep-sky splendors.

Swift Instruments Inc. is one of America's oldest existing optical houses, having been founded in 1926 by Robert W. Swift. The company is internationally known for developing and selling beautifully-made advanced scientific products. During the early 1960s, Swift marketed three astronomically significant equatorial refractor telescopes, which were promoted as instruments for performing "serious amateur work" and as an opportunity to view "space spectaculars" in regal style.

According to the Swift literature, these 50mm, 60mm, and 79mm telescopes were the brainchild of Dr. Shusuke Kojima of Tokyo, Japan. He was regarded as one of the world's foremost authorities on the design of observatory instruments during the past 20th-century.

Swift's close association with Takahashi, a Japanese firm with a strong reputation for manufacturing premium grade telescopes, resulted in beautifully-styled refractors with flawless optics. The classic Model No. 831, having exact specifications D=77mm and F=1000mm, is considered by expert telescope appraisers as the best in the series.

In their long trek around the night sky Sol's retinue of worlds regularly pass between the 3rd-magnitude stars $\alpha^{1,2}$ and β Librae, familiarly known as

Top: Swift's 79mm achromatic refractor telescope. Above: the constellation Libra as shown in a decorative map of the heavens made in 1660 by Andreas Cellerius.

Zubenelgenubi (meaning the southern claw) and Zubenelchemale (northern claw). Because of their unique position along the ecliptic, they have been appropriately dubbed the "Gateway Stars" by skygazers.

The Southern Claw, formed by the two stars 8 Alpha^1 (α^1) and 9 Alpha^2 (α^2) Librae, is an attractive target for small instruments. In the Swift telescope, 5.2-magnitude Alpha^1 appears as a gleaming yellowish orb while the brighter star Alpha^2, 231" distant, has a more subdued shade of pale bluish-gray. This extraordinarily fine pair of stars is 57 light-years distant.

The telescopic journey continues by visiting the pretty 2.6-magnitude stellar gem Beta (β) Librae, nicknamed the "Emerald Star." Astronomers throughout the centuries have been enchanted by its striking greenish-white hue. Those who have made note of the star's peculiar color include such luminaries as the Rev. T. W. Webb and William Tyler Olcott. This particular star is shrouded in mystery, since Eratosthenes and then 400 years later Claudius Ptolemy recorded it as bright as fiery red Antares.

The star's distinctive emerald tinge shows best in the authors' telescope at a magnification of 125x, a sight that is long remembered after the observing session ends. This marvelous beauty in Libra lies 120 light-years away.

Centering the Swift 79mm refractor 2°

(Continued on page 4)

Classic Scopes *(Continued from page 3)*

to the north-northwest of Zubenelgenubi, the star Mu (μ) Librae pops into view. A close binary system, where the two components are separated by just 1.8", proves to be a tough test for the Swift refractor optics. High power and steady skies are necessary to get a clean split of this tight pair of 5.8 and 6.7 magnitude stars. Under such conditions, the vintage glass reveals two beautiful white diffraction disks separated by dark sky.

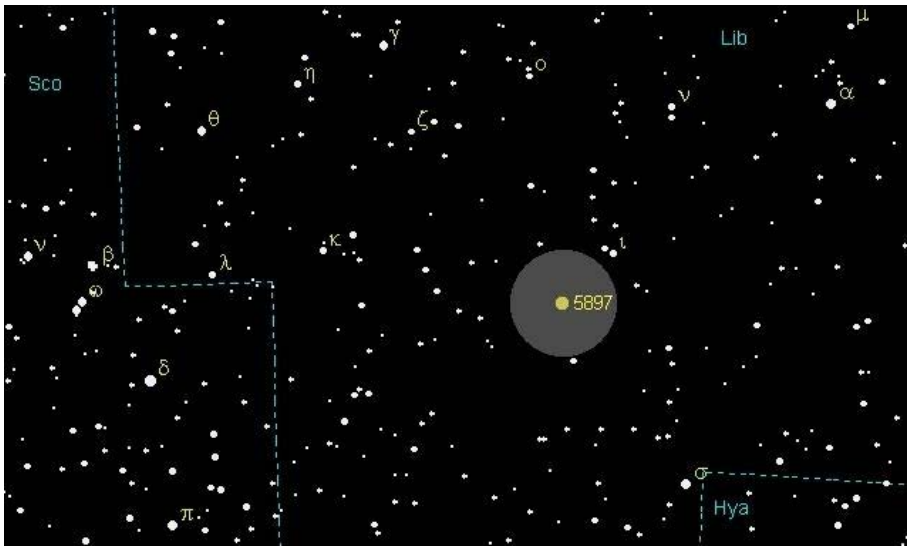
Next stop in our telescopic sojourn is at the elegant double star HN-28. (An entry found in William Herschel's 1821 catalogue of binaries.) Although not much of a challenge—the two stars are separated by a comfortable 23.0"—what draws the observer's attention is their lovely color combination. A truly superb sight at 48x, these 7th- and 8th-magnitude gems are orange and crimson-red, respectively.

The binary system Σ1962, a closely matched pair of pale yellow 7th-magnitude stars spaced 11.9" apart, is another easy target for small instruments. A pleasing object through the Swift telescope at 125x, this attractive duo deserves further study during a nightly star hunt.

Libra's uncontested deep-sky showpiece is NGC 5897, a low surface brightness globular cluster found in the southern portion of the constellation. (See the finder chart above.) A guide to finding this loosely-structured (class XI) swarm of suns is a Y-shaped asterism of four 8th-magnitude stars located 15' to the east. Libra's lone globular cluster shines at magnitude 8.6 and measures 12.6' across.

In the volume *Hidden Treasures* author Stephen James O'Meara compares the 40,000 light-year distant star cluster to M55, calling it a ghost reflection of that brighter Messier object.

William Herschel considered NGC 5897 an important discovery because, in his view, it was "one of the gradations from palpable congeries of stars…towards the distant nebulae."



Above: Daniel Verschatse – Observatorio Antilhue – Chile supplied this extraordinary image of NGC 5897. Top: a plot of the object's position in Libra. Courtesy of the East Valley Astronomy Club.

Selecting a low power ocular, the "ghost" globular's oblate disk is found hanging on the western edge of the Y-shaped asterism of four stars. O'Meara goes on to describe the globular cluster's appearance as "buffed and featureless," an observation that exactly matches the view through the Swift refractor. At any random power, NGC 5897 is an amorphous cometary glow that resists resolution.

Swift's Model No. 831 telescope has set a high standard of optical and mechanical excellence that still holds true today. It meets every discriminating lunar, planetary, and deep-sky observer's most stringent requirements. As expected, this outstanding classic refractor from the 1960s is a highly sought-after collectable instrument, with scarce few examples entering the astronomical marketplace.

William Tyler Olcott gave this advice on the proper handling of your (Swift) refractor telescope, "Lastly, remember that the telescope is a scientific instrument. Take good care of it and it will never cease to offer you many hours of keen enjoyment, and [it will act as] a source of pleasure in the contemplation of the beauties of the firmament that will enrich and enoble your life."

IDENTIFYING RCW NEBULAE IN CONSTELLATION CARINA

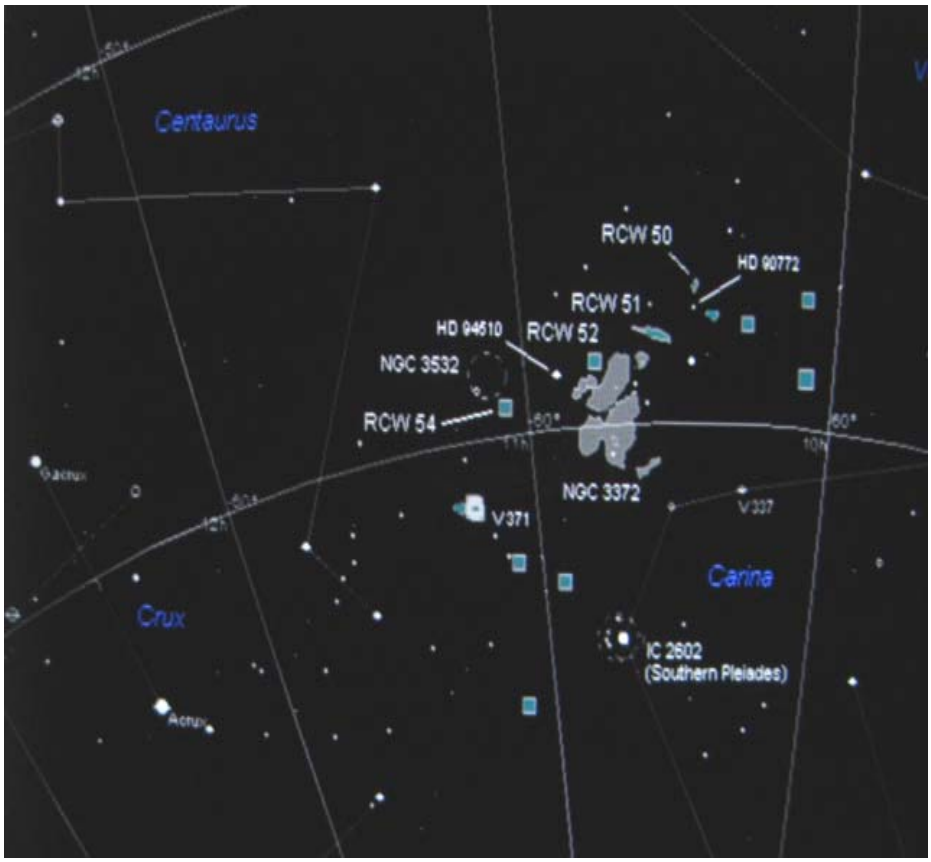
by Leo Cavagnaro

Part 2. RCW 50, RCW 51, RCW 52 and a section of the complex RCW 54

In part 1. "Identifying RCW Nebula in Constellation Carina", published in the April 2009 Rosette Gazette, I included observing reports on four of the nebula, RCW 46 to RCW 49, with RCW 48 by far the brightest and easier nebula to observe thus far.

The purpose of this project (the observation of non common nebulae in Carina) is to determine which of them are visible through an 8-inch telescope, observing under a normal dark sky (6.2 or 6.3 limiting magnitude) and which nebulae are invisible through this kind of instrument, thus needing bigger scopes to see them, or even to know if they are invisible at all and reserved for astrophotography or observations in other wavelengths only.

On April, 18th I went to the same observing site (Canota) with the idea of observing more nebulae of this catalogue. This time the objects are mostly situated in the immediate area of the "Mother of the Nebulae" Eta Carinae (NGC 3372, also RCW 53 and Gum 33). One of the sections of the RCW 54 complex (section b) is situated a few degrees east of NGC 3372 (see the map on this page).



RCW 50, RCW 51 & RCW 52. Three Very Faint Nebulae

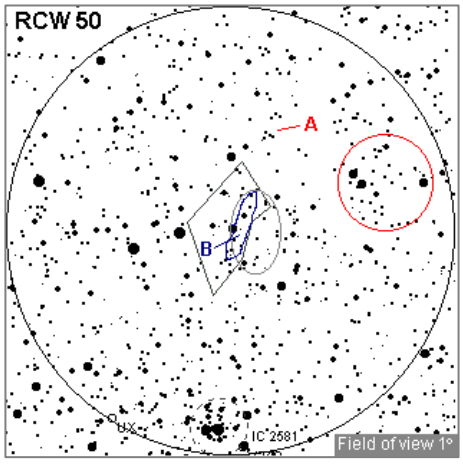
I observed these nebulae under not excellent sky conditions even though the sky was good enough to carry out the observations. However, more observations under an even better sky would be necessary.

RCW 50

This nebula is situated about half a degree north of the 4.7 magnitude star HD 90772, so the zone was found easily using this naked eye star as a guide (see the map on this page).

At low magnification (42x) you can see a starry field where a small and round

(Continued on page 6)



Carina Nebulae *(cont'd from page 5)*

"nebulosity" is visible in the zone indicated with **A** on the eyepiece field image previous page. Applying averted vision, a group of faint stars is visible there. It is not labeled as an open cluster by the charts I checked so maybe it is just an asterism.

Focusing on the search of RCW 50, the use of nebular filters like UHC or Orion Ultrablock do not help to see the nebula clearly. To the west, the stars within the red circle appear to be embedded in a very faint nebulosity (see image below).

Observing carefully at higher magnification (78x) a faint hazy patch is visible in the zone that I have indicated with a gray ellipse at the center of the eyepiece. Observing with averted vision a group of very faint stars populate the region.

The use of even higher magnification (106x) and the UHC filter make it possible to see the nebulosity a little better. Using the same magnification and the Orion Ultrablock filter, a "stream" of faint stars in a hazy environment is visible in the zone indicated by **B** in the eyepiece field.

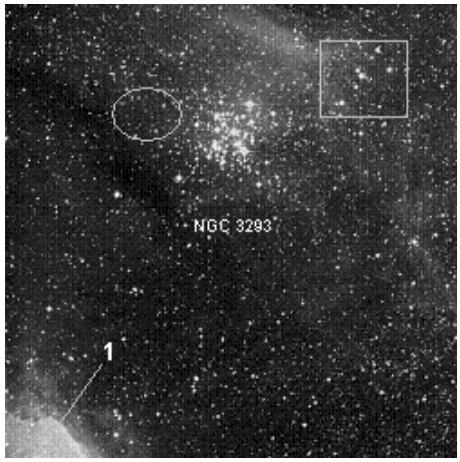
Darker skies and bigger telescopes are necessary in order to get a better view of this faint nebula in Carina.

RCW 51 and the Open Cluster NGC 3293

Rcw 51 is an HII region surrounding the stellar cluster NGC 3293. I observed it half an hour before its transit, so the altitude was very good (64 degrees).

At low magnification (42x) the zone surrounding the cluster shows a starry field with several stars of faint magnitude, also some faint hazy zones are visible. NGC 3293 (left) is a young open cluster with a visual magnitude of 4.6 and with a Trumpler classification of I,3,r,n. It was discovered by Nicholas L. de Lacaille in 1751-52. Situated about 2 degrees northwest to the Eta Carina Nebula, it is a showpiece for observers in the southern hemisphere. It is a good example of an open cluster even for those owners of small telescopes.

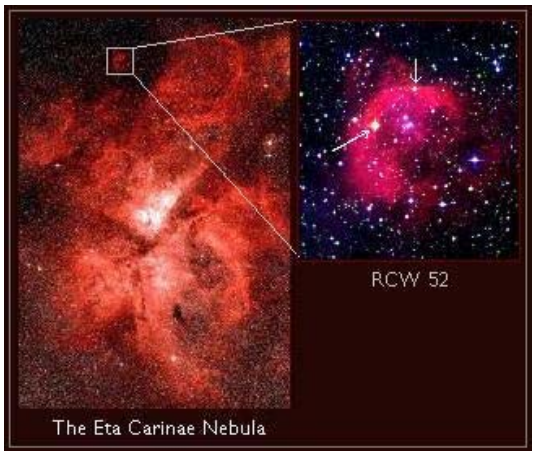
If you observe this cluster with low magnification in order to have a wide eyepiece field (1.2 degrees for example) you will see, with direct vision and without a filter, a uniform nebulosity (**1** on the picture below). The open cluster NGC 3324 lies there and also the yellowish star (the brighter in the field) V370, which is not visible in the DSS picture here. In the picture below north is up.



Doubtless RCW 51 is a challenging target for visual observers with telescopes like mine. Observing with averted vision, a very faint nebulosity surrounds NGC 3293 and a faint and short extension is also visible eastward (indicated with a circle).

I observed the zone again with the same magnification (42x) but this time using an UHC filter. The nebula surrounding NGC 3324 (to the south of NGC 3293-RCW 51) is the most conspicuous feature in the field, appearing round and with a smooth brightness. Focusing on NGC 3293 the nebulosity surrounding the cluster is viewed a little better. With this filter a broad lane of faint nebulosity is visible to the west of the cluster reaching the stars indicated by the rectangle.

At higher magnification (78x) and with both filters UHC and Orion Ultrablock, I got a similar view but a little worse than that at low magnification. The H-beta filter was useless giving me a poor view.



The Elusive Nebula RCW 52

Situated about 1.2 degrees north-northeast to the center of Eta Carina nebula lies a 7 arcminutes size nebula, situated in a field that shows less stars than where NGC 3293 is situated.

If you have an 8-inch telescope, do not expect to see much when you aim your telescope to the zone where RCW 52 (also Gum 32) lies. At low magnification this crescent shape nebula was not visible at all. Using a nebular filter (UHC) and the same magnification RCW 52 was extremely difficult to catch.

At 42x the outer part of the big nebula NGC 3372 is visible in the south edge of the eyepiece field as shown in the picture to the right where north is up. I could identify the pattern formed by the stars where RCW 52 lies (showed in the right hand picture above), including two stars indicated by arrows, the 9.9 magnitude star TYC 8626-142-1 (the brighter one) situated at the heart of the nebula and the 12 magnitude star GSC-8626-0002, expecting to see some of nebulosity connecting them.

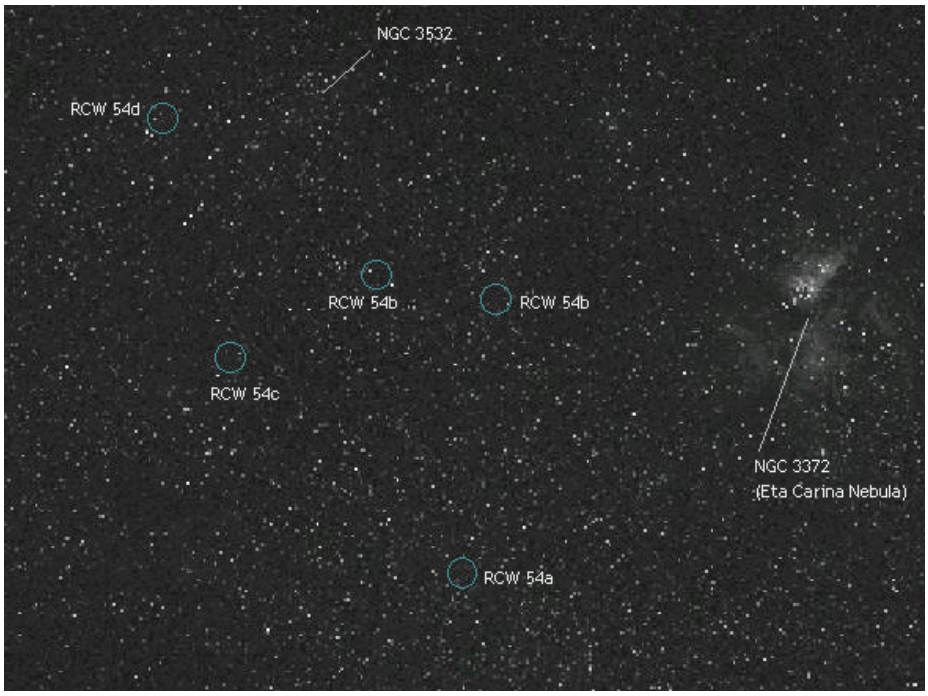
(Continued on page 7)

Carina Nebulae *(Cont'd from page 6)*

Working with a UHC filter at the same power the outskirts of NGC 3372 look brighter and sharper.

At 78x with nebular filters it was not possible to see RCW 52 clearly.

It is an extremely faint nebula, at least for an 8-inch telescope. You will see it appears in some star atlases (SkyAtlas 2000 by W. Tirion, the software Skymap Pro 6.0 and Skycharts) as Gum 32. Even the observation through a 16-inch telescope does not show nebulosity. This is a nebula to observe with even bigger mirrors or maybe it is invisible to all and a good target for advanced astrophotographers.



The RCW 54 Complex and the Carina OB2 Association

The Carina OB2 Association

Car OB2 (*l,b*) (290 degrees, 0.4 degrees) is an extended and rich stellar association located at about 3 kpc from the Sun, in the Sagittarius-Carina arm with 157 stars listed as members or possible members (paper **"A Study of the Interestelar Gas Surrounding Carina OB2"** by J. R. Rizzo from Instituto Argentino de Astronomía and E. M. Arnal from Facultad de Ciencias Astronòmicas y Geofísicas, La Plata, Argentina).

The HII regions RCW 54b, RCW 54d and RCW 55 have distances comparable to the distance quoted for the HI shell associated with Car OB2. Summing up, there are strong observational arguments favouring a physical link between the HI shell and the association Car OB2.

You can read more of this paper at SAO/NASA ADS *Astronomy and Astrophysics, v.332, p.1025-1034 (1998).*

The sky in the eastern part of constellation Carina is home of RCW 54. This is an extended emission nebulae ionized by the stars of the Carina OB2 association. The nebulae complex spans some degrees in the sky and in the few web sites where you can find information about it they talk about different sections of the nebula, labeled a,b,c,d.

The map upper right (north is up) shows where the different sections are situated in the sky. There are two sections labeled RCW 54b which have different numbers in Gum catalogue (Gum 34a and 34b).

For an observer in the U.S., this part of the sky is only visible at low altitude (less than 10 degrees) from a few places in south Florida.

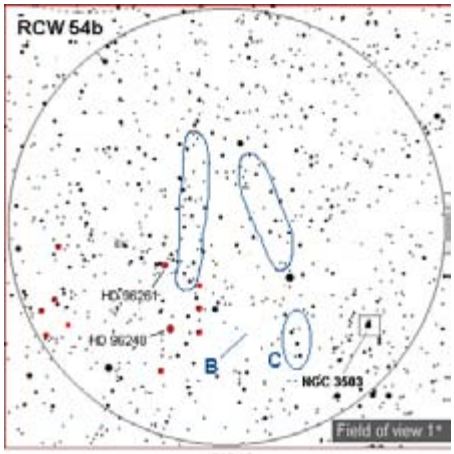


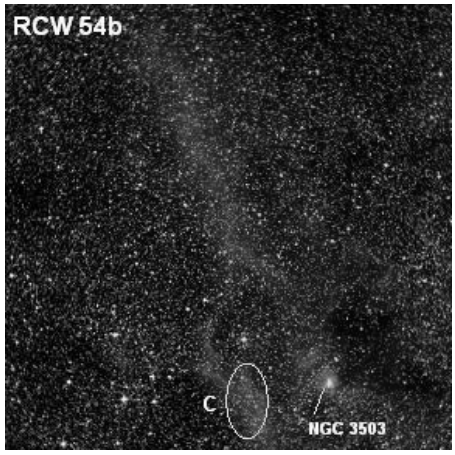
FIG. 2

RCW 54b

This section of the complex, the easternmost of the RCW 54b sections (I name it "eastern b"), also known as Gum 34b, is situated at about 11hs 4m of Right Ascension and a declination of –59.5 degrees (J2000.0) , immediately to the west of the optical center of the Car OB2 association. According to the DSS images of RCW 54, this part is seemingly the bigger one.

To find it is easy because it lies about 1 degree south-southwest to the superb naked eye open cluster NGC 3532 (position angle of about 205 degrees).

At 42x and without a filter a zone with a lot of mostly faint stars is visible. The brighter stars are situated in the southeast region of the field (lower left in figure 2). I used some of the bright stars to identify the zone where the nebulosity should be



(Continued on page 8)

Carina Nebulae *(Cont'd from page 7)*

visible. No nebulosity is visible in the eyepiece field. However, the faint stars in the northern part (up in the pictures) of the field appear to be embedded in a very faint and smooth nebulosity.

Using the UHC filter, nebulosity jumps to view. Two hazy lanes form a "tuning-fork" or "V"-shape structure that crosses the eyepiece field. The "branches" join together in the northern part. I had a similar view using this filter and 53x, but the upper zone in the eyepiece was observed a little better.

The UHC was the best filter to observe this HII region. With the H-beta filter I had the worst view.

In figure 2 I have indicated with **B** the zone where a dark patch is visible. Moreover, a little brighter patch of nebulosity is visible in **C**, embedding a line of 3 stars with magnitudes between 9.7 and 10.9, even if the entire nebula is faint. It would be good to make a new observation of this area from a darker sky or from a site at higher altitude.

At low magnification and without a filter, the emission and reflection nebula NGC 3503 is visible in the same eyepiece field. At 42x it looks very small, with a smooth appearance and elongated in shape. A star is visible very close to this nebula.

The use of higher magnification made possible a detailed observation. At 78x three very faint and close stars are visible when you use averted vision. They are separated about 8 arcseconds each other (I measured the distance on a picture of NGC 3503 using the software Aladin v2.0). A faint nebulosity surrounds the chain of three stars, this is better viewed when you observe at 156x and an UHC filter. Of course, averted vision is necessary to get this view and to discern the stars.

The blue supergiant stars HD 96248 and 96261 (shown in figure 2) are believed to belong to the Car OB2 association. Also, I have indicated with red color some of the earliest stars that are listed as members and possible members of Car OB2 in table 4 in the paper "A Study of the Interstellar Gas Surrounding Carina OB2". The optical center of the association lies there (left edge in figure 2) and is given here in galactic coordinates (l=290.1 deg. b= +0.6 deg.)

In part 3 of the article, "Identifying RCW Nebulae in Constellation Carina", I will include reports about the other sections of the complex RCW 54 and the last five RCW nebulae in this constellation.

Be Kind, Renew on Time!

It's that time of year again, astronomy friends, to renew your membership with the Rose City Astronomers. As most of you are aware, we have a fiscal calendar year from July 1 to June 30th. If you are new to the club, you may have paid a pro-rated membership fee.

We begin a new fiscal year with the good news that dues will remain the same at $24.00. This is a bargain for all the benefits available to you--as we are sure you are well aware.

How to renew? Checks or cash are accepted at the general meeting. Plenty of renewal forms available also. You may print the renewal form from the RCA website http://www.rosecityastronomers.org/renew.htm and mail it with your check (no cash in the mail, please).

You can pay online, via PayPal, with debit or credit card at http://www.rosecityastronomers.org/pp/renew.htm (note that there is a 1 dollar handling fee for this option, total online renewal cost is $25.00).

At the general meetings you'll find the friendly VP of Membership, Ken Hose, at a table just inside the entrance of the OMSI auditorium. We're ready to receive your prompt renewal and answer any questions, too!

RCA 'Downtowner's' Lunch

Join us on the first Friday of each month for lunch at a great downtown restaurant (Holidays and such may push us to the second Friday of some months, check the calendar at http://www.rosecityastronomers.org).

The location is announced on the RCA general forum discussion list. at http://www.rosecityastronomers.org/forum under special interest groups.

Always great conversation and food.

For more information contact: Margaret Campbell at secretary@rosecityastronomers.org

Photo by Jan Keiski

Astro-Imaging Special Interest Group

The "AI-SIG" is about advancing the skills of beginner, intermediate and advanced astro-imagers. We rely on the skills of our members to bring each other along as we image the beautiful night sky and its many wonders. Whether you use a CCD, DSLR, point-and-shoot or film camera, members of this group can help you achieve better images with less effort and frustrations. Please join us as we learn together to produce "stellar" images!

Next Meeting: Monday, June 8, 2009, 6:30pm
Beaverton Public Library
In Meeting Room B
12375 SW 5th St, Beaverton

Science Special Interest Group (SCI-SIG)

Next meeting is June 6 at 3pm. Following the Telescope Workshop at Technical Marine Services.

This group is for people who would like to advance their skills in astronomy beyond casual observing. Various projects that some group members are involved in include; variable and double star observing, occultations, photometry and astrometry. A science background is not required, however a curious mind does help.

Location: Technical Marine Service, Inc
6040 N. Cutter Circle on Swan Island

http://www.rosecityastronomers.org/sigs/science.htm

Tom Nathe sigs@rosecityastronomers.org
RCA SIG coordinator

Observing Site Committee

To lead and coordinate efforts of the Rose City Astronomers (RCA) in securing and managing a variety of observing sites for private use by members, and for community outreach and special events organized by the RCA.

Please Check
http://nemoworld.com/RCA/sitehome.htm
for more information.

Or Contact: David Nemo <david@nemoworld.com>

Telescope Workshop

When: Saturday, June 6 10:00 AM - 3:00 PM
Place: Technical Marine Service, Inc.
6040 N. Cutter Circle on Swan Island
For more information contact:
Director: John DeLacy johncdelacy@comcast.net
Assistant: Don Peckham don@dbpeckham.com

ASTROPHYSICS / COSMOLOGY SIG

Date/Time: Wednesday, June 17, 7 PM.

Topic: "Moon Day - Lunar Exploration"

Presented by: All Attendees

Place: Linus Pauling Complex,
3945 S.E. Hawthorne St., Portland.

Sig Directors: Lamont Brock 503-235-5893
Jim White..... 503-236-7802

Email: cosmology-sig@rosecityastronomers.org

www.rosecityastronomers.org/sigs/cosmology.htm

Oregon Museum of Science and Industry
Rose City Astronomers
1945 SE Water Avenue
Portland, Oregon 97214-3356

June 2009

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				

June 2009

Jun 1	Mon	RCA Board Meeting	OMSI Classroom 1	7pm
Jun 5	Fri	Downtowner's Luncheon	TBD	Noon
Jun 6	Sat	Telescope Workshop	Swan Island	10am-3pm
Jun 6	Sun	Science SIG	Swan Island	4pm
Jun 8	Mon	Astro Imaging SIG	Beaverton Public Library	6:30pm
Jun 13	Sat	OMSI Star Party	Stub Stewart and Rooster Rock S. P.	
Jun 15	Mon	RCA Information Fair	OMSI Auditorium	7pm
Jun 17	Wed	Cosmology SIG	Linus Pauling Complex	7pm
Jun 19-20	Fri-Sat	Dark Sky Star Party	Maupin	
Jun 20	Sat	RCA Star Party	Stub Stewart State Park	

July 2009

July 6	Mon	RCA Board Meeting	OMSI Classroom 2	7pm
July 10	Fri	Downtowner's Luncheon	TBD	Noon
July 11	Sat	Telescope Workshop	Swan Island	10am-3pm
July 11	Sat	Science SIG	Swan Island	3pm
July 13	Mon	Astro Imaging SIG	Beaverton Public Library	6:30pm
July 15-19	Wed-Sun	Non RCA Star Party	Mount Bachelor	
July 20	Mon	General Meeting	OMSI Planetarium	7pm
July 22	Wed	Cosmology SIG	Linus Pauling Complex	7pm
July 18	Sat	OMSI Star Party	Stub Stewart and Rooster Rock S. P.	
July 23-26	Thu-Sun	Non RCA Star Party	Table Mountain	
July 24-26	Fri-Sun	RCA Star Party	Trout Lake	

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.rosecityastronomers.org).

RCA CLUB INFORMATION

Web Site: http://www.rosecityastronomers.org

The
Rosette Gazette

Volume 21, Issue 7 Newsletter of the Rose City Astronomers July, 2009

RCA JULY 20 GENERAL MEETING
"Simplified Astrophotography"
Presented by Pat Hanrahan

With the advent of digital cameras (especially DSLRs), astrophotography has become available to a much wider group. Some of this work probably can be done with tools you already own. The purpose of this talk is to show various techniques that you can begin using almost immediately.

The Milky Way, the moon, and constellations are targets that are easily within the capabilities of today's DSLRs. And almost any point-and-shoot digital camera can be used to image the moon.

The comet Lulin (center-right) is seen through the trees from Shenandoah National Park in Virginia, Monday, Feb. 23, 2009.
Image Credit: NASA/Bill Ingalls

Mr. Hanrahan will discuss how to get started with astrophotography and to see what is needed to extend your work into more advanced areas. It does not get into the details of how to use intricate software, but will mention what tools are available. Some of the objects discussed will include those visible from the southern hemisphere as well as the science behind those objects.

Pat Hanrahan is an instructor of chemistry, physics and astronomy at several local colleges.

In This Issue:

RCA is a member of the Astronomical League.
http://www.astroleague.org

All are Welcome! Monday July 20
Social Gathering: 7 pm. Meeting Begins: 7:30 pm.
Location: OMSI Planetarium

Full Moon	Last Quarter Moon	New Moon	First Quarter Moon
July 7	July 15	July 21	July 28

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RCA MAGAZINE SUBSCRIPTIONS

One of the benefits of RCA Membership is a reduced rate subscription to Sky & Telescope and Astronomy magazines. The RCA member rate for Sky & Telescope Magazine is $32.95 for one year or $65.95 for two years. The RCA member rate for Astronomy magazine is $34 for one year or $60 for two years. For more information go to the RCA web site index and click on any of the links for magazines. Larry Godsey, Treasurer, 503-675-5217, will be taking renewals and new subscriptions at the Magazine Table before General Meetings. Please make checks out to "RCA" and allow two months for your subscription to be renewed.

RCA LIBRARY

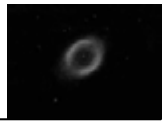
The Rose City Astronomers maintains a comprehensive club library of astronomy related articles, books, CDs and videos. These items can be borrowed by members through checkout at the general meetings for a period of one month with renewals available by phone or e-mail to the club library director, Jan Keiski.

The RCA library is constantly growing through many donations and the purchase of new materials. A listing of library materials (PDF format) can be found at the library web page: http://www.rca-omsi.org/library.htm

Jan Keiski (jikeiski@comcast.net) 503-539-4566

THE OBSERVER'S CORNER

Howard Banich



Random thoughts

The summer star party season has arrived along with a few thoughts that have been burbling around in the back of my mind for awhile. Oh, and there's a tip on a cool deep sky object at the end…

Laptop shielding

I've written about this before but think it bears repeating. More observers are using laptops to run their scopes at dark site star parties and even though most have taken care to properly shield their monitors there are a few who either haven't given it much thought or perhaps don't think it's that big of a deal.

However, it's a very big deal to all visual and astro-imagers that are nearby because both care a great deal about stray light flying around an observing field.

Consider:

1. The person using an incompletely shielded laptop will never become dark adapted and will not perceive the true relative brightness of their laptop. Experience shows that they don't see the problem because they literally can't. Those who are dark adapted do see the full relative brightness, and so the seeds for an unpleasant confrontation are sown.

2. An unshielded laptop is about the same brightness as a white light flashlight – imagine shining a flashlight steadily at a star party. The only acceptable light level at a star party is about the same as a dim red flashlight.

3. Dark site star parties take effort, time and expense to attend and are located where they are TO GET AWAY FROM BRIGHT LIGHTS. Did I just shout? Pardon me! Unshielded laptops are not a cause of light pollution per se, but they are most certainly light trespass and infringe on everyone else's enjoyment of a truly dark night sky. Holy smokes, this should be the no-brainer of all time.

Things that don't work well enough:

1. Turning the laptop away from other observers. Although a thoughtful gesture, it still brightly lights your face to everyone with a direct line of sight to your location. Imagine how brightly your face would be illuminated by an unshielded flashlight at a dark site star party.

2. Flaps that block the sides and top of the monitor but otherwise leave the screen at full brightness. This still brightly illuminates your face.

3. Turning on the "night vision" setting. This is still insanely bright to dark adapted eyes. It barely dims the screen by turning most of it red.

4. A single sheet of flexible red film. This reduces the intensity of the monitor slightly, plus it makes the screen difficult to read because it won't lay flat.

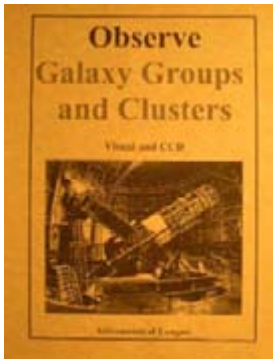
Things that do work well enough:

1. A sheet of dark red, 1/8 inch thick plexiglass. Actually, two sheets work even better. TAP Plastics sells them and will cut to fit the dimensions of any laptop, all for less than five dollars. So you can get two for less than ten dollars. If you can't afford this I will buy them for you. Seriously.

2. Drape a dark towel over the laptop while the screen isn't being looked at. A laptop monitor is pretty large and even properly shielded it puts out a lot more light than a little red flashlight.

3. Better yet, use the dark towel over both the laptop and your head – just like an old fashion portrait camera. This may be the optimal method for those who plan to use video cameras like a MallinCam or StellaCam. No one else will be exposed to the monitor and you'll have the sincere thanks of your fellow observers.

Observing lists



The most difficult observing list I've completed so far is the excellent "Galaxy Groups and Clusters" list put together by Bob McGown and Miles Paul.

It consists of two hundred and fifty galaxy groups and clusters, many of which are quite dim and a challenge to both find and see. It's taken about eight years of leisurely effort to complete it, which I finally did in May 2009. This is the fourth Astronomical League list I've finished and I've noticed the same things with each one:

1. I've begun each list by carefully noting the position of each object on my charts (Sky Atlas 2000 and Uranometria 2000.0) so I'll always be ready when a clear night comes along.

(Continued on page 4)

The Observer's Corner *(Continued from page 3)*

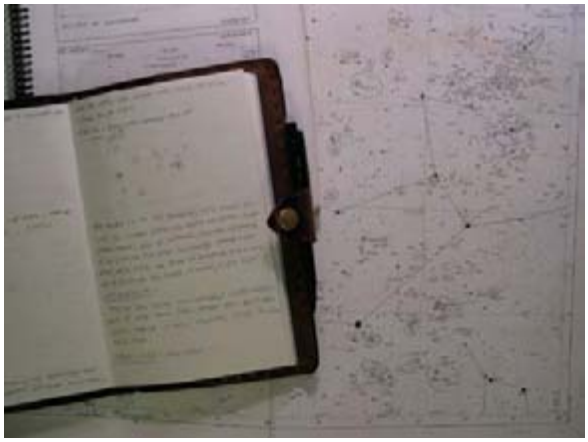
2. I'll start with the easiest to find and/or the most interesting objects and will linger over them at the eyepiece. The summer and early fall sky are the first areas I complete because that's when we have the best weather.

3. I've completed each list with objects located in the spring sky. Not so surprising since other than the southern sky, which we never see from Oregon, the spring sky is a close second for inaccessibility. This time the final 30 objects were located between 9 and 14 hours right ascension.

4. The closer to completing a list the more it becomes an exercise in organization as well as an observing challenge. Keeping track of 250 observations of galaxy clusters is a non-trivial task.

5. Closing in on completing a list speeds up my rate of observations three or four times my normal pace. For instance, two galaxy clusters per night was probably average for all but the last five nights - when I averaged six. The most in one night was 10.

6. This increase in speed has two drawbacks – I skip over time to contemplate what I'm seeing in exchange for getting on to the next object, and as a result I lose much of the sense of wonder that drew me to this class of objects in the first place. Once I can smell the barn all I want is that pin.



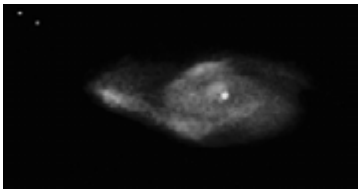
Lists aren't for everyone but I find them helpful to keep me supplied with a bunch of new objects to view on any clear night. When I was a kid I read somewhere that it was a worthy goal to observe at least one new thing every night that one observes. I took that to heart and have made a point of doing just that but I don't claim a perfect track record. However, I always have something new marked on my charts so I'm always ready. That leaves my charts with lots of strange markings and gives them a somewhat jumbled, but pleasing well used look.

Aside from wonderful memories, the most important thing my observing produces are observing notes. Not just a description and possibly a sketch of each object but also my thoughts of the night - where I was, what it was like, who shared the sky with me, was it cold, dewy or perhaps how I couldn't resist observing on a week night. To me this makes my notes a priceless possession.

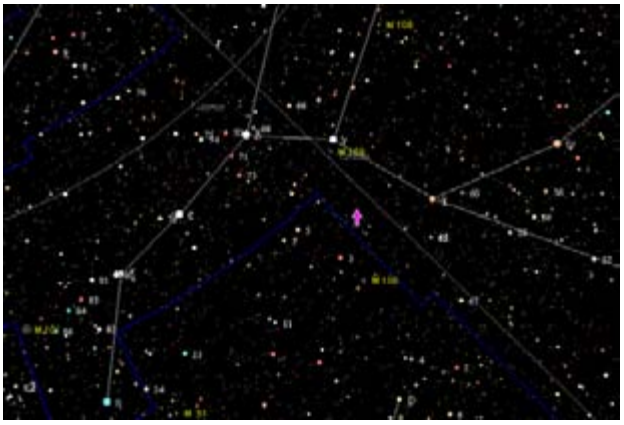
In addition, taking notes that will eventually be submitted to an award process has helped sharpen my midnight writing and sketching ability. I really do love getting an observing pin – the Cub Scouts got me going on pins I think - and that little reward has been enough motivation to organize and submit my observations. Collectively my notes form my most prized possession as they remain a tangible bit of each night I've spent under the stars, making the extra effort they require a treasure in the long run.

What's next? I've already gotten a good start on Abell planetaries and am just beginning the Arp list. Great stuff!

A nifty spiral galaxy



A couple months ago a bright supernova was discovered in NGC 4088. Located near the rear leg of Ursa Major makes it easy to find, and at it's brightest the supernova (2009dd) stood out from the galaxy really well as shown in my sketch. As cool as it is to watch a star in another galaxy blowing itself to smithereens, it was the asymmetrical spiral arms of the 4088 that held my attention. It also caught astronomer Alton Arp's eye decades ago and so it's also listed as Arp 18. The arrow on the Cartes du Ciel chart below shows the location of NGC 4088 / Arp 18.



I had a good view of the spiral structure because I was using a 28 inch scope, but Chuck and Judy Dethloff were able to see much the same detail, although fainter, in Judy's really cool 16 inch scope. I'll bet a skilled observer can glimpse the action here with a 12 inch scope under very dark skies, so even though supernova 2009dd has faded from history, NGC 4088 / Arp 18 is worth putting on your observing list.

Classic Telescopes

JOHN W. SIPLE

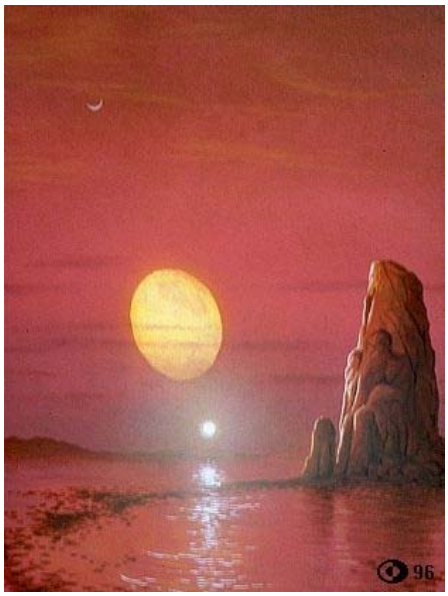
HUNTING double stars is a favorite pastime of amateur astronomers who possess small to medium-sized telescopes. Probably no other constellation offers a better selection than Boötes, the Herdsman. An unmistakable kite-shaped figure of late spring and summer nights, its principal star is orange-colored Arcturus, the "Watcher" or "Guardian of the Bear." This prominent northern constellation is known for its sluggishness in setting, due to its great length and relative closeness to the celestial pole.

Tasco's reliable #10TE Solarama, a best-selling telescope from the past, was used for making detailed observations of Boötes' impressive flock of double stars. This cleverly designed 3-inch F/16 (D=76.2mm F=1200mm) achromatic refractor telescope was manufactured in Japan by the prestigious company Royal Astro Optical Industries Co. Ltd. as R-74.

A favorite starter telescope among amateur astronomers, the Solarama refractor first appeared in the company's illustrated brochures during the late 1950s. Riding the wave of popularity of the newly born Space Age, sales of the classic instrument eventually climbed into the thousands. In 1963, Tasco also sold a rare pedestal-mounted version of the same telescope. (An extra tracking motor converts the Solarama into the #15TE Planetary.)

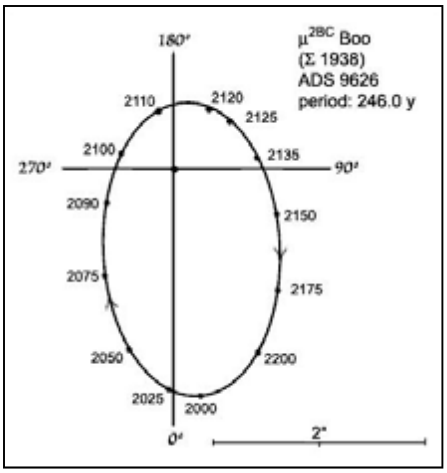
The small telescope was a common sight in major department stores throughout the 1960s, where science-minded shoppers could purchase one for a sum of about $200. A significant rise in cost toward the end of the seventies and stiff competition from cheaper, mass-produced telescopes ultimately resulted in its demise.

The grand marshal in Boötes' long parade of doubles is Epsilon (ε), or Izar. The striking 2.8" pair consists of a deep golden 3rd-magnitude primary and an intense blue 5th -magnitude secondary. Izar is considered



Future galactic tourists stand on a wind-swept shoreline in this work by Chris Dorreman (above). Because of its low position above the horizon, the light from the whitish sun is much diminished and has a yellowish hue. Gravitational forces have distorted the orange giant into an oval shape.

A placid river and towering rock spires provide the setting for Richard Bizley's painting. A planet orbiting the major star would be subject to intense magnetic storms.



by stargazers as one of the finest examples of its type in the night sky. In his notes, astronomer F. G. W. Struve poetically called the star "Pulcherrima," or Latin for "most beautiful." In good seeing, the 3-inch refractor at extreme magnification shows two beautifully colored diffraction disks nearly in contact.

Our universe beyond the outskirts of the solar system comes to life in astronomical artwork. Distant binary stars offer an excellent opportunity for skilled illustrators to conjure strange landscapes. Richard Bizley's amazing painting, shown at lower left, places the galactic traveler on the rocky surface of a planet illuminated by Izar's K-class primary sun.

A jump to the northeast takes us to the splendid multiple star Mu (μ). It consists of an easily resolvable wide double (108") whose fainter member is a close 2" pair. The best view in the Tasco refractor is at 250x, where all three stars are clearly seen. At this power, the 4th-magnitude primary is a gleaming yellowish-white orb, while the two components of the tighter pair (magnitudes 7.0 and 7.6) exhibit contrasting shades of orange and white.

The close BC pair is a rapid binary with a period of 246 years. (The projected orbital path drawn by Richard Dibon-Smith, www.dibonsmith, is displayed above.) Graphic artist Chris Dorreman's mesmerizing *Double Star by the Sea* (middle of page) gives the reader an imaginary glimpse of a water-rich world orbiting around a similar pair of stars.

(Continued on page 6)

TASCO #10TE SOLARAMA
Late 1950s through 1977

TASCO #15TE PLANETARY
Rare pedestal model

Classic Scopes *(Continued from page 5)*

Flanking the eastern side of Arcturus is the pretty double star Xi (ξ) Boötis. Another favorite of active observers, the present separation of its stars is 6.4". The colors are easy in the author's 3-inch Solarama at 92x; the brighter component, at magnitude 4.8, is yellowish-orange, while the 7th-magnitude attendant has an eerie red-purple cast.

The stellar gem Pi (π) Boötis lies just to the southwest of Xi. In the Tasco scope, the 4.9-magnitude primary of this duo is an opaline white. However, the delicate tone of the secondary star is harder-to-pin down. At times, Pi's dimmer 6th-magnitude companion is perceived as a blend of white and yellow.

The incredibly beautiful double star i Boötis, also charted as 44 Boötis, is a challenging target for the 3-inch telescope. Described by observers as a miniature of Castor, the two stars are currently split by a mere 1.7".

On nights when the atmosphere is steady, the vintage Tasco glass reveals a dazzling pair of white 5th- and 6th-magnitude stars. Other stargazers have cited shades of yellow and pale blue for the primary and secondary stars, respectively.

The constellation Boötes is host to several Algol-type binary star systems. Image courtesy of Don Dixon.

The minor star in the system is an eclipsing binary of the W Ursae Majoris type, regularly fluctuating in brightness by about 0.6-magnitude with a period of 6.4 hours. In the scene above, artist Don Dixon presents a vivid picture of Algol, another eclipsing binary with a longer cycle of 2.9 days.

Before putting your Tasco Solarama refractor away for the night, a quick trip to the extreme northwestern portion of the constellation is recommended. The Herdsman's upraised left hand, reaching far into the circumpolar zone toward Alkaid in the Big Dipper's handle, is formed by the stars Theta (θ), Kappa (κ), and Iota (ι).

Iota is sometimes called Asellus Secundus; it is a binary made up of magnitude 4.8 and 7.7 stars separated by 38.6". The vantage point gleaned from a low power ocular also includes the notable double star Kappa (κ). In the 3-inch refractor at 30x, Kappa's 5th-magnitude primary blazes clear, pale yellow. However, the pure, deep blue of the 7th-magnitude secondary, 13.4" distant, may be largely an illusion created by the telescope's limited aperture and relative faintness of that star.

Oregon Star Party 2009

Come join us August 19th through August 23rd for the OREGON STAR PARTY which is held in the isolation and darkest skies in the Northwest 50 miles east of Prineville, Oregon at 5000 feet above sea level. The Oregon Star Party party takes place in a 40 acre clearing in the Ochoco Mountains and is accessible most of the way from Prineville via a paved road, with only the last 4 miles on a graveled road. From Portland, it is about a 4.5 hour drive.

REGISTRATION - Pre-Registration is now open until July 24th. 2009 OSP T-shirts, Sweatshirts and Dinners are only available to those that Pre-Register for OSP before the July 24th cutoff. So if you don't pre-register before July 24th, you'll still be able to register at a higher fee onsite at the star party in the Registration Tent.

SPEAKERS - We've working on a great list of speakers again this year. Steven Coe, David Hayworth, Dave Powell, Steven Speath, and Russ Genet will be talking on various subjects of interest to all.

ACTIVITIES - Don't forget the Telescope Walk-about, the Mars Rover Races, the Solar System Walk, the Kids vs. Adult quiz, the Swap Meet, the Limiting Magnitude and Sky Identification programs. There are a lot of things to do during the day at OSP in addition to the very dark night skies. Again this year Andy has another exciting schedule of activities for the kids from 10am until 4pm every day. VOLUNTEERS - The Oregon Star Party has a dedicated committee of 32 people who work year around planning for the outing. But it still takes a lot of volunteers on site to make it actually happen. We still need people to volunteer for a 2 hour shift to help with registration, parking, shower ticket taking, setup and cleanup. Contact Jan Keiski, our Volunteer Coordinator at 'volunteer at oregonstarparty.org' with your name, email address or phone number, and if you have any job and/or time you would particularly like to volunteer for and she'll get back to you. For youth activities contact Andy Phelps, 'youth at oregonstarparty.org'; for adult mentoring contact Mark Dakins, 'adultmentor at oregonstarparty.org'; and for youth telescope mentoring contact Bernie Kuehn, 'youthmentor at oregonstarparty.org'. Again this year there will be door prizes just for volunteers.

BURGERS & LATTES - Mary will be back with the Chuck Wagon serving up breakfast, lunch, dinner and late night snacks as in the past and Shawna will be back with the Espresso Blast for cold drinks during the day and caffine at night. This year both the Chuck Wagon and Espresso Blast are again planning on being open for business Wednesday afternoon through Sunday Noon. Information, directions, registration, activities are listed on the website at http://www.oregonstarparty.org. For those who have yet to experience OSP, you can review stories from the prior years, and do some planning for this year right there on the web site. So mark your calendars, bookmark your browsers, and get ahead of the crowd by signing up for the 2009 OSP. Consider joining us for both excellent planetary and deep sky observing with about 600 of your soon-to-be closest friends. We are able to partake of good food, espressos, showers, vendors with tons of astro gear, and a great array of speakers. And while you visit our web site, please consider joining the volunteer group. It is a great way to contribute to the fun, and to meet a number of new friends.

Photos by Jan Keiski

Shedding Light on Black Holes

By Tom Koonce
Antelope Valley Astronomy Club
Lancaster, California

This month's theme of the International Year of Astronomy is "Black Holes"

Black Holes... Just their name sounds like something out of science fiction. Maybe this is one reason why they have been the focus of misconceptions and misguided theories. This month, the theme of the International Year of Astronomy is centered on the objects that weigh heavily (pun intended) on the minds of theoretical physicists and leading astronomers… Black Holes.

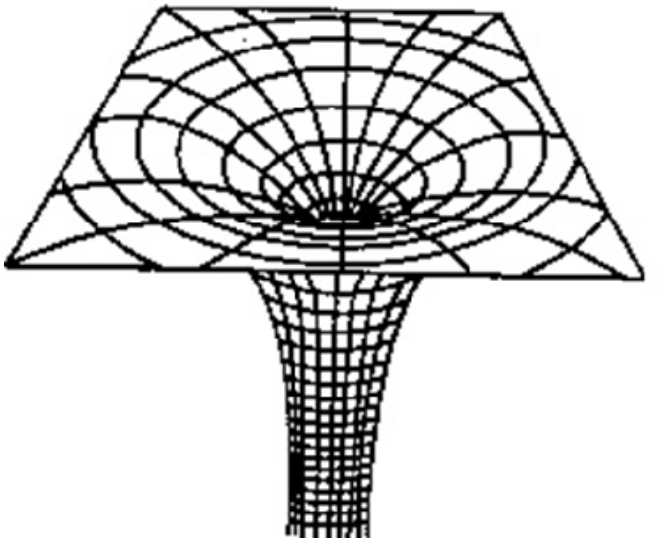
First a bit of background on the subject.

The gravitational force exhibited by a celestial body is directly related to its mass and inversely proportional to the square of the distance which the object is away from that mass. So how does a black hole generate its enormous gravity even though its mass is reduced to an infinitesimal point?

Consider a star with the mass and radius of the red supergiant Betelgeuse. Under normal circumstances, an object could orbit the star at a distance outside of Betelgeuse's stellar atmosphere. But if the entire mass of Betelgeuse was compressed down to become a black hole and in the absence of Betelgeuse's stellar atmosphere, the object could pass much closer to the black hole's center of mass… so close, in fact, that the gravitational force it could experience would be incredibly high.

Another concept to realize is that if the Sun were to suddenly be replaced with a black hole of equal mass, the Earth would continue to orbit it in the exact same manner as it does today, except that the lack of sunlight would render the Earth incapable of sustaining life.

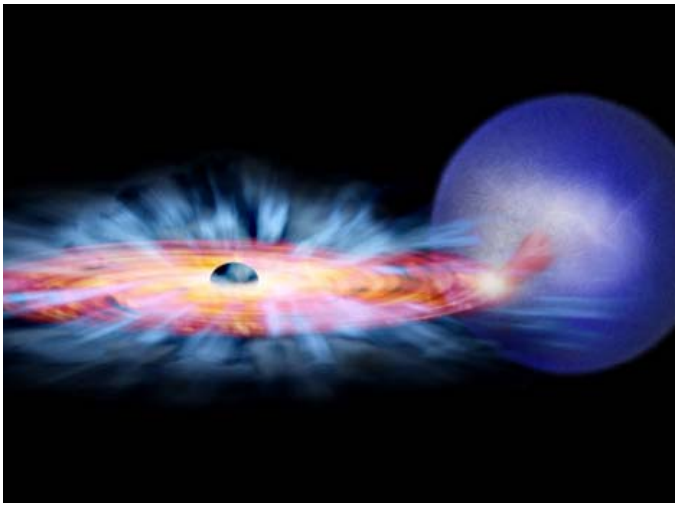
A common question that comes up during casual conversation about this subject is, "If I went through a black hole, where would I go?" The straight-forward blunt answer? "To your death!" You literally would be torn to pieces by the gravitational tidal forces during your approach to the event horizon and then, with unerring certainty, what gelatinous mess remained would be squashed much, much flatter than a pancake as your remains fell deeper into the gravity well. Black holes are not a mode of transportation to another universe, but they are efficient "matter compactors," sweeping up all mass that passes too near. Of course they can't draw in matter from light years away, but as matter falls into a black hole it becomes (perhaps) infinitely compressed by its overwhelming gravitational force.



Imagine what a black hole looks like and you probably picture the graphic popularized by the media; a two dimensional plane with a funnel-shaped hole descending towards the black hole's singularity. This stylized perception of the three dimensional nature of the object has misled many people to think of a black hole as a hole in space, like a hole in the backyard, or perhaps a tunnel in space-time leading to other parts of our own universe. The event horizon is a spherical region around the black hole, inside of which the black hole's gravity is so strong that nothing can achieve escape velocity - nothing, not even light. Because light can't escape, space artists have envisioned the object as a black blob against a field of distant stars. This black blob is surrounded by a fairly bright disk of material caught in the gravitational field. Why is it bright? As all of the dust and matter spirals in closer to the black hole it is rubbing against other matter, heating it up by friction until it gets to millions of degrees. It is this dust outside of the event horizon that is radiating light.

(Continued on page 9)

Black Holes *(Continued from page 8)*



(This is an artist's representation of GRO J1655-40, a binary star system observed in April 2005 by Chandra. This binary consists of a black hole and a normal star shown in blue. Gas is being pulled away from the star and falling onto a red disk spinning around the black hole. Some of this gas spirals in towards the black hole, generating copious amounts of light along the way. Credit: NASA)

What would a glimpse below the event horizon look like? How important would it be to you to find out? It would be a one-way trip to find out. Nothing, not even light, can escape from below the event horizon… but photons of light could orbit the black hole. Since there is an equivalent mass for the energy of a photon (E = mc2), light is affected by gravitational forces. Photons can orbit a black hole if conditions are right. Since there are photons continuously falling into black holes, many must get trapped in this manner. We can't see the photons because they are orbiting and not radiating outward and striking our retinas. If we were somehow able to glimpse just below the event horizon, on that one way trip into gravitational flatness, I believe you would see bright light surrounding you; you would see photons instead of blackness. Your final view would be of all of the light shed upon the black hole.

Telescope Workshop

When: Saturday, July 11, 10:00 AM - 3:00 PM
Place: Technical Marine Service, Inc.
6040 N. Cutter Circle on Swan Island
For more information contact:
Director: John DeLacy johncdelacy@comcast.net
Assistant: Don Peckham don@dbpeckham.com

Astro-Imaging Special Interest Group

The "AI-SIG" is about advancing the skills of beginner, intermediate and advanced astro-imagers. We rely on the skills of our members to bring each other along as we image the beautiful night sky and its many wonders. Whether you use a CCD, DSLR, point-and-shoot or film camera, members of this group can help you achieve better images with less effort and frustrations. Please join us as we learn together to produce "stellar" images!

Next Meeting: Monday, July 13, 2009, 6:30pm
Beaverton Public Library
In Meeting Room B
12375 SW 5th St, Beaverton

ASTROPHYSICS / COSMOLOGY SIG

Date/Time: Wednesday, July 22, 7 PM.

Topic: "Shapes of Galaxies "

Presented by: Jim White

Place: Linus Pauling Complex,
3945 S.E. Hawthorne St., Portland.

Sig Directors: Lamont Brock .. 503-235-5893
Jim White 503-236-7802

Email: cosmology-sig@rosecityastronomers.org

www.rosecityastronomers.org/sigs/cosmology.htm

Science Special Interest Group (SCI-SIG)

Next meeting is July 11 at 3pm. Following the Telescope Workshop at Technical Marine Services.

This group is for people who would like to advance their skills in astronomy beyond casual observing. Various projects that some group members are involved in include; variable and double star observing, occultations, photometry and astrometry. A science background is not required, however a curious mind does help.

Location: Technical Marine Service, Inc
6040 N. Cutter Circle on Swan Island

http://www.rosecityastronomers.org/sigs/science.htm

Tom Nathe sigs@rosecityastronomers.org

BOARD MEETING MINUTES

May 6, 2009
OMSI Classroom 1
Margaret Campbell-McCrea

Attending: Art Morris, Howard Knytych, Dawn Willard, Jan Keiski, Sameer Ruiwale, Tom Nathe, Greg Rohde, Ken Hose, Matt Vartanian, Larry Godsey, Matt Brewster, Margaret Campbell.

The meeting was called to order at 7:17 p.m.

Board Reports

- Secretary's Report – Margaret Campbell: Quorum (10) met with 12 voting members present.
- Treasurer's Report – Larry Godsey: As of April 30, 2009, we had a total of $39,191.69: $19,829.39 in the RCA accounts, and $19,352.30 in the Site Fund accounts. Larry reported that the newsletter mailing list has been culled of about half the people who were getting it, because they are not dues-paying members. It's down to 44 people, but the culling didn't bring down the costs very much. He presented an outline of the proposed budget for next year [see new business below].
- VP Programming – Matt Brewster: Lawrence Doyle will speak at the May meeting. He's from the SETI Program in Mt. View, California. He will be talking about quantum astronomy. Matt has sent information to Larry Deal and will send info to webmaster. The SIG and Swap Meet will be in June. After June there will be amateur astronomy talks. We agreed that it's time to start announcing the Swap Meet. Sameer will put it on the Forum. We have already started advertising the SIG Fair at the Astronomy Day at OMSI.
- VP Observing– Matt Vartanian has talked to Stub Stewart about their plans for publicizing the star parties. They will place notices on campground bulletin board, and place notices in the Vernonia paper. They're also willing to swap out red lights, especially if we bring them, and will publish star party etiquette for us. The next Stub Stewart Star Party is on May 23rd. The Board agreed to go ahead and make the arrangements for Stub Stewart, since all RCA star parties are public. Greg will put tiger-striped tape on the bumpers in the parking lots as a thank-you to the park. Matt will have to clarify if we can camp or bring a trailer, for free or reduced fee.
- VP Community Affairs – Dawn Willard: Astronomy Day went well. There were fifteen volunteers. Probably 500 people looked through the solar scopes. We handed out a lot of our materials. We have been invited to provide scopes at a star party at Reed on Thursday and another one at Vernon Elementary on May 28th.
- Media: No report
- Membership: Ken Hose reported that we are getting more and more PayPal renewals. We now have 328 member-families; there were 305 last year and 298 the year before. We took in $562 in dues.
- New member advisor: Howard Knytych reported that about 25 people were at the workshop in April. Dale Fenske talked about AL programs and Jim Todd showed the planetarium. In June he'll show star-hopping techniques.
- Sales – Margaret Campbell: There were $270.00 in sales in April.
- Book Library – Jan Keiski: Nominal.
- Telescope Library – Greg Rohde: Larry Godsey heard from John Harris. He wants $500 for his solar scope. The Board was not interested. Tom Nathe offered to sell his damaged one. He'll look into the cost of repairing it.
- IDA – Art Morris visited state capital about Rep. Greenlick's bill regarding light pollution (HB 3367). Art felt that it was advisory only, not a real commitment. He spoke to Rep. Greenlick's aide who suggested that as an incentive for cities to change their lights, they could apply for TARP money. He's going to send information about TARP money which Art will take around to city council meetings.
- Magazine Subscriptions – Larry Godsey: Nominal
- Webmaster – Larry Godsey: Nominal.
- Site Committee – David Nemo: No report.
- Youth Director: Jean London: No report.
- SIGs – Tom Nathe: Nominal.
- Alcor – Dale Fenske: No report.
- OMSI –Jan Keiski: Jim was very happy about the turnout for Astronomy Day.
- Sister Club update – Jan Keiski: Nominal.

Old Business / Action Items

- Youth Program Update based on survey results – Jean London: No report.
- Info for Kids section on RCA website to Larry G. – Jean London: No report.
- 2009 Starlight parade update – Margaret Campbell: We have been accepted in the Starlight Parade and

(Continued on page 11)

May Board Minutes *(Continued from page 10)*

need to submit proof of insurance. Dawn Willard, who is providing the tow vehicle, Greg Rohde, who has the trailer, Larry Godsey and Margaret Campbell will work out the forms needed for insurance via email.

- Add a White River Star party to RCA calendar: Matt Vartanian will do this.
- Contact Carlos about joint viewing via live video-conferencing: Jan Keiski will set this up for our Sept./ Oct.
- Update on mirror making machine purchase: Three people have agreed to put $50 each into the kitty. Steve Swayze says it can be made portable and Dan Gray says that it can be kept at TMS. Greg will follow up with Steve Swayze about making the machine portable. Ken Hose is willing to have it available at his observatory.
- Create form on RCA website for submission of volunteer hours: Larry Godsey did that and asked for a review and test of its operation.
- Send IDA kit from Nightsky Network to Art Morris: Dawn Willard used it during astronomy day and brought some for Art Morris to look at at the meeting.
- Contact Diana about media contacts: Dawn Willard sent her an email and invited her to the Board meeting.
- Members' only section of RCA website rollout – Larry Godsey: Tabled for this month.
- Talk to Patton about Media Director position – Sameer Ruiwale: No report.
- Contact Matt about tables for swap meet at June Info Fair – Sameer Ruiwale: Done
- OMSI's vendor policy at RCA meetings – Jan Keiski: Okay, as long as it's not advertised.
- Update member list for the reflector – Dale Fenske: No report.
- New Business
- We discussed the 2009-2010 RCA budget proposals. The dues to the Astronomical League are the biggest portion of our dues. We really receive $19 for dues, not $24, because $5 goes to AL.
- There was considerable discussion regarding the cost of printing the newsletter. We spend $125/month for 93 members to get a printed newsletter. That's a total of $1,500, the biggest portion of our budget. With the recent culling, we now print 44 for $105, which means we pay an $85 set up fee and 50¢ per newsletter. Most of the people getting it are active members and on the Forum. This adds up to 20% of our budget for 44 people. After some discussion about several alternatives, Art Morris moved that we stop printing and mailing the newsletter on July 1st. Greg Rohde seconded the motion. Motion carried. We agreed to do the usual publicity about this change on the website, Forum, and at the general meeting.
- Member presentations for General Meeting topics: Batteries, chargers and solar power?
- Letter of Agreement with OMSI: Sameer read it, Greg Rohde moved that we sign it; Howard Knytych seconded it. Motion carried. Sameer Ruiwale signed our letter of agreement with OMSI for 2009 – 2010.
- Business cards: Art Morris asked if we have some. Sameer will get some pricing. Art will send him information that his wife has. Greg has business card software on his computer; so does Art.

The meeting was adjourned at 8:58 p.m.

ToDo:

1. Sameer will announce the Swap Meet and Info Fair on the website. He will also announce the changes regarding the printing of the newsletter on the Forum and at the general meetings. Price business cards for RCA.

2. Greg Rohde will put tiger-striped tape in parking lot at Stub Stewart Park. He will talk to Steve Swayze about making the mirror making machine portable.

3. Matt Vartanian will find out if RCA members have free or reduced camping / RV sites on star party nights.

4. Tom Nathe will look into the costs of repairing his solar telescope.

5. Art Morris will talk to various city councils in the Portland area about TARP funds for light pollution projects.

6. Dawn, Margaret and Larry: get proof of insurance to the Starlight Parade Committee.

7. Matt Vartanian will add a White River star party to this year's star party schedule.

8. Jan will talk with Carlos about a joint viewing in Sept. or Oct.

9. Everyone: Test the website form for submitting information on volunteer hours.

July 2009

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	

July 6	Monday	RCA Board Meeting	OMSI Classroom 2	7pm
July 10	Friday	Downtowner's Luncheon	Kell's	Noon
July 11	Saturday	Telescope Workshop	Swan Island	10am-3pm
July 11	Saturday	Science SIG	Swan Island	3pm
July 13	Monday	Astro Imaging SIG	Beaverton Public Library	6:30pm
July 15-19	Weds-Sunday	Non RCA Star Party	Sunriver Nature Center	
July 19	Saturday	OMSI Star Party	Stub Stewart & Rooster Rock S. P.	
July 20	**Monday**	**General Meeting**	**OMSI Planetarium**	**7pm**
July 22	Wednesday	Cosmology SIG	Linus Pauling Complex	7pm
July 23-26	Thurs-Sunday	Non RCA Star Party	Table Mountain	
July 24-26	Friday-Sunday	RCA Star Party	Trout Lake	

August 2009

August 3	Monday	RCA Board Meeting	OMSI Classroom 2	7pm
August 7	Friday	Downtowner's Luncheon	Kell's	Noon
August 8	Saturday	Telescope Workshop	Swan Island	10am-3pm
August 8	Saturday	Science SIG	Swan Island	3pm
August 10	Monday	Astro Imaging SIG	Beaverton Public Library	6:30pm
August 11	Tuesday	OMSI Persied Meteor Watch	Stub Stewart & Rooster Rock S. P.	
August 14-16	Friday-Sunday	RCA Star Party	Maupin	
August 17	**Monday**	**General Meeting**	**OMSI Planetarium**	**7pm**
August 19	Wednesday	Cosmology SIG	Linus Pauling Complex	7pm
August 19-23	Weds-Sunday	Oregon Star Party	Indian Trail Springs, Ochoco N. F.	

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.rosecityastronomers.org).

http://www.rosecityastronomers.org

Rose City Astronomers
Oregon Museum of Science and Industry
1945 SE Water Avenue
Portland, Oregon 97214-3356

The Rosette Gazette

Volume 21, Issue 8 Newsletter of the Rose City Astronomers August, 2009

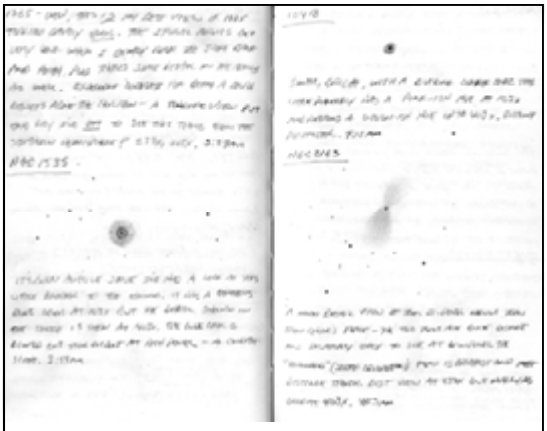
RCA AUGUST 17 GENERAL MEETING

Enhancing the Observing Experience: Through Documentation

Presented By Margaret Campbell and Matt Vartanian

The process of documentation creates a lasting picture of each observed object that is unique to that time and place and relative to a multitude of variable conditions. Employing two very different means of capturing the essence of the observing session, Margaret through note taking, and Matt through sketching, each presenter relates the intricacies of their methodology.

This practical information is presented with several good examples of what can be done with simple, useful supplies/tools for recording one's observing sessions in consideration of night and in-the-field conditions. Note-taking systems will be discussed, and how to start writing-thinking of what you want to remember about this object…or this night.



*Notebook photo from **"The Observer's Corner"** by Howard Banich, November 2008 **Rosette Gazette**.*

Above all, it is intimated that the habit of writing or sketching helps us improve our observing skills, so we see more of the beauty and wonder that draws us out into the night again and again.

In This Issue:

RCA is a member of the Astronomical League.
http://www.astroleague.org

All are Welcome! Monday August 17

Social Gathering: 7 pm. Meeting Begins: 7:30 pm.

Location: OMSI Planetarium

Full Moon	Last Quarter Moon	New Moon	First Quarter Moon
August 7	August 15	August 21	August 28

CLUB OFFICERS

Office	Name	Email
President	Sameer Ruiwale	president@rosecityastronomers.org
Past President	Carol Huston	pastprez@rosecityastronomers.org
VP Membership	Ken Hose	membership@rosecityastronomers.org
VP Observing/Star Parties	Matt Vartanian	observing@rosecityastronomers.org
VP Community Affairs	Dawn Willard	community@rosecityastronomers.org
VP Communications	Matt Brewster	communications@rosecityastronomers.org
Treasurer	Larry Godsey	treasurer@rosecityastronomers.org
Secretary	Margaret Campbell-McCrea	secretary@rosecityastronomers.org
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New Member Advisor	Howard Knytych	newmembers@rosecityastronomers.org
Webmaster	Larry Godsey	webmaster@rosecityastronomers.org
ALCOR, Historian	Dale Fenske	alcor@rosecityastronomers.org
Library Director	Jan Keiski	library@rosecityastronomers.org
Telescope Director	Greg Rohde	telescope@rosecityastronomers.org
Observing Site Director	David Nemo	sitefund@rosecityastronomers.org
IDA Liaison	Art Morris	ida@rosecityastronomers.org
OMSI Liaison	Jan Keiski	omsi@rosecityastronomers.org
Magazines Director	Larry Godsey	magazines@rosecityastronomers.org
SIG Director	Tom Nathe	sigs@rosecityastronomers.org
Youth Programs Director	Jeannie London	youth@rosecityastronomers.org

RCA MAGAZINE SUBSCRIPTIONS

One of the benefits of RCA Membership is a reduced rate subscription to Sky & Telescope and Astronomy magazines. The RCA member rate for Sky & Telescope Magazine is $32.95 for one year or $65.95 for two years. The RCA member rate for Astronomy magazine is $34 for one year or $60 for two years.

For more information go to the RCA web site:

www.rosecityastronomers.org/mags

Please make checks out to "RCA" and allow two months for your subscription to be renewed.

RCA LIBRARY

The Rose City Astronomers maintains a comprehensive club library of astronomy related articles, books, CDs 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.

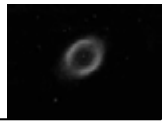
The RCA library is constantly growing through many donations and the purchase of new materials. A listing of library materials (PDF format) can be found at the library web page:

http://www.rosecityastronomers.org/library.htm

Jan Keiski (jikeiski@comcast.net) 503-539-4566

THE OBSERVER'S CORNER

Howard Banich



Favorites

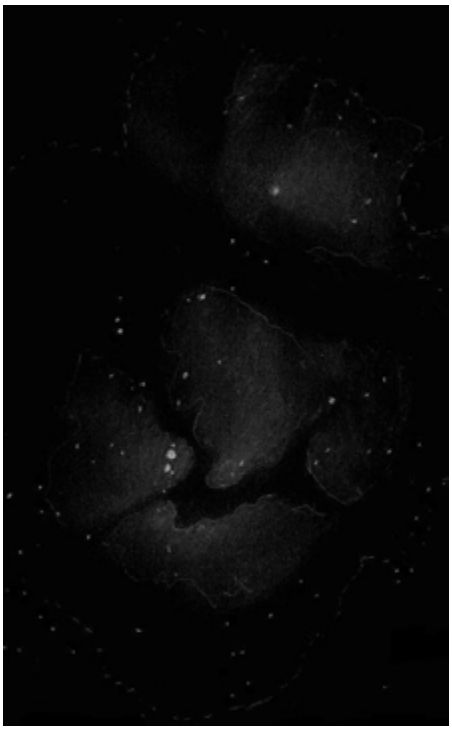
I was asked at the Golden State Star Party this past June what my favorite deep sky object was. At the moment my scope was pointed at M51 and a large group of people where enjoying the view, so my questioner was surprised when I said M20, the Trifid nebula. Actually, it's my favorite summer deep sky object - my all time favorite is M42, which I suspect would be replaced by at least one southern hemisphere object given the chance.

Regardless, this is prime time for the Trifid especially if you're heading to the Oregon Star Party later this month. It will be approaching the meridian when the sky is fully dark, it's easy to find just north of M8 (the Lagoon Nebula, another top notch deep sky sight) and the Trifid has a surreal quality that comes through in almost any size scope.

When I was a kid I saw a photo of the Trifid much like the DSS image Above and it help fire my imagination about the universe and got me started wondering about everything out there. I've never really thought of it as my favorite deep sky object but I'll bet if I counted up all my observations it would be at the top.

Part of its appeal is its location in the sky. When on the meridian – due south and as high above the horizon as it can get – it's comfortably placed for observing. Even those with big scopes will find they can observe it while comfortably seated.

The sketch below is my only attempt to date and reminds me how difficult sketching an extended diffuse object can be. This sketch was done at the 2002 OSP through a 20 inch scope and falls far short of conveying what was seen through the eyepiece. I hope to do better in the near future.



The main appeal of the Trifid nebula, at least to me, is two fold. First, it's a stunningly beautiful sight – an emission nebula with a reflection nebula side by side mixed in with an open cluster (M21) – wow! All this can be seen through a 6 inch or larger scope under a truly dark sky even without a nebula filter, although sometimes I prefer the view through a UHC filter.

Second, you can see some details that in most images are overexposed. Look back at the DSS image near the beginning of this article and notice the brightest area just to the left edge of the center of the dark lanes. Now look at my sketch – it's actually a wonderful multiple star, with the two brightest being SAO 186145 and SAO 186143 at magnitudes 6.4 and 7.4.

The HST image below shows that this is a compact group of stars much like the Trapezium in M42, only we're seeing the group more from the side. They're certainly clearing out the center of the nebula and powering the HII emission (the red part of the nebula you see in color photos) like the Trapezium does.

To see them well you'll need to punch up the magnification of your scope to around 200x or so, but higher is better if the seeing is steady enough.

Speaking of the red color shown so prominently in color photos of the Trifid, I can start to detect it as a warm hue in scopes 20 inches and above, but it's so unsaturated that it's easily overlooked. The blue (reflection) part of the nebula has always looked grey to me.

It looks like there are really four dark lanes slicing up the Trifid in photos but you'll appreciate the name better while looking at the nebula through a telescope – the visual appearance is much more

(Continued on page 4)

suggestive of three dark lanes. These lanes have the designation B85 and are fun to trace through the gauzy haze of the bright nebula. The UHC filter does a good job punching up the contrast of B85, but some might find the OIII does a better job. I suspect that's not just a personal preference but a combination of the each person's dark adapted eyesight along with the size of scope they're using.

I've also found that a low power binoviewer gives an exceptional view of the Trifid. Not everything looks better through a binoviewer, and I'm not sure I want to use the word better in this case, but it's worth a look if you possibly can. B85 shows more contrast with the emission nebula even though the entire view is dimmer.

These days we think of M20 as primarily a beautiful nebula, but Messier's discovery description from June 5, 1764 is mostly concerned with two star clusters, with nebulosity as a secondary object:

"I have determined the position of two clusters of stars which are close to each other, a bit above the Ecliptic, between the bow of Sagittarius & the right foot of Ophiuchus: the known star closest to these two clusters is the 11th of the constellation Sagittarius, of seventh magnitude, after the catalog of Flamsteed: the stars of these clusters are, from the eighth to the ninth magnitude, environed with nebulosities".

This is as much a comment about the quality of Messier's telescopes and his viewing conditions from downtown Paris, as most modern telescopes will highlight the nebulae of M20 more than the clusters.

Not surprisingly, William Herschel saw more on July 12, 1784:

"Three nebulae, faintly joined, form a triangle. In the middle is a double st[ar], vF [very faint], and of great extent."

And on May 26, 1785 Herschel wrote:

"A double st[ar]. with extended nebulosity of different intensity. About the double st[ar]. is a black opening[,] resembling the neb[ula]. in Orion in miniature."

This excellent Hunter Wilson photograph from Wikipedia shows of all the features described above.

It certainly illustrates the advantage of color imaging over visual observing, but let's not discount the visual view too much because it lacks saturated color. Letting your eye and brain collect the photons from the Trifid directly is an experience very different than collecting them on a detector. Happily, both can be a rewarding personal experience so there's no need to assign superiority of one method over the other.

Finally, if your scope has a wide enough field of view, have a look at the Trifid and Lagoon nebulae at the same time, or at least bounce back and forth between the two several times. Try your nebula filters and a variety of magnifications, and if the seeing is steady pile on the magnification. You might be surprised at what you can see.

Telescope Workshop

When: Saturday, August 8, 10:00 AM - 3:00 PM
Place: Technical Marine Service, Inc.
6040 N. Cutter Circle on Swan Island
For more information contact:
Director: John DeLacy johncdelacy@comcast.net
Assistant: Don Peckham don@dbpeckham.com

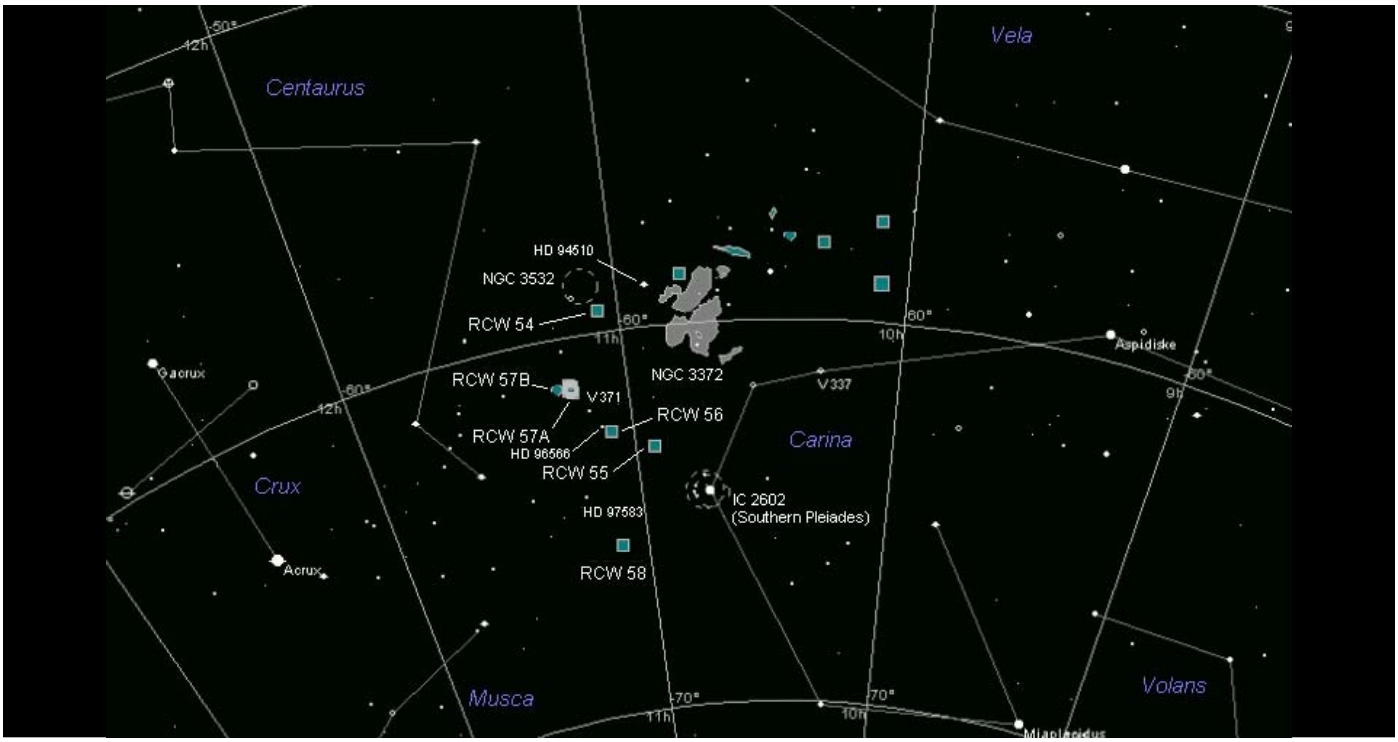
ASTROPHYSICS / COSMOLOGY SIG

Date/Time: Wednesday, August 19, 7 PM.
Topic: "Exploring Mars - Through Rover Eyes
Presented by: Duane Ray
Place: Linus Pauling Complex,
3945 S.E. Hawthorne St., Portland.
Email: cosmology-sig@rosecityastronomers.org
www.rosecityastronomers.org/sigs/cosmology.htm

IDENTIFYING RCW NEBULAE IN CONSTELLATION CARINA

by Leo Cavagnaro

Part 3. RCW 54 Sections, RCW 55, RCW 56, RCW 57 and RCW 58



The map shows the positions in the sky of some RCW nebulae situated in the eastern part of the southern constellation Carina. The great Carina Nebula is highlighted in gray color. In addition, some stars (all brighter than magnitude 5.5) are indicated in the chart so the observer can use them as guides or starting points to find the different nebulae.

Some weeks after observing the faint nebulae close to NGC 3372 (Eta Carinae Nebula) I went to an observing site in Villavicencio on July 11th and to Canota on July 18th to work on the last group of RCW nebulae, all of them situated in the eastern part of constellation Carina, thus finishing the project about these not very well known objects.

The RCW 54 Complex and the Carina OB2 Association

A report on the biggest section of this complex (called by me "eastern b") is included in part 2 of the RCW nebulae article. Here I have included reports about the other parts of this huge HII region. The map on page 3 in "Identifying RCW Nebulae in Constellation Carina - Part 2", June 2009 Rosette Gazette, shows where the different sections lie in the sky to the east of Eta Carinae nebula.

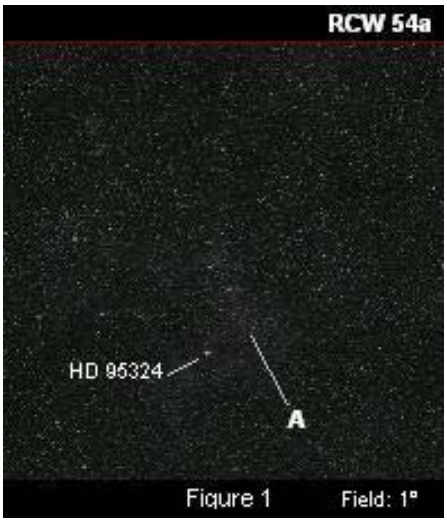
RCW 54a (Gum 35)

Date: July 18, 2009. Observing Site: Canota, Mendoza

This is an HII region associated with the giant molecular cloud (GCB 88)13. This section of the RCW 54 complex lies about 1.8 degrees southwest of the 4.6 magnitude star HD 97534. In the 1.2 degree eyepiece field given by my telescope (42x) the open cluster Cr 236 is seen detached from the surrounding stars. This 7.7 magnitude cluster (Trumpler classification III,2,p) shows a few stars with magnitudes around 9.5 and several more faint stars can be detected using averted vision.

According to the DSS image of this nebula (figure 1, page 6), the brighter zone of this section lies about 6 arc minutes northwest of the 6.2 magnitude star HD 95324 (the brighter in the field) but no nebulosity is visible there without using a nebular filter. Using both the UHC and Orion Ultrablock filters and the same magnification, a smooth and very faint nebula is visible with averted

(Continued on page 6)



vision in the zone indicated by A. This faint hazy patch was very hard to see and it could be glimpsed for only a few moments when I was observing it for several minutes. I had a similar view using a little higher magnification (53x) and the UHC filter. It is another target for owners of bigger mirrors, astrophotographers or places with exceptionally dark skies.

RCW 54b

Date: July 11, 2009 Observing Site: Villavicencio, Mendoza

This is the westernmost of the two sections labeled as "b" (named here "western b"). It also appears in Gum Catalogue of Southern HII Regions as Gum 34a. If you check the eyepiece field picture (figure 2) you will see that this nebula is situated just 25 arcminutes west-northwest of the nebula NGC 35031 which is visible in the same field of view of a telescope working at low magnification and about half a degree west from the "eastern b" section described in part 2 of this project. Also, you can use the naked eye open cluster NGC 3532 to find the zone where this nebula lies moving your telescope 1.5 degrees to the southwest.

RCW 54b is situated very close to the bright star U Carinae (visual magnitude 6.3) which is obviously the brighter one in a field where several faint stars are visible. Toward the northwest, on the edge of the eyepiece field, the open cluster Trumpler 17 (Tr17) is clearly visible like a hazy and round patch of smooth brightness. Its Trumpler classification of II,2,p matches well with the view at low magnification through my 8-inch telescope, several faint stars populate it. Do not expect to see much more there with telescopes of this size. The section was not visible at all at 42x and 78x, even using the UHC and OIII filters. This is the last object I saw that night, the Moon rose around 11pm local time (UT – 3hours) so after 3 hours of observation (beginning at local astronomical twilight which occurred at 8:12pm local time) the sky got too bright to carry out more deep and detailed observations.

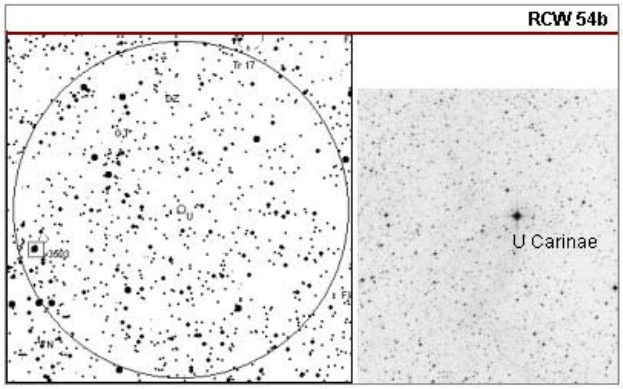


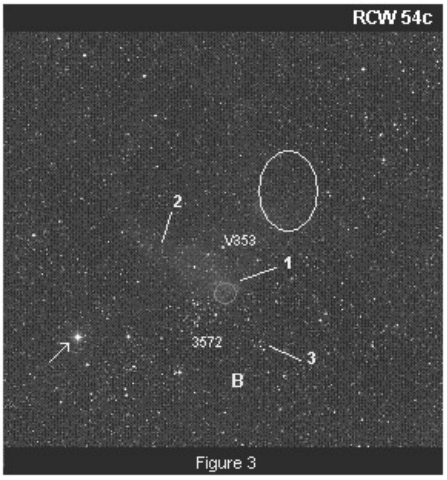
Figure 2

RCW 54c

Date: July 11, 2009 Observing Site: Villavicencio, Mendoza

This is another section of the huge complex RCW 54, also known as Gum 37. This section "c" lies close to a group of open clusters situated about 1.75 degrees south of the naked eye cluster NGC 3532. You will be able to find this area easily using the 4.6 magnitude star HD 97534 (member of Cr 240?).

At low magnification (42x) the field is very impressive showing open clusters with different Trumpler classifications and stars grouping in interesting shapes. "These open clusters form an extensive and almost continuous grouping of stars lying in a region where the Carina spiral feature is seen tangentially" (Clariá 1976). The naked eye star HD 97534 (indicated with an arrow in figure 3) is the brightest one in the 1.2 degree eyepiece field of my telescope. A group of a few sparse stars is visible (lower left in figure 3), Collinder 240 (Cr 240), a swarm of stars with a Trumpler classification of III,1,p,n and 25 arc minutes size. Superimposed on Cr 240 toward the northwest lies a smaller and more compact open cluster, NGC 3572 (Trumpler classification I,2,m,n) situated at a distance of about 2.8 kpc. The stars of this cluster show similar brightness. NGC 3572 probably belong to the association Carina OB2 and its massive stars are seen in projection close to the geometrical center of the cavity of the overall HI distribution toward Car OB2..



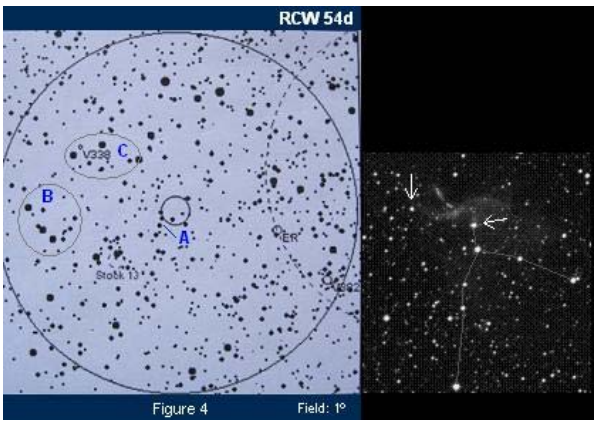
Southeast to Cr 240 a stream of three open clusters is visible (Tr18, Hogg 12, NGC 3590). Several of these open clusters (namely Cr 240, NGC 3572, NGC 3590, Hog 11 and Tr 18) may be physically related to the Car OB2 association (see the paper **"A Study of the Interstellar Gas Surrounding Carina OB2"** by J.R. Rizzo and E. M. Arnal).

Without a nebular filter no nebulosity was visible in the field, but using an UHC filter at the same magnification

(Continued on page 7)

(which gave me a sharper image than the Orion Ultrablock filter) I could observe a faint and smooth nebulosity indicated by 1 in the DSS image here (figure 3), involving also NGC 3572. If you want to see this section of RCW 54 you should keep your eye at the eyepiece for several minutes and explore the area carefully using averted vision as help. Seemingly, some of nebulosity is also visible embedding the line of three stars including the variable 7.7 magnitude star V353 Carinae (indicated in the picture). In the picture I have indicated with 2 a lane of faint nebulosity and with 3 a round and small hazy patch embedding a small group of a few stars.

The image above shows a nebulosity with an interesting shape. However, a very different shape when I observed through my 8-inch telescope. At 42x the area shows a rich starry field. The eastern edge of NGC 3532 is visible in a wide field with the star ER being the brightest there (see eyepiece field picture where North is up). The open cluster Stock 13 is also visible containing few stars not very well detached from the surrounding field. After identifying the pattern of stars (indicated by A in figure 4 and shown in detail in the right hand picture there) no nebulosity was visible at this magnification and without using a nebular filter. In the section indicated by B a lot of very faint stars are visible applying averted vision.



Letter **B** in figure 3 indicates a dark zone visible in the eyepiece field where a very few faint stars are superimposed when you observe the zone without a filter. Observing through nebular filters this dark zone is clearly detected. Using averted vision I could see, for moments, a very faint extension of the nebula toward northwest (white ellipse) being a feature that was very hard to detect visually. If you see the 1 degree wide image you can download from the STScI DSS image web page: <http://archive.stsci.edu/cgi-bin/dss_form> this part of the nebula is clearly visible.
I had a good view of the nebula using 53x and the UHC filter. Even if the entire nebula is faint, the region indicated by the gray circle near the center of figure 3 looks a little brighter and sharper at this magnification.

RCW 54d

Date: July 11, 2009 Observing Site: Villavicencio, Mendoza

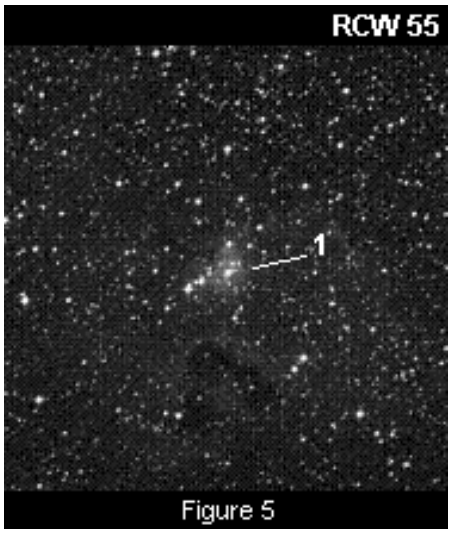
This rather small nebula (Gum 36) lies 45 arc minutes to the east of NGC 3532 so the zone is easily found using this cluster as a starting point.

Using an UHC filter, I first used the star indicated by the arrow to the right to search for nebulosity but nothing was visible. Through this filter a very faint nebulosity seems to embed the open cluster Stock 13 and also the zones B and C. Higher magnification is necessary to search for RCW 54d because of it is a nebula with small angular size. Applying little higher magnification (78x) and using the UHC and Orion Ultrablock filters I made a detailed observation of the zone between the stars indicated by arrows, where this nebula lies, but I did not have results. At 148x without filter I could clearly see a group of faint stars including one of the guide stars (left arrow in figure 4). Working with the UHC and OIII filter this nebula did not jump to the view. This section, which has a distance comparable for the distance quoted for the HI shell2 associated with Car OB2 is another example of a challenging RCW nebula.

RCW 55

Date: July 18, 2009 Observing Site: Canota, Mendoza

Half way between the variable star V371 and the naked eye open cluster IC 2602, known as Southern Pleiades, lies this nebula (see map in page 1). At low magnification (53x), using UHC filter and averted vision some of faint nebulosity, in fact the brighter part of RCW 55, seems to surround a line of 3 stars which are clearly identified from the surrounding field and which are also visible in the DSS image (1 in figure 5).



(Continued on page 8)

A brief observation at 78x made possible a better view of the stellar stream and I got a good view of the faint nebula and the stream at higher magnification (106x) using the UHC filter.

RCW 56. A Very Small Nebula

Date: July 18, 2009 Observing Site: Canota, Mendoza

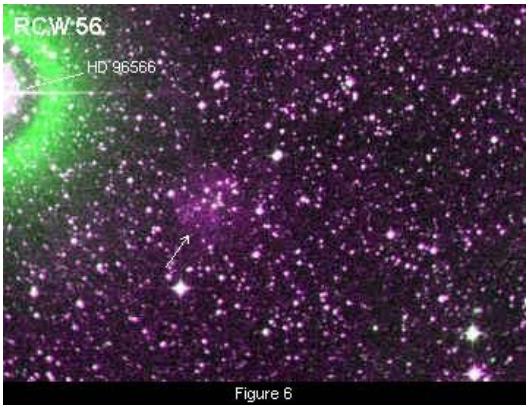


Figure 6

The bright stars V371 and HD 96566 are visible in the same 1.2 degree eyepiece field of a telescope. Very close to the last one is situated RCW 56 (indicated by the arrow in figure 6). The field surrounding the position of this nebula has few stars The light from HD 96566 made the search of this small hazy patch hard in advance. I scan the zone with high magnification trying to avoid the presence of HD 96566 in the field. As you can see in the picture, this nebula is very small in apparent size and very close to the star. Using 148x and the UHC filter and then 296x with the same filter nothing was visible through my 8-inch scope. Moreover, the altitude of the zone was not favorable for the observation (29 degrees in the southwest sky).

RCW 57a & RCW 57b

Date: July 18, 2009 Observing Site: Canota, Mendoza

These are nebulae that are easy to observe even without a nebular filter. They are situated about 20 arcminutes from each other so they are visible in the same field of view if you use low magnification. The observer can use the stars HD 96566 and V371 Carinae (visual magnitudes 4.6 and 5.2) to find them (see map in page 5). These HII regions are much brighter than others RCW nebulae in constellation Carina. In fact, they are two of the highest luminosity optically visible HII regions in our galaxy and they also have NGC numbers

The zone shows several stars with the brighter ones in the edge of a 1.2 degrees eyepiece field. Two hazy patches are clearly visible without a filter. RCW 57a (figure 7) is ionized by a large star cluster visible in infrared. It was discovered in 1834 by John Herschel who only saw the brightest parts of this nebula. For this reason there are six NGC numbers for this nebula but it is usually known as NGC 3576.

At 42x this HII region looks bigger than RCW 57b and elongated north-south (north is up in figure 7). On the other hand, RCW 57b (NGC 3603), situated at 20,000 light-years from us contains some 104 solar masses of ionized gas and may be (according to Eisenhauer et. al. 1998), the most massive HII region in the Milky Way aside from W94. It was viewed in my 8-inch telescope smaller and more compact than RCW 57a, showing a bright core that looks quasi-stellar at

Figure 7

42x. Other parts in the surrounding field seems to have nebulosity.

Working with an UHC filter the view is much more interesting. Both nebulae are clearly detached from the surrounding field. As figure 7 shows, NGC 3576 have some bright spots or regions. Observing carefully and using averted vision some of these regions are detected at this magnification. Two of them (NGC 3581 and NGC 3582) are situated very close each other and can be discerned using averted vision. They are the brightest part of the whole nebula. To the north I could see another region (NGC 3184), which is fainter than the other ones and is immersed in a wider and faint nebulosity (see bottom image in page above). A thin dark lane seems to cross between NGC 3184 and the two brightest spots.

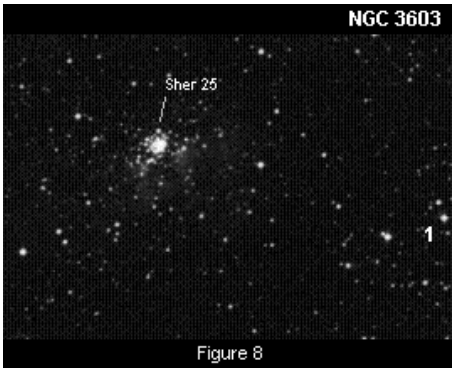


Figure 8

RCW 57b looks bigger through the UHC filter. A bright central spot is visible like a little defocused star. It is the central cluster of strongly UV-radiating stars of type "O" and "B" (see figure 8 above) Higher magnification is necessary in order to carry out a more detailed analysis of the nebulae. It is elongated in shape and a few faint stars are superimposed. A lane of nebulosity is visible in the section indicated by 1.

At higher magnification (106x) and the same filter and using averted vision, I could identify the different sections of NGC 3576 better. With this filter, the zone NGC 3184 looks elongated and the round patch of nebulosity known as NGC 3579 is visible. Also, the faint sec-

(Continued on page 9)

tion NGC 3586 was glimpsed by moments but it was hard to see even with averted vision

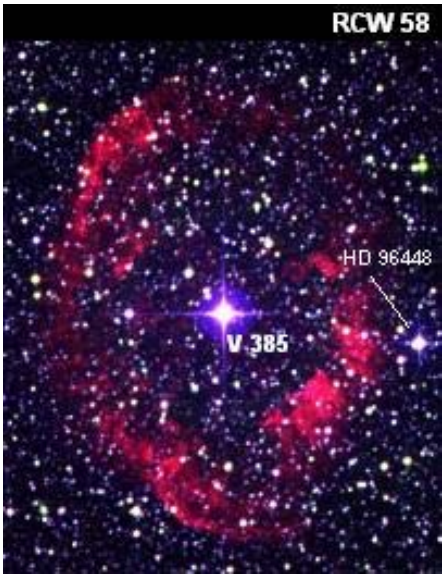
RCW 57b is clearly seen through the UHC filter at 106x, appearing as a smooth luminosity elongated East-West covering a section south of the central cluster (middle left in figure 8). A group of researchers concluded that in terms of density and stellar population NGC 3603 is a "galactic clone" of the cluster R136 in the 30 Doradus complex, in the Large Magellanic Cloud (see the paper **"NGC 3576 & NGC 3603: Two Luminous Southern HII Regions Observed at High Resolution with the Australia Telescope Compact Array"** by C. G. de Pree, Melissa C. Nysewander and W. M Goss).

I removed filters and applied even more magnification (296x). Then I aimed my 8-inch telescope to see the stellar cluster associated with the HII region NGC 3603 named HD 97950. I got a bad quality image but the small spot of light suggest a not smooth appearance. In figure 8 I have indicated the position of an evolved blue supergiant star (B1.5 Ia) named Sher 25 located 20 arcsecond north of the central cluster. A group of researchers compare this star to the progenitor of SN 1987A in the Large Magellanic Cloud.

RCW 58. An Annular Nebula

Date: July 18, 2009 Observing Site: Canota, Mendoza

The last nebula I observed in constellation Carina is RCW 58 which surrounds the 7.7 magnitude Wolf-Rayet star V385 (also known as WR40). I tried to observe this 7.0 x 7.0 arcminutes size nebula when it was about 28 degrees high so the altitude was not the best. I first observed it using low magnification to find the accurate position of the nebula. The star is easily identified because it forms a pattern (triangle) with other two stars with magnitudes of 8.1 and 8.9 that are not visible in the picture here.



According to the image above, one of the brightest portions of the nebula lies in the middle of the way between the stars V385 and HD 96448 (visual magnitude 10) and other "bright" section is situated diametrically opposite so I focused my attention in that parts of the field. The sections were not visible at all at low magnification and using the UHC and Orion Ultrablock filters as help.

A new try using higher magnification (78x and 106x) and the use of the UHC and the OIII filters did not give me a view of this nebula or any of its sections. Doubtless it is a very faint nebula for an 8-inch mirror. However, it is labeled in Skymap Pro 6.0. I think it is good to carry out more observations under different (better!) conditions and from different observing sites to have more information about the visibility of deep-sky objects like this.

Final remarks

For some months I have observed 12 of the 13 RCW nebulae situated in constellation Carina (except NGC 3372, the Carina Nebula, which appears in the RCW catalogue as RCW 53), including the five (5) sections of RCW 54 complex. Some of them were very hard to observe visually through an 8-inch telescope, others like RCW 58 were invisible at all. The objects RCW 48, RCW 57A and RCW 57B were by far the brightest nebulae of the sample and they were visible even without using nebular filters but needing them for a more deep and accurate analysis of the structures. Obviously these bright RCW nebulae have also a number in the very well known NGC catalogue (NGC 3199, NGC 3576 and NGC 3603 respectively).

1. A brief description of this cluster with nebulosity in part 2 of "Identifying RCW Nebulae in Constellation Carina", June 2009 Rosette Gazette

2. Also, the HII regions RCW 54b and RCW 55 have similar distances and all of them are seen in projection on the same sky area where the HI expanding shell is observed.

Photo by Jan Keiski

RCA 'Downtowner's' Lunch

Join us on the first Friday of each month for lunch at a great downtown restaurant (Holidays and such may push us to the second Friday of some months, check the calendar at http://www.rosecityastronomers.org).

The location is announced on the RCA general forum discussion list. at http://www.rosecityastronomers.org/forum under special interest groups and is normally Kell's Irish Pub at Second and Ash.

Always great conversation and food.

For more information contact: Margaret Campbell at secretary@rosecityastronomers.org

This month's theme of the International Year of Astronomy is "Rocks and Ice in the Solar System"

Moments Remembered

By Tom Koonce
Antelope Valley Astronomy Club
Lancaster, California

June 20, 1994: My Uncle generously decided to pass along his 8 inch Schmidt-Cassegrain telescope to me and make the switch to binoculars that better fit his astronomical observing habits. That gift was what launched me into "serious" amateur astronomy…but that's not why I remember the date so well.

Comet Hyukatake (Credit: Amador Astronomical Society)

Saturday night, March 23, 1996: My wife and I drove 25 miles north on I-35 out of Fort Worth to a dark, quiet country lane with open fields on either side of us. Surprisingly there were at least a hundred other cars already parked along the sides of the road with people getting ready to do exactly what we were going to do J …but that's not why I remember the date so well.

"Rocks and Ice in the Solar System" have made an indelible mark on mankind and probably on each of you too. Our recorded history is full of dramatic references to cometary visitors and falling stars. Many of history's events have been influenced by the superstitious belief that comets were harbringers of great success or of doom. Many of us have read of Augustus Caesar ascending to Emperor of Rome as a comet hung in the sky. It was common for royal births and deaths that occurred during comet apparitions to be recorded as being related directly with the comet. As William Shakespeare said, "When beggars die there are no comets seen; the heavens themselves blaze forth the death of princes."

If you've seen a comet and its tail, even if faintly through a telescope, you know how dramatic they appear. The brightest, most easily visible comets are called "Great Comets." These can be seen by the naked eye by multitudes of people across the Earth while the wisps of their icy tails are blown back by the solar wind. As they stretch across the sky, they are so extraordinary that they are easily remembered for the rest of a person's life. It seems natural that they have figured so prominently throughout history; indeed it would seem more remarkable if they had not!

The Saturday night of March 23, 1996, is fixed firmly in my memory as the night we spent watching Comet Hyukutake stretching gracefully across the northern sky. It was awe inspiring. Even though there were several hundred people on that dark road that night, only hushed voices were heard. We were casually sitting on the hoods of our cars and in lawn chairs, but everyone knew that we were witness to a very special celestial event, and there was a certain reverence to the moment. Later, a police car came around a bend of the road and his headlights shone upon all of the cars and the people looking up at the sky. He came to a sudden stop and the officer just sat in his car for a few minutes looking at us. He must have been quite startled by the scene. I'll never forget what happened next. He got out of his car, looked around slowly at us, started to say something, but stopped… and then he looked up. He just stood there looking for a minute then walked back to his car, turned off the headlights and shut off the car. He came back over without saying a word and watched The Great Comet of 1996 with us for a half hour or so. As I said, there was a certain reverence to the moment.

Our solar system has countless asteroids, and distant rocky Kuiper Belt Objects. Our Earth is struck many times each minute by particles of rice grain-sized rock. 40,000 kg of material falls daily on Earth, most of it in the form of micrometeorites that hit the upper atmosphere, and then fall to Earth. We know that these rocks from space come in many different sizes and some are even left over debris from cometary tails. I have seen great displays of meteoritic activity. Several years ago (November, 2002) a fellow amateur astronomer and I witnessed a stunning (but sadly, too short) five minute burst of Leonid meteors with an equivalent rate of over 700 per hour from a dark sky site. I'm sure we will always remember that portion of the

Photos Courtesy of NASA

(Continued on page 11)

Moments Remembered

(Continued from page 10)

evening and that we were the only two observers left when the meteor shower peak finally came.

Occasionally the Earth gets hit by rocks and ice that are truly impressive. The Tunguska Event in 1909 was very likely caused by a collision of rock or ice with the Earth. Several mass extinctions of life on the planet have been attributed to collisions at a much larger scale; for instance the demise of the dinosaurs 65 million years ago may have been from an asteroid approximately 4 to 9 miles across. But these events seem to lack the real-world immediacy which resulted from a chain of events that started at Mount Palomar on the night of March 24, 1993. That night, a photograph taken by Carolyn and Eugene Shoemaker and David Levy revealed a comet which now bears their names. It was soon determined that their comet was headed towards Jupiter on a collision course and it was breaking up into a "string of pearls"; a long line of cometary fragments that would hit Jupiter like slow-motion bombardment. If we fast forward fifteen months - I received the C-8 from my Uncle on June 20, and was learning how to use it efficiently. Exactly a month later, on July 20, 1994, I vividly remember looking through the telescope with several other amateurs as we watched the face of Jupiter turn slowly towards us to reveal the scars of massive cometary collisions the size of the entire Earth. There were a few brief cries of astonishment that the impact was so visible followed by stunned silence as we contemplated the energies involved in collisions that could have wiped the Earth clean of life. There was a certain reverence to the moment. Astronomy offers unforgettable moments like those to us.

We do not remember days; we remember moments. ~Cesare Pavese

Camp Hancock Dark Sky Star Party

September 18-20, 2009

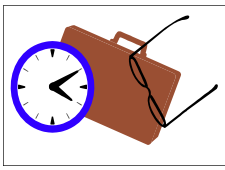
Mail-in Registration only - Deadline September 11th

With the grand-daddy of the regional dark sky parties coming up (The Oregon Star Party, of course) you might still need another weekend in late September to wind down your viewing season. September 18-20 will the final RCA outing of the year and OMSI's Camp Hancock with meals and cabins fits the bill for a great outing for on cool fall weekend. Dark skies, warm cabins, real bathrooms, warm showers, good meals and great friends top off the last outing of the year for RCA. There's also electrical outlets on both Astronomy Hill and the Ridge for those who need power for their scopes, ccds and computers. Wireless internet service is also available at Hancock.

Registration for this star party is by mail only. There will be no one taking registration at the August 17th general meeting and the September 21st general meeting is after the outing. Mail In Registration and Payment Deadline is Friday, September 11th. We do expect to get permission again to use the "Dob Valley" which will increase our capacity by a bit.

Photo's by Jan Keiski (except, possibly, this one).

Registration form, lots of information for our outing, including pictures, downloadable Camp Hancock information, Clarno Fossil bed information, driving maps and instructions, etc. can be found on the RCA website under Star Parties. Join us for the final fall fling at Hancock.



BOARD MEETING MINUTES

June 1, 2009
OMSI Classroom 1
Margaret Campbell-McCrea

Attending: Dale Fenske, Ken Hose, Dawn Willard, Jean London, Jan Keiski, Sameer Ruiwale, David Nemo, Howard Knytych, Margaret Campbell, Greg Rohde.

Non-voting members: Peter Abrahams.

Guest: Diane Fredlund.

The meeting was called to order at 8:08 p.m.

Special Business: We had considerable discussion with Diana Fredlund about the possibility of her becoming our Media Director. She loves astronomy but is a newbie to it. Her strength is that she knows media. She made several suggestions for how we could improve our media communications: getting our information out regarding events and meetings; responding to telephone calls for information; working with Matt Zaffino (local weather news) and Jim Todd (OMSI). She can't work on this during the day as she works for the Army Corps of Engineers and cannot do private work on public time. Dale suggested that we submit our astro-images, live solar flares and eclipse images and videos from our members to be shown on television news. Diane said that their budgets have been cut so they appreciate the assistance. She offered to write a publicity plan, which would be submitted to Board for review.

After some discussion, Greg nominated Diane Fredlund to be our Media Director, Dawn Willard seconded. Motion carried. Sameer will contact her by email, and ask if she can do some publicity for our Info Fair.

Board Reports

- Secretary's Report – Margaret Campbell: Quorum (10) met with 10 voting members present. The May minutes have not been done.
- Treasurer's Report – Larry Godsey: Larry was out of town, so the budget information was submitted via the Board's website. As of May 31, 2009, RCA had $19.873.14 in its accounts and the Site Fund had $19,402.83, for a total of $39,275.97. Larry also submitted a revised budget for us to review. See New Business below.
- VP Programming – Matt Brewster: No report. June is information fair. Larry Deal and Dawn Willard have made copies of the RCA brochure. Sameer will send out information about swap meet and info fair.
- VP Observing – Matt Vartanian: No report. There is an OMSI event coming on the 13th and RCA event on the 19th.
- VP Community Affairs – Dawn Willard: The Vernon School Star Party will be on Thursday. On June 8 there will be a star party at Archbishop Howard school; later a party at St. Vincent de Paul; in July we have been invited to Mountaindale Girl Scout Camp, and on August 1st, to Cooper Mtn. park. The Center for Inquiry wants to have a star party in Bend in August. Night Sky Network wants a survey. Dawn will pass out the information at our events and the request asks people to take a survey on line.
- Media: See Special Business, above.
- Membership: We are getting more and more PayPal renewals. We now have 333 member-families. In May we had 1 new member and 26 renewals and took in $662 in dues. Larry will have to remove the option of receiving the newsletter by mail from the PayPal. Ken will talk to Larry about the forms that are being used.
- Sales – Margaret Campbell: There were $312.95 in sales in May.
- New member advisor: Howard Knytych will show star-hopping technique for new members at our next meeting. Howard has worked with Jim Todd to improve the presentation with a projected telrad. Some discussion about making some changes in the planetarium to fill in the space in the middle were the old projector used to be. We will have a Dummy Dob in that space for learning to look through a scope. Sameer suggested having a table for membership at the Info Fair.
- Book Library – Jan Keiski: There was some discussion about putting our speakers' video presentations in the library. The question had to do with security for our speakers. The videos are available in the members' section of the website. Bruce McKay is willing to do the burning; Sameer and Larry will close this issue via email during the month.
- Telescope Library – Greg Rohde has purchased a PST from Sean's Astronomy Shop with a hard-shell case, no tripod yet.
- IDA – Art Morris: no report. Peter Abrahams talked to an attorney who is interested in getting involved, especially on legislation; Sameer will talk to him via email.
- Magazine Subscriptions – Larry Godsey: No report
- Webmaster – Larry Godsey: No report.
- Site Committee – David Nemo: One of the local people in Maupin is a pilot and he's going to be scouting some places for us.

(Continued on page 13)

June Board Minutes *(Continued from page 12)*

- Youth Director: Jean London circulated materials for our website, including the survey results. She noted that after school programs by Saturday Academy and OMSI can be are listed in a kids' section of our website
- SIGs – Tom Nathe reported that Patrick Smith, the SIG leader, was not at the last two meetings, and Greg Marshall has volunteered to take it on. This was announced in the public portion of the forum. There was some discussion about the process, since SIG leaders are approved by the Board. We agreed to give it conditional approval until the SIG brings the issue to the Board. Approved.
- Alcor – Dale Fenske: Dues due July 1. He will send bill to Larry. The membership roster has been updated to May 1 based on April membership.
- OMSI –Jan Keiski: Our annual agreement has been signed by OMSI. Jim Todd is going to make sure we have lots of tables for our swap meet.
- Sister Club update – Jan Keiski: Nominal.

Old Business / Action Items

- Starlight Parade wrap up: It was good fun, successful, worth doing, and we would like to do it again next year.
- White River Star Party: Nothing done.
- Joint viewing with GAMA: Carlos and Jan are setting this up for OSP. Jan needs to get with Matt Brewster to get this into the program for one of our meetings.
- Mirror making machine purchase: done and at TMS. We need to send out an announcement. Tom Nathe and Greg Rohde will make a short training video and require that people watch the video before they use the machine. John DeLacey is the contact person for people saying they want to use it.
- Volunteer hours: some discussion about how to record the hours that members do. Once the form is up on our website, we need to make a broadcast message.

New Business

Budget: We discussed it last month, but there was some discussion about starlight parade expenses. Dale Fenske moved that we approve the budget, Dawn Willard seconded the motion. Motion carried.

The meeting was adjourned at 9:02 p.m.

Respectfully submitted, Margaret Campbell

To Do:

1. Sameer will notify Diane Fredlund that the Board approved her being our Media Director. He will post information about the Swap Meet and Information Fair. Sameer will talk to Peter Abraham's attorney contact on legislative issues having to do with light pollution.
2. Ken Hose will talk to Larry Godsey about the form that we use for new members asking for the newsletter.
3. Sameer and Larry will close the discussion about putting videos of our speakers on our library for checking out.
4. Margaret will order the Sky Puppies workbook and the Universe Sampler program workbook for our youth program.
5. Dale Fenske will send the AL bill to Larry Godsey.

Astro-Imaging Special Interest Group

The "AI-SIG" is about advancing the skills of beginner, intermediate and advanced astro-imagers. We rely on the skills of our members to bring each other along as we image the beautiful night sky and its many wonders. Whether you use a CCD, DSLR, point-and-shoot or film camera, members of this group can help you achieve better images with less effort and frustrations. Please join us as we learn together to produce "stellar" images!

Next Meeting: Monday, August 10, 2009, 6:30pm
Beaverton Public Library
In Meeting Room B
12375 SW 5th St, Beaverton

Science Special Interest Group (SCI-SIG)

Next meeting is August 8th at 3pm. Following the Telescope Workshop at Technical Marine Services.
This group is for people who would like to advance their skills in astronomy beyond casual observing. Various projects that some group members are involved in include; variable and double star observing, occultations, photometry and astrometry. A science background is not required, however a curious mind does help.

Location: Technical Marine Service, Inc
6040 N. Cutter Circle on Swan Island

http://www.rosecityastronomers.org/sigs/science.htm

Tom Nathe sigs@rosecityastronomers.org

August 2009

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					

August 3	Monday	RCA Board Meeting	OMSI Classroom 2	7pm
August 7	Friday	Downtowner's Luncheon	Kell's	Noon
August 8	Saturday	Telescope Workshop	Swan Island	10am-3pm
August 8	Saturday	Science SIG	Swan Island	3pm
August 10	Monday	Astro Imaging SIG	Beaverton Public Library	6:30pm
August 11	Tuesday	OMSI Persied Meteor Watch	Stub Stewart & Rooster Rock S. P.	
August 14-16	Friday-Sunday	RCA Star Party	Maupin	
August 17	**Monday**	**General Meeting**	**OMSI Planetarium**	**7pm**
August 19	Wednesday	Cosmology SIG	Linus Pauling Complex	7pm
August 19-23	Weds-Sunday	Oregon Star Party	Indian Trail Springs, Ochoco N. F.	

September 2009

September 5	Saturday	Telescope Workshop	Swan Island	10am-3pm
September 5	Saturday	Science SIG	Swan Island	3pm
September 11	Friday	Downtowner's Luncheon	Kell's	Noon
September 12	Saturday	OMSI Star Party	Stub Stewart & Rooster Rock S. P.	
September 14	Monday	Astro Imaging SIG	Beaverton Public Library	6:30pm
September 14	Monday	RCA Board Meeting	OMSI Classroom 1	7pm
September 18-20	Friday-Sunday	RCA Star Party	Camp Hancock	
September 21	**Monday**	**General Meeting**	**OMSI Planetarium**	**7pm**
September 23	Wednesday	Cosmology SIG	Linus Pauling Complex	7pm

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.rosecityastronomers.org).

http://www.rosecityastronomers.org

Rose City Astronomers
Oregon Museum of Science and Industry
1945 SE Water Avenue
Portland, Oregon 97214-3356

The
Rosette Gazette

Volume 21, Issue 9 Newsletter of the Rose City Astronomers September, 2009

RCA SEPTEMBER 21 GENERAL MEETING

Richard Berry Presents:

"The Edge, the Lollipop, and the Star"

In August, amateur astronomers, science teachers, and students gathered at Pine Mountain Observatory for an educational event called the "Pine Mountain Summer Research Workshop." In three nights of intensive observation, the participants observed double stars and measured a pulsating variable star, gave talks, analyzed our measurements, and wrote up our results. My talk will focus on how much fun it was to make real science observations under the stars, how we made those observations, and how much everyone learned from the experience. Oh yes--what does that nutty title mean? The "Edge" is a telescope, and the "Lollipop"....well, I'm not going to give it away! You'll have to come to the meeting to learn about the "Lollipop" and the "Star."

Spitzer-Hubble-Chandra Composite of M101
Credit: NASA, ESA, CXC, SSC, and STScI

In This Issue:

RCA is a member of the Astronomical League.
http://www.astroleague.org

All are Welcome! Monday September 21

Social Gathering: 7 pm. Meeting Begins: 7:30 pm.

Location: OMSI Auditorium

Full Moon	Last Quarter Moon	New Moon	First Quarter Moon
September 4	September 11	September 18	September 25

CLUB OFFICERS

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Past President	Carol Huston	pastprez@rosecityastronomers.org
VP Membership	Ken Hose	membership@rosecityastronomers.org
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VP Community Affairs	Dawn Willard	community@rosecityastronomers.org
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IDA Liaison	Art Morris	ida@rosecityastronomers.org
OMSI Liaison	Jan Keiski	omsi@rosecityastronomers.org
Magazines Director	Larry Godsey	magazines@rosecityastronomers.org
SIG Director	Tom Nathe	sigs@rosecityastronomers.org
Youth Programs Director	Jeannie London	youth@rosecityastronomers.org

RCA MAGAZINE SUBSCRIPTIONS

One of the benefits of RCA Membership is a reduced rate subscription to Sky & Telescope and Astronomy magazines. The RCA member rate for Sky & Telescope Magazine is $32.95 for one year or $65.95 for two years. The RCA member rate for Astronomy magazine is $34 for one year or $60 for two years. For more information go to the RCA web site index and click on any of the links for magazines. Larry Godsey, Treasurer, 503-675-5217, will be taking renewals and new subscriptions at the Magazine Table before General Meetings. Please make checks out to "RCA" and allow two months for your subscription to be renewed.

RCA LIBRARY

The Rose City Astronomers maintains a comprehensive club library of astronomy related articles, books, CDs 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.

The RCA library is constantly growing through many donations and the purchase of new materials. A listing of library materials (PDF format) can be found at the library web page:

http://www.rosecityastronomers.org/library.htm

Jan Keiski (jikeiski@comcast.net) 503-539-4566

Globular Clusters in Art

A study looks at contemporary paintings of those remarkable objects.

By John W. and Diane A. Siple

The fine arts have stepped beyond Gaia into the beckoning realm of the unknown universe. Globular clusters, a popular theme in space art, are tightly packed assemblages of as many as a million or more stars that roam the outskirts of our galaxy. Earth's night sky holds at least a hundred of them, including the glittering treasure houses of 47 Tucanae, The Great Globular Cluster in Hercules and especially Omega Centauri, the finest example in the whole heavens.

It is a delight when art and extraterrestrial environments mesh. The artist's canvas elegantly captures the transcendent, glimmering mystery of those magnificent stellar populations and has impelled many a viewer to turn his or her telescope skyward. "These realistic scenes are reminiscent of art a century ago when Moran, Church and Bierstadt painted fantastic scenes of Earth's last frontiers; Yellowstone, the Arctic regions, South America…only now the new frontiers are the planets, stars, and fantastic scenes of the universe," says gallery owner and award-winning artist Kim Poor.

Throughout most of its history, astronomical or space art was limited to relatively droll but nonetheless scientifically accurate pencil and ink drawings of comets, planetary landscapes and various deep-sky phenomena. Some of the strongest work was done by technical virtuoso Leopold Trouvelot; two standout examples are of the globular clusters M13 and M92 in Hercules, both drawn from Harvard College Observatory in the 1870s.

A pictorial metamorphosis in space art occurred through the pioneering efforts of such talented draughtsmen as Abbé Moreux, Scrivener Bolton and Lucien Rudaux. The frenchman Rudaux's renditions from the 1920s and 1930s had an uncanny prescience, accurately depicting the surface of the Moon and other celestial bodies before visitations by Apollo and planetary probes.

Chesley Bonestell several decades later began thrilling the public with his provocative vistas of the earth and outer space. His paintings appeared in hundreds of major magazines, including *Life* and *Popular Mechanics*, and his drawings became the impetus for the US space program. Bonestell's carefully executed works helped to inspire a future generation of space artists, some of them fellow recipients of the coveted IAAA (International Association of Astronomical Artists) Lucien Rudaux Memorial Award.

Left: A supreme example of a globular cluster in space art by master illustrator Chesley Bonestell. Above: Hawaiian Night *(March 2002) by Dan Durda depicts both the otherworldly and familiar.*

Winning compositions reflect an individual's own interests, among them astronomy, cosmology and rocketry. Contemporary space artists combine scientific realism with a speculative imagination of events, often drawing subject matter from past travels and experiences. Their surrealistic works favor eerie vistas of globe-shaped masses of shimmering stars hovering over deserted, extrasolar landscapes.

Chesley Bonestell's dazzling starscape (shown at far left) of a globular cluster seen from a hypothetical planet 500 light years away marries a skillful illustrative technique and a tone of galactic curiosity. In this incredible view, the quicksilver beauty of an ancient star cluster illuminates the limitless sky of a moonlike world. Bonestell's pivotal work was featured on the cover of *The Magazine of Fantasy & Science Fiction* in 1972.

Dan Durda's elegant visual haiku, titled *Hawaiian Night*, is a superb example of a successful relationship between the commissioned artist and his patron. According to Durda, "That piece was commissioned by a fellow astronomer and space artist who was working in Hawaii at the time and wanted a memento of his time

(Continued on page 4)

Globulars in Art *(Cont'd from page 3)*

there. It was a fun piece to do—I love beach scenes and this was my first attempt to do one with subdued, night lighting." In his captivating presentation, a broad-leafed palm tree is silhouetted against an alien night sky, a strangely beautiful tropical seascape bathed in the soft, greenish light of a nearby globular cluster.

Space art rarely looks as pristine and alluring as it does in the otherworldly landscapes of Kurt C. Burmann. Exhibiting great compositional ingenuity, his haunting arctic scene (shown below) takes on an almost hypnotic authority. The star cluster, nebulous in aspect, floods the rugged polar topography with its lucid white light. A crown of minute stars scintillates around its condensed border, their irregularly terminated starlight gathered in the form of delicate swirls and rays.

Globular clusters are crowded environments, where the average density is about 0.4 stars per cubic parsec, increasing to 100 or more stars per cubic parsec at the center of the cluster. Chance encounters between packed members can result in the dramatic expulsion of the involved stars, causing them to sail off into deep space. A similar situation occurs when a star is caught in the tidal wake of a passing globular cluster—gravitational interactions disrupt the unfortunate solar system and may rob or eject some of its bound planets.

In one of distinguished artist Don Dixon's most celebrated works (shown above), the chromatic brilliance of a globular cluster is seen from a planet whose parent sun has been tidally ejected from the cluster. An eon's old globular cluster, spangled with glittering stars, rises ponderously over the horizon, its light shining on a rounded slope hooded with snow. The planet's lone sun is offstage, having set hours before and leaving the globular cluster as the only source of light and heat.

Above: In this scene by Rolf Wahl Olsen, a natural arch is viewed from a ringed planet's moon. Left: A nearby globular cluster hovers over snow covered mountains in Kurt C. Burmann's 1984 work. Top: Don Dixon's globular cluster illustration from 1977.

Few individuals have rendered distant starlight more evocatively than New Zealand/Dutch artist Rolf Wahl Olsen. His unforgettable panoramas masterfully juxtapose planetary expanses and hallowed celestial events. Through the ingenious manipulation of the laws of perspective, our attention is held by a monumental archway, projected against a sky filled with myriad stars and the nearly vertical view of a gas giant's rings (*Natural Arch*, shown at center).

At first glance, Olsen's powerful rendition, created in 2000 with 3D Studio Max, is perceived as a classic portrayal of a distant solar system. Upon closer examination, the intuitive viewer can detect many of the hidden elements common to paintings of Salvador Dali and Octavio Ocampo, famous representatives of surrealism. Other clever paintings of rock arches from astronomical art include *Arc of the Ages* by Michael Carroll, *Brilliant Arch*

(Continued on page 5)

Globulars in Art *(Cont'd from page 4)*

by Mitchell Davidson Bentley, and *Archway to the Stars* by the combined efforts of John Urwin, Gunter Welz and NASA.

Globular clusters house not only ordinary main sequence stars but also exotic components, such as blue stragglers, pulsars and low-mass X-ray binaries. Intermediate-sized black holes, or those with masses several thousand times that of our Sun, may dwell near the hearts of these ancient star clusters. Observational evidence strongly points to the existence of such matter-gobbling entities—earth orbiting telescopes have detected their peculiar gravitational signature emanating from several sources. Black holes have been discovered in the globular clusters M15 and G1 by the probing eye of NASA's Hubble Space Telescope.

Above: A black hole eclipses a globular cluster's stars. Image courtesy of NASA/ESA and G. Bacon (STScI). Top: The brilliant light of a concentrated globular cluster washes over an alien landscape in this painting done in 2000 by Walter Myers.

In the artist's digital representation (shown above), a black hole—apparently in a quiescent phase and therefore lacking an appreciable accretion disk—is casually absorbing matter from the surrounding interstellar medium. As trapped dust and gas crashes into the event horizon at high velocity, it is heated to supercritical temperatures and begins to fiercely glow. A ring of bluish-violet fire develops around the black abyss, the tortured matter offering an unending supply of elemental nourishment. Experimental physics predicts that a wormhole, or magical tunnel through space and time, may exist around such a black hole.

"This magnificent ball of stars presents so fine a spherical form that imagination cannot but picture the inconceivable brilliance of their visible heavens to its animated myriads."

The quote highlighted above, given by 19th-century astronomer Admiral William Henry Smyth in reference to his observation of the Aquarian globular cluster Messier 2, provides a perfect description of the glittering mass of suns pictured in the artwork by Walter Myers. His (Myers) bold composition, filled with saturated and brilliantly colored light and shadow, conveys to the viewer the ultimate thrill of standing on a faraway and distinctly alien world.

The artist had this to say about his rendition, "Regarding the landscape itself, given the enormous age of globular clusters, and the possibility that they may be fossil remnants of galactic centers I wanted to convey a world that was both very old and alien. There's no atmospheric chemistry (I'm aware of) motivating the exotic violet-magenta sky; I was just going for an otherworldly look."

Geochemists and planetary scientists might attribute the deep and luminous color of the alien sky to a strange atmospheric chemistry; aerosols high in the troposphere, possibly consisting of mixed hydrocarbons, preferentially absorb and scatter selected wavelengths of light. The planet's native sun may also provide a clue to the psychedelic colors of the landscape. The star's scarlet-tinged rays, upon hitting the sunward facing side of the planet, are reflected not only back into space but are transmitted downward to the surface.

As author of countless scientific journal articles and publications, IAAA charter member Ron Miller is well-versed in space science. Along with fellow artist and researcher William K. Hartmann, he wrote the acclaimed series of books

(Continued on page 6)

Top: This drawing of a globular cluster shining between foreign clouds by Ron Miller appeared in the bestselling book Cycles of Fire *from 1987. Above: Kim Poor's remarkable rendition of a pair of ice moons in slow orbit around a distant ball of suns. Below: A dazzling globular cluster heats the sands of a faraway desert world in Brian Smallwood's beguiling 1998 work. All of the images used throughout this article are copyright protected by the individual artists.*

Grand Tour, Out of the Cradle, and *Cycles of Fire.* His splendid representation (shown at top left) unleashes a complex medley of azure sky and billowing clouds.

Ron Miller explains, "Although planets are unlikely to form inside globular clusters because these clusters lack heavy elements, close-up views of globular clusters from planets may occur. Globulars, in their orbital trips around the centers of galaxies, pass through galactic disks, where the heavy-element-rich stars and dust (and hence, we assume, planets) reside. For about 100,000 years, this globular cluster will dominate the cloudy sky of this gas giant planet as the cluster passes through the galactic plane near the planet."

With very few exceptions, the collectable art of Kim Poor cannot be equaled. One of his signature pieces is *Globular Star Cluster*, a limited edition print released in 1981 and sold out by 1995. The stark, crisp rendering (shown at middle left) was done completely in black and white and has the appearance of a fine photograph. In his exquisitely detailed work, an isolated pair of ice moons is in a long, epochal orbit around the periphery of a globular cluster.

Variations in a planet's climate are an expected occurrence throughout the universe—not all worlds are locked in the throes of perpetual darkness or stuck in the eternal grip of winter. An artist's creative transformation can turn an otherwise dark, wintry location into one of lush tropical rain forests or that of blistering deserts.

In Brian Smallwood's majestic piece (shown at bottom left), commissioned by the BBC for 'The Sky at Night,' a million bright stars, many of them red giants, shine down upon a desolate Saharan world. The hypothetical planet, along with its attendant cratered moon, is close enough to bask in the warmth of this energetic cacophony of stars.

Viewers gaze upon miles of rolling dunes in the foreground, while off in the distance an inland valley is peacefully blanketed in fog. He added, "Although the planet is without its own star, the combined light of the cluster would be strong enough to cast shadows."

"Scenes beyond the reach of space probes…appear on canvas with vivid realism as if painted from an explorer's sketchbook."

—Science Digest

Kim Poor offered this closing statement about the hyper-realistic world of space art: "Space artists portray believable scenes of places they have *never been and will never see*. Calculators, planetary maps, and a working knowledge of many branches of science are as necessary as a palette and brush to complete a space art painting. Good space art makes the viewer want to *go there.*"

For further information please browse these online websites and galleries:

http://www.outer-space-art-gallery.com/chesley-bonestell.html (Chesley Bonestell)

http://www.boulder.swri.edu/~durda/paintings.html (Dan Durda's Space Art Gallery)

http://www.burmannartproductions.com/spaceart.htm (Burmann Art Productions)

http://www.cosmographica.com/gallery (Don Dixon's Cosmographica)

http://www.geocities.com/hwy37/spaceart.html (Rolf Wahl Olsen's Space Art renderings)

http://www.arcadiastreet.com/cgvistas/ (Walter Myer's Arcadia Street Gallery)

http://www.black-cat-studios.com/spaceart.html (Ron Miller's Black Cat Studios)

http://www.novaspace.com/LTD/POOR/Poor_ltd.html (Kim Poor's NOVASPACE Art & Autographs)

http://www.spaceprime.com/ (Brian Smallwood's Spaceprime Art Gallery)

This month's theme of the International Year of Astronomy is "Planets and Moons"

Observe Pluto This Year!

By Tom Koonce

How many planets have you observed? How many minor planets and dwarf planets? Even though this month's IYA theme is "Planets and Moons" our new Dwarf Planet, Pluto, offers an interesting challenge. Let's not debate the terms "Planet" or "Dwarf Planet", but instead ask if you have you ever observed faint Pluto? It's a difficult object to see and to verify.

Pluto can be observed through an 8" telescope, but in my opinion it is HARD to do for an intermediate-level observer. In Greek mythology, Pluto was named after Hades, the God of the underworld, and you'll think about sending this challenge to the same location, but stick with it because spotting Pluto on your own for the first time is an extremely rewarding experience.

You need exceptionally dark skies, a decent telescope and a lot of patience! There is an equation to help you work out how far down the magnitude scale you can get with a telescope (Remember big magnitudes = fainter objects):

There is an equation to help you work out how far down the magnitude scale you can get with a telescope (Remember big magnitudes = fainter objects):

Telescope Limiting Magnitude = (Visual Limiting Magnitude) – (5*log d) + (5*log D)

where d is the aperture of the human eye in meters and D is the aperture of the telescope in meters. So to give some examples, let's consider a normal sky where the visual limit is around Magnitude 4.5 and using a 3-inch (76 mm) refractor telescope. We'll use 6 mm as an example aperture of the dark-adapted human eye (young eyes can get to 7 mm):

*Telescope Limiting Magnitude = 4.5 – (5*log(0.006)) + (5*log(0.076))* ***= 10.0***

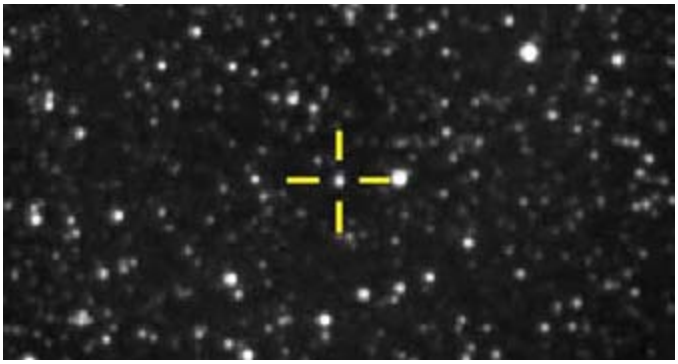
So with a small refractor you can theoretically see down to a limit of about Magnitude 10.0 under these conditions. **Pluto however is at Magnitude 13.8** so this is well out of the range of such a small telescope. Under very good skies with a limiting Magnitude of 7.0 and using a telescope of 10 inches (254 mm) aperture, the limiting magnitude becomes.

*Telescope Limiting Magnitude = 7.0 – (5*log(0.006)) + (5*log(0.254))* ***= 15.1***

This puts Pluto easily into "realistically observable" status. Why not set the goal of observing all the planets, and Pluto – just for fun?

Depending upon the type of telescope you have and if you have astrophotography skill, you may choose to image Pluto instead of working on the drawing recommended here. Either way you'll have to know where to look. It's recommended that you determine (and memorize) the field of view that you will use during your observation. You can utilize the "12DString FOV Calculator" online here: (http://www.12dstring.me.uk/fov.htm) to help figure out the field of view you will see in the eyepiece. You can use a Go-To scope or you can star-hop to the location of Pluto. Either way you must use your telescopes' clock drive to keep the field around the suspected position of Pluto and carefully draw the field of stars. It is critical to spend a lot of time making this drawing because you'll use it over the next two nights to determine which of the faint dots of light is moving and which are static. Fixed = background stars… moving = Pluto!

You will see something like this in your eyepiece:



Amateur astronomer Chris Peterson, 12-inch telescope, Cloudbait Observatory, Guffey, CO

NOT something like this:

Pluto Image from Bill Dirk

Take the Pluto Observing challenge! Try to observe all of the planets and at least one dwarf planet within the next twelve months! Maybe you'll be able to see or image Charon, Pluto's moon!

The Galileoscope™ In Action

By Tom Koonce

When I first heard about the Galileoscope project which seeks to get a 'good' telescope into people's hands for $20, I was, to say the least, a bit dubious about their claims. I wasn't expecting much, but for $20 and an acknowledged addiction to telescopes, I took a chance and ordered one from their website: https://www.galileoscope.org/gs/

The Galileoscope™: An IYA2009 Cornerstone Project

"The Galileoscope™ is a high-quality, low-cost telescope kit developed for the International Year of Astronomy 2009 by a team of leading astronomers, optical engineers, and science educators. No matter where you live, with this easy-to-assemble, 50-mm (2-inch) diameter, 25- to 50-power achromatic refractor, you can see the celestial wonders that Galileo Galilei first glimpsed 400 years ago and that still delight stargazers today. These include lunar craters and mountains, four moons circling Jupiter, the phases of Venus, Saturn's rings, and countless stars invisible to the unaided eye. The Galileoscope costs just US$20 each plus shipping for 1 to 99 units."

"Production and distribution are managed by Galileoscope, LLC, a new company established by the Galileoscope project team with the express purpose of ensuring delivery of the best possible product at the lowest possible price."

Sounds great right? But we all know that "talk is cheap." Well, I am now a believer in this product! I ordered my Galileoscope in early March and didn't receive delivery until mid July. But as I said, I wasn't expecting much for my $20, and the delay turned out to be caused by the sheer number of orders they had.

The telescope arrived in kit form, and thanks to outstanding online directions, it only took 30 minutes from the box to mounting the completed two inch refractor, with two 1 ¼ inch eyepieces being mounted onto my existing photo tripod! It went together easily and probably would for ages 8 and up with adult supervision and for ages 12 and up, building it by themselves. Also, despite the name, the telescope is NOT a model of Galileo's telescope. He would have loved to have an instrument of this quality and capability!

You have to supply your own mount for the scope, but the scope has a standard tripod mount thread on it and the instructions describe how to make a poor-man's cardboard box mount that would work fine. I mounted mine on an inexpensive photo tripod I already had.

The two inch, two element objective lens produces well color-corrected imagery of the Moon and Venus, and the eyepieces produce 18X and 25X images when used individually or by combing these into a Barlow arrangement, you can get up to 50X. I have left it at 25X. First light for the scope was a daylight terrestrial object, the top of a power pole located 1 mile from my house that I frequently use to sight in telescopes and finder scopes. I'm glad I did this during the day because I was able to get familiar with the drawtube focusing of the Galileoscope and get focus set close to infinity before I used it later that night. The daylight images of the mountains we very sharp, but I was trying to not be too anxious in case the night-time views were less spectacular. The first object I looked at later in the evening was the gibbous Moon. Wow! It was tack sharp and I could see all details which I wasn't expecting to see for a $15 dollar telescope. I could also see subtle shade differences and crater details that made me smile. I remembered the views through my very first Tasco two inch refractor with its "75X Zoom" eyepiece that had to cost $50 in the 1960's. You probably had similar experiences with fuzzy imagery and chromatic aberration that made looking at the Moon poorly surreal experience. The Galileoscope is a breath of fresh air.

What can be seen? After studying the Moon with both eyepieces, I decided I liked the 25X view better, made sure the focus was still sharp before I pointed it at Jupiter, about thirty degrees above the eastern horizon. The very first thing I noticed about Jupiter were the four sharply focused moons, one just emerging from behind the planet. I guess I wasn't expecting to even see the Moons very well, not the two primary and one set of secondary bands on the planet. But there they were! I can imagine the inspiration that the Galileoscope will provide youngsters around the world. I observed the beautiful gold and blue double star Albireo at the head of Cygnus next. Great color, nice view. The globular cluster M13 was a nice fuzz ball and I could tell it was a globular and not a comet. The next morning I got up at 4:30 am to point the scope at the

(Continued on page 9)

Galileoscope *(Continued from page 8)*

Orion Nebula and was not disappointed. I resolved everything I expected a two inch telescope to reveal, and the contrast was pretty darn good! I had to kneel on the ground while looked nearly overhead at the nice view of the Andromeda Galaxy M31, ($20 folks! This scope is sooo cool!), then I got the entire Pleiades cluster in the field of view. I saved Venus for last, since it is typically a big problem for inexpensive scopes because Venus appears small, white and very bright. I immediately noted two things. I was looking at a gibbous Venus and that I saw an afterimage from internal reflection between the front two elements and a faint afterimage reflection between the two elements of the eyepiece. The front reflection was a bit distracting, but not overwhelmingly so.

The Moon, major planets, the brighter deep sky objects – all for one twenty dollar bill. Better yet, buy one for yourself and in the spirit of the International Year of Astronomy 2009, buy a second scope for just $12.50 to donate to someone around the world who otherwise would never get an opportunity to see the sky in such detail.

Camp Hancock Dark Sky Star Party

September 18-20, 2009

Mail-in Registration only - *Deadline September 11th*

Photo's by Jan Keiski (except, possibly, this one).

With the Pacific NW weather gradually slipping towards winter you can still get another weekend in late September to wind down your viewing season. September 18-20 will the final scheduled RCA outing of the year and OMSI's Camp Hancock with meals and cabins

fits the bill for a great outing for on cool fall weekend. Dark skies, warm cabins, real bathrooms, warm showers, good meals and great friends top off the last outing of the year for RCA. There's also electrical outlets on both Astronomy Hill and the Ridge for those who need power for their scopes, ccds and computers and wireless internet service is also available. Registration for this star party is by mail only as the next RCA general meeting on September 21st is after the outing. Mail In Registration and Payment Deadline is Friday, September 11th. We do expect to get permission again to use the "Dob Valley" with a few scopes which will increase our capacity by a bit. Registration form, lots of information for our outing, including pictures, downloadable Camp

Hancock information, Clarno Fossil bed information, driving maps and instructions, etc. can be found on the RCA website under Star Parties. Join us for the RCA end of the year fling at Camp Hancock.

BOARD MEETING MINUTES

July 6, 2009
OMSI Classroom 1
Margaret Campbell-McCrea

Attending: Jean London, Matt Vartanian, Greg Rohde, Matt Brewster, David Nemo, Sameer Ruiwale, Larry Godsey, Dawn Willard, Ken Hose, Howard Knytych, Margaret Campbell, Jan Kieski.

Board Reports

- Secretary's Report – Margaret Campbell: Quorum (10) met with 12 voting members present. The minutes of the May and June minutes complete.
- Treasurer's Report – Larry Godsey handed out the end-of-year financial statements for 2008-2009; the report shows that we under spent what we budgeted for the year. The report shows that the RCA Operations Fund has $19.219.88 and the RCA Site Fund has $19,466.25 for a total of $38,686.
- VP Programming – Matt Brewster reported that July's meeting is on beginning DSLR imaging, with Pat Hanrahan as the speaker. Feedback on the June Information Fair indicated that it went well, and it was a good idea to have the Swap Meet at the same time.
- VP Observing – Matt Vartanian reported that Trout Lake is the next star party on July 24th.
- VP Community Affairs – Dawn Willard reported that the American Meteorological Society star party went well. The DePaul Alternative School star party also went well, with twelve volunteers showing up to help out. On July 30th there is a Girl Scout Camp star party at Mountaindale off Highway 6. The Cooper Mountain star party will be August 1st. We have logged twenty events for the Night Sky Network so far, among the most in the country.
- Media: Diane Fredlund and Sameer Ruiwale have not been able to connect over the last month. He will ask her to put announcements about our meetings in the newspapers.
- Membership: Ken Hose reported that in June there were 52 renewals, compared to 62 last year and 43 the year before. There were nine new members, compared to eight last year and six the year before. We closed out the year with a total of 342 member families compared to 318 and 316 for the last two years. We took in a total of $1506; $304 of it was via PayPal.
- Sales – Margaret Campbell reported $209 in sales in June.
- New member advisor: Howard Knytych reported that in June we had 15 – 20 new members in the planetarium for the star-hopping techniques talk with himself and Greg Rhode as presenters. The next new members' forum will be in August. Sameer Ruiwale and Margaret Campbell will be the presenters, talking about how to prepare for overnight star parties. Howard expressed thanks to Jim Todd and Sarah Manson for helping out with the planetarium.
- Book Library – Jan Keiski displayed two new purchases for the library.
- Telescope Library – Greg Rohde reported that he completed the purchase of another PST in June. We spent $681.95 on equipment for the telescope library, well within our budget. The new solar telescope will be primarily for use at outreach star parties.
- IDA – Art Morris: no report.
- Magazine Subscriptions – Larry Godsey: Nominal.
- Webmaster – Larry Godsey: Nominal.
- Site Committee – David Nemo: Nominal.
- Youth Director: Jean London circulated materials showing our responses to the survey results we got. She has designed a program for younger children to complete the Sky Puppies observing program and young teens to complete the Universe Sample program. It's designed to be a drop-in program. She'll send out a broadcast message announcing this before the next meeting and also put it on the Forum. We have arranged a space for the children's program in the employee lounge.
- SIGs – Tom Nathe: No report.
- Alcor – Dale Fenske: No report.

(Continued on page 11)

July Board Minutes *(Continued from page 10)*

- OMSI –Jan Keiski reported that Jim Todd says our July and August meetings will be in planetarium. Jim will do a five-minute night sky presentation on the DS3, since Dave Powell will not be available. There are two OMSI star parties coming up, July 18 and August 11.
- Sister Club update – Jan Keiski is co-coordinating a real-time video exchange for the October RCA meeting.

Old Business / Action Items

- White River Star Party: No White River Star Party has been scheduled.
- October meeting live exchange with GAMA: Matt has been informed.
- Mirror making usage video: Nothing has been done.
- Volunteer hours report form to be available on our website: Larry and Dawn are actively working on it.
- Members' only section has been shelved. The Forum is providing the privacy and security that we want.
- Sameer has talked to Peter about Bronson James and will follow up.
- We confirmed that we no longer offer a printed newsletter option on our membership form and on forum. The trifold has also been updated.
- Videos of our speakers in library: Sameer will discuss this with Bruce. We agreed that having them in the library is more secure than having them on the Internet.
- Astronomical League dues have been taken care of.

New Business

- Impromptu star parties at Stub Stewart: The park personnel don't mind that we arrive and set up, but they want some notice. We're willing to do whatever they ask us to do. Matt Vartanian is going to work out the understanding with Stub Stewart about this (who to call, etc).
- Putting reflecting tape on parking bumpers at Stub Stewart: Greg Rohde has found a tape that would work and estimates the cost at $180. Matt Brewster may be able to get a discount from a contractor supplier. Greg Rohde moved and Howard Knytych seconded this expenditure. Motion carried.
- Member presentations for general club meetings: We discussed several ideas for topics that club members could present at monthly meetings: batteries and solar energy; documenting for observing programs; research possibilities for amateur astronomers; eclipse report from Jim Todd; international observing and club connections. Margaret volunteered to present at the August meeting on making written records of observations. She will find a co-presenter who is good at drawing observations.
- Sound system for meetings: Matt Brewster asked that Jim Todd or someone else be there at 7:15 to do a sound check so we don't have the technical problems we've had in the past, or train one of our members to do the work.

The meeting adjourned at 8:49 p.m.

To Do:

1. Sameer will contact Diane Fredlund about publicity for RCA events and meetings; Will also follow-up with Bronson James; discuss putting videos of our speakers in the RCA library with Bruce.
2. Greg Rohde will work with Tom Nathe on making a short training video on how to use the mirror-making machine.
3. Larry Godsey and Dawn Willard will complete the form on the website for logging volunteer hours.
4. Matt Vartanian will confirm with Stub Stewart how they want to be informed if someone goes out there for an informal star party.
5. Matt Brewster will search for a reflecting tape that will lower cost than the tape that Greg found.

(Continued on page 12)

July Board Minutes *(Continued from page 11)*

- Greg Rohde will contact Don Coates at Stub Stewart about putting the tape on the parking bumpers.
- Margaret will search for a good artist to be a co-presented in August about taking good observing notes.

Telescope Workshop

When: Saturday, September 5th, 10:00 AM - 3:00 PM

Place: Technical Marine Service, Inc.
6040 N. Cutter Circle on Swan Island

For more information contact:

Director: John DeLacy johncdelacy@comcast.net

Assistant: Don Peckham don@dbpeckham.com

Astro-Imaging Special Interest Group

The "AI-SIG" is about advancing the skills of beginner, intermediate and advanced astro-imagers. We rely on the skills of our members to bring each other along as we image the beautiful night sky and its many wonders. Whether you use a CCD, DSLR, point-and-shoot or film camera, members of this group can help you achieve better images with less effort and frustrations. Please join us as we learn together to produce "stellar" images!

Next Meeting: Monday, September 14th, 2009, 6:30pm
Beaverton Public Library
In Meeting Room B
12375 SW 5th St, Beaverton

ASTROPHYSICS / COSMOLOGY SIG

Date/Time: Wednesday, September 23rd, 7 PM.

Topic: "Shapes of Galaxies"

Presented by: Jim White

Place: Linus Pauling Complex,
3945 S.E. Hawthorne St., Portland.

Email: cosmology-sig@rosecityastronomers.org

www.rosecityastronomers.org/sigs/cosmology.htm

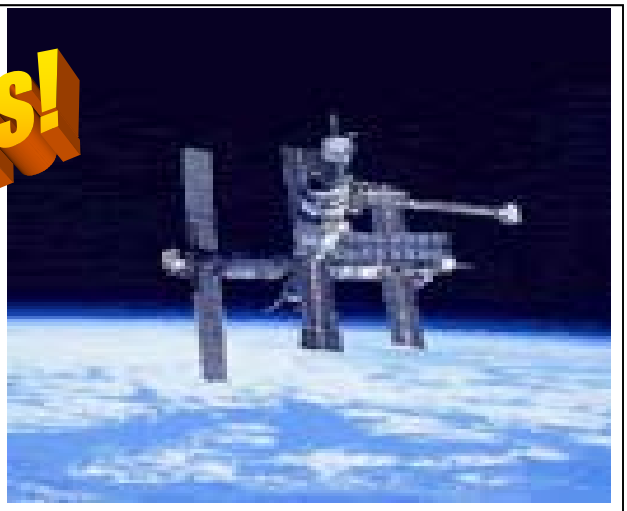
Science Special Interest Group (SCI-SIG)

Next meeting is September 5th at 3pm. Following the Telescope Workshop at Technical Marine Services.
This group is for people who would like to advance their skills in astronomy beyond casual observing. Various projects that some group members are involved in include; variable and double star observing, occultations, photometry and astrometry. A science background is not required, however a curious mind does help.

Location: Technical Marine Service, Inc
6040 N. Cutter Circle on Swan Island

http://www.rosecityastronomers.org/sigs/science.htm

Tom Nathe sigs@rosecityastronomers.org



Howard Knytych
Galaxy Groups and Clusters Certificate # 19

Marcello Napolitano
Earth Orbiting Satellite Certificate #22

For more information visit:
http://www.astroleague.org/observing.html

September 2009

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			

September 5	Saturday	Telescope Workshop	Swan Island	10am-3pm
September 5	Saturday	Science SIG	Swan Island	3pm
September 11	Friday	Downtowner's Luncheon	Kell's	Noon
September 12	Saturday	OMSI Star Party	Stub Stewart & Rooster Rock S. P.	
September 14	Monday	Astro Imaging SIG	Beaverton Public Library	6:30pm
September 14	Monday	RCA Board Meeting	OMSI Classroom 1	7pm
September 18-20	Friday-Sunday	RCA Star Party	Camp Hancock	
September 21	**Monday**	**General Meeting**	**OMSI Planetarium**	**7pm**
September 23	Wednesday	Cosmology SIG	Linus Pauling Complex	7pm

October 2009

October 2	Friday	Downtowner's Luncheon	Kell's	Noon
October 3	Saturday	Telescope Workshop	Swan Island	10am-3pm
October 3	Saturday	Science SIG	Swan Island	3pm
October 5	Monday	RCA Board Meeting	OMSI Classroom 2	7pm
October 12	Monday	Astro Imaging SIG	Beaverton Public Library	6:30pm
October 19	**Monday**	**General Meeting**	**OMSI Planetarium**	**7pm**
October 21	Wednesday	Cosmology SIG	Linus Pauling Complex	7pm
October 31	Saturday	Telescope Workshop	Swan Island	10am-3pm
October 31	Saturday	Science SIG	Swan Island	3pm

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.rosecityastronomers.org).

http://www.rosecityastronomers.org

Rose City Astronomers
Oregon Museum of Science and Industry
1945 SE Water Avenue
Portland, Oregon 97214-3356

The
Rosette Gazette

Volume 21, Issue 10 Newsletter of the Rose City Astronomers October, 2009

RCA OCTOBER 19 GENERAL MEETING
Greg Cermak Presents
"Hubble: Back in Business and Better Than Ever"

It was a mission to once more push the boundaries of how deep in space and far back in time humanity can see. It was a flight to again upgrade what already may be the most significant satellite ever launched. And, for the space shuttle, it was a final visit to a dear, old friend.

The STS-125 mission returned the space shuttle to the Hubble Space Telescope for one last visit before the shuttle fleet retires in 2010. Over 11 days and five spacewalks, the shuttle Atlantis' crew made repairs and upgrades to the telescope, leaving it better than ever and ready for at least five more years of research.

Greg Cermak is a software engineer and technical trainer. He is a Solar System Ambassador for the NASA Jet Propulsion Laboratory (JPL) and teaches Astrobiology at Washington State University, Vancouver. His interests include technology, reading, history, and bicycling. He is a frequent speaker at school, public, and industry events.

Image credits: NASA, ESA, and the Hubble SM4 ERO Team.
For more information vist:http://hubblesite.org/newscenter/archive/releases/2009/25/

All are Welcome! Monday October 19
Social Gathering: 7 pm. Meeting Begins: 7:30 pm.
Location: OMSI Auditorium

In This Issue:

RCA is a member of the Astronomical League.
http://www.astroleague.org

Full Moon	Last Quarter Moon	New Moon	First Quarter Moon
October 3	October 11	October 17	October 25

CLUB OFFICERS

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Past President	Carol Huston	pastprez@rosecityastronomers.org
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VP Observing/Star Parties	Matt Vartanian	observing@rosecityastronomers.org
VP Community Affairs	Dawn Willard	community@rosecityastronomers.org
VP Communications	Matt Brewster	communications@rosecityastronomers.org
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OMSI Liaison	Jan Keiski	omsi@rosecityastronomers.org
Magazines Director	Larry Godsey	magazines@rosecityastronomers.org
SIG Director		sigs@rosecityastronomers.org
Youth Programs Director	Jeannie London	youth@rosecityastronomers.org

RCA MAGAZINE SUBSCRIPTIONS

One of the benefits of RCA Membership is a reduced rate subscription to Sky & Telescope and Astronomy magazines. The RCA member rate for Sky & Telescope Magazine is $32.95 for one year or $65.95 for two years. The RCA member rate for Astronomy magazine is $34 for one year or $60 for two years. For more information go to the RCA web site index and click on any of the links for magazines. Larry Godsey, Treasurer, 503-675-5217, will be taking renewals and new subscriptions at the Magazine Table before General Meetings. Please make checks out to "RCA" and allow two months for your subscription to be renewed.

RCA LIBRARY

The Rose City Astronomers maintains a comprehensive club library of astronomy related articles, books, CDs 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.

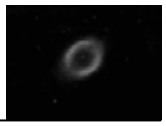
The RCA library is constantly growing through many donations and the purchase of new materials. A listing of library materials (PDF format) can be found at the library web page:

http://www.rosecityastronomers.org/library.htm

Jan Keiski <library@rosecityastronomers.org>
503-539-4566

THE OBSERVER'S CORNER

Howard Banich



Cassiopeia A

There's an article about little known and seldom observed supernova remnants (SNR's) in issue 63 of Amateur Astronomy (pages 17–19) that caught my attention before the OSP this year. It's the fourth article in a series on the subject written by William Gates. Bill is a terrific observer but what really caught my attention was his report that he was able to observe a shard of the Cassiopeia A SNR as an relatively easy object in his 9.25 inch SCT equipped with an OIII filter. Wow!

I've always had the impression that Cas A was essentially invisible at optical wavelengths to all but the largest optical telescopes and that only radio and infrared telescopes could get a good image of it. Checking Wikipedia I found a typical quote to that effect:

"Cassiopeia A (Cas A) *is a supernova remnant in the constellation Cassiopeia and the brightest astronomical radio source in the sky… Despite its radio brilliance, however, it is extremely faint optically, and is only visible on long-exposure photographs."*
http://en.wikipedia.org/wiki/Cassiopeia_A

So the fact that Bill could see part of it with a 9.25 inch scope blew my mind, and Cas A instantly became my primary observing target for OSP this year.

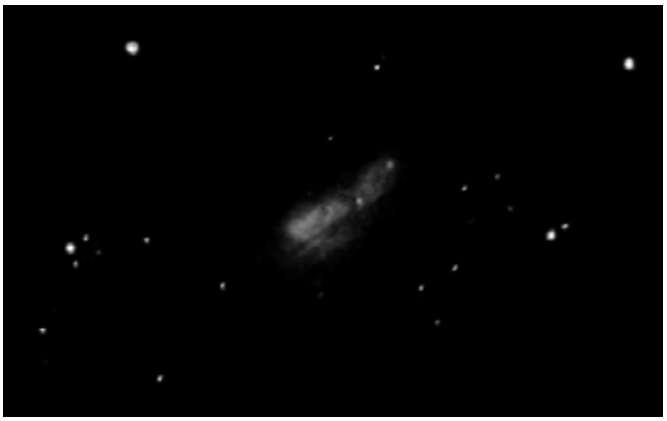
Even though I didn't doubt Bill's observation, the skeptical part of my brain kept wondering how such a think was possible – if it could be seen in such a modest size scope why wasn't the visibility of Cas A more well known? Perhaps no one else thought to check it out? I don't know, but I was determined to have a look for myself to see what was really visible.

I plotted where it should be on my Sky Atlas 2000 chart but then found that Cas A was already plotted in Uranometria. I also checked MegaStar but it's not listed under any of its designations (3C 461 in the *Third Cambridge Catalogue of Radio Sources* and G111.7-2.1 in the *Green Catalog of Supernova Remnants*.) but I printed a chart of the area anyway. Cas A is fairly close to the bright open cluster M52 and the Bubble Nebula, NGC 7635, so it looked to be a pretty easy star hop to the proper location.

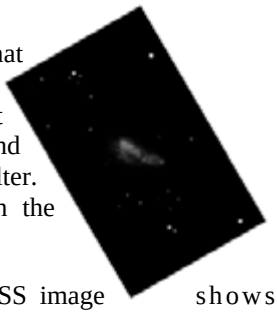
Around midnight on August 20th, with Cassiopeia approaching the zenith I pointed my scope at M52. I quickly found NGC 7635 and spun the OIII filter into place and was surprised at how excited I was - would I really see Cas A? One more look at Uranometria to confirm my star hop and I pushed off…

It was immediately obvious at 105x and the OIII filter – and I had chills literally run up my spine. I moved the filter out and Cas A was nearly as obvious without it, and in fact it was more obvious than many NGC objects I've seen. How is it this thing didn't end up with a NGC or IC number? Sure, I was using my 28 inch scope but remember that William Gates saw it with his 9.25 SCT and called it a pretty easy observation with an OIII filter. That implies that most everyone could have seen Cas A from the OSP.

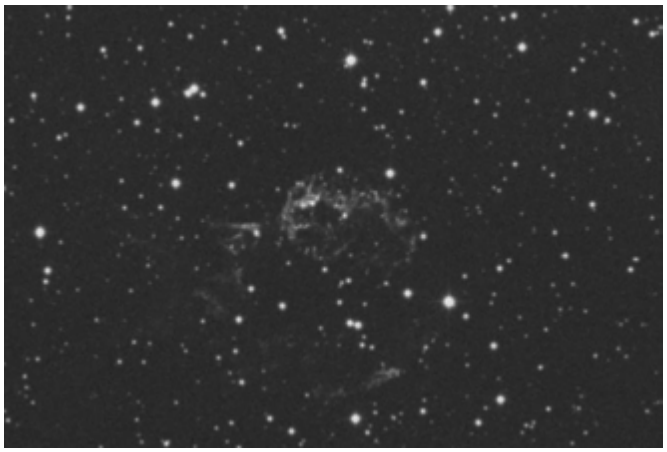
My sketch shows what I saw, which is two medium size and



somewhat elongated nebulae that touch each other with hints of filamentary structure throughout. It looked equally good at 253X and 408x with and without the OIII filter. The UHC filter gave pretty much the same view but showed more stars.



Comparing my sketch with the DSS image shows



that the orientations are about 70 degrees off, and because the red filter DSS image shows stars as different brightness's than I saw them it makes matching the two images a little tricky.

(Continued on page 4)

The Observer's Corner *(Continued from page 3)*

Look on the left center of my sketch for the triple star and then look at the DSS image for the same triple star – only it looks like an equal brightness double with a fainter third companion in the upper left center of the photo. Or look at the small, rotated version of my sketch to the right that matches the orientation of the DSS image.

It looks like I didn't draw Cas A in the correct orientation to the field stars though, but that might not be the case – the two brightest areas shown in the DSS image have approximately the same angle to each other. I'll check this next time I observe.

I also saw the smaller, fainter portion on the left in the DSS image as the larger and brighter of the two. That was true with and without filters. Despite my best efforts I didn't detect any other parts of the Cas A bubble.

Like most things seen through a scope it wasn't all that compelling a sight based solely on what it looked like. Knowing that it's part of the expanding debris shell of the second most recent Milky Way supernova (G1.9+0.3A in Sagittarius is the youngest SNR in the Milky Way at only about 140 years old, while Cas A is about 329 to 342 years old) and the brightest radio source in the sky outside of the solar system made it one of the most memorable sights I've ever seen.

No doubt that's because I thought it was an exotic radio object forever out of reach and I suspect few people have seen it for the same reason. However, a quick search through DSS images bought up the view above. My experience has been that if an object shows up well in a DSS image it can often be seen visually.

The HST image (below left) shows more optical detail than the DSS image of course, and the composite of the Hubble with images from Chandra in X-rays and Spitzer in infrared (on the right) fills out the complete shell of the expanding SNR.

There's a cool time lapse video of eight years of Chandra images posted on YouTube that wonderfully shows the expansion of the SNR.

http://www.youtube.com/watch?v=VunToqmW9so

Back at OSP, the sky darkness and transparency at the time of my observation was only so-so by OSP standards (21.48 SQM) so I'll bet there's more to see in Cas A. Actually, I noticed the transparency and sky darkness were sub par all summer starting at the Golden State Star Party in June.

Those who went after the OSP observing list "Satan's Sampler" know how impossibly faint the two Palomar globulars were to see and I noticed a general decrease in low level detail in many objects, particularly M33.

My guess is that the volcanic eruptions this past spring of Mt. Redoubt and Sarychev Peak added a significant amount of aerosols and volcanic dust to the upper atmosphere like Mt. Pinatubo did in 1991. If that's the case we may have reduced transparency until next year. The transparency was made worse at the OSP by other particulates in the atmosphere as shown by the remarkably increased sky glow from Prineville, Bend and Redmond on the western horizon.

No matter, Cas A will still be there when the skies clear out. It's circumpolar and visible all year with it being highest in the evening sky August through December. October is prime time with Cassiopeia near the zenith before midnight.

If you star hop, don't forget to linger on M52 and the Bubble Nebula for awhile, both are worth some eyepiece time. The bubble responds well to the OIII and UHC filters but I find the main arc of the bubble to be more subtle than Cas A.

The coordinates of Cas A for those with goto scopes are Right Ascension 23h 23m 26s, Declination +58° 48'.

STELLAFANE
By Greg Marshall

On Breezy Hill west of Springfield, Vermont the tradition of the star party is both ancient and vigorous in the form of "Stellafane", the oldest organized star party in the country. The event is operated by the Springfield Telescope Makers, an equally old and storied club. As the name might suggest, the club and star party are heavily oriented toward the making and testing of telescopes, although there is certainly a common enjoyment of observing and even a handful of astrophotographers.

One of several observing fields, with observatory.

Vermont is geographically far from Oregon (about 3000 miles), but not so different. I grew up in the Burlington, Vermont area and think of Oregon as "Vermont on steroids" - both have lots of rivers, trees and mountains, they're all just bigger in Oregon. Unfortunately, I didn't get into astronomy until well after I moved to the west coast. Another connection I have to Stellafane is that it largely exists because of the prevalence of mechanical engineers and machinists in the Springfield area beginning in the late 19th century and continuing into the late 20th century, one of whom was my father. He worked at Jones and Lamson, a leading manufacturer of precision machining equipment, from 1940 to 1947, starting as a work co-op student. In 1920 the president of J&L was James Hartness, who also served as Governor of Vermont from 1921-22. Hartness had the idea of testing the accuracy of machined threads by optically comparing them to a known good sample. He hired explorer and inventor Russell Porter to work on the idea of optical comparison. Both men were interested in astronomy and Hartness was fully supportive of Porter's idea of starting a club to explore and promote the development of amateur-made telescopes.

At that time only the very wealthy could purchase a telescope and few people possessed either the knowledge or skills to make their own. Porter could provide the knowledge and the employees of J&L definitely had the skills (and access to the precision tools) to make it possible. In 1920 15 employees of J&L, including one woman, signed up to learn how to make telescopes and in 1923 the Springfield Telescope Makers held their first meeting.

In 1925 Albert Ingalls of Scientific American magazine visited Springfield and wrote 2 articles on telescope making with input from Porter. The magazine was overwhelmed by the letters and inquiries that followed. For the next year the magazine was dominated by astronomy and telescope articles.

In 1926 the club held the first Stellafane convention, becoming the first such event ever devoted to amateur telescope making. In fact, with the arguable exception of the Riverside Telescope Makers Conference, Stellafane is still the only star party in the country devoted to ATM. The name is a contraction of "stellar fane", Latin for "shrine to the stars". The convention was not held some years during World War II, but has been held every year since 1954. The 2009 Stellafane convention is the 74th Typical attendance is about 1,000 people, although it has been down somewhat this year and last, presumably because of economic conditions and the high cost of transportation.

The history of Stellafane probably has some influence on the personality of the event, but in comparison to our Oregon Star Party the difference is more due to the focus on ATM and the geography. The Springfield club owns the 70 acre site, which has been developed with a lot of facilities, including a club house, bunk house, several observatories and a large pavilion where technical talks are presented. The original 2 acre site, where the clubhouse is located, was donated to the club by Porter. This was expanded to 30 acres when the club purchased adjacent land and another 40 acres were donated by club member Hardy Beardsley.

(Continued on page 6)

John (Jack) David Heinzmann's SCT is modified for use from a wheelchair. The eyepiece is "polar aligned" along with the RA axis, so you can point the scope anywhere without changing the observer's position.

Stellafane *(Continued from page 5)*

The site is also unlike OSP in that it is basically in the woods with several large openings for observing fields. People camp close to the trees, leaving the fields largely free of vehicles. The site is only a few miles from town, so many people actually stay in hotels rather than camping at the site. One observing field, near the clubhouse, is closed to night traffic so as not to disturb late night observers and astrophotographers. In the other areas they try to keep traffic away from the observing fields, but it is less than ideal for serious observers. I was there only Saturday, the last night of the event, and there were a lot of "civilians" on the field, so there was even less attention paid to light etiquette.

Because the club promotes amateur telescope making, commercial telescope vendors are banned, although there is an active swap meet for used equipment.

Naturally, a big part of Stellafane is the competition for telescope design and construction. There are two competitions, mechanical and optical. Gerry Logan of Lakewood, CA dominated the competition this year, taking 1st place in craftsmanship, mechanical design, and optical design (compound optics category) for his 6" f/15 Maksutov and equatorial mount. He was also received an award for innovative component design for his eyepiece adapter and counterweight. Douglas Arion of Pleasant Prairie, WI also did very well with his 10" f/6.1 newtonian and ball mount, taking 2nd place in optical design, 3rd in craftsmanship and 4th in mechanical design. He also received received an innovative component award for his single-screw diagonal adjustment. And Steven Pellarin of LaSalle, Ontario took 2nd place in both mechanical design and craftsmanship for his beautiful 28" f/3.164 dobsonian (see photo). That's a very fast mirror – I wish I had gotten a look through this scope at night.

Steven Pellarin's 28" f/3.164 dob took 2nd place in mechanical design.

Jay Scheuerle's 4.5" ball mount dob costs about $90 to make.

I saw a lot of interesting and unique telescope designs, ranging from very small and inexpensive (less than $100 of materials) to 28" truss Dobsonians with beautifully machined metal parts. But the one that most intrigued me was not one of the latest designs, but a very old one, the Porter Turret Telescope, which is located near the clubhouse. There is a similar telescope at the Hartness House (in Springfield), but that one is a refractor, which makes it somewhat more ordinary. In both cases the idea is to keep the observer inside a building while the telescope is outside. A half dome turns around the RA axis on a turret. For the refractor design the telescope tube then swivels in declination and a diagonal brings the image into the dome. In the Porter reflecting telescope the primary mirror is held at the far end of an open truss system and it is sometimes below the pivot point. The dome is built on a small hillside with a trench cut on the low side to provide clearance for the mirror assembly. But the primary mirror does not point toward the target as it does in a conventional Newtonian reflector. Instead, a diagonal flat mirror (with minor axis of the same size as the primary) is placed at the center of the truss, just outside the dome. This mirror can be rotated 360 degrees from inside the dome and has a hole in the center to let the focused image into the dome. That is, the diagonal mirror rotates in the declination axis and the whole assembly rotates in right ascension. Aside from the hole in the diagonal the path is unobstructed except

(Continued on page 7)

when the flat mirror is pointed at one of the trusses. I estimate that the obstruction in this case is about 25%, but in many cases it can be completely avoided by flipping to the other side of the dome in RA and 180 degrees in DEC. Since the truss has 3 beams at 120 degree separation, a target that is obstructed on one side is guaranteed to be unobstructed on the other.

The Porter Turret Telescope. The whole truss system rotates in RA. The diagonal mirror on the edge of the dome can be rotated from inside and provides the DEC adjustment. The focused image passes through a hole in the center of the diagonal to inside the dome.

In addition to being an avid astronomer and inventor, Porter was an adventurer and artist. On one of his expeditions he was stranded in the arctic region for nearly two years and he often expressed an aversion to cold weather thereafter, so the turret telescope provided an ideal solution.

Getting back to Stellafane, the keynote speaker at the 2009 convention was astronaut Alan Bean, who gave a very interesting presentation on the lunar missions and his later transition from astronaut to artist. A common theme in his paintings is to depict things that he and other astronauts wished they had done on the moon, but didn't. For example, one of his colleagues said that he wished he had scratched his daughter's name in the lunar soil, so Bean painted the scene with the name clearly visible.

One of the nicest moments in my visit was when Miranda Walsh, a young lady who looked to be about 9 years old, was presented with a small, handmade wooden telescope autographed by Alan Bean. The scope was the prize for the youth horseshoe competition and she also participated in its assembly.

Kevin McCarthy's 12.5" travel scope is half a carry-on size, so take 2! It took 3rd place in mechanical design

Many other prizes were awarded for such things as the person who came the greatest distance to attend Stellafane (I wasn't even close – the winner was from Germany). Another prize went to the oldest attendee, who was 90 years old and also won the prize for the longest record of attendance, having been at every convention since 1938!

Before heading home on Sunday I stopped at the Hartness-Porter Museum of Amateur Telescope Making. The museum is located in (more precisely, under) Hartness House, the former home of James Hartness, now operated as an inn. The museum is open to the public only during the Stellafane convention. Hartness constructed a tunnel from the basement of his home out to his observatory, which is built around a turret telescope, like the one built by Porter, except that this one is a refractor. Since the turret design places the observer inside the structure, one need never be exposed to the elements to practice astronomy with this setup. Having survived 35 years of long, cold winters in Vermont, I can definitely appreciate the merits of this design.

Thinking back on my trip, I conclude that Stellafane is certainly not the best star party for serious observing or imaging, it is well worth a visit for all the other reasons we go to star parties. If you are interested in telescope making, you should make an effort to attend at least once. And if you are also interested in the history of amateur astronomy and telescope making, you should stop reading this right now and start making plans to be at Stellafane 2010.

Thanks to Ken Slater, the webmaster for the Springfield Telescope Makers and Bert Willard, club historian, for their insight and knowledge of STM and Stellafane.

This month's theme of the International Year of Astronomy is "What is the Fate of the Universe?"

Your Own Time Machine - Your Telescope

By Tom Koonce

Look up in the sky this evening at the Moon. In the time it takes to read

> "The Moon light took a second and a half to reach my eyes, "

It did! The light from our Sun takes about eight minutes to reach us. Farther out in space, Jupiter is high in the evening sky during October. Its light takes approximately forty to fifty minutes to travel the distance to Earth. Can you remember what you were doing five hours ago? Perhaps you were at school or at work. Light that left distant Pluto at that moment five hours ago and is just arriving here. This means that when we look at Pluto, we are seeing it as it looked five hours earlier. In the meantime, an asteroid could be crashing into it right now, erupting into a great plume, but we'd have no way of knowing this yet until the light arrives showing us the scene.

All of the light reflected from objects within our Solar System arrives at Earth in a matter of hours. At the speed of light, this demonstrates the vast distance involved between the solar system objects. When we look up into the night sky and see the stars of our own Milky Way Galaxy, the light has traveled years or even thousands of years to get to our eyes. Some of the light you see started its journey the day you were born and has been on its way ever since - every second of your life the light has been moving 186,000 miles closer. The night sky has objects whose light left them when the Declaration of Independence was signed, the fall of Rome, or when the capstone was set in place at the top of the Great Pyramid… Back farther and farther in time.

Andromeda Galaxy – Approx. 2.54 million ly away

With our telescopes pointed outside of the Milky Way Galaxy, we can see the light of much more distant objects in the Universe. The light that we see from the Andromeda galaxy shows it as it was about two and a half million years ago, long before modern humans walked our planet. Some common amateur astronomy 'deep-sky' objects are so distant that the light has been on its way to us since the time of the dinosaurs.

When you think about it, the telescope is a type of time machine, showing us objects as they looked, not as they are at this instant in time, but as they looked at the moment the light left them.

Before your next public star party, it could be a lot of fun to make up a table of objects' distances in units of light years (ly). Then you can ask a young stargazer to tell you their age and show them the object whose light left it in the year of their birth. Below is a sample of the table available complete (ages 0 to 101) at: http://www.pbs.org/seeinginthedark/explore-the-sky/birthday-stars.html

Print the distance/age table out on paper along with your club's contact and membership information (or application) and a calendar of your club's events and you'll have a great handout that people will enjoy and get them interested in astronomy.

Your Age	Star	Distance (light years)	Magnitude	Comments
8	*Wolf 359*	7.8	13.4	Very faint dwarf in Leo, the Lion; visible with a medium-sized telescope
9	Sirius	8.6	-1.4	Brightest star in Earth's skies; can cast shadows on dark, clear nights
10	Epsilon Eri	10.5	3.7	Less luminous than the Sun today but may resemble the young Sun (closest star known to have a planet)
11	Procyon	11.4	0.4	More luminous than the Sun and about twice as big; in Canis Minor, near Sirius
12	Tau Ceti	11.9	3.5	First star to be examined by radio astronomers searching for signals from intelligent life; they heard nothing

BOARD MEETING MINUTES

August 3, 2009
OMSI Classroom 1
Margaret Campbell-McCrea

Jean London, Greg Rohde, Matt Brewster, David Nemo, Sameer Ruiwale, Larry Godsey, Dawn Willard, Ken Hose, Margaret Campbell, Jan Keiski, Dale Fenske; Peter Abrahams.

The meeting was called to order at 7:15 p.m.

Board Reports

- Secretary's Report – Margaret Campbell reported that a quorum (10) was met with 11 voting members present.
- Treasurer's Report – Larry Godsey handed out the P & L and Balance Sheet for our first month of the new fiscal year. The RCA current assets are $16,707.14 and the Site Fund current assets are $19,508.36, for a total of $36,215.50. There was some discussion of how to handle cost over-runs. The general agreement is that every person who is handling a budget item needs to be aware of costs and if it looks as though there is going to be an over-run to bring it to the Board. Larry Godsey made a motion to increase the telescope budget to $1,200. It was seconded by Greg Rohde and the motion carried. Larry Godsey made a motion to increase the youth group budget to $300. It was seconded by Dale Fenske and the motion carried.
- VP Programming – Matt Brewster reported that Matt Vartanian and Margaret Campbell will make a presentation in August on keeping logbooks of observations. For September, he is working on getting a speaker from the Stardust Mission at the University of Washington. There was general discussion about the length of time that announcements are taking. The general agreement is that Board members should let the chair of the meeting know that they want to make announcements in advance, so he has an idea of what the time frame is, and for the chair of the meeting to be strict about cutting off announcements that go on too long.
- VP Observing – No report. RCA has a star party in Maupin coming up August 14 – 16, and one September 18 – 20 at Camp Hancock. There are also two OMSI star parties coming up, on August 11 and September 12 at Stub Stewart State Park.
- VP Community Affairs – Dawn Willard reported that she hosted two public outreach parties this week at Cooper Mountain. There were eleven volunteers on Thursday and thirteen on Saturday. They had good horizons but it clouded up. Cooper Mountain expressed interest in trying again. About 125 people attended. She will be co-ordinating a star party at Frenchman's Bar on August 15th, at Jackson Bottom wetlands in September, and Cooper Mountain in October. We discussed turning down star parties in locations that do not work for astronomy - - places that are too light, too wet, too many mosquitos, etc. The consensus was that if volunteers are arriving, we should keep going.
- Media - Diane Fredlund no report. Sameer reported that he and Diane had a long conversation at the July meeting and discussed several ways to publicize and promote RCA. For starters, she will put our meeting announcements in the local newspapers. Matt Brewster will send the publicity information to her as well as to Larry Godsey for the website and Larry Deal for the newsletter.
- Membership - Ken Hose reported that there are 208 members. This seems like a drop in membership, but it is renewal time, so 158 members are on the "yet to renew" list. We took in 47 renewals and 9 new members in July, and $1,411 in dues.
- Sales – Margaret Campbell reported $448 in sales in July.
- New member advisor - Howard Knytych has planned Sameer Ruiwale and Margaret Campbell for the August New Member Meeting to discuss preparing for star parties. The new member meetings are being promoted on the website.
- Book Library – Nominal.
- Telescope Library – Greg Rohde reported that Dave Danskey did a terrific job of rebuilding our 12.5" telescope. Sameer will be sending a thank you to him, and Nate Currier and anyone who donated materials, for their good work. Sunriver Nature center donated the Astrosystem secondary dew heater and controller, Morgan Pope donated the ebony star laminate, Chantal Danskey donated the truss tube case, and Greg Babcock gave the club a great deal on the JMI focuser with motofocus.
- IDA – Art Morris had no report. Sameer had a message from Art. Sameer will accept his resignation. We discussed inviting potential candidates to take the position. Sameer will follow up on this matter.
- Magazine Subscriptions – Larry Godsey: Nominal.
- Webmaster – Larry Godsey requested that when Board members change their email address to let

(Continued on page 10)

August Board Minutes *(Continued from page 9)*

him know. Greg Rohde is going to submit information on the updated 12.5" for the website.

- Site Committee – David Nemo: Nominal.
- Youth Director - Jean London reported that we had ten kids at our first session: 5 Star Puppies, 1 Universal Sampler and 1 binocular Messier. She will change the meeting beginning time to 7:00 p.m. at the request of the adult helpers and parents.
- SIGs – Tom Nathe: No report.
- Alcor – Dale Fenske discussed the September roster update with Ken Hose.
- OMSI –Jan Keiski reported that August's meeting will be at the planetarium and Jim Todd will do the night sky report.
- Sister Club update – Jan Keiski still working with Carlos on planning a joint meeting with us in October.

Old Business / Action Items

- Mirror making usage video: The machine is ready for use but needs to be bolted down to the floor. David Nemo volunteered to help make the instructional media. He will work with John DeLacy on this project by making a demo mirror.
- Impromptu star parties at Stub Stewart: Sameer will send an email to Matt Vartanian asking what has been done on this issue. We need to tell our members that if they go up there, they need to let the park know in advance.
- Tape on bumpers: Greg purchased the tape, under budget. He will talk with the park staff about applying it.

New Business / Action Items

- Nominating committee for next year's election: According to our bylaws, we have to make the announcement at the August meeting, request nominations in September, make nominations in October, and have the election in November. Dale Fenske, Greg Rohde and Margaret Campbell volunteered for the Nominating Committee. We have to find three non-Board members to be in the committee.
- Laser pointer issues: We need to send a Forum message to our membership about pointing green laser pointers at airplanes, and put it in the newsletter and on website too. Sameer will do this. We also need to make this announcement at public star parties.
- Outreach volunteer discussion: We had a general question about needing to have a sense of who our volunteers are and who shows up at events. Dawn is already asking volunteers to sign in so we know who's there. Kids events will be posted on the Forum but information about where, when and how to get there will be sent only to people who are going. We also discussed giving certificates to our star party volunteers at the year-end banquet.
- Greg will send a message that the telescope library is closed in August because he won't be there to receive or lend them out.

Meeting adjourned at 8:49 p.m.

To Do:

1. Matt Brewster will send meeting publicity to Diane Fredlund as well as to the usual outlets.
2. Sameer Ruiwale will (1) ask about the lost video recorder at the next meeting, (b) follow up on the IDA liaison position, (c) contact Tom Nathe, (d) contact Matt Vartanian about the issue of impromptu star parties at Stub Stewart, (e) put an announcement on the website about notifying the park rangers if RCA members have an impromptu star party at Stub Stewart, (f) put a warning about pointing green lasers at airplanes on the Forum, website and newsletter, (g)
3. Greg Rohde will submit an article for the website on the refurbished 12.5" library scope; he will bolt the mirror making machine to the table at TMS; he will apply the reflecting tape at Stub Stewart; he will send out a message that the telescope library is closed in August.
4. Dale Fenske will submit an updated roster to ALCOR for the September mailing.
5. David Nemo will work with John DeLacy on making an instructional video on using the mirror-making machine by making a demo mirror.
6. Margaret Campbell will make a broadcast announcement seeking RCA members for the Nominating Committee.
7. Jan Keiski will make an announcement at the general meeting about her lost video recorder.

Telescope Workshop

When: Saturday, October 3rd, 10:00 AM - 3:00 PM

Place: Technical Marine Service, Inc.
6040 N. Cutter Circle on Swan Island

For more information contact:

Director: John DeLacy johncdelacy@comcast.net

Assistant: Don Peckham don@dbpeckham.com

ASTROPHYSICS / COSMOLOGY SIG

Date/Time: Wednesday, October 21st, 7 PM.

Topic: "Fate of the Universe"

Presented by: Howard Knytych

Place: Linus Pauling Complex,
3945 S.E. Hawthorne St., Portland.

Email: cosmology-sig@rosecityastronomers.org

www.rosecityastronomers.org/sigs/cosmology.htm

Astro-Imaging Special Interest Group

The "AI-SIG" is about advancing the skills of beginner, intermediate and advanced astro-imagers. We rely on the skills of our members to bring each other along as we image the beautiful night sky and its many wonders. Whether you use a CCD, DSLR, point-and-shoot or film camera, members of this group can help you achieve better images with less effort and frustrations. Please join us as we learn together to produce "stellar" images!

Next Meeting: Monday, October 12th, 2009, 6:30p will be a field trip to Ken Hose's Observatory. Email:

ai-sig@rosecityastronomers.org for directions & info.

Science Special Interest Group (SCI-SIG)

Next meeting is October 3rd at 3pm. Following the Telescope Workshop at Technical Marine Services.
This group is for people who would like to advance their skills in astronomy beyond casual observing. Various projects that some group members are involved in include; variable and double star observing, occultations, photometry and astrometry. A science background is not required, however a curious mind does help.

Location: Technical Marine Service, Inc
6040 N. Cutter Circle on Swan Island

http://www.rosecityastronomers.org/sigs/science.htm

Tom Nathe sigs@rosecityastronomers.org

Photo by Jan Keiski

RCA 'Downtowner's' Lunch

Join us on the first Friday of each month for lunch at a great downtown restaurant (Holidays and such may push us to the second Friday of some months, check the calendar at http://www.rosecityastronomers.org).

The location is announced on the RCA general forum discussion list at http://www.rosecityastronomers.org/forum under special interest groups. The meeting is normally Kell's Irish Pub at Second and Ash.

Always great conversation and food.

For more information contact: Margaret Campbell at secretary@rosecityastronomers.org

Observing Site Committee

To lead and coordinate efforts of the Rose City Astronomers (RCA) in securing and managing a variety of observing sites for private use by members, and for community outreach and special events organized by the RCA.

Please Check
http://www.rosecityastronomers.org/donate/site.htm
for more information.

Or Contact: David Nemo <sitefund@rosecityastronomers.org>

October 2009

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

October 2	Friday	Downtowner's Luncheon	Kell's	Noon
October 3	Saturday	Telescope Workshop	Swan Island	10am-3pm
October 3	Saturday	Science SIG	Swan Island	3pm
October 5	Monday	RCA Board Meeting	OMSI Classroom 2	7pm
October 12	Monday	Astro Imaging SIG	Beaverton Public Library	6:30pm
October 16-18	Friday-Sunday	Skyview Acres Star Party	Goldendale Washington	
October 19	**Monday**	**General Meeting**	**OMSI Auditorium**	**7pm**
October 21	Wednesday	Cosmology SIG	Linus Pauling Complex	7pm
October 31	Saturday	Telescope Workshop	Swan Island	10am-3pm
October 31	Saturday	Science SIG	Swan Island	3pm

November 2009

November 2	Monday	RCA Board Meeting	OMSI Classroom 1	7pm
November 6	Friday	Downtowner's Luncheon	Kell's	Noon
November 9	Monday	Astro Imaging SIG	Beaverton Public Library	6:30pm
November 16	**Monday**	**General Meeting**	**OMSI Auditorium**	**7pm**
November 18	Wednesday	Cosmology SIG	Linus Pauling Complex	7pm
December 6	Saturday	Telescope Workshop	Swan Island	10am-3pm
December 6	Saturday	Science SIG	Swan Island	3pm

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.rosecityastronomers.org).

http://www.rosecityastronomers.org

Rose City Astronomers
Oregon Museum of Science and Industry
1945 SE Water Avenue
Portland, Oregon 97214-3356

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Rosette Gazette

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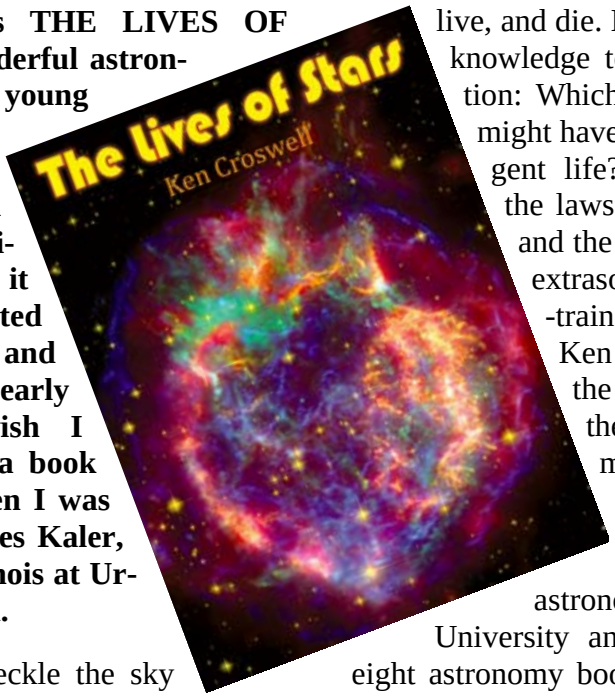
RCA NOVEMBER 16 GENERAL MEETING

KEN CROSWELL PRESENTS

"THE LIVES OF STARS"

"Ken Croswell's THE LIVES OF STARS is a wonderful astronomy book for young people, for anyone, for that matter. Well written, beautifully illustrated, it takes sophisticated modern concepts and makes them clearly accessible. I wish I could have had a book like this one when I was young." Dr. James Kaler, University of Illinois at Urbana-Champaign.



The stars that speckle the sky have long fascinated humanity, but only in the past century have astronomers figured out how stars are born, live, and die. Now we can use this knowledge to address the question: Which stars near the Sun might have planets with intelligent life? Drawing on both the laws of stellar evolution and the latest discoveries of extrasolar planets, Harvard-trained astronomer Dr. Ken Croswell describes the lives of stars and the alien worlds they may support.

Dr. Ken Croswell earned his Ph.D. in astronomy at Harvard University and is the author of eight astronomy books, including Magnificent Universe, Ten Worlds, and The Lives of Stars.

All are Welcome! Monday November 16

Social Gathering: 7 pm. Meeting Begins: 7:30 pm.

Location: OMSI Auditorium

In This Issue:

RCA is a member of the Astronomical League.
http://www.astroleague.org

Full Moon	Last Quarter Moon	New Moon	First Quarter Moon
November 2	November 9	November 16	November 24

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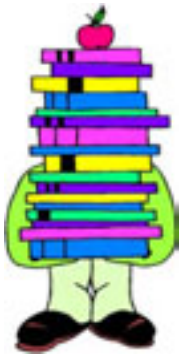
RCA MAGAZINE SUBSCRIPTIONS

One of the benefits of RCA Membership is a reduced rate subscription to Sky & Telescope and Astronomy magazines. The RCA member rate for Sky & Telescope Magazine is $32.95 for one year or $65.95 for two years. The RCA member rate for Astronomy magazine is $34 for one year or $60 for two years. For more information go to the RCA web site index and click on any of the links for magazines. Larry Godsey, Treasurer, 503-675-5217, will be taking renewals and new subscriptions at the Magazine Table before General Meetings. Please make checks out to "RCA" and allow two months for your subscription to be renewed.

RCA LIBRARY



The Rose City Astronomers maintains a comprehensive club library of astronomy related articles, books, CDs 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.

The RCA library is constantly growing through many donations and the purchase of new materials. A listing of library materials (PDF format) can be found at the library web page:

http://www.rosecityastronomers.org/library.htm

Jan Keiski <library@rosecityastronomers.org>
503-539-4566

AUTUMN NIGHTS and DISTANT STARLIGHT

By John W. Siple

THE increasing hours of darkness during the coming fall months offer sky watchers a great opportunity to do some leisurely backyard observing. Summer's rich treasure trove of deep-sky splendors has wheeled into the western sky, while winter's brilliant constellations have yet to rise, lying just below the eastern horizon. Few sights of any kind can compare with sweeping your telescope across the length of the Andromeda Galaxy, peering into the multitude of stars that comprise the Double Cluster in Perseus, or seeing for the first time the distant galaxy group known as Stephan's Quintet.

Autumn's starry night sky, a heavenly canopy filled with myriad points of light, was explored using an observer's dream of astronomical equipment. An Obsession 15-inch f/4.5 reflector of unsurpassed quality, along with a sampling of some of today's finest available oculars, was picked for the visual journey. Obsession Telescopes is an established leader in the "Big Dob" business, producing superb large aperture telescopes for serious astronomical work. From a dark rural site, mirrors of this size can reach stars of the 15th-magnitude or fainter.

Careful selection of four superior grade eyepieces from Tele Vue Optics, based upon sound advice from experienced deep-sky observers, provides unforgettable views of rich stellar groupings and extended extra-galactic nebulae. The short list includes the incomparable 10mm and 13mm Ethos eyepieces (shown at left) with their commanding 100° fields of view, now considered the oculars of choice among amateur and professional astronomers worldwide.

Seeming to defy the laws of optics and to the disbelief of many veteran observers, eyepieces in the Ethos series actually appear to *increase* a telescope's effective aperture by several inches. This unexpected benefit may be the result of the critical use of exotic glass types, a high surface polish on all of the lens surfaces and state-of-the-art multi-coatings. The unprecedented triple-digit apparent field of view also removes the claustrophobic feel of lesser eyepieces, giving a tremendous psychological boost to the telescope user.

A very collectable 2-inch 40mm Wide Field, sold by Tele Vue during the 1980s, and a newer generation 27mm Panoptic round out the foursome. Used by a significant number of serious amateurs and deep-sky hunters who desire a perfect combination of low power and tack sharp imagery, these two astronomical eyepieces boast 65° and 68° apparent fields of view, respectively.

Autumn's chief deep-sky treasure is the Andromeda Galaxy (M31), an island universe that can be found nearly overhead on clear autumn nights. This famous object, the finest representative of its class, is easily spotted by the naked eye as an elongated patch of grayish-white light nestled among the stars of northern Andromeda. Two principal companion systems, the round form of M32 and the oval shape of slightly brighter M110, lie on opposite sides of its behemoth, uneven glow.

A magnificent spectacle in the 15-inch Obsession using Tele Vue's 40mm Wide Field, the massive, almost featureless hazy ellipse of light is dappled with an uncountable number of faint foreground stars. Spread out over 2½° and possessing a high surface brightness, it has an almost three-dimensional aspect. The Andromeda Galaxy's star-studded face, viewed 12.5° from edge-on, spans across the eyepiece field. The two dark strands of obscuring matter on the northwestern side—M31's dust lanes—were readily seen at this same magnification.

A line trending northwest from the star α Trianguli soon leads to a spot occupied by the Pinwheel Galaxy (M33), another island universe and a prominent member of the Local Group of Galaxies. It can be seen with the unaided eye on exceptionally dark nights, thus making it the most distant object visible without optical aid. Seen to best advantage in the 13mm Ethos, this fabulous galaxy is resplendent with crosses, rifts and nebulous condensations. A beautiful, well-defined spiral pattern completes the view.

Scattered throughout Messier 33 are numerous knots including NGC 604, a cloud of hot hydrogen gas and dust particles located just a short distance from the nucleus. At nearly 100 times the size of the Orion Nebula, this nebulous patch is one the largest known areas of star birth. Careful scrutiny through the 15-inch telescope with a 10mm Ethos reveals a curious, mottled glow that contains a surprising amount of internal detail.

One of the most spectacular sights in the heavens is the famous Double Cluster h-χ (NGC 869 and 884) in Perseus. Although both clusters are clearly visible to the unaided eye as condensations in the band of the Milky Way, the revelation of their full beauty requires some form of telescopic aid. Even in bright autumn moonlight, the 15-inch reflector shows a glorious field teeming with hundreds of brilliant, predominately bluish-white stars. The best view of the Double Cluster is at 63x through the 27mm Panoptic, an object that can only be described as "fabulous, wonderful, a celestial icon, and the pinnacle of the autumn night sky."

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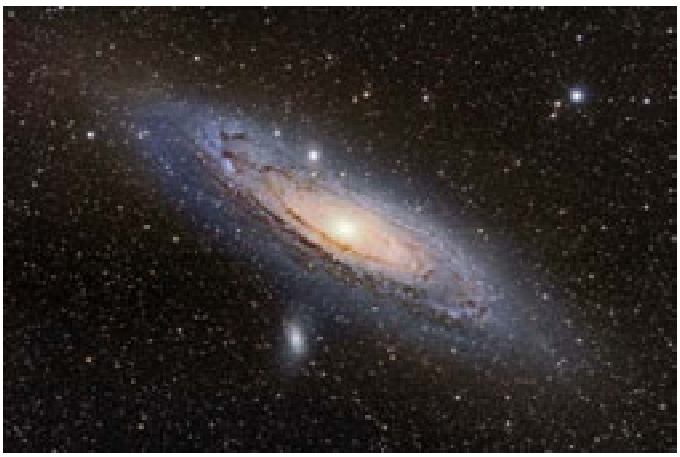
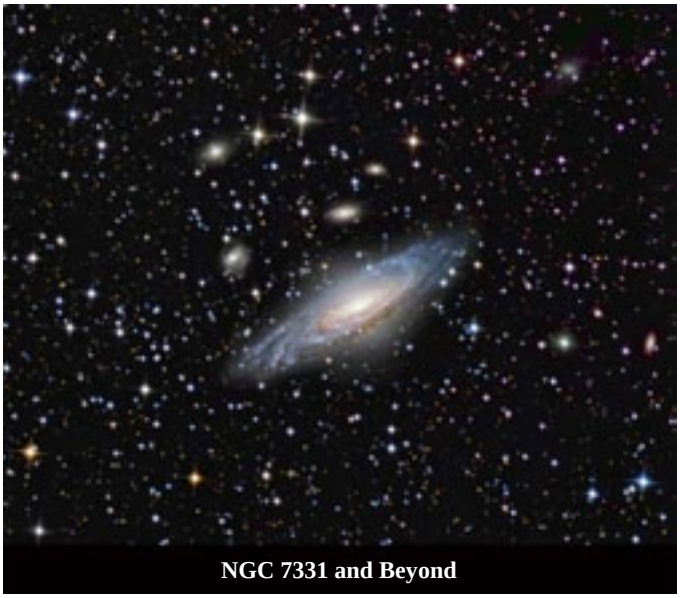


A Takahashi FS-60CB refractor was used by expert astronomer Mark Hellweg to acquire this large scale view of the Andromeda Galaxy.

Ole Nielsen obtained this excellent image of the Pinwheel Galaxy with a Takahashi FS-60C (at f/4.8) and Starlight Xpress SXV-H9 camera.



NGC 7331 and Beyond

NGC 7331 (photo at center left), sometimes referred to as our galaxy's twin, is found in the constellation Pegasus at a distance of 49 million light years. It along with a crown of faint background galaxies are known among observers as the "Deer Lick Group." This special image from Don Goldman, Sierra Remote Observatories, was the featured Astronomy Picture of the Day on July 12, 2008. Cassiopeia's NGC 7789 is a very rich and compressed open cluster found 6,000 light years away. Large telescopes show an intricate mass of hundreds of 10th-magnitude and fainter stars arranged in loops and parallel rows, similar to that displayed in the image above by astronomer Dimitris Kolovos of Athens, Greece.

The famous Double Cluster in Perseus is a pair of 5th-magnitude open clusters visible to the unaided eye as a hazy patch embedded in the Milky Way. To the right is NGC 884 (Chi Persei), while richer and more impressive NGC 869 (h Persei) is shown at left. These two star clusters are physically bound, forming a true pair for observers. Member h Persei lies at a distance of 6,800 light years, while its companion Chi is only slightly further away at 7,600 light years. Dr. Todd K. Leen made this stunning portrait of the Double Cluster at White River Canyon, located on the slopes of Mt. Hood, Oregon, on July 23, 2004. He used a Takahashi Sky 90 operating at f/4.5 and a ST2000XM CCD camera to capture the distant starlight. On the following page, Jim Thommes used his C8 telescope set at f/6 for this detailed image of the edge-wise spiral galaxy NGC 891. It was photographed from the clear, dark skies of Blair Valley, Anza Borrego Desert, California in October 2006. The remaining picture showing Stephan's Quintet was taken through Kitt Peak National Observatory's 0.9-meter telescope in October 1998. North is up and east is to the left in this close-up shot. Courtesy of N.A. Sharp/NOAO/AURA/NSF.

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Left: NGC 891 in Andromeda, a 10th-magnitude edge-on spiral galaxy. Right: Stephan's Quintet, a compact cluster of five remote galaxies found near NGC 7331. This faraway quintet was once the central topic in a controversial debate about redshifts in the universe.

Another genuine open cluster and a fabulous showpiece of the autumn night sky is NGC 7789, located midway between the two 5th-magnitude stars Rho (ρ) and Sigma (σ) in Cassiopeia. This beautiful object was first sighted by Caroline Herschel in the fall of 1783. An incredible number of stars, 580 in all, reside inside a region of the sky just 25' in diameter. Observers call it the "Crab Cluster" and "Herschel's Spiral Cluster."

Gazing at NGC 7789 with a 27mm Panoptic, this 7th-magnitude deep-sky object appears as a large, faint sprinkling of pinpoint stars in a dimmer, partially resolved round glow. When averted vision is used, the entire cluster blossoms into a vast array of loops and swirls. Two shells of glittering stars, separated by a dark void, dominate the view. NGC 7789 is equally impressive at double the original power in a 13mm Ethos. The cluster's whirlpool pattern becomes much more pronounced, giving added credence to the descriptive term honoring Herschel.

Observers with a little more experience can try finding NGC 891, a thin sliver of light found several low power eyepiece fields to the southwest of Messier 34. It is an impressive but relatively dim (magnitude 9.9) galaxy that is tilted a mere fraction from edge-on. Writer Stephen James O'Meara has nicknamed this extraordinary object the "Outer Limits" galaxy because of its repeated use on the popular 1960s television series carrying the same name. Sir Patrick Alfred Caldwell-Moore, Britain's tireless champion of astronomy, simply calls it Caldwell 23 in his listing of 109 deep-sky splendors.

The winning view is at 171x using the 10mm Ethos. The serrated zone of darkness that divides the galaxy exactly in half—the equatorial dust band—stretches from tip-to-tip. Interspersed along NGC 891's slender form are several field stars from inside the Milky Way. This remarkable view brings to mind the comment by author and astronomer James Mullaney, who in *Celestial Harvest* called it a "cigar-shaped sliver of dim grey light…a long, thin, almost ghostlike glow."

Dominating the sky in northwestern Pegasus is the 9th-magnitude spiral galaxy NGC 7331 (Caldwell 30). It was unfortunately overlooked by Charles Messier during his search for comet-like objects. Instead the deep-sky object was independently discovered by William Herschel in 1784. This stunning island universe, one of the classic hidden jewels of the night and a stepping stone into the cosmos beyond, is often touted as being a close cousin of our own Milky Way. A smattering of dim background galaxies, ten times more remote than NGC 7331, lies in the same line of sight.

The spindle-like form of NGC 7331, 10.7' X 4.0' in extent, is obvious through the Obsession 15-inch reflector when a 27mm Panoptic is used. It is elongated north-south and a nearly stellar nucleus is visible at its exact center. However, a superior view is obtained when a 13mm Ethos is substituted in the telescope. The oval halo assumes a more textured appearance and the dust lane is now plainly visible as a sharp, darkened arrow skimming the western fringe of the galaxy.

Slewing the Obsession telescope 1/2° to the SSW of NGC 7331 brings into view a region of the sky populated by a tight clustering of five faint galaxies, the finale in our trip through autumn's celestial paradise. Stephan's Quintet is named in honor of the French astronomer E.M. Stephan, who discovered this quaint little grouping in 1877. The quintet, also cataloged as Hickson 92, consists of the NGC objects 7317, 7318A, 7318B, 7319, and 7320.

Definitely a telescopic challenge even for veteran observers, the key to successfully seeing all five of the 13th- to 14th-magnitude galaxies in Stephan's Quintet is a dark sky and lots of light gathering power. When a 10mm Ethos is applied to this system, three out of the five members instantly pop into view. If observing conditions are very good, the two remaining galaxies (NGC 7317 and 7318A) can be picked out from the field, but only with difficulty.

Here are some other favorite objects in the autumn night sky:

NGC 253, the "Silver Coin Galaxy." Rivaling the Andromeda Galaxy, this nearly edge-on spiral galaxy in Sculptor dominates the southern skies.

NGC 457, the "Owl Cluster." A rich open cluster that includes the colorful multiple star Phi Cassiopeiae.

NGC 752. A relatively large open cluster of 6th-magnitude located northeast of 56 Andromedae.

M34, also designated as NGC 1039. A fine open cluster located midway between the 2nd-magnitude stars Algol and Gamma Andromedae.

NGC 7293, the "Helix Nebula." A very large planetary nebula of low surface brightness found in Aquarius.

M52 (NGC 7654). An easily resolvable open cluster in Cassiopeia, it has the combined light of a magnitude 7.5 star and contains over 100 members.

NGC 7662, the "Blue Snowball." Found in Andromeda, this planetary nebula glows at magnitude 8.3 and measures 32" X 28" across.

M76 (NGC 650-1), the "Little Dumbbell Nebula." This small 9th-magnitude planetary nebula in Perseus also goes by such nicknames as the Barbell, Cork, and Butterfly.

This month's theme of the International Year of Astronomy is "The Life of a Star"

The Life Cycles of Stars

By Tom Koonce

"The bigger they are, the harder they fall…" This is certainly true of stars. When single stars condense from a star forming nebula, their life history is pre-written based upon their initial mass and the cloud's composition. High mass stars burn very hot, have very short stellar lifetimes then explode in spectacular Supernovae, forming either Neutron Stars or Black Holes. On the other end of the mass scale, low mass single stars have relatively cool temperatures, but live extremely long lifetimes and may radiate dimly for many, many billions of years

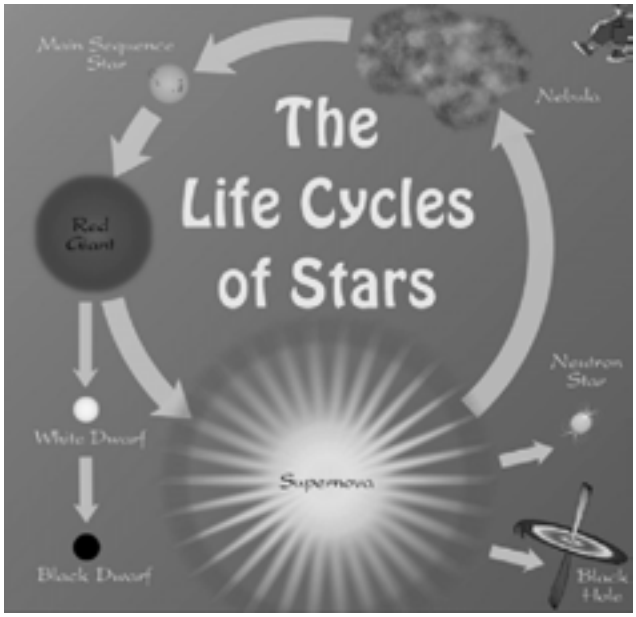
Over time, higher density regions within giant nebulae like the Orion Nebula or the Eagle Nebula begin to contract gravitationally, and as they do, the cloud rotates. As the gas contracts and rotates faster, the gas begins to heat up to become a Protostar. Once its temperature reaches approximately 15,000,000 Celsius, nuclear fusion initiates in the cloud's center causing the Protostar to begin to radiate brightly. The smallest stellar objects that form in the star forming regions are called Sub-Stellar Objects. These form with masses between 0.013 and 0.08 times the mass of our own Sun (our Sun = one solar mass). These stars radiate briefly as a dim star, but gradually collapse, cool as they evolve further into Brown Dwarf stars. Eventually the Brown Dwarf will cool further and it will cease radiating at all.

The stars known as "Red Dwarf" stars have between 0.08 and 0.4 solar masses when they form. These are the most common type of stars in the observable universe and have lifetimes longer than 13 billion years. As these small, long living stars eventually cool, they die and become Black Dwarf stars.

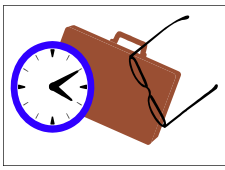
Stars approximately the size of our Sun with 0.4 to 8 solar masses are called "Intermediate" stars and will swell into Red Giant stars as their fuel is expended. Eventually, these stars will end their lives as White Dwarf stars.

Nebulae and stars are typically composed of 74% hydrogen, 25% helium and 1% everything else in the periodic table by mass. A star's initial mass is determined by the amount of material available within the nebula from which the star forms. Very dense nebulae can produce the most massive stars - true giants with 8 times (or greater than) our Sun's mass. Those stars with between 8 and 25 solar masses will expand into Super Giant stars then explode as supernovae and end their lives as Neutron Stars; those stars with greater than 25 solar masses will expand into Super Giant stars, explode as supernovae and become Black Holes. It isn't known what the upper limit is to a star's initial mass is, but in the early 1990's, a star nicknamed the "Pistol Star" was discovered by the Hubble Space Telescope near the center of the Milky Way galaxy with a mass of 100 solar masses and a radius of 100 million miles, comparable to the Earth-Sun distance of 93 million miles. The Pistol Star is called a Blue Hyper Giant and is so hot that its gravity can't stabilize it and it is expected to go supernova within only 1 to 3 million years. A great deal of gas and matter is expelled during these supernovae explosions which then give rise to future generations of stars, repeating the cycle of stellar birth.

Smaller stars burn dimly, but may burn for billions and billions of years. Giant stars burn with incredible intensity, but go through their hydrogen and helium fuel in as little as millions of years, and then end their lives in dramatic supernovae explosions. I can think of a few analogous Hollywood situations…but that's for another type of "Star" article altogether.



References and image credit: NASA StarChild initiative, NASA Hubble Space Telescope, Wikipedia.



BOARD MEETING MINUTES

September 14, 2009
OMSI Classroom 1
Margaret Campbell-McCrea

Jean London, Greg Rohde, Matt Brewster, David Nemo, Sameer Ruiwale, Ken Hose, Margaret Campbell, Jan Keiski, Howard Knytych, Diane Fredlund.

The meeting was called to order at 7:25 p.m.

Board Reports

- Secretary's Report – Margaret Campbell reported that a quorum (10) was met with 10 voting members present.
- Treasurer's Report – None.
- VP Programming – Matt Brewster reported that Richard Berry will be the speaker at the September meeting. He will present information about an amateur astronomical program that was conducted at Pine Mountain Observatory in August. October's speaker will be Ken Croswell, who has written a new book on stellar evolution (i.e., star formation). There was a lively discussion about a joint GAMA/RCA meeting via Internet telecommunications. The Board suggested to Matt that there be a Southern Skies program for one of the meetings, tentatively either November or January, which might include a half-hour presentation by GAMA and then a half-hour presentation by a club member who has traveled for Southern Sky viewing. Both Jan and Margaret volunteered to work with Matt on setting up this program.
- VP Observing – No report. There will be a star party at Camp Hancock this coming weekend (September 18 – 20), but there is none at Maupin. There is also an informal star party at Skyview Acres on the same weekend, and another in October.
- VP Community Affairs – No report.
- Media - Nominal. See New Business below.
- Membership - Ken Hose reported that there are 230 members. This compares to last year at the same time, when we had 229 members. We took in 21 renewals and 11 new members in August, and $760 in dues. Larry has advised non-renewing members that they will be dropped from the Forum at the end of September if they do not renew.
- New member advisor - Howard Knytych reported that there were fewer new members than usual at the August new member session, because of OSP. There will be no new member session in September. The program planned for October is to introduce the Forum. Dave Nemo is the invited speaker. There was some discussion about Diane including information on the new member sessions for our publicity.
- Sales – Margaret Campbell reported $113.25 in sales in August.
- Book Library – Nominal.
- Telescope Library – Greg Rohde reported he is following up on a couple offers of telescopes. This makes 21 telescopes in our library. Greg is planning to sell one or two. Also, he has been contacted by the club in Eugene. They saw our scope library on our website and liked the idea - - and the webpage - - so much that they set up their own telescope library. We may want to donate some telescopes to them. There was lively discussion about branching out into other kinds of items to lend, including imaging equipment. Matt Brewster has done some recent research on this, and will write a proposal to the Board about how to handle this new activity. Greg is planning on making up "kits" of items, such as filters, to lend.
- IDA – No report. Sameer will talk to a couple candidates about being our IDA liaison. There was some discussion about creating a new position that would be a liaison to public policy makers on dark sky issues.
- Magazine Subscriptions – No report.
- Webmaster – No report.
- Site Committee – David Nemo: Nominal.
- Youth Director - Jean London reported that we had four kids at our August session, and she saw the rest at OSP. She has set up a telephone network for the group. There was some discussion about moving the time and place for the youth meetings if attendance falls below five kids during the winter months. Jean suggested that Saturday morning may work better for a kids program.
- SIGs – Tom Nathe: No report.
- Alcor – No report.
- OMSI –Jan Keiski reported that Jim Todd has sent her a proposed list of Board meeting and general meeting dates and places for 2010 for review. The list is included at the end of these minutes. Jan will clarify with him the dates for the January and the December meetings. She will also clarify with him the meeting place for the June meeting, as this is one of our twice-a-year swap meets.
- Sister Club update – Nominal.

Old Business / Action Items

- Mirror making usage video: Dave Nemo has talked to John DeLacy about making the video.
- Impromptu star parties at Stub Stewart: Sameer will contact the park directly about having an official policy regarding impromptu star parties at Stub Stewart, and will publish it on the Forum and our website.
- Tape on bumpers: Greg reported that he has applied tiger-striped tape to about one-third of the parking bumpers at Stub Stewart, and then checked them after about three weeks, and they are working well. He plans to finish this project within the next month.
- Warning about green laser pointers: Done. Sameer will reinforce this message.
- Article on the refurbished 12.5" scope: Dave Dansky has written a short description of what was done to remake the scope, and posted a series of pictures of the finished scope on the Forum, in the Discuss Anything Else - - Astronomy-Related section. The consensus was to use this as a basis for an article on the website. Diane Fredlund volunteered to help create and edit that article. Sameer will send her the link to Dave Dansky's article.

(Continued on page 8)

August Board Minutes *(Continued from page 7)*

- Bolt the mirror-making machine: Done.
- Updated roster for ALCOR: Done.
- Election committee: Margaret Campbell reported that the committee is complete: Dale Fenske, Greg Rohde and M. Campbell are the Board members of the committee; Scott Kindt, Scott Shierman, and Chris Steinkamp are the general membership members. Margaret will make an announcement at the September meeting looking for nominations for the positions that are opening up. They are Secretary, Sales Director, and Telescope Librarian. The Nominating Committee will contact other Board members not here tonight about their plans for 2010.

New Business / Action Items

- Publicity Ideas: Diane Fredlund outlined two ideas for RCA outreach and publicity. The first is to
- Make a proposal to the OPB show Think Out Loud to discuss dark sky issues. She suggested tying the show to something astronomical or a current event or issue. Margaret volunteered to work with her on making that proposal. The second idea is to make a liaison relationship with Matt Zafino (and other local weather personnel) who could publicize astronomical happenings, RCA events, and perhaps be speakers at our meetings, come to star parties, etc. There was some discussion about this idea. Diane will send Matt Brewster her contact information for Matt Zafino, as a potential future speaker.
- Minor Catalogs Book: Margaret Campbell proposed that RCA create a "Book of Lesser Catalogs" as a fund-raising project for the site committee. There was considerable discussion of the idea, based on work that she has already done, and discussions among herself, Ken Hose, Dave Nemo and Sameer Ruiwale. The Board supported the idea and suggested that (1) we start with only one of the lesser catalogs, probably the Trumpler list, and (2) we ask RCA astro-imagers to do the imaging for the project. David Nemo volunteered to help with the design and layout; Diane Fredlund volunteered to help with the editing; Ken Hose volunteered to help with the sky atlas portion of the project and some of the imaging issues; Sameer volunteered to help in an unspecified way with the project. Margaret Campbell will announce the project at the September meeting and ask for imagers who might be interested in contributing. She will also put an announcement on the Forum.
- January meeting: Sameer announced that he will not be able to attend the January, 2010 meeting.
- RCA mention: David announced that he was interviewed for an article on dark skies for Cowboys and Indians magazine, and the article mentioned both RCA and himself. He will try to provide a link to the article to the Forum.

Meeting adjourned at 8:59 p.m.

To Do:

1. Matt Brewster will send meeting publicity to Diane Fredlund as well as to the usual outlets. He will also write a report to the Board detailing his recent research into accessible imaging equipment, and his ideas for how to make these materials available to members through our telescope library.
2. Sameer Ruiwale will (1) follow up on the IDA liaison position (s), (2) contact Tom Nathe, (3) contact Stub Stewart about impromptu star parties at Stub Stewart, (4) reinforce the warning about green laser pointers on the Forum, website and newsletter, and (5) send a link to Dave Dansky's article on refurbishing the 12.5" scope to Diane Fredlund, who will edit the article for the newsletter.
3. Greg Rohde will apply the remaining reflecting tape at Stub Stewart.
4. David Nemo will work with John DeLacy on making an instructional video on using the mirror-making machine by making a demo mirror. David will post to the Forum that he was interviewed for an article on dark skies for Cowboys and Indians magazine, and the article mentioned both RCA and himself.
5. Margaret Campbell will work with Matt Brewster and Jan Keiski about having a Southern Skies presentation for one of our future meetings. Margaret will make an announcement at the meeting seeking and via the Forum nominations for the vacant Board positions for 2010. Margaret will work with Diane Fredlund on proposing a dark skies program on OPB's Think Out Loud. Margaret will send an email to the Board members not at tonight's meeting about their plans for 2010.
6. Jan Keiski will work with Matt Brewster and Margaret for designing and setting up a Southern Skies presentation for one of our future meetings. Jan will contact Jim Todd about the January 2010 Board meeting date, the December 2010 general meeting date, and the June 2010 meeting place.
7. Ken Hose will send a broadcast message reminding people to renew their membership by the end of September or they will lose their access to the Forum and their subscription to the Reflector.
8. Diane Fredlund will forward Matt Zafino's (and other local meteorologists) contact information to Matt Brewster. Diane Fredlund will work with Margaret Campbell on making a proposal to Think Out Loud. Diane Fredlund will edit / create an article for the newsletter from Dave Dansky's Forum posting on refurbishing the 12.5" scope.

OMSI's Suggested 2010 Meeting Schedule

RCA Board Meetings:	**RCA General Meetings**
January 11..... Classroom 1	January 18..... Auditorium
February 1 ..... Classroom 1	February 15..... Auditorium
March 1..... Classroom 1	March 15..... Room TBD
April 5..... Classroom 1	April 19 ..... Auditorium
May 3..... Classroom 1	May 17..... Auditorium
June 7..... Parker Room	June 21..... Planetarium
July 12 ..... Parker Room	July 19 ..... Planetarium
August 2 ..... Parker Room	August 16 ..... Planetarium
September 13 .. Classroom 1	September 20 .. Auditorium
October 4 ..... Classroom 1	October 18 ..... Auditorium
November 1 .... Classroom 1	November 15 .. Auditorium
December 6..... Classroom 1	December 20... Auditorium

Observing Site Committee

To lead and coordinate efforts of the Rose City Astronomers (RCA) in securing and managing a variety of observing sites for private use by members, and for community outreach and special events organized by the RCA.

Please Check
http://www.rosecityastronomers.org/donate/site.htm
for more information.

Or Contact: David Nemo <sitefund@rosecityastronomers.org>

Photo by Jan Keiski

RCA 'Downtowner's' Lunch

Join us on the first Friday of each month for lunch at a great downtown restaurant (Holidays and such may push us to the second Friday of some months, check the calendar at http://www.rosecityastronomers.org).

The location is announced on the RCA general forum discussion list at http://www.rosecityastronomers.org/forum under special interest groups. The meeting is normally Kell's Irish Pub at Second and Ash.

Always great conversation and food.

For more information contact: Margaret Campbell at secretary@rosecityastronomers.org

ASTROPHYSICS / COSMOLOGY SIG

Date/Time: Wednesday, November 18th, 7 PM.

Topic: "Indian Night Out - With food and a talk about Asian Indian astronomy and astronomers"

Presented by: Sameer Ruiwale

Place: Linus Pauling Complex,
3945 S.E. Hawthorne St., Portland.

Email: cosmology-sig@rosecityastronomers.org

www.rosecityastronomers.org/sigs/cosmology.htm

Astro-Imaging Special Interest Group

The "AI-SIG" is about advancing the skills of beginner, intermediate and advanced astro-imagers. We rely on the skills of our members to bring each other along as we image the beautiful night sky and its many wonders. Whether you use a CCD, DSLR, point-and-shoot or film camera, members of this group can help you achieve better images with less effort and frustrations. Please join us as we learn together to produce "stellar" images!

Next Meeting: Monday, November 9th, 2009, 6:30pm
Beaverton Public Library
In Meeting Room B
12375 SW 5th St, Beaverton

Telescope Workshop

When: Saturday, December 5th, 10:00 AM - 3:00 PM

Place: Technical Marine Service, Inc.
6040 N. Cutter Circle on Swan Island

For more information contact:

Director: John DeLacy johncdelacy@comcast.net

Assistant: Don Peckham don@dbpeckham.com

Science Special Interest Group (SCI-SIG)

Next meeting is December 5th at 3pm. Following the Telescope Workshop at Technical Marine Services.
This group is for people who would like to advance their skills in astronomy beyond casual observing. Various projects that some group members are involved in include; variable and double star observing, occultations, photometry and astrometry. A science background is not required, however a curious mind does help.

Location: Technical Marine Service, Inc
6040 N. Cutter Circle on Swan Island

http://www.rosecityastronomers.org/sigs/science.htm

Tom Nathe sigs@rosecityastronomers.org

November 2009

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					

November 2	Monday	RCA Board Meeting	OMSI Classroom 1	7pm
November 6	Friday	Downtowner's Luncheon	Kell's	Noon
November 9	Monday	Astro Imaging SIG	Beaverton Public Library	6:30pm
November 16	**Monday**	**General Meeting**	**OMSI Auditorium**	**7pm**
November 18	Wednesday	Cosmology SIG	Linus Pauling Complex	7pm

December 2009

December 4	Friday	Downtowner's Luncheon	Kell's	Noon
December 5	Saturday	Telescope Workshop	Swan Island	10am-3pm
December 5	Saturday	Science SIG	Swan Island	3pm
December 7	Monday	RCA Board Meeting	OMSI Classroom 2	7pm
December 14	Monday	Astro Imaging SIG	Beaverton Public Library	6:30pm
December 21	**Monday**	**Holiday Potluck**	**OMSI Auditorium**	**7pm**

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.rosecityastronomers.org).

http://www.rosecityastronomers.org

Rose City Astronomers
Oregon Museum of Science and Industry
1945 SE Water Avenue
Portland, Oregon 97214-3356

The
Rosette Gazette

Volume 21, Issue 12 Newsletter of the Rose City Astronomers December, 2009

RCA DECEMBER 21 HOLIDAY POTLUCK!

The December meeting of the Rose City Astronomers will be a holiday potluck and social gathering for all family members to be held in the OMSI Auditorium.

Each member is asked to bring a dish to serve 10-12 people.

If your last name begins with . . .

- A thru E, please bring an appetizer or side dish
- F thru K, please bring a desert
- L thru Z, please bring a main dish

Plates, silverware, and beverages/ice will be supplied by the club. Just bring your dish along with a serving utensil and enjoy the holiday spirit of the RCA membership.

The Holiday Social is a great event to pick up some excellent holiday deals! Save time to shop at the RCA Sales Table for your favorite astronomy gifts. In addition, the Swap Meet will be back by popular demand and there will be ample empty tables around the lobby for everyone who is interested in displaying items for the Swap Meet. There will be music by Howard Knytych. Jan Keiski will present some of her photos in a multimedia slide show with music and effects by Duncan Kitchin.

There will also be tables provided for interesting celestial displays. If you have taken any astronomy pictures this year and want to share them, this is your ideal opportunity. Members also bring their latest inventions and "astro stuff." If you have a fun gadget, item, or tool, please bring it in and show it off to the rest of the membership!

Note that December 21 is the THIRD Monday of the month which is the evening of our normal general meeting. We hope to see everyone there!

All are Welcome! Monday December 21

Festivities Begin 6 pm

Location: OMSI Auditorium

In This Issue:

RCA is a member of the Astronomical League.
http://www.astroleague.org

Full Moon	Last Quarter Moon	New Moon	First Quarter Moon
December 1	December 8	December 16	December 24

CLUB OFFICERS

Office	Name	Email
President	Sameer Ruiwale	president@rosecityastronomers.org
Past President	Carol Huston	pastprez@rosecityastronomers.org
VP Membership	Ken Hose	membership@rosecityastronomers.org
VP Observing/Star Parties	Matt Vartanian	observing@rosecityastronomers.org
VP Community Affairs	Dawn Willard	community@rosecityastronomers.org
VP Communications	Matt Brewster	communications@rosecityastronomers.org
Treasurer	Larry Godsey	treasurer@rosecityastronomers.org
Secretary	Duncan Kitchin	secretary@rosecityastronomers.org
Sales Director	Margaret Campbell-McCrea	sales@rosecityastronomers.org
Newsletter Editor	Larry Deal	editor@rosecityastronomers.org
Media Director	Diana Fredlund	media@rosecityastronomers.org
New Member Advisor	Howard Knytych	newmembers@rosecityastronomers.org
Webmaster	Larry Godsey	webmaster@rosecityastronomers.org
ALCOR, Historian	Dale Fenske	alcor@rosecityastronomers.org
Library Director	Jan Keiski	library@rosecityastronomers.org
Telescope Director	Greg Rohde	telescope@rosecityastronomers.org
Observing Site Director	David Nemo	sitefund@rosecityastronomers.org
IDA Liaison	Dawn Nilson	ida@rosecityastronomers.org
OMSI Liaison	Jan Keiski	omsi@rosecityastronomers.org
Magazines Director	Larry Godsey	magazines@rosecityastronomers.org
SIG Director	Scott Kindt	sigs@rosecityastronomers.org
Youth Programs Director	Jeannie London	youth@rosecityastronomers.org

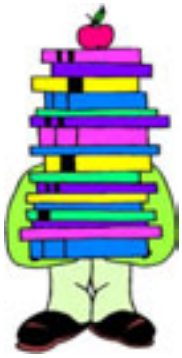
RCA MAGAZINE SUBSCRIPTIONS

One of the benefits of RCA Membership is a reduced rate subscription to Sky & Telescope and Astronomy magazines. The RCA member rate for Sky & Telescope Magazine is $32.95 for one year or $65.95 for two years. The RCA member rate for Astronomy magazine is $34 for one year or $60 for two years.

THIS MONTH ONLY - RENEWALS VIA MAIL IN ONLY

For more information go to the RCA web site: http://www.rosecityastronomers.org/mags Please make checks out to "RCA" mail to the address on the website and allow two months for your subscriptions to be renewed.

RCA LIBRARY



The Rose City Astronomers maintains a comprehensive club library of astronomy related articles, books, CDs 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.

The RCA library is constantly growing through many donations and the purchase of new materials. A listing of library materials (PDF format) can be found at the library web page:

http://www.rosecityastronomers.org/library.htm

Jan Keiski <library@rosecityastronomers.org>
503-539-4566

INTERACTING GALAXIES IN THE SOUTHERN SKY

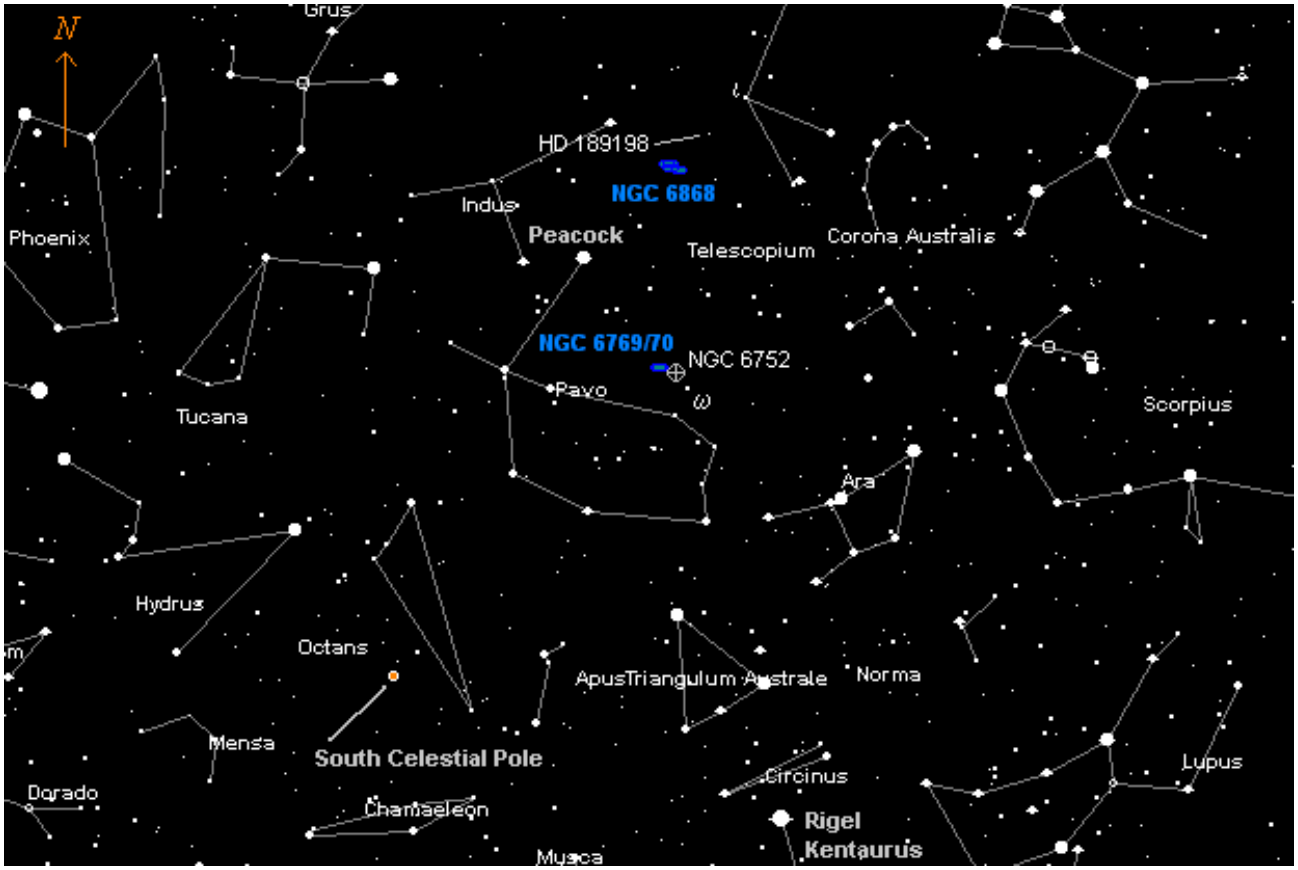
by Leo Cavagnaro

Part 2. Galaxies in the Spring Southern Sky

On October, 16th I went to the mountains to continue with the observations of interacting galaxies, compact groups and galaxy chains I had begun at the end of last year. The reports below are result of the observations I made under a good sky, but not as good as other times in the same place. As I always say, it would be useful to observe these galaxies again under different conditions to compare results.

Last December 2008, I observed some groups of interacting-galaxies situated in some constellations which are home of this kind of objects (e.g. Pavo, Indus, Telescopium, Grus, Piscis Austrinus, Phoenix, Sculptor). In this article I have included reports and information about two groups situated in that area in the sky, namely the GR28 Cluster in constellation Telescopium and a galaxy triplet in Pavo.

The Disturbed Galaxies NGC 6769, NGC 6770 & NGC 6771



Briefly mentioned in Part 1 of the article **"Interacting Galaxies in the Southern Sky"** appearing in the January 2009 issue of the Rosette Gazette, this small group of three faint galaxies lies in the beautiful constellation Pavo and this time was a target in my observing project because they are better viewed early in the night from here in October.

The observing site was again Villavicencio, a place with dark skies situated about 1,645 meters above see level, about 31 miles north of Mendoza city.

NGC 6752 is a wonderful globular cluster (see map above)

(Continued on page 4)

Southern Galaxies *(Continued from page 3)*

situated in the north part of constellation Pavo (The Peacock). In my opinion, it is the third most impressive globular after 47 Tucanae and Omega Centauri. This 5.4 magnitude stellar swarm, visible to the naked eye as a faint fussy patch from very dark skies sites, is a neighbor of a small group of three galaxies situated only 1 degree southeast from it.

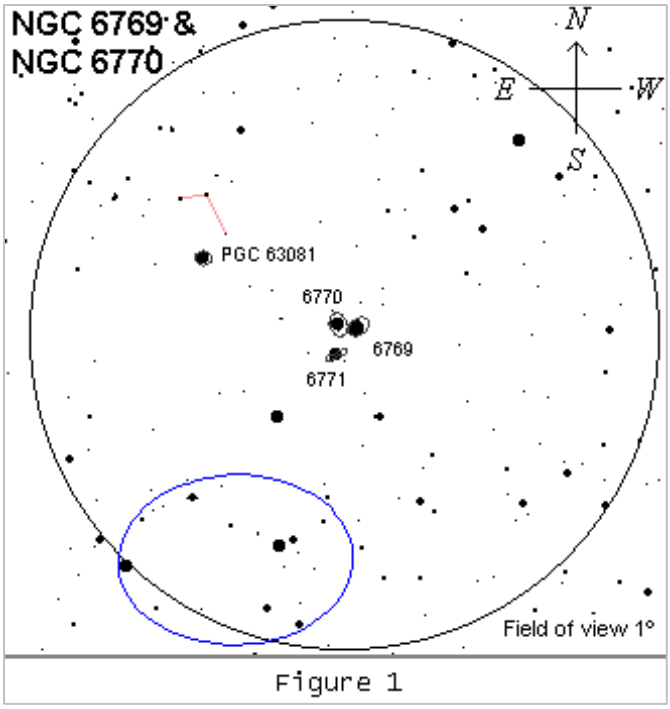


Figure 1

After aiming my telescope at this galaxy triplet I first observed it at low magnification (42x). A very faint and small nebulosity is visible in the region where these interacting galaxies lie. The field shows some relatively bright stars with magnitudes between 8.8 and 9.3 (the brightest in the field which are indicated by a blue ellipse in Figure 1). The pair NGC 6769/6770 looks like a single elongated nebulosity. The galaxy NGC 6771 is barely visible very close to the pair (about 3 arc minutes). Moreover, some very faint stars are visible in the zone of the pair engulfing it. This group is included in Category 3: Interacting Triples in "**A CATALOGUE OF SOUTHERN** PECULIAR GALAXIES AND ASSOCIATIONS" by H. Arp, B. F. Madore and W. Roberton as AM 1914-603.

On the other hand, the small and faint SBb galaxy PGC 63081 (also IC 4845, magnitude 11.9 according to Skymap Pro 6.0) is clearly visible even with direct vision to the northeast of the triplet appearing like a well detached little defocused star. I used the pattern of stars indicated with red lines in Figure 1 to find it.

The use of higher magnification (78x) made possible a better view of the stars surrounding the interacting galaxies. A pattern of four stars was easily identified (indicated with red arrows in Figure 2). This helped me to identify and observe in detail both galaxies. To the right and very close to the star indicated by **A** in Figure 2 lies the brightest galaxy of the triplet, NGC 6769, an SBb/P galaxy according to the Wolfgang Steinicke's Revised NGC and IC Catalog. Through my 8 -inch telescope this galaxy looks round and smooth in brightness. NGC 6770 looks fainter (mag 12.0, SB: 13.2 mag per square arcmin) and the barred galaxy NGC 6771 was very hard to see (higher magnification was necessary).

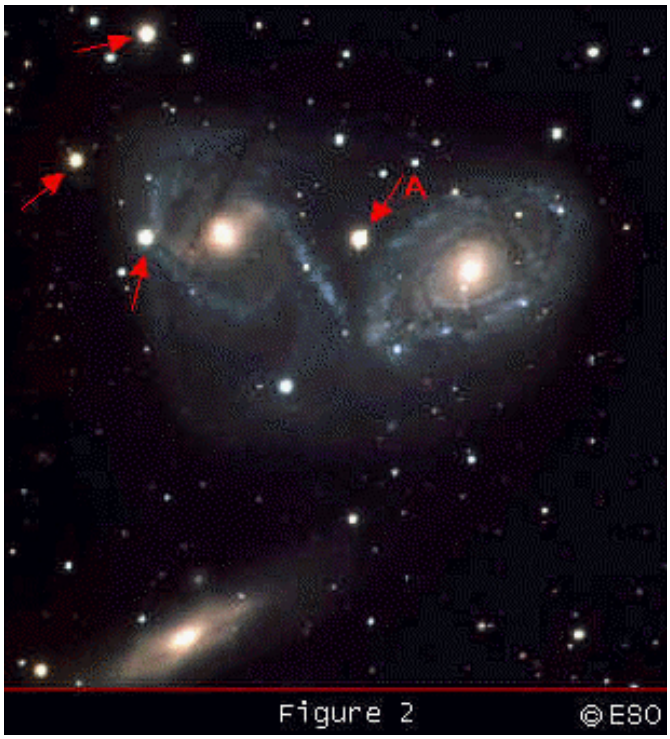


Figure 2

Using 106x the guide stars and each galaxies are better detected, specially NGC 6771 which is the fainter of the group with a magnitude of 12.6. Always averted vision improved the view.

With even higher magnification (148x) the elongated shape of NGC 6771 comes to the view easily using averted vision. Very close to this galaxy a small group of faint stars looks detached from the field.

The Cluster GR28 in Telescopium

In the northeast part of constellation Telescopium lies a group of faint galaxies (e.g. NGC 6868, 6861, 6861D, 6851 and 6870) that belong to the cluster GR28 (see Figure 3). At least four (4) galaxies can be observed in the same eyepiece field of an 8-inch telescope when low magnification is used but higher magnification is necessary to see the faintest ones. Other small and faint galaxies with magnitudes around 14 are situated there (see DSS image in Figure 3) but a bigger mirror is necessary to see them.

(Continued on page 5)

Southern Galaxies *(Continued from page 4)*

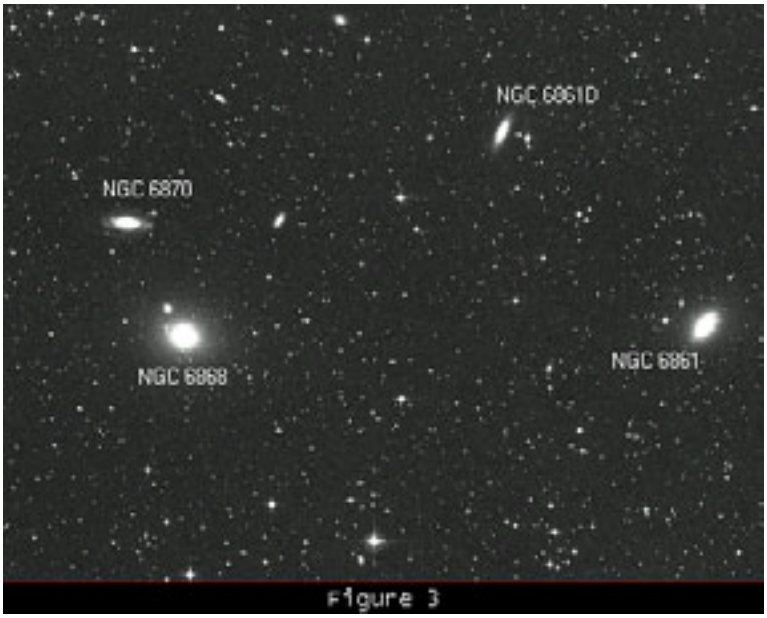


Figure 3

The pattern of stars indicated with the blue ellipse in Figure 4 was useful to find the major galaxy in the group, NGC 6868. Working at low magnification (42x) this elliptical galaxy was visible even with directed vision in an interesting star field appearing small, round and with a bright and sharp star-like core. The brightness of this galaxy drops outward. NGC 6868 is the brightest galaxy of the group. This is an elliptical galaxy (classified as E3 in RC3[1] and E2 by the Revised NGC/IC Catalogue).

Seemingly, the main source of gas ionization in this galaxy is non-thermal suggesting the presence of a LINER at the galaxy center (you can read more on NGC 6868 in the paper "**Star Formation, Metallicity Gradient and Ionized Gas: Clues to the Formation of the Elliptical Galaxies NGC6868 and NGC5903"** M.G. Rickes, M.G. Pastoriza and C. Bonatto Departamento de Astronomia, Universidade Federal do Rio Grande do Sul, Brazil February 2008). LINERs may be the weakest and most common manifestation of the quasar phenomenon, and can be classified as low luminosity Active Galactic Nuclei (LLAGN) "**LINERs AS LOW-LUMINOSITY ACTIVE GALACTIC NUCLEI"** (Luis C. Ho, Harvard-Smithsonian Center for Astrophysics).

According to Savage et al. (1977) it is also a radio source.

The stars GSC-8396-1362 and GSC-8396-0092 indicated with letter **D** in Figure 4 were used to easily find and identify NGC 6861 which was clearly visible at this magnification looking smaller than NGC 6868, round and with smooth brightness.

NGC 6870 was not visible at low power. Surrounding the position where this galaxy lies a line of stars is identified (marked with red lines in Figure 4). The very faint star **B** (GSC-8396-0396 with a visual magnitude of 13.8) being barely visible with averted vision. At only 1.5 arc minutes from this star the galaxy should be visible but it was impossible at 42x. For very brief moments something seems to be visible but doubtless you need higher magnification in order to get a more clear view of this Sab type galaxy and make a detailed observation of it.

Another faint and small galaxy lies about 18.5 arc minutes northwest to NGC 6868, NGC 6861D which is the faintest member of the group. This E-S0 galaxy was not visible at 42x through an 8-inch telescope. However, you can use the 10.4 magnitude star TYC 8396-1542-1 (**C**) to find the accurate region where this galaxy is visible.

Observing the zone with higher magnification (83x) NGC 6868 is easily observed with its bright inner part. It resembles to me a small globular cluster with a low Shapley-Sawyer concentration class. The stars near NGC 6870 are better seen, specially the star **B**. This made possible the identification of NGC 6870 which was hardly detected. Averted vision was necessary to glimpse this galaxy. NGC 6870 is a good target to know how well your eye works when it is observed through an 8-inch telescope.

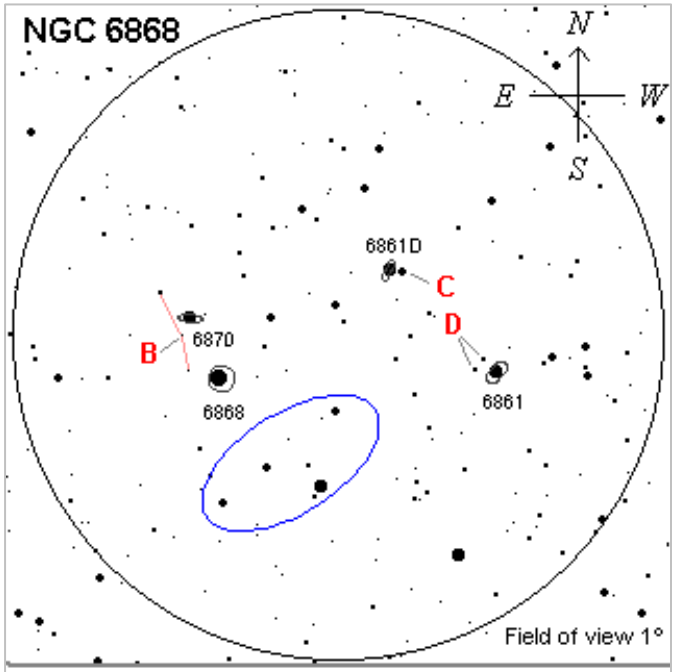


Figure 4

NGC 6861 is easier to see at this magnification appearing round at first glance. Observing carefully with averted vision the galaxy seems to have a little elongated shape.

(Continued on page 6)

Southern Galaxies *(Continued from page 5)*

On the other hand, NGC 6861D is at the threshold of visibility through an 8-inch telescope at this magnification. Very close to the star **C** is visible for moments with averted vision like a faint and small nebulosity. The overall shape was hard to determine, higher magnification is necessary to study this galaxy better.

A last observation of this group of galaxies at even higher magnification (106x) makes it possible to observe NGC 6870 with more details. It shows an elongated shape and smooth brightness. NGC 6861D was also visible with averted vision at 106x looking round in shape.

This Article Is Dedicated To The Memory Of My Very Dear Mother, April 1939 - September 2009

Photo by Jan Keiski

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For more information contact:

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http://www.rosecityastronomers.org/sigs/science.htm

Tom Nathe sigs@rosecityastronomers.org

This month's theme of the International Year of Astronomy is "Discovering New Worlds"

Discovering New Worlds

By Tom Koonce

My Grandfather was born exactly 100 years ago. I remember him telling me that he and his friends used to watch in amazement as early automobiles passed horse-drawn carriages. He was always interested in technology, sometimes wondering if men would ever make it to the moon, and if they did, what creatures might live there, or even if there might be men that already lived there. You may have heard similar stories from your grandparents or great-grandparents from that era. In just 100 years our world has experienced tremendous change. The pace of the transformation is accelerating; a "Moore's Law" for information, innovation, and discoveries unimagined even a few decades before.

Image Credit: Library of Congress

It wasn't that long ago when the universe was imagined to extend beyond our own Galaxy. The rough dimensions of the Milky Way have only been known since the 1920's from the initial work of Kapteyn and Shapely. For that matter, considering how long thinking, rational human beings have existed, the concept that the Earth revolves around the Sun and not the other way around is a relatively recent mental model for our species, only with us since Aristarchus of Samos (310 B.C. to c.a. 230 B.C.) proposed it approximately 17 centuries before Copernicus. In both of these cases, it is interesting that the general public at the time did not immediately react to the revolutionary ideas. These fundamental changes in our models of the universe raised interest in scholarly circles, but were seen as irrelevant information to the everyday lives of the common man and woman.

Mankind is in the midst of yet another fundamental change in its perception of the universe. Scientists and others interested in astronomy are understandably excited about the discovery of numerous worlds around other stars, but few others outside the astronomical community understand the implications of the discovery. The universe is populated with a great multitude of planets! The variety of these bodies appears to be unbounded. Their sizes and orbits have been unexpected and will one day lead to a definitive understanding of the process by which planetary systems are formed.

We have gone from science fantasy regarding the existence of other planets – Flash Gordon and Star Trek – to scientific fact. The existence of extra-solar planets was confirmed in the 1990's, and now we are stunned in 2009 by the sheer number of planets being detected. Within the past 100 years, we've discovered that there are likely planets around nearly every star. We can assume that this is representative of the rest of our galaxy and logically, the rest of the observable universe. The NASA planet-finding mission, the Kepler Mission, is on the verge of discovering how many Earth-like planets exist in a typical part of the sky. Isn't this exciting stuff?! We've progressed from horse-drawn carriages to discovering Earth-like words around distant stars - in only 100 years!

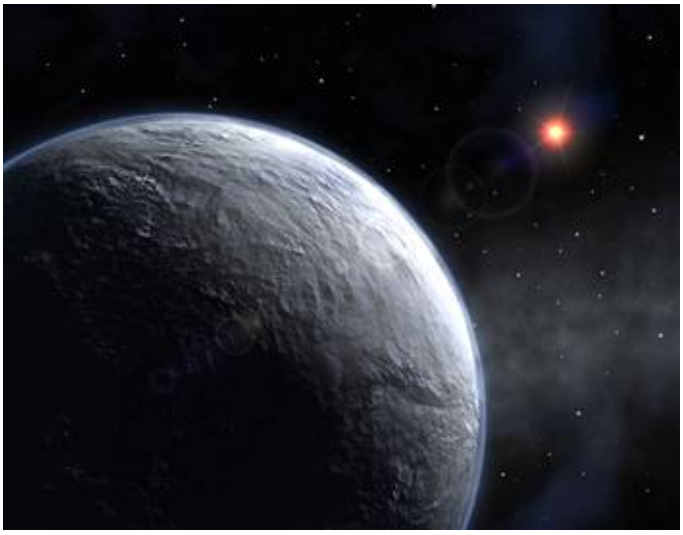

Image Credit: ESO

As we wrap up 2009, the International Year of Astronomy, amateur astronomers have gone out of their way to conduct public outreach events to get the general public involved in amateur astronomy and to get them to look through telescopes. Perhaps as we go forward into 2010, we can take it upon ourselves to share our sense of wonder and awe for the heavens, and to make the time to truly inspire young minds with the wondrous changing view of a universe filled with planets… and promise for future adventure. Let's inspire the next generation to challenge our understanding of the universe as we discover endless new worlds.

BOARD MEETING MINUTES

October 5, 2009
OMSI Classroom 1
Margaret Campbell-McCrea

Attending: Dawn Willard, Diane Fredlund, Dale Fenske, Larry Godsey, Ken Hose, Jan Keiski, Sameer Ruiwale, Matt Brewster, Howard Knytych, Greg Rhode, David Nemo, Margaret Campbell.

Guests: Scott Kindt, Duncan Kitchin

The meeting came to order at 7:10 p.m.

Board Reports

- Secretary's Report – Margaret Campbell: Quorum (10) met with 12 voting members present.
- Treasurer's Report – Larry Godsey handed out the balance sheets and profit and loss statements. The RCA current assets are $21,165.91 and the Site Fund current assets are $19,555.19, for a total of $40,721.10.
- VP Programming – Matt Brewster reported that our speaker for October is Ken Croswell, who will speak on the lives of stars. Matt is making plans with Mark Claire for November's program. December's program is the annual potluck, with Howard Knytych providing music. January is our GAMA program, and Lawrence Doyle will come sometime early next year. Matt will send publicity regarding these events to the newsletter, Forum and webmaster.
- There was some discussion of raffling off one or two of our excess scopes as a fund-raiser for the Site Fund at the December potluck. David Nemo and Greg Rhode will decide which scope(s) to raffle, David Nemo will get some tickets and decide how much to charge.
- VP Observing – Matt Vartanian - - No report. Larry Godsey reported that there are two Camp Hancock star parties scheduled for next year, and one at Goldendale coming up in October. Jim Todd has created the OMSI star party schedule for 2010. All OMSI events for 2010 are at quarter moons.
- VP Community Affairs: Dawn Willard reported that there were 250 people at the Jackson Bottom Star Party with 12 volunteers, and there were 60 people and 10 volunteers at last night's event. There are several other events coming up in October. Dave Powell is taking up some of the events, since Dawn's schedule is full. Dawn will report to Larry Godsey the number of volunteer hours we've done so we can report this information to the IRS. There was some discussion about holding a raffle for star-party volunteers next year. Larry Godsey will check if this conflicts with our 501-C3 status.
- Media: Diane Fredlund reported that she gave Matt Zafino's information to Matt Brewster. She has been sending our meeting information to all the regional newspapers. She has contacted Think Out Loud at OPB about the possibility of having a special program on dark sky issues. Margaret will put her in touch with Dawn Nilson about this project.
- Membership: Ken Hose reported that we have 277 member-families. There were 15 new members and 35 renewals in September. We took in $1,159.00 in dues. Last year at this time we had 254 member-families, and two years ago we had 206.
- Sales – Margaret Campbell: $381.90 in sales in September.
- New member advisor: Howard Knytych reported that there will be a new members' presentation at the October meeting.
- Book Library – Jan Keiski: Nominal.
- Telescope Library – Greg Rohde: Nominal.
- Webmaster: Larry Godsey - - Nominal.
- Site Fund: Dave Nemo has located a couple of properties in the Goldendale area. He asked for volunteers to go look at them.
- Youth director: Jean London - - No report.
- SIGs: No report.
- ALCOR: Dale Fenske reported that we will pay a little more for our AL membership because our membership numbers were up in December over the year before. Our payment due in June is based on the December membership numbers.
- OMSI –Jan Keiski. Jim Todd has revised the 2010 meeting schedules based on our inquiries. See OSMI meeting calendar attached below.
- Sister Club update – Jan Keiski: Nominal.

Old Business / Action Items

- Mirror-making machine has been assembled but it's not working yet, so no instructional material has been made yet.
- Jan continues to work on the January meeting program. We have not yet invited an RCA speaker for our portion of the program.
- The striped tape at Stub Stewart is holding up well after several weeks, so Greg will go out and apply the rest soon.
- Warnings about using green lasers have been made at two meetings, and on the Forum.
- The election committee has had three volunteers for our three open positions: Larry Froburg (and daughter) for the Sales Table, Duncan Kitchin for Secretary, and Scott Kindt for SIG director.
- Larry has sent out renewal reminder notices to 178 people. 114 have not renewed, 78 people have been knocked off the Forum, but they can reinstate if they renew.

New Business

- Appointed Board Positions: Since the SIG director and IDA liaison positions are not elected positions, but appointed, Sameer made a motion to appoint Scott Kindt as our SIG director and Dawn Nilson as our IDA liaison. The motion was seconded by Greg Rhode. The motion carried.
- Adding imaging equipment to the telescope library: There was a very lively discussion about adding imaging equipment to our telescope library. Matt Brewster is going to make a formal proposal regarding this idea to the Board next month. In the meantime, he'll have a committee of astro-imagers to help him with the idea and will continue the discussion on the Forum.

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August Board Minutes *(Continued from page 8)*

Ken Hose, Sameer Ruiwale and Duncan Kitchin will begin working with Matt Brewster on this proposal.

- Minor Catalogs project: Margaret Campbell reported the inception of this project to raise funds for the Site Fund, and asked to have a monthly update on the project as part of Old Business at future meetings.

The meeting was adjourned at 8:30 p.m

To Do:

- Matt Brewster will provide publicity information to the Newsletter Editor, the webmaster and to Diane Fredlund. Also, work up proposal regarding on imaging-equipment-in-the-telescope-library, in consultation with Ken Hose, Sameer Ruiwale, and Duncan Kitchin.
- Greg Rohde will decide which scope to raffle off at December's meeting.
- Dave Nemo will get some raffle tickets, determine the price, and begin the publicity.
- Diane Fredlund will follow up with Think Out Loud at OPB. She will create an article about the refurbishing of the 12.5" telescope.
- Dawn Willard will send Margaret Dawn Nilson's email address.
- Sameer will contact Stub Stewart about their policies for impromptu star parties, and work with Matt Brewster, et al on imaging-equipment-in-the-telescope-library idea, and notify Dawn Nilson of her appointment as IDA liaison.
- Ken Hose will work with Matt Brewster, et al on imaging-equipment-in-the-telescope-library idea.
- Duncan Kitchin will work with Matt Brewster, et al on imaging-equipment-in-the-telescope-library idea.
- Larry Godsey will check to see if having a raffle for volunteers at a year-end potluck would conflict with our tax status.

2010 OMSI meeting room schedule:

RCA Board Meetings: (1st Monday of month)		RCA General Meetings (3rd Monday of month):	
Jan 4 - Classroom 1	July 12- Parker Room	Jan 18 - Auditorium	July 19- Planetarium
Feb 1- Classroom 1	Aug 2- Parker Room	Feb 15 - Planetarium	Aug 16- Planetarium
March 1- Classroom 1	Sept 13- Classroom 1	March 15 - Auditorium	Sept 20 - Auditorium
April 5- Classroom 1	Oct 4- Classroom 1	April 19 - Auditorium	Oct 18 - Auditorium
May 3- Classroom 1	Nov 1- Classroom 1	May 17 - Auditorium	Nov 15 - Auditorium
June 7 - Parker Room	Dec 6- Classroom 1	June 21 - Planetarium	Dec 20 - Auditorium

ANTELOPE VALLEY ASTRONOMY CLUB, INC.

Holiday Fun!

Submitted by By Tom Koonce,
Antelope Valley Astronomy Club, Lancaster, California

How many star terms can you find hidden in the puzzle? Words may be written horizontally, vertically, diagonally, left to right or right to left. Circle each word as you find it.

Star Terms:

hot, atoms, nebula, supernova, neutron, red giant, cycle, sphere, energy, fusion, core, galaxy, hydrogen, evolve, gas, cloud, glow, x-ray.

N	G	F	C	E	L	S	I	U	A	A
E	N	T	U	L	S	D	W	C	I	L
B	O	N	A	S	S	P	E	O	G	U
U	R	A	I	H	I	M	H	R	D	B
L	T	I	G	Y	E	O	O	E	E	E
E	U	G	A	D	T	V	N	T	R	N
L	E	D	L	R	O	E	L	W	A	E
C	N	E	A	O	R	D	U	O	L	C
Y	A	R	X	G	A	S	Y	L	V	U
C	T	O	Y	E	N	A	I	G	X	E
A	A	V	O	N	R	E	P	U	S	N

December 2009

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		

December 4	Friday	Downtowner's Luncheon	Kell's	Noon
December 5	Saturday	Telescope Workshop	Swan Island	10am-3pm
December 5	Saturday	Science SIG	Swan Island	3pm
December 7	Monday	RCA Board Meeting	OMSI Classroom 2	7pm
December 14	Monday	Astro Imaging SIG	Beaverton Public Library	6:30pm
December 21	**Monday**	**Holiday Potluck**	**OMSI Auditorium**	**7pm**

January 2010

January 2	Saturday	Telescope Workshop	Swan Island	10am-3pm
January 2	Saturday	Science SIG	Swan Island	3pm
January 4	Monday	RCA Board Meeting	OMSI Classroom 1	7pm
January 8	Friday	Downtowner's Luncheon	Kell's	Noon
January 11	Monday	Astro Imaging SIG	Beaverton Public Library	6:30pm
January 18	**Monday**	**General Meeting**	**OMSI Auditorium**	**7pm**
January 20	Wednesday	Cosmology SIG	Linus Pauling Complex	7pm
January 30	Saturday	Telescope Workshop	Swan Island	10am-3pm
January 30	Saturday	Science SIG	Swan Island	3pm

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.rosecityastronomers.org).

http://www.rosecityastronomers.org

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Oregon Museum of Science and Industry
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