RCA OCTOBER 20 GENERAL MEETING
The Space Elevator and Our Future
Presented by Dr. Bryan Laubscher

The Space Elevator is a radical technology for accessing space. The concept was first published in 1960 and was subsequently popularized in science fiction stories. After the discovery of carbon nanotubes in 1991 the Space Elevator concept moved from the realm of science fiction to science possibility. Now there are small groups of researchers and enthusiasts working to develop the concept and further the development of the Space Elevator.

In this presentation the basic concept and economic motivation for building the Space Elevator will be discussed first. Then the major components, deployment scenario and technological challenges of the Space Elevator will be presented. Next, the promise of the space elevator: opening space as a place to solve problems on Earth, will be outlined. Specific examples of the future with Space Elevator technology will be mentioned such as space-based solar power satellites, low cost satellites and scientific missions, manned exploration and supplying lunar and martian outposts or settlements.

Dr. Bryan Laubscher is an astrophysicist and was a project leader at Los Alamos National Laboratory until he left in January of 2008. Over the last 20 years he has carried out research and development in astrophysics, electromagnetic detection physics, space instrumentation, spacecraft, non-linear optics, laser technology, lidar and spectrometer development. In 2006 Bryan spent a year on entrepreneurial leave in Seattle starting a company to build high-strength materials based upon carbon nanotubes.
There have been some exciting new changes and developments in the club in the recent months that I would like to share some thoughts about. We recently initiated a sister club relationship with the GAMA (Grupo de Astronomos Mendocinos Aficionados) club located in Mendoza, Argentina. RCA members have had a long history of collaboration and sharing with GAMA - some RCA members have travelled to Mendoza and received great hospitality from GAMA members; Some GAMA members have attended ALCON 07 and OSP 07. A formal sister club relationship will allow greater collaboration and exchange opportunities for our members of our two clubs! To find out more about sister club relationships and guidelines for sister clubs, please visit the RCA website. I would like to thank all the sister-club committee members for drafting these guidelines and helping initiate this first Sister Club relationship with GAMA - I look forward to many more sharing opportunities with them!

Another big change we have made is introduction of the RCA forum as a replacement to our current RCA-L email list. Based on member feedback received from a survey conducted last year and in an effort to enhance collaboration and sharing amongst our own members, we decided that the Forum was well suited to our communication needs. The forum brings several benefits - ability to create topic areas by subject, ability to organize messages within these topic areas, ability to post images, easy search capabilities, ability to see different topic areas without having to subscribe individually, options to receive email notifications of topics and replies, etc.. The forum does represent a big change to how we have communicated with each other in the past -- however I very am encouraged with the response. In about a month since introduction of the forum, we have had 66 new topics started on the forum with about 246 replies! This is great and I hope the forum continues to encourage more increased sharing and communication. As we have retired the RCA-L elist, please make sure to register on the forum, if you have not already done so. I would like to put in a big word of thanks to all in the forum committee - especially to David Nemo and Larry Godsey for enabling this for us.

Finally, if you haven't already visited the new RCA website - I encourage you to do so. Larry Godsey and Dareth Murray worked very hard to reorganize the website, enhancing the design and organization of content. The result is a great website that is easy to navigate and packed with useful information. The new website is a great way to commemorate the RCA's 20th anniversary.

Clear Skies
Sameer Ruiwale.
CLASSIC TELESCOPES
Discovering the hidden deep-sky treasures of Capricornus the Sea Goat with a Sears 3.5-inch refractor.

By John W. Siple

THE PROMISE of successful deep-space observing is kept when a Sears Discoverer refractor telescope is selected. From the late 1950’s through the 1970’s, Sears, Roebuck & Co. imported some extraordinary instruments from Japan. Sears’ finest telescopes, advertised in their catalog pages as the “Discoverer” series, rival the best made instruments on the market today. They sold 2-inch (50mm) through 3.5-inch (90mm) refractors; the most popular model was a 3-inch with a finely crafted equatorial mounting.

Beginning in 1970, a novel new product, the advanced #6345, was added to the already existing Discoverer series. For an introductory price of $499.95, the amateur astronomer received an “astronomical scope with a giant 3½-inch diameter objective lens that gathers 165 times more light than the human eye and shows a whole new world of stars that has only been read about.” The streamlined “professional model,” a masterpiece of the telescope maker’s art, was touted as having the ability of magnifying up to 700 times, which was a typical advertising ploy for that time period and rarely realized in actual observing.

The 3.5-inch (90mm) achromatic refractor was manufactured in Tokyo, Japan by the prestigious optical firm of Royal Astro Optical Industries Co., Ltd. (Their reputation for making quality telescopes remains unmatched even today.) The precision engineered Discoverer 90mm was originally intended for distribution in Japan, but Sears acquired all of the 600 prized telescopes for the U.S. market. Its debut created a flurry of keen interest among serious amateurs and sent a clear message to the users of top notch instrumentation that one of Japan’s best refractors had now arrived.

Royal Astro Optical Industry employees regard the moderately sized refractor as their finest effort in telescope making; painstaking care went into the manufacture of every single part down to the tiniest nut and bolt. The coated, air-spaced Fraunhofer-type objective lens was figured by master opticians to tight tolerances, resulting in a lens that is completely free of optical errors and capable of reaching deep into the cosmos with unparalleled clarity.

The classic 90mm equatorial refractor was discontinued just two short years later in the autumn of 1972, when a clearance price of $299.95 was used to sell the last remaining stock of telescopes. A short period of sales and limited production run, combined with the unusually good mechanical and optical characteristics, has resulted in a very rare, highly collectable instrument. Whenever an example appears on the secondary
market, a price of $1,100-1,500 is usually realized. Of course, this is for a complete, all-original 90mm telescope having a "perfect" (unchipped) objective lens. Each instrument has its own serial number, which is inscribed on the top of the rack-and-pinion focusing mechanism along with the scope’s lens diameter, focal length, and model number.

A supreme example of a Sears Discoverer 90mm refractor telescope, serial number 990112, was used to view the hidden celestial treasures of Capricornus the Sea Goat, a broad star grouping of late summer and autumn nights found hovering above the southern horizon. Capricornus, known by the ancients as the “Southern Gate of the Sun,” is an inconspicuous zodiacal constellation that resembles an inverted cocked hat or boat. The Tropic of Capricorn, or the point on the earth’s globe where the sun is directly overhead at noon during the winter solstice, is derived from this waterborn constellation.

Capricornus lies in a part of the sky known as the “Sea,” a vast area that spans most of the celestial sphere and inhabited by Pisces the Fishes, Cetus the Whale, Hydra the Sea Serpent, and many other legendary creatures of past oceans. In Greek mythology, Capricornus (Capricorn) is identified with the god Pan, who escaped the horrible monster Typhon by metamorphosing himself into the form of a sea goat, a creature with the head of a goat and the tail of a fish. Antiquated star atlases often give a fanciful representation of the “god of Waters.” (See Burritt’s famous depiction below.)

Capricornus, although associated with the water world in mythology, is a true desert for deep-sky observers. It has only one notable star cluster, the globular Messier 30 (NGC 7099) shining at magnitude 7.5, and a very poor selection of faint galaxies that are beyond the reach of the Sears 90mm refractor. However, an enticement for amateur astronomers is a smattering of predominantly gold and blue double stars scattered throughout the western part of the constellation. And since the ecliptic passes diagonally through the main body of the constellation, observers can get extended glimpses of the moon, planets, and asteroids.

Alpha-1 ($\alpha_1$) and Alpha-2 ($\alpha_2$) Capricorni, known together as Al Giedi or “The Goat,” are located about 20° south-southeast of Altair and in the NW corner of the boat-shaped constellation. Nearby is the radiant of the meteor shower known as the $\alpha$ Capricornids. The attractive naked-eye pair, separated by a whopping 378" or slightly more than 0.1", is a result of a chance alignment (optical double) of two solar type suns that are not gravitationally bound to each other. The two stars lie at distances of 500 and 100 light years, respectively.

In the Sears Discoverer 90mm refractor low powers work best on this fascinating hybrid system, where 4.3-magnitude Alpha-1 is seen as a yellow orb tinged with orange, while 3.6-magnitude Alpha-2 radiates a soft, pure golden light. Each saffron gem has another easily visible companion star nestled nearby in the eyepiece field. Far more difficult a challenge to split is an 11th-magnitude bluish star centered only 7" from Alpha-2. William H. Smyth (1788-1865), a prominent English astronomer, recorded seeing this elusive attendant to Alpha-2 as “in evanescent flashes, so transient as again to recall Burns’ snow-flakes on a stream.”

A noble field glass triple, also located in the head of the Sea Goat and 2.3° south-southeast of Al Giedi, is Dabih ($\beta$ Capricorni). At 35x, the Sears 90mm scope shows a strikingly beautiful star system, where a deep blue secondary star of 6th-magnitude circles at a healthy distance of 205" from the 3rd-magnitude yellowish-orange primary. The remaining 9th-magnitude tertiary star sits 227" to the southeast from the brighter main sun. All three stars are again beautifully framed in the Sears 40mm guide refractor at 25x.
The planet Neptune was discovered twenty minutes of arc east and 3° north of δ Capricorni on the night of September 23rd, 1846. This remarkable portrait is by James Hastings-Trew.

Following the constellation’s outline to about 4° southeast of Beta, stargazers will encounter a pleasing mix of optical double stars that comfortably fit into the same low power eyepiece field. The equilateral triangle formed by the double stars Rho (ρ), Pi (π), and Omicron (ο) Capricorni is best viewed in the Sears Discoverer 90mm refractor at magnifications ranging between 50x and 100x, but higher power is needed to clinch a positive observation of Pi’s close companion star. Each delightful pair gives the telescopist a different aspect of separation, color, and magnitude.

The star of the group easiest to resolve is ρ Capricorni, where a large gap of 256" separates the two components. In an ocular providing 54x, the 5th-magnitude primary sun looks pale yellow, while the 7th-magnitude secondary star has a definite rust color. Positive proof of the refractor’s outstanding performance is given by testing it on π Capricorni, a very difficult challenge since the secondary star glows faintly at magnitude 8.5 and lies at a distance of only 3.4" away from the 5th-magnitude primary. To successfully resolve the tight pair of white and blue stars in the Sears refractor the magnification must be stepped up to nearly 300x under steady skies. The constellation’s beauty queen of double stars is ο Capricorni, a flashy pair of 5.9 and 6.7 magnitude suns separated by just over 21". The closely matched pair of blue-white stars is a nice sight in the Sears Discoverer at 82x.

Although not a member of the triad, Sigma (σ) Capricorni, another fine double star located 2.5° southwest from the group’s center, deserves honorable mention. This sparkling duo consists of a deep yellow 5th-magnitude primary star and a pale blue secondary star of magnitude 9.2 orbiting a leisurely 55" away. The unequal double lies in an attractive field, where a patch of stars immediately to the south adds to the view.

On the opposite side of the constellation and 0.4° west-northwest of 41 Capricorni is M30, a globular star cluster discovered by Charles Messier in August 1764. The sharply concentrated glow has a diameter of about 5' in the Sears 90mm refractor, but catalogs list a value twice that size. In the refractor at 156x, Messier 30 has an asymmetric appearance because of the presence of several very noticeable stubby arms or “straggling streams of stars” on the north side of the cluster. However, the rest of the globular star cluster remains a mottled mass of milky white light with a central blaze. Astronomer T. W. Webb (1807-85) fittingly described M30: “Moderately bright, beautifully contrasted with 8 mag. star beside it. Comet-like on 64x. With higher powers, resolvable.”

Fortunate indeed is the amateur astronomer who has the controls of a Sears Discoverer 90mm equatorial refractor telescope at his or her fingertips. Mechanically sound and optically perfect, this Sears import from Japan is at the forefront of a modern day classic telescope gold rush. Never before has a refractor telescope had such an impact on those who like astronomical equipment from the recent past. Hidden treasures lie not only in the constellation Capricornus, but also in the closets, attics and basements of amateur astronomers, where fine examples of these 90mm telescopes from yesteryear await another chance to collect light from distant stars and galaxies.
M74 and M77

For the most part the only times I’ve been excited about observing M74 and M77 have been during a Messier Marathon. Both of these galaxies are nearly unobservable during late March because they set before the sky is truly dark, making their observation more an exercise in extreme detection. They’re the first two Messier objects to check off your marathon list, otherwise you have no chance to see the entire list in one night.

I’ve only seen M74 and M77 in a dark sky a couple times over the years and I’ve been overdue for quite awhile for another good look. Unfortunately, they’re best placed for observing when our weather is usually at its worst so the opportunity often passes. However, staying up late during the August or September new moon is the next best thing and I took that opportunity at this year’s Oregon Star Party.

I went after these two galaxies early on Saturday morning, August 30, when the sky was typically OSP dark and transparent. The seeing was quite steady and the light breeze from earlier in the evening had mostly died down. With M74 in Pisces and M77 in Cetus they were both well placed (3am to 4am) so overall the conditions for observing were ideal. Also, I was pumped up about all this, so I was primed for a good look at these two galaxies. Here’s what I saw:

M74

Notes made at the scope:

“Wow, what a terrific face-on spiral galaxy in a dark sky! The tight core with a star-like nucleus has an equally bright star near it (supernova?). Two main spiral arms with two HII or star clouds also stand out well giving the arms great personality. Best at 251x, 3:36am.”

First of all, the star near the core isn’t a supernova as I conjectured in my notes, but it sure looked like it might be! You can see the same star in the DSS image by looking closely at the core area. Dang.

Whenever I make a sketch of a Messier object I like to compare it to the sketch made by Stephen James O’Meara in his book Deep-Sky Companions: The Messier Objects. Very often his sketch, made with a 4” refractor, shows as much as mine made with a 28” reflector. That hardly seems fair, but then O’Meara is renowned for his exceptional observing skills, plus he put several hours of observation into each of his Messier object sketches.

In this case my sketch shows more, but not by much. If you have O’Meara’s book, turn to page 211 to check it out. All things considered I’m happy to see as much as I do in about a half hour as O’Meara does in several hours – but then I wouldn’t mind living in Hawaii like he does…

M74 sketch, 28” f/4 at 251x. M74 DSS image.
My observing technique is to examine an object at a wide range of magnifications to see what each power can reveal, and then to settle on the magnification that shows the most detail. I start my sketch at this point and if needed I’ll shift the power up and/or down to help finish the sketch. I’ll increase the power if there’s a part of the object that can benefit from it, and decrease the power to help put the object into a better context with its surroundings.

I’ll clean up my eyepiece sketch a little the next day when I can see it in daylight and I’m well rested. That involves making the stars rounder as I tend to draw them as short dashes at the scope, and to blend areas of nebulosity to more closely resemble what I saw in the eyepiece.

To get the sketches as they’re shown in this article I scanned the originals into Photoshop to clean up any marks that weren’t part of the sketch, perhaps do a little more blending, then make the stars rounder still, and then finally invert the sketches into the negative and more realistic images seen here.

Notes made at the scope:

“M77 is about 1/4th the apparent size of M74 but it’s much brighter. The bright star-like core is embedded within an elongated whirl that looks like a planetary nebula. The outer portion of the galaxy is the faintest part but also shows some spiral action with a few HII/star cloud highlights. Best at 467x, 4:12am.”

The listed size of M74 is 10’.5 x 9’5 compared to M77 at 7.1’ x 6’.0 so my perception of their apparent sizes shows how different a visual estimate can be from a photographic measurement.

I was immediately struck at how much like a planetary nebula the core of M77 looked and it took a minute or two for the much dimmer outer spiral arms to come into definite view. The bright core took magnification well which should mean that medium size scopes should get a nice view under good conditions. This is confirmed by O’Meara’s sketch (page 218 in his book) which is just about as detailed as mine.

Even though I didn’t spend hours observing each of these galaxies like O’Meara did, the time I did take to sketch them helped me see more details than I would have seen otherwise. As a general rule I’ll make a sketch of an interesting object if it’s within my ability to do so. My motivation to sketch is not only to see the most that I possibly can during an observation but to also to have a permanent record of what I saw, and that’s a big part of what makes my notes my most prized possession.

M74 and M77 are no doubt under-observed by those of us in the Pacific Northwest because of our usually very cloudy and wet Autumn weather. Hopefully we’ll get a few breaks this year and we’ll have a chance or two to see these galaxies during their true prime observing time.
THE LAST LUNAR ECLIPSE OF 2008
VIEWED FROM MENDOZA, ARGENTINA

The eclipse on August, 16 was a partial one.
From Mendoza we could see the last moments of this phenomenon

Report by Leo Cavagnaro

We had two lunar eclipses this year. The first one was a total eclipse that occurred on February, 20th and was visible from the Americas. On August, 16th there was a partial eclipse.

This was the number 29 of 83 eclipses of Saros Series 138. This Series began with a small eclipse on October, 5 1503 and it will end with a small eclipse on March, 30 2982. The eclipses of this Series occur in the Moon’s ascending node.

At the time of this phenomenon, our satellite was in Constellation Capricornus, near the border with Constellation Aquarius.

The Observation from Mendoza, Argentina

I took this picture with my Canon A570 IS digital camera at 7:19pm local time, with the Moon very low in the sky.

It was mostly cloudy at 7pm. However, we could see a clear eastern sky from our observing site situated 15 miles North of Mendoza. The picture here was taken at 7:26pm local time, 18 minutes before the umbral phase ended.

The Moon’s trajectory took it through the northern umbral shadow, resulting in a partial eclipse that lasted 3 hours 8 minutes. However, it was a short phenomenon for observers situated in the west region of our country. We could see the eclipse for only 37 minutes (7:07pm to 7:44pm)

Greatest eclipse took place at 6:10pm local time (9:10pm UT) when the eclipse magnitude reached 0.8076.

From these geographical coordinates the Moon was below the horizon for us at that moment. At 7:44pm local time the Moon left the umbra and we saw the usual appearance of a

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Lunar Eclipse  (Continued from page 8)

bright full Moon. Astronomically, the phenomenon finished at 8:55pm local time (11:55pm UT), when the Moon left the penumbral shadow.

In spite of the low temperatures at the observing site (41F) we enjoyed this amazing astronomical phenomenon. There are four lunar eclipses next year. Three are penumbral eclipses and the last one is a partial eclipse.

Physicist Lawrence Krauss to speak at OMSI

The new Center for Inquiry Community of Portland is pleased to welcome physicist Lawrence Krauss to speak at its kickoff event at the Oregon Museum of Science and Industry at 7 p.m., Tuesday, Oct. 14. Dr. Krauss is Foundation Professor in the School of Earth and Space Exploration and Director of the Origins Initiative at Arizona State University. He will present his ideas on how scientific discovery enhances our experience and understanding of the world, and how “anti-science” thinking is threatening our common good.

“Most people think that science is something that other people do, something separate from everyday life—and they think that’s OK,” said Krauss. “But it’s not OK. Whether we’re talking about the environment, energy policy, economic competitiveness, or even national security, almost all of the major challenges we face as a society have a scientific or technological basis.”

Krauss, an acclaimed teacher, lecturer, and prominent theoretical physicist, will talk about the way the public’s scientific literacy—or the lack of it—is affecting policies about global warming, missile defense, stem cell research, and evolution/science education. The talk will be a look at the fascinating discoveries and advances of modern science as well as a discussion of the dangers facing our society if we fail to grasp what science teaches us about ourselves and our world.

“We don’t need a nation of physicists,” Krauss explained, “but if we’re going to solve these problems, we do need citizens and leaders who at least understand the values and methods of science.”

This event, “Science, Non-Science, and Nonsense: From the Classroom to the Capitol,” celebrates the kickoff of a new local advocacy group: The Center for Inquiry Community of Portland. CFI Portland is an educational nonprofit organization created to advance science, reason, and freedom of inquiry in all areas of human endeavor. Through outreach, social services, and public events such as this, the new CFI Portland promotes critical thinking and science education while providing a positive, rational, and ethical alternative to the reigning paranormal and religious systems of belief.

The event is FREE and open to the public. For more information, visit www.centerforinquiry.net/portland. To arrange an interview with Dr. Krauss, please contact Lauren Becker, 716-636-4869, ext. 406.

Lawrence M. Krauss, cosmologist, is Foundation Professor in the School of Earth and Space Exploration and Director of the Origins Initiative at Arizona State University. He is an activist for the public understanding of science and is on the steering committee of ScienceDebate2008.

The Center for Inquiry/Transnational, is a 501(c)(3) nonprofit, educational, advocacy, and scientific-research think tank based in Amherst, New York, with additional outreach communities in dozens of cities throughout North America. The Center for Inquiry’s research and educational projects focus on three broad areas: religion, ethics, and society; paranormal and fringe-science claims; and medicine and health. The Center’s Web site is http://www.centerforinquiry.net.
Board Meeting Minutes
September 8, 2008
OMSI Classroom 1
Margaret Campbell-McCrea

Attending: Dave Nemo, Greg Rohde, Sameer Ruiwale, Jan Keiski, Ken Hose, Margaret Campbell, Larry Godsey, Dale Fenske, Patton Echols

Meeting called to order at 7:15 p.m.

Officer Reports:
- Secretary: A quorum has not been met; nine voting members attending.
- Treasurer: Financial activity was nominal in August. The Club has $21,022.12 in current assets and the Site Fund has $18,851.13.
- Programming: September’s program will cover the Allan Array’s SETI in auditorium. The speaker is Seth Shostak.
- Observing: There was discussion of the mistake regarding the date of the star party at Stub Stewart Park. In spite of the unforeseen problem, we were able to recover, and 25 RCA members attended and showed the night sky to about 70 people. On the same night, OMSI had its final star party of the season at Rooster Rock. Jim Todd reported to the Club that about 25 scopes and many RCA members came, with over 350 people coming out to view through their scopes. He was very pleased with the way this year’s observing season has gone.
- We discussed the idea that it might be good to have two star parties on the same night, giving eastsiders and westsiders a chance to go to either. Sameer will talk to Jim Todd about having events on both sides of the city.
- Community affairs: We have been contacted by a film crew that wants a “guide to the sky” for a documentary about kids and nature. It would apparently involve having someone at a star party working with kids. The Board expressed interest in the project, and asked Patton Echols to learn more about it.
- Also, Lawrence Kraus wants RCA to help publicize a talk that he is giving, on physics at the Science in the Public Interest lecture. (I missed this point - - can someone clarify?)
- Media Director: Nominal.
- Membership: There were 6 new members and 16 renewals in August. We have 229 paid up members; last year we had 179. $498 in dues was received.
- New Members: No report.
- Sales: $254 was collected in August.
- Library: Nominal.
- Telescope Library: Nominal.
- IDA: No report.
- Magazine Subscriptions: Nominal.
- Webmaster: No report.

Old Business
- Forum/eList transition: Dave Nemo reported being pleased with the transition so far. Sameer had gathered some statistics between August 9 and September 4: 70 new topics have been created, and there have been 400 or more posts. That is all much better than we’ve had on the email list.
- Nevertheless, 120 people still haven’t signed up and not all of the Board have participated as they should, even though they are all signed up. Also, Board members can and should send out global messages to the whole club, about things like changes in meeting dates or searches for volunteers. Dave agreed to send out instructions to the Board members on how to do that. We agreed to send out more broadcast message reminding members to sign up. For those who do not, we’ll contact them and sign them up. Also, after September’s meeting, we will drop those who have not renewed their membership. Ken will send out broadcast message to member list reminding them to renew or they will be dropped. The last day of September will be the cut-off date for the old email list.
- Press Release and/or article on Christina Lee: Not done.
- Article for the Reflector on Sister Clubs: The deadline for submission is October 15, and Margaret will meet that deadline. She will circulate the article to the Board before sending it in.
- Youth Program: Jan has set aside books for Jeanie for the Youth Program.

New Business
- November Meeting: The November meeting will be in the auditorium, not the IMAX theater.
- Elections: We need three Board members and three general RCA members to create a nominating committee: Margaret, Dale, Greg volunteered. We will send out a broadcast message to RCA for three more members. We must have a slate of nominees by the October meeting, and elections in November. Sameer will send out message to club asking who wants to continue their position, or change it.
- Starlight Parade: Sameer suggested getting started on the project early. Margaret will send Andy Phelps a message asking him if he wants to chair this activity in 2009. The first steps will be to form a committee and propose a budget.
- Harriet Tubman Leadership Academy for Young Women is looking for guest speakers and ideas for activities for their 8th grade science course this fall. We have a precedence of doing star parties at schools and providing speakers, but it seems they want more, including a person for a couple hours per week to

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work with a science club. Patton said he has something like this before with the SUN program for five week in summer about one hour a week. After some discussion, we agreed that Sameer will write back for more specifics. Margaret expressed interest in learning more about the project.

- Astronomy Display Grant at Multnomah County Library: The library is applying for a grant to sponsor a “Vision of the Universe” exhibit. The application asks for local partners, and they asked us to be a local partner. We will allow them to reference us as a partner for speakers and activities, but at the moment there is no need to have these planned out. Sameer will write a letter to them by 9/19 giving general support and assent; Sameer will put the application on the Board Forum.

- Bylaws: Tabled.

Meeting adjourned 8:40 p.m. The next Board meeting is on 10/06.

Action Items:

1. Sameer will discuss the idea of joint or overlapping or simultaneous star parties with Jim Todd.
2. Patton Echols will learn more about the filming project.
3. Dave Nemo will send out instructions to Board members about how to send broadcast messages to the club.
4. Ken will send broadcast message reminding people to renew their membership or they will be dropped after the September meeting.
5. Dave will send a broadcast message reminding people to sign up for the Forum.
6. Margaret will write article on sister clubs for Reflector and will circulate it to the Board before submitting it.
7. Sameer will send out message to club asking who wants to continue their position, or change it.
8. Margaret will contact Andy Phelps about chairing the Starlight Parade project.
9. Sameer will reply to Harriet Tubman Leadership Academy about what they are looking for. He will forward Margaret Campbell’s contact information.
10. Sameer will write a letter to Mult. Co. Lib. by 9/19 giving general support and assent; Sameer will put the application on the Board Forum.

OMSI HOSTS 16th ANNUAL “WHAT WILL WINTER BE LIKE” AMS MEETING FRIDAY OCT. 24

Prognosticators to Give Weather Outlooks for Upcoming Winter

Weather experts from the Oregon chapter of the American Meteorological Society (AMS) will gather at the Oregon Museum of Science and Industry (OMSI) on Friday, Oct. 24, 2008 from 10 a.m. to 12 noon for the 16th annual “What Will the Winter Be Like” meeting. The event is held in the OMSI auditorium and is free and open to the public.

“Will we have another La Nina this winter?” ponders Oregon-AMS president Kyle Dittmer. “We haven’t seen a back-to-back La Nina since the 1970s – we’re way overdue. Perhaps we’ll just have a ‘normal’ winter, whatever that means anymore.”

Experts in the field of weather will talk about the forthcoming winter. Mark Nelsen, KPTV meteorologist, will give a review of the past winter in the Pacific Northwest.

This year’s speakers include: Steve Todd, Meteorologist-in-Charge, NOAA-National Weather Service Portland, Kyle Dittmer, Hydrologist-Meteorologist, Columbia River Inter-Tribal Fish Commission Portland, Pete Parsons, Meteorologist, Oregon Department of Agriculture, Salem, and George Taylor, Climatologist, Applied Climate Services LLC, Corvallis.

About Oregon AMS

The Oregon Chapter of the American Meteorological Society is the local arm of the national organization that promotes the use and understanding of meteorology in the Oregon and Southwest Washington area. New members are always welcome to join the Oregon AMS; information on membership will be available at the meeting.

http://www.ametsoc.org/chapters/oregon/index.html
A star is born. A star is born. A star is born... Repeat that phrase 4000 times and you start to get an idea what life is like in distant galaxy J100054+023436. Astronomers using NASA’s Spitzer Space Telescope and ground-based observatories have found that the galaxy gives birth to as many as 4000 stars a year. For comparison, in the same period of time the Milky Way produces only about 10. This makes J100054+023436 an extreme starburst galaxy.

“We call it the ‘Baby Boom galaxy,’” says Peter Capak of NASA’s Spitzer Science Center at the California Institute of Technology in Pasadena, CA. "It is undergoing a major baby boom, producing most of its stars all at once. If our human population was produced in a similar boom, then almost all people alive today would be the same age."

Capak is lead author of a paper entitled "Spectroscopic Confirmation of an Extreme Starburst at Redshift 4.547" detailing the discovery in the July 10th issue of Astrophysical Journal Letters.

The galaxy appears to be a merger, a “train wreck” of two or more galaxies crashing together. The crash is what produces the baby boom. Clouds of interstellar gas within the two galaxies press against one another and collapse to form stars, dozens to hundreds at a time.

This isn’t the first time astronomers have witnessed a galaxy producing so many stars. “There are some other extreme starburst galaxies in the local universe,” says Capek. But the Baby Boom galaxy is special because it is not local. It lies about 12.3 billion light-years away, which means we are seeing it as it was 12.3 billion years ago. The universe itself is no older than 14 billion years, so this galaxy is just a youngster (Capak likens it to a 6-year-old human) previously thought to be incapable of such rapid-fire star production.

The Baby Boom galaxy poses a challenge to the Hierarchical Model of galaxy evolution favored by many astronomers. According to the Hierarchical Model, galaxies grow by merging; Add two small galaxies together, and you get a bigger galaxy. In the early years of the universe, all galaxies were small, and they produced correspondingly small bursts of star formation when they merged. “Yet in J100054+023436, we see an extreme starburst. The merging galaxies must be pretty large.”

Capak and colleagues are busy looking for more Baby Boomers “to see if this is a one-off case or a common occurrence.” The theory of evolution of galaxies hangs in the balance.

Meanwhile… A star is born. A star is born. A star is born.

See more breathtaking Spitzer images at www.spitzer.caltech.edu/Media/maimages. Kids can play the new Spitzer “Sign Here!” game at spaceplace.nasa.gov/en/kids/spitzer/signs.

This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.
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 website 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-oms.org/library.htm

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

Science Special Interest Group (SCI-SIG)

Next meeting is October 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 of TMS -
http://www.rosecityastronomers.org/sigs/science.htm
Tom Nathe <sigs@rosecityastronomers.org>
RCA SIG coordinator

Telescope Workshop

When: Saturday, October 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

ASTROPHYSICS / COSMOLOGY SIG

Date/Time: Wednesday, October 22, 7 PM.
Topic: “Indian Physicists' Night (with food)”
Presented by: Sameer Ruiwale
Place: Linus Pauling Complex,
3945 S.E. Hawthorne St., Portland.
Contact: Bob McGown (503-244-0078)
or Dareth Murray, (503-957-4499).
http://www.rca-oms.org/cosmologysig.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.rca-oms.org).

The location is announced on the RCA general email discussion list. Information on how to join this list is at http://www.rca-oms.org/emaillists.htm

Always great conversation and food.
For more information contact: Margaret Campbell at mmcrea@nwlink.com

Photo by Jan Keiski

Photo by Jan Keiski

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

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).