

The

Rosette Gazette

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Newsletter of the Rose City Astronomers

April, 2010



RCA APRIL 19 GENERAL MEETING

Connecting To Your Cosmic Context

Presented by Todd Duncan

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Our frame of mind profoundly influences how we think, feel, and act.

Just consider the difference between your narrow perspective when someone cuts you off in traffic at the end of a long day, and the expansive feeling of connection while lying

under the stars on a summer night, wondering if someone out there is looking back at you.

Views about sustainability are particularly dependent on staying aware of the threads connecting you to the universal tapestry in which you are a strand.

The aim of this talk is to help you spend more of your time in that expansive, connected frame of mind, and convince your non-astronomical friends of its value. Dr. Duncan will briefly survey the story of our cosmic environment and history, building a thread of connection from your present state of awareness



out across the unimaginable distances and nearly 14 billion years of history that make the present moment possible. Hell also offer a few simple suggestions for returning to that connected frame of mind whenever you lose it.

Todd Duncan is a cosmologist whose work is guided by the theme of better understanding how our immediate human experiences connect to a cosmic perspective that gives them meaning. He combines a research background in physics with experience teaching science concepts to a wide range of audiences. He's the author of "An Ordinary World: The Role of Science in Your Search for Personal Meaning", and co-author of "Your Cosmic Context: An Introduction to Modern Cosmology".

After the presentation Todd is happy to sign his books if you bring them.

All are Welcome! Monday April 19

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

Location: OMSI Auditorium



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

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Hubble Deep Field above courtesy R. Williams (STScI), the Hubble Deep Field Team and NASA.

Moon photos below courtesy David Haworth

Last Quarter Moon
April 6

New Moon
April 14

First Quarter Moon
April 21

Full Moon
April 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.

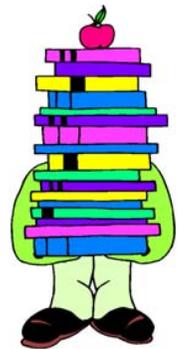
The RCA member rate for Astronomy magazine is \$34 for one year or \$60 for two years. For more information go to the RCA web site index and click on the link for magazines. Renewals and new subscriptions at the Magazine Table before General Meetings. Please make checks out to "RCA" and allow two months for your subscription to be renewed.

<http://www.rosecityastronomers.org/magazines/>
 Larry Godsey <magazines@rosecityastronomers.org>

RCA LIBRARY

The Rose City Astronomers main-tains 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. 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>



In Memoriam
Larry Deal
1955-2010

Larry joined the Rose City Astronomers in January 1999 and had been an active member for the past eleven years. He volunteered for the Rosette Gazette Newsletter editor position in March of 2003.

In September 2005 he received an honorable mention for the Astronomical League's Mabel Stearns Award which recognizes astronomy newsletter excellence.

In 2007 he won first place for the Mabel Stearns award for his work on the Rosette Gazette.



Photo by Jan Keiski.

Larry at Hancock
Dark Sky Party
in October 2007

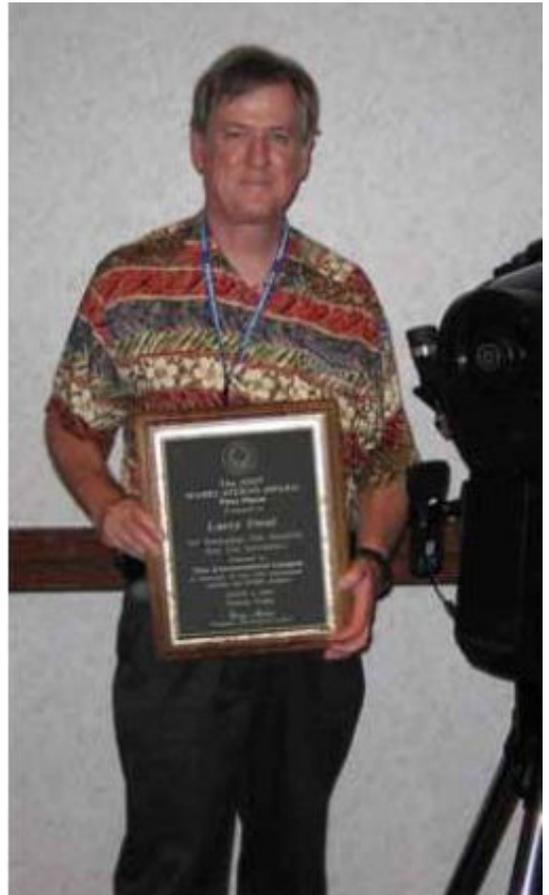


Photo by Jan Keiski.

The family asks that in lieu of flowers please make donations payable to:
Audubon Society of Portland
5151 NW Cornell Road
Portland, OR 97210

Explore the Finest Deep-Sky Objects in Hydra

Challenge yourself to spot the Southern Pinwheel, the Ghost of Jupiter, and a planet-bearing quaternary star system through a classic 6-inch reflector.

by John W. Siple

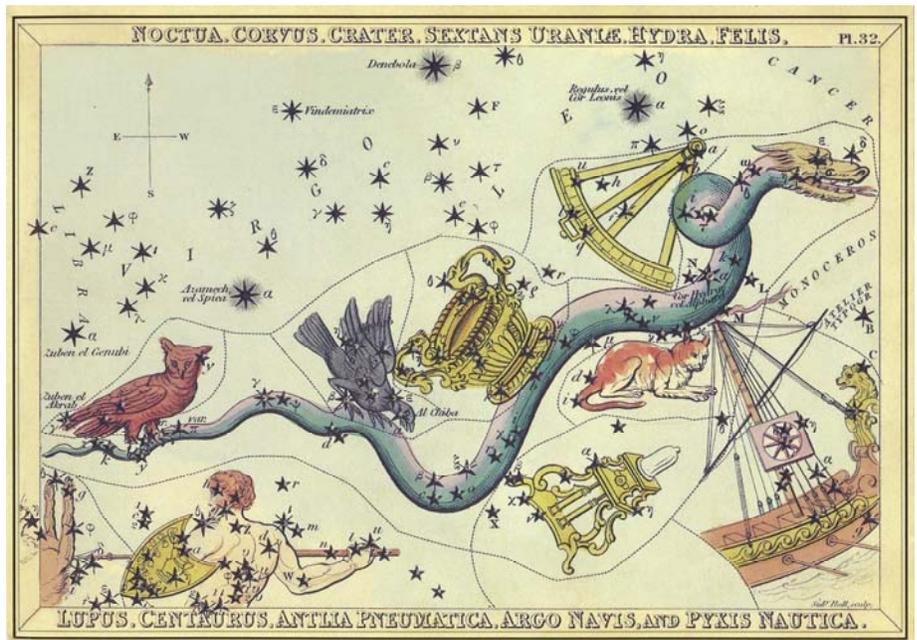
ON APRIL NIGHTS, Hydra, the Sea Serpent, holds sway in the south. This snake-like figure, the largest and longest of the 88 recognized constellations, winds its way through a wide swath of the night sky. At one time its boundaries extended even further, encompassing Corvus, Sextans and Crater. An evening's vigil shows the constellation's true size, which straggles almost interminably south and eastward across the heavens, below the stars of Virgo and paralleling the ecliptic.

According to an old legend, Hydra was the multi-headed monster that once lived near the marshes of Lerna. Its job was to protect the Golden Fleece, which the creature did with a deadly precision. In early Babylonian mythology, it represented Tiamat, the great dragon of chaos, while in China the water serpent was known as the 'Red Bird' or 'Willow.' The constellation's resemblance to a wandering stream led the Egyptians to associate it with the River Nile.

Because of the constellation's long extended and serpentine form, it reaches almost from Canis Minor to Libra. In its heavenly design, chartists have drawn Hydra's head as a single ring-shaped figure of five stars, just south of Cancer. A slightly variable orange giant, Alphard or the Solitary One, marks the position of the serpent's heart. Although big, Hydra has little to offer the casual observer, but the few objects that it does have are definitely worth searching for in a telescope.

Astronomers can choose from a list that includes the rich galactic cluster M48, one of Messier's infamous 'missing objects' and now identified with NGC 2548. Another tempting target is the grand spiral galaxy M83 or Southern Pinwheel, located beneath the tail portion of Hydra near the Centaurus border. A telescopic voyage into the region would not be complete without seeing the planetary nebula NGC 3242, lodged on the beast's body close to the star Mu (μ).

A circa 1967 Cave Astrola 6-inch F/8 Newtonian reflector was successfully employed by the author to hunt for Hydra's deep-sky delights. This modestly-priced instrument was one of Cave Optical Co.'s bestselling telescopes and a regular sight in *Sky & Telescope* ads. The Long Beach, California company is world famous for producing outstanding mirrors, but all of their completed instruments are ranked highly by both collectors and discriminating amateurs.



Above: The sea monster as illustrated on a card from *Urania's Mirror*, published in London in about 1825. Throughout the month of April the southern constellation can be seen in its entirety, sliding across the heavens from dusk until dawn. Hydra spans about one quarter of the sky but has little to show amateur astronomers besides its mere length.

Left: One point of interest for deep-sky observers is the Southern Pinwheel. First described by the French astronomer Nicolas-Louis de Lacaille during a survey of the heavens at the Cape of Good Hope in 1751-52, this galaxy was glimpsed some thirty years later by Charles Messier from his observatory in Paris. Best viewed from southerly latitudes, it is one of the most spectacular examples of its class. Since 1923, six separate supernova outbursts have been recorded in the triply branched spiral. A distance of about fifteen million light-years has been determined for M83. Photograph courtesy of Wolfgang Kloehr.

(Continues on Page 5)

Exploring Hydra (Continued from page 4)



At left is the multiple star HD 98800, a member of the TW Hydrae Association. It is located just across the border in the constellation Crater at coordinates (epoch 2000) RA 11h 22m and declination $-24^{\circ} 47'$. Artwork courtesy of NASA/JPL-Caltech/T. Pyle (SSC). Andrew C. Stewart's stunning mind's-eye interpretation (right) of a face-on spiral galaxy, viewed from a habitable ocean planet, closely approximates M83's appearance.

If undecided on which object to look at first, a logical solution is to start in the western sky with M48. Finding this isolated open cluster is easy. Simply point your telescope in the direction of the little asterism of stars that includes 1 and 2 Hydra—M48 lies only 3° to the southwest. The total magnitude is about 5.8, confirming claims that the cluster's glow can be seen by the naked-eye.

Through the Cave Newtonian some of the best views are at low magnification, where M48 is transformed into a triangular-shaped group of more than seventy 8th- to 12th-magnitude stars loosely scattered in an area of the sky about 1° across. In his 6-inch refractor, W. H. Smyth noted that the object appeared as "a splendid group, in a rich splashy region of stragglers, which fills the field of view, and has several small pairs, chiefly of the 9th-magnitude."



A favorite object for telescopes on an April evening is the planetary nebula NGC 3242 in Hydra. This photograph in filtered light was made by Adam Block (NOAO/AURA/NSF).

Moving eastward to a place marked by the 4th-magnitude star Mu (μ) Hydrae, we encounter the constellation's brightest planetary nebula. It is found 2° south and just a tad bit west of that star. Staring down from the heavens like a pale blue cat's eye, the planetary, often referred to as the Ghost of Jupiter, enralls the observer with its appearance. William Herschel lays claim to its discovery, sighting the annular ring nebula in 1785.

NGC 3242 has a total light roughly equivalent to that of an 8th-magnitude star, but has a disk measuring only $25''$ across. As a result the surface brightness is quite high, averaging about 10 times greater than Lyra's M57. The Cave 6-inch scope at 174x shows it slightly elongated northwest-to-southeast with brighter patches at each end. The distinctive double shell structure is equally obvious in moments of steady seeing.

A deviation from the normal routine comes by turning the 6-inch telescope on HD 98800. This fancy designation refers to TV Crateris, a multiple system 150 light-years away containing four young T Tauri-type stars, and where the stars are paired off into binaries. One of the stellar twins, identified as HD 98800B, has a circling ring of dust and possible planets, while the other 'A' pair 50 astronomical units away has neither.

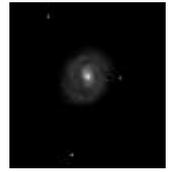
A praiseworthy test for the Cave optics is the ability to split the A-B pair. Its doublet components are nearly equal in brightness, magnitudes 9.59 and 10.06, and are currently $0.83''$ apart. Dividing them can therefore be a difficult task. The multiple star's low altitude above the southern horizon combined with the telescope's limited light grasp and borderline resolving power all contributed to an

inconclusive result. Perhaps other skilled amateurs using 8-inch and larger instruments operating under more favorable conditions can successfully pick out the two stars.

Hydra is not without its share of globular clusters. M68, an outstanding example, has an apparent diameter of $12'$ and glows at magnitude 7.8. It can be found by following the Sea Serpent's trail of stars further to the southeast close to a spot occupied by 5.5-magnitude ADS 8612, directly underneath the 'sail' of Corvus. In an eyepiece that provides 94x, it is partially resolved, containing tattered streamers of stars winding out from a mottled central disk.

NGC 5694 is another of Hydra's globular clusters, tucked away in the extreme northeastern corner of the constellation a little less than 2° west of a $3\frac{1}{2}^{\circ}$ -long chain of 4th- to 6th-magnitude stars. A harder target than M68, it lies in an attractive field at the end of a bent arrow of fainter stars. In the 6-inch telescope at 94x, this 10th-magnitude swarm of suns appears as a tiny, concentrated patch about $3'$ across. At a distance of 113,000 light-years, NGC 5694 is one of the most remote globular clusters known to us.

The last object on our travels across Hydra is M83. With a diameter of $13'$ by $11'$ and shining at magnitude 7.5, it is probably the brightest, intrinsically, of Messier's galaxies. For those who possess Cave 6-inch telescopes, a visual rendezvous will reveal a bright, circular core buried within an oval $5'$ by $2'$ halo. Surrounding this is another but broader envelope nearly $8'$ across. M83's spiral arms, arcing from either end of a short bar at the center of the galaxy, can be seen with averted vision on clear, dark nights.



Today's new word is...

Have you ever come across a word that you'd never seen before and you couldn't wait to use it somewhere? I did not long ago and this is my first chance to use it – "gobsmacked". The definition is "utterly astounded" and it sounds wonderful when spoken.

I bring it up here because I was gobsmacked by two pairs of interacting galaxies in Canes Venatici, and no, one of them is not M51. I had the pleasure of observing them nearly at the zenith on the nights of March 18th and 19th from Chuck and Judy Dethloff's place in the Coast Range west of Forest Grove. Both nights had enjoyable conditions – not overly cold, dewy or frosty and little to no breeze. SQM readings were between 21.12 and 21.35.

NGC 4485 and NGC 4490

I was looking for Arp 23 when I stumbled across this pair, and for the whole time I was working on my sketch I thought I'd found Arp 23. It wasn't until I looked at the photo in the book *Arp Atlas of Peculiar Galaxies* (<http://www.willbell.com/HANDBOOK/arp.htm>) to compare to my sketch did I realize my mistake, but my initial reaction – aside from "how did I do that?" was "how did Halton Arp miss putting this pair on his list?" 4485/4490 has been nicknamed The Cocoon, but what really grabbed me was the obvious gravitational interaction between these two bright galaxies. I love this kind of stuff so I was thrilled and astounded at the view.

It's good to put this into a broader context – most Arp galaxies are on the faint side and although I've found most of them to be surprisingly interesting, this pair is brighter and more detailed than most. Of course there are bigger and brighter Arp galaxies like M51 and M101 but I was unprepared for 4490/4485.



Also, my description of "bright and detailed" may be the same as your definition of "dim and fuzzy", so expecting a similar view with an 8 inch scope from a light polluted site will be disappointing.

That said, at magnitudes 10.2 and 12.3, these two galaxies are rather bright as NGC galaxies go. Sure, I was using a big scope but I have no doubt that a 12 inch scope on a dark, transparent night would show both quite well. Look not only for the tidal tail linking the two galaxies (it's really faint) but also for the linear knot of star burst activity near the core of 4490.

Evidently, this pair is around 45 million light years away and the galaxies are presently pulling away from each other after their closest approach. This is creating a tidal tail of star and gas between them and creating star burst areas along the tail and within both galaxies. The tidal tail is measured at approximately 24,000 light years long and is destined to grow longer as the galaxies continue to pull away from each other.

I didn't know any of this while observing 4485/4490 but the view was riveting even so. I'll go back for another look the next time I observe and will no doubt enjoy the view even more. I generally mark an exclamation mark on my Sky Atlas 2000 next to objects that are really special, and this pair of interacting galaxies got three. Gobsmacked indeed!

Arp 23

However, I will probably re-observe this interacting pair first. Arp 23 is also composed of two NGC galaxies, 4618 and 4625, but to my eye they're even more interesting. I observed them as high clouds were moving in so there's a good chance there's more to see under better conditions. At first glance the larger of

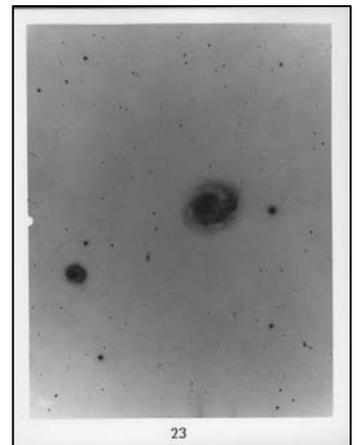


Photo by Halton Arp
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the two galaxies, 4618, looked more like a large oval planetary nebula with two brighter areas on its perimeter. A closer, longer look showed that 4618 is composed of one big spiral arm, with its core at one end of the arm. I thought that looked really cool and used a bunch of different magnifications to find the one that gave the best view, but each one I tried was terrific.

4625, the smaller companion looked like an irregular blob with its core displaced away from its center. But checking the original photo taken by Arp it shows the same basic structure as 4618 – one big spiral arm. How cool is that? I can practically hear both galaxies whooshing around each other. Both 4625 and 4618 are classified as distorted dwarf galaxies, and although they are gravitationally interacting there's no tidal tail of material between them, at least not in visible wavelengths. They are approximately 30 million light years away.

Although not as bright or as apparently large as the NGC 4485/90 duo, Arp 23's two galaxies are listed at magnitudes 11.2 and 12.9, which are still on the bright side for NGC galaxies. There are certainly tons of NGC galaxies that are fainter than this. I suspect a scope around 16 inches of aperture would be needed for a good look, but that's just a guess – have a look and see for yourself.

I didn't see the far background galaxy seen the Arp photo (probably taken with the 5 meter Hale telescope) but it might be detectable under a more transparent sky. Anyway, I gave Arp 23 three "!!!" as well.

That was partly because I didn't expect that the real Arp 23 would be as interesting as the NGC 4490/4485 duo, and that they're both so close to each other near Beta Canes Venatici. But mostly because it was so interesting to look at under all magnifications.

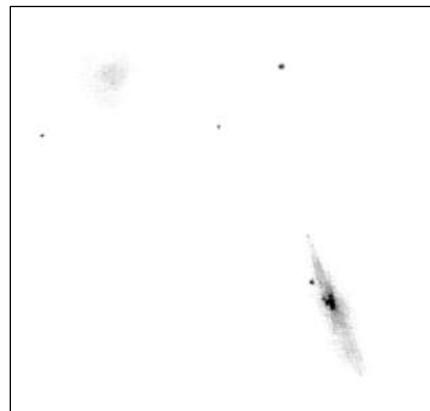
By the way, Caltech has an online version of the Arp catalog at <http://ned.ipac.caltech.edu/level5/Arp/frames.html> complete with his original images. I find using the book *Arp Atlas of Peculiar Galaxies* in the field to be a valuable resource to check what I'm seeing – and to make sure I'm looking at what I think I am. There's also a web site of amateur images of all 338 Arp objects at <http://www.338arps.com/> that's quite good too.

GR-8 irregular dwarf galaxy

Ok, this isn't part of the gobsmacked observing experience of the above two objects but I did observe it on the same night as NGC 4490 and 4485.

My good friend Leo suggested I track down this irregular dwarf galaxy a few years ago and I finally did so on March 18th. Also listed as UGC

8091, this 14.4 magnitude object is a tough catch and it took averted vision to find it. But once located it was dimly visible with direct vision even though its surface brightness of 14.6 is really quite faint. Don't expect to see it without some effort under a dark, transparent sky while using a fairly large scope.



This is the first object I recall that I can't find a decent image of on the internet so I only have my sketch and a DSS image to present - a Google search brought up only 14 individual hits and none have a good photo. I can't even find how far away it is.

The bright edge on galaxy at the bottom right of the sketch is NGC 4866, so once you find this 12.1 magnitude galaxy it almost points the way toward GR-8, which is the small, dim smudge in the upper left corner.

Both are located in northern Virgo and, at the very least NGC 4866 is worth the trip for smaller scopes. I'm still intrigued by GR-8 because I know practically nothing about this little galaxy, so thanks again to Leo for serving up another astronomical treat. Anyone know where I can find out more about it?



Awards

Congratulations to Mark Kowalski for completing the LUNAR CLUB II. Certificate number 26.

THE EXTRAGALACTIC HII REGION N11 AND ITS SURROUNDING FIELD

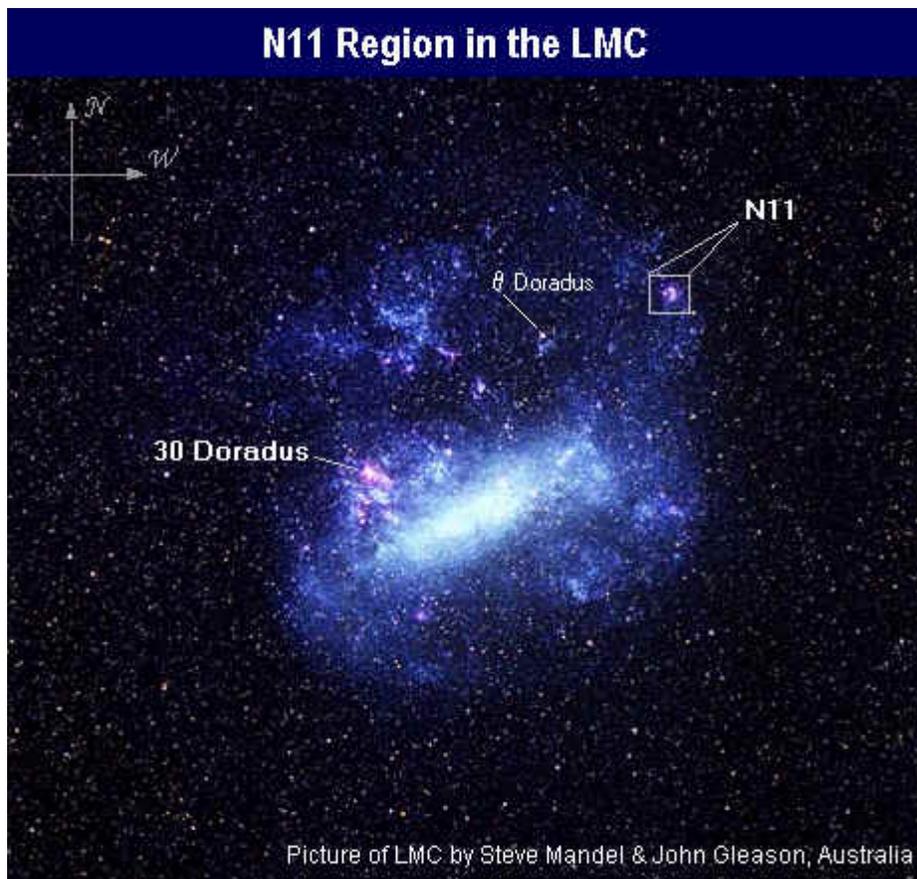
by Leo Cavagnaro

The Observation of the Second Largest HII Region in the Large Magellanic Cloud

The northwest corner of the Large Magellanic Cloud (LMC) is home of many different kind of deep sky objects, including bright nebulae, open and globular clusters and supernova remnants. Several of these objects are visible within the range of average size amateur telescopes.

But more than this, the northwest region hosts the second largest HII region of our satellite galaxy, the N11 complex.

I began the observation of this interesting formation from an observing site at Uspallata Valley (2,000 meters above sea level) at 01:25am on February 14, 2010, when the LMC was at 40 degrees altitude. This is a circumpolar object at this latitude and it reaches about 53 degrees when it transits. At the lowest altitude (inferior transit) it is visible at 13 degrees above the southern horizon. Taking this into account, the best season to observe this galaxy is during the southern summer months (December, January, February & March) when it is high in the sky.



Picture of LMC by Steve Mandel & John Gleason, Australia

The N11 Complex and Its OB Associations

N11, whose parts are known with the more familiar numbers in the NGC catalogue, lies about 4.75 degrees to the northwest of the 30 Doradus complex (Tarantula Nebula) and can be, according to Y. Nazé *et. al.* in their paper “**XMM-Newton Observations of the Giant HII Region N11 in the LMC**”, a more evolved version of this latter nebulae. Observing our nearby satellite galaxy through common and average size binoculars, i.e., 10x50s, N11 is one of the most prominent features that is clearly visible among others, like the 30 Doradus Complex, the conspicuous off-center bar-type structure (see picture above) and the stellar arcs in the northeast part of the galaxy, where Shapley’s Constellation III (one of the most enigmatic structures in the Local Universe: a coherent semi-circular arc spanning several hundred parsecs, composed of

thousands of bright young stars and tens of star clusters) in the LMC4 region lies (nebulae complex to the north of 30 Doradus and to the east of q Doradus). I have indicated all of these features on the picture above taken by Australian astrophotographers. If you come to the southern hemisphere to observe the sky have in mind that N11 is one of the extragalactic bright nebulae.

The 4.8 magnitude star q Doradus, which is clearly visible to the naked eye from a dark sky site, can be a good starting point to find N11 (see picture in first page). This HII region lies about 1.8 degree west-northwest of this star. A first view at low magnification (42x) shows a prominent nebulae com-

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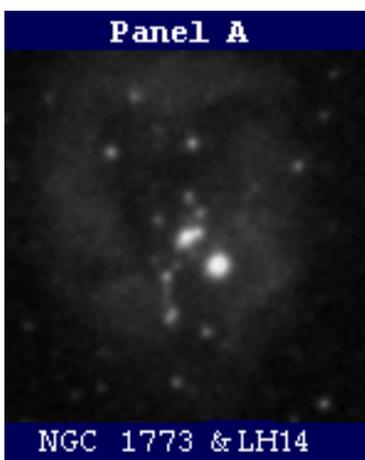
plex about 15 arcminutes wide in a $PA^1=234$ degrees. It is clearly visible even with direct vision and without a filter and contains some patches with different angular sizes and shapes. As mentioned in the paper above it harbors some associations² of massive stars: LH9, LH10, LH13 and LH14 (Lucke & Hodge 1970) and even a SNR, N11L, which is included in another observing project I am carrying out with a bigger mirror (16 inches).

The pattern of three stars indicated with a red circle in Figure 1 on the next page helped me find one of the hazy patches in the complex, NGC 1773, the smaller of the three most conspicuous component of the complex. It is situated half way between the stars HD 32427 (visual magnitude 9.2) and GSC-8889-0432 (visual magnitude 10.7) indicated with letter **A** and **B** respectively in Figure 1 which you can also use to find it. At this power, NGC 1773 shows a star-like bright center surrounded by a faint and small round nebulosity (see Figure 2). The bright core looks off-center with the nebula. Higher magnification is necessary in order to get a more detailed view of its structure.

An open cluster, NGC 1776, with a magnitude of 13 and about 1 arc minute in size (according with the [Wolfgang Steinicke's Revised NGC and IC Catalog](#)) lies close to the star **B** but I could not see it at this magnification.

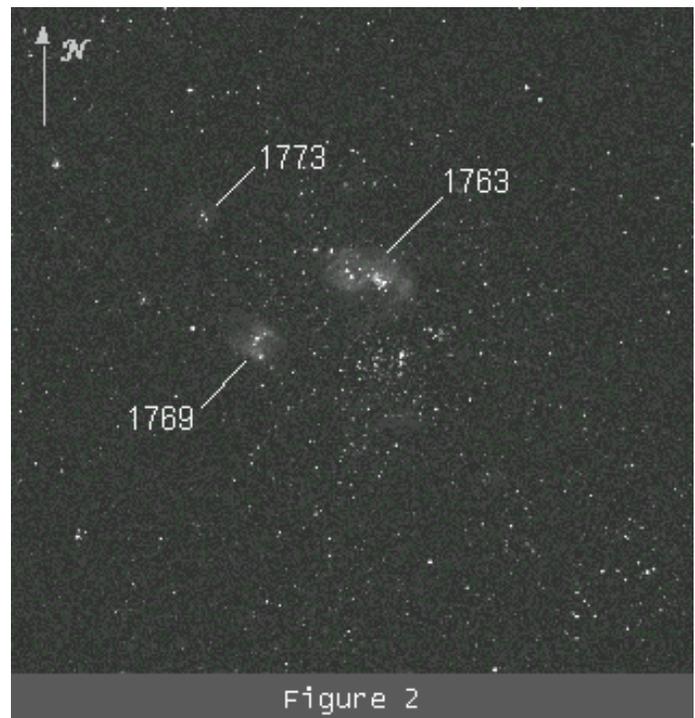
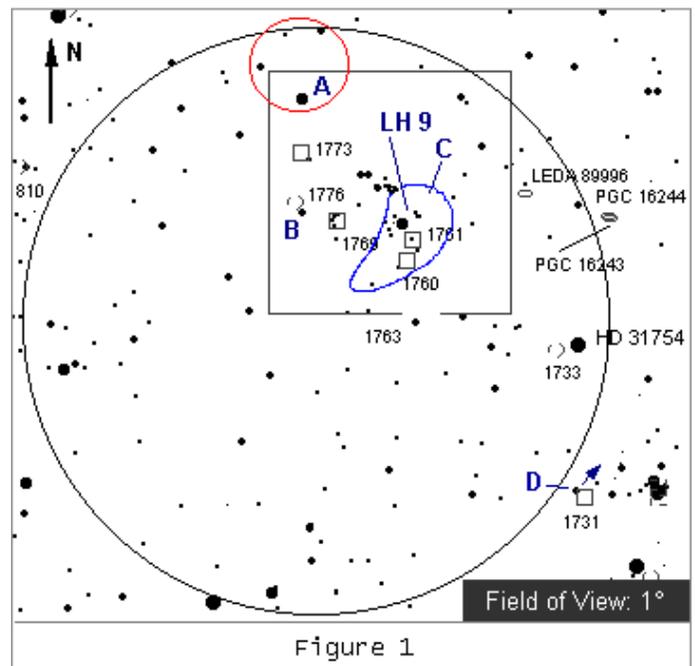
One of the two brightest patches of the complex, NGC 1769 (indicated in Figure 2), looks round with a symmetric nebulosity surrounding a bright stellar-like core. If you observe this nebula carefully for several minutes using averted vision its shape is better viewed.

The other brightest nebula, NGC 1763, is indicated in Figure 2. It is a structure with a brightness similar to that of NGC 1769, and elongated approximately east-west. A more detailed observation at the same magnification (42x) made possible the detection of a stream of faint stars within this nebulae structure, the bigger one.



The zone labeled **C** (Figure 1) that is outlined with a blue line is visible as several faint stars very close to each other embedded in a faint nebulosity. The brightest part is coincidentally in the area where nebulae NGC 1760 and NGC 1761 are situated in the eyepiece field (in the southwest part of the complex).

After the observation and identification of the whole



complex, I decided to use the UHC nebula filter to observe each patch again at the same magnification.

NGC 1769 and NGC 1763 appeared smooth in brightness through this filter and more contrasted with the background sky. On the other hand, NGC 1773 looked sharper and the nebulosity in the region labeled **C** more obvious, with a detached small spot in the south edge, surely NGC 1760.

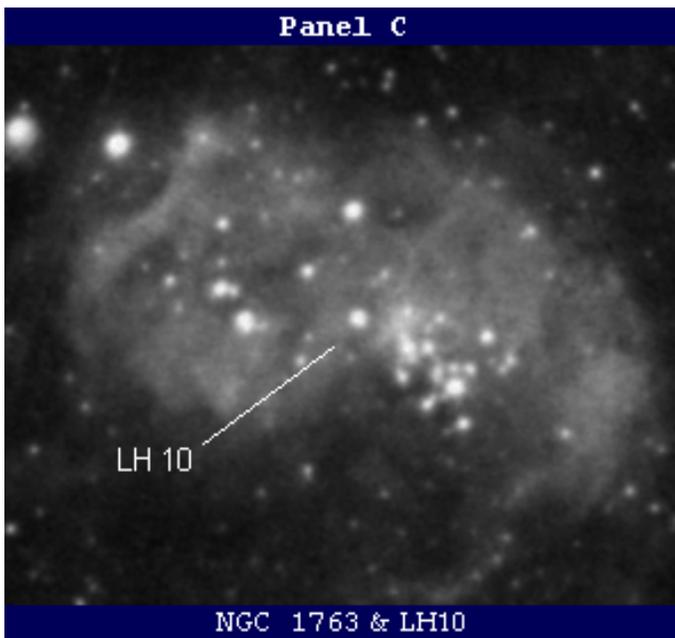
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Using an eyepiece that gives a little higher magnification (78x) two stars appear in NGC 1773 (also N11D) surrounded by a faint nebulosity (see **Panel A**). Embedded in the nebulosity lies LH 14, the least studied of the four OB associations.

NGC 1769, at this magnification, shows the star-like core and the surrounding circular nebulosity with more detail. Mentioned above, there are some OB associations in the N11 complex. LH 13 lies in this bright component also known as N11C. LH 13 contains two compact stellar clusters, Sk-66°41 and HNT. The ages of the two clusters suggest there is no association between them (Heydari-Malayeri *et. al.* 2000). I think the stellar core I saw through my 8-inch telescope is actually Sk-66°41 according to its position in NGC 1769 (see **Panel B**).

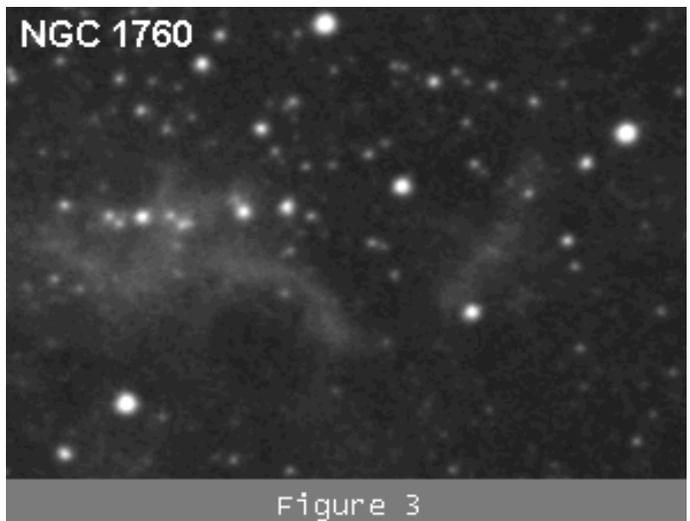
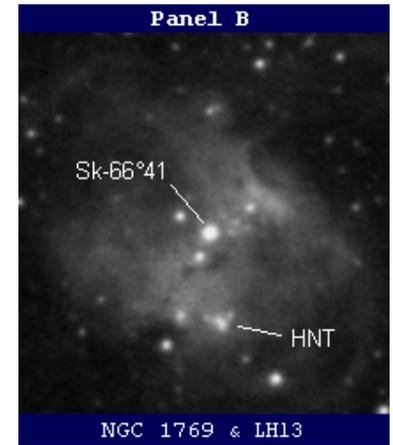
At 78x the stream of stars in the elongated patch NGC 1763 (also N11B) is clearly visible on its south edge (**Panel C**). These stars belong to the OB Association LH 10 which is the youngest cluster of the N11 complex, containing several O3



stars and, according to Nazé *et. al.* 2001, is still embedded in its natal cloud but its most massive components have already begun to blow bubbles around them.

Finally, the region indicated with **C** in Figure 1 looks very interesting at this higher magnification with several stars easier to observe in a hazy background. This group of stars I saw is the LH 9 association (indicated in Figure 1), whose action on its surroundings has triggered a burst of star formation in the periphery leading to the birth of the three other OB associations (Rosado *et. al.* 1996).

At 106x using a UHC nebula filter a very faint and smooth nebulosity with an irregular shape is visible in the zone where NGC 1760 lies (see eyepiece field in page 7). The view I had of NGC 1760 was not as detailed as shown in the DSS image (Figure 3).



The Surrounding Field of N11

Other objects are situated close to the N11 complex. If we move about 25 arc minutes to the southwest we find the brightest star in the 1 degree field, HD 31754, a 6.4 magnitude reddish star. Very close to it lies the faint (magnitude 13.3) open cluster NGC 1733. I tried to observe it but it was not visible at 42x.

Three galaxies are situated to the west of the N11 complex, the pair of PGC galaxies (16243 & 16244) were not visible at low magnification (42x) and the same occurred with the galaxy LEDA 89996, also not visible at higher magnification (106x).

To the south of these galaxies lies NGC 1731 (see eyepiece

field in page 2). According to [Wolfgang Steinicke's Revised NGC and IC Catalog](#) and software Skymap Pro 6, this is a cluster with nebulosity. Through my 8-inch telescope it looks like a faint luminosity engulfing the 10.7 magnitude star TYC 8889-619-1 indicated with letter **D** in Figure 1. The nebula extends toward the direction indicated by the blue arrow there.

Our nearby galaxy is home of several interesting nebulae complex and group of stars, it is rich in objects to explore through telescopes, thus discovering the wonderful structure and content of this companion, with the Small Magellanic Cloud, of our Milky Way.

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1_ **PA**= Position Angle

2_ **OB Association:**

The concept of a stellar association was originally introduced in 1949 by V. A. Ambartsumian, who later separated them into OB and T associations (Ambartsumian 1968). Morgan, Sharpless, & Osterbrock (1952) considered as a stellar association any loose group of stars within an area where bright OB stars exist and with evidence of a common origin.

A recent definition of a stellar association (Kontizas et al. 1999) refers to it as a single, unbound concentration of early-type luminous stars, embedded in a very young star forming region.

Spectacular Spiral

By Tom Koonce

Antelope Valley Astronomy Club, Inc. - Lancaster, California

Every year around mid-April the Whirlpool galaxy is well placed for observation in the northern sky in Canes Venatici (The Hunting Dogs). The Whirlpool is also known as M51 and NGC 5194, but most people know it by the nickname that is obvious after your first view. It has a smaller, yellowish companion galaxy, NGC 5195 in the distance. The Whirlpool is the best spiral galaxy in the sky, in my opinion. It can be seen with a small telescope, the spiral arms detected in an 8" scope, and when it is viewed through a really large telescope it is a stunning sight that you'll never forget. It's always a star party favorite when it's visible higher in the sky. A friend once let me observed it through his 51" reflector and I could hardly tear myself away from the view after 15 minutes. I thought I had only been at the eyepiece for 30 seconds...

You will find it quickly by following the curved handle of the Big Dipper away from the dipper to the star Alkaid at the end of the handle. Then look 2 degrees (outer ring of your Telrad) lower to the south and west in declination at about a 90 degree angle to the handle of the dipper. Scan around the area at low powers and you'll spot it as a fuzzy patch of gray.

The more magnification that you apply to the view, the more of the galaxy's structure will be revealed. Under clear, dark skies you will easily be able to make out the spiral structure of the two tightly wound spiral arms, dust lanes and the illusion of a connecting bridge of material between the two galaxies that is not actually there, at least to the extent that it looks like through the eyepiece. The two galaxies interacted about 70 million years ago, with M51 coming out the winner, gaining mass and kick starting many regions of active star formation.

While it certainly would have been an exciting (bad?) time to be living in the Whirlpool galaxy, the result today is a spectacular face-on spiral galaxy just 31 million light years away from us with plenty of interesting details, such as the pinkish knots of star forming regions and the radial wisps of interactions between the spiral arms. At medium power, sharp observers may be able to spot another much smaller edge-on galaxy, NGC 5229, to the northwest in the same field of view.

There are a few tricks to observing the Whirlpool galaxy and other 'faint fuzzies' like it. Obviously clear, dark skies and



Photo Credit: HST, ACS

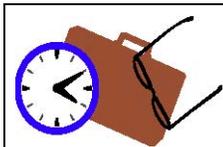
steady seeing are important. Filters will not enhance your views of galaxies, since galaxies are composed of stars emitting at all frequencies, filtering the view down to a particular band of frequencies will not increase the contrast of the view, like looking at the Ring Nebula with an OIII filter. The best way to visually observe extended, dim, magnitude 8.4 objects like the Whirlpool is to increase the amount of light getting to your eye... thus "bigger aperture is better." Please be careful when viewing awesome deep sky objects like M51 through really big telescopes, as it has been known to lead to serious infections of "Aperture Fever" in some observers. Sadly, there is no known cure for it and no known health insurance plans cover the cost of treatment. Trips to the Texas Star Party, Winter Star Party and other major deep sky events where big telescopes are present only offer temporary relief.

Now that the weather is warming up once again, take some time in April to get to know the spectacular Whirlpool galaxy, either for the first time or perhaps visit your old friend and study it in new detail.

Clear Skies, Tom

For More Information:

<http://hubblesite.org/newscenter/archive/releases/2005/12/image/a>
<http://apod.nasa.gov/apod/ap090526.html>



BOARD MEETING MINUTES

February 1st, 2010
OMSI Classroom 1
Duncan Kitchin

Board Members Present

Sameer Ruiwale (President)
Ken Hose (VP Membership)
Larry Godsey (Treasurer, Webmaster, Magazine Sales)
Duncan Kitchin (Secretary)
Larry Froberg (Sales Director)
Diana Fredlund (Media Director)
Jan Keiski (Library Director, OMSI Liason)
Greg Rohde (Telescope Library)
David Nemo (Observing Site Director)
Scott Kindt (Special Interest Groups Director)

Call to Order

The meeting was called to order at 7:07pm by Sameer Ruiwale and, there being 10 board members present, the quorum requirement of 10 was declared to be met.

Approval of Agenda

The agenda was approved by unanimous consent.

Approval of Minutes

Moved Duncan Kitchin, Second Larry Froberg: Approve minutes from the January 2010 board meeting. Motion passes.

Directors' Reports

- * Treasurer's Report – Larry Godsey: Balance & profit and loss statements were distributed. The CD was renegotiated, yielding a much better rate, but not as good as we have had in the past. The new CD matures Feb 2nd 2011.
- * Motion : increase budget for Astronomical League Dues by \$200 to meet new requirements. Moved : Larry Godsey, second Greg Rohde. Question from David Nemo: is this from budgeted or unbudgeted money? This is from unbudgeted money and represents a change to the budget. Motion passes 10-0-0.
- * Discussion: we have some money in the library fund. Should it be transferred? No change at present.
- * VP Programming – Matt Brewster: not present. Somebody is presenting in the planetarium for this month. From Ken Hose : received email about speakers, wanting to know what our speaker program was this year. Discussion : can we generate a list of past speakers? This is in the newsletters
- * VP Observing – Matt Vartanian: not present. Need to close on the star party schedule, since there have been some changes. Ken Hose: disconnect in terms of camp Hancock? It seems that we have a double booking, and the September date is not available. October slot is available. Larry Godsey is going to book October 8 – 10. What is the situation with Kahneeta? Not currently clear.
- * VP Community Affairs – Dawn Willard: Not present. Has received a request from PCC to provide a speaker on the subject of astronomy as a profession.
- * Media Director – Diana Fredlund: Will issue a news release

for the next meeting. Question from Larry Godsey – do we want to do that given that the meeting is in the planetarium with limited seating? Consensus was that there isn't likely to be an issue so this should be fine.

- * VP Membership – Ken Hose: 2 new members, 1 renewal. Brought in \$97 in news. Total member families 326, compared with 299 this time last year, year before 278.
- * New Member Advisor – Howard Knytych: Not present.
- * Sales – Larry Froberg: Despite lower turnout, still managed \$481 in sales. Completed a sale of some older magazines to a gentleman in Massachusetts. Will add some additional details onto the financial reports to give a better picture of the results. Still looking for an additional volunteer. Not critical at present, but will need some more help eventually.
- * Book Library – Jan Keiski: Nominal
- * Telescope Library – Greg Rohde: Accepted donation of a classic 6" Dobsonian. In good enough condition that it can be used in the library. Sold one of the older 8" scopes. Still trying to track down one unreturned telescope.
- * IDA – Dawn Nilson: Sent email to let us know that nobody from RCA has RSVPd for the February IDA symposium at OMSI. May need to look into additional promotion amongst membership for this event.
- * Magazine Subscriptions – Larry Godsey: Nominal
- * Webmaster – Larry Godsey: Nominal
- * Site Committee – David Nemo: No big news – some payroll deduction checks for the site fund.
- * Youth Director: Jean London: Not present.
- * SIGs – Scott Kindt: Nominal
- * Alcor – Dale Fenske: Not present
- * OMSI – Jan Keiski: February – planetarium. Astronomy day – OMSI has not given a firm date for this year yet. Requesting to make a later date this year in hopes of getting better weather. Has traditionally been the last week of April, when it is usually clouded out.
- * Sister Club update – Jan Keiski: Sister club wants to commend Larry Godsey for the website, which they found very useful. GAMA also wanted to let us know how much they appreciated the teleconference at the last joint meeting. Getting ready for the southern Messier marathon. Leo is going to send us pdf of his observing charts that he puts together for his group.

Old Business

- Make an arm for the mirror-making machine – Greg Rohde: Greg found the part that we were missing – it was a tool holder.
- Create Mirror Making Machine usage instructions after it is operational – David Nemo / Greg Rohde: Not done, but ready to start now that all of the parts have been located.
- Update about Stub Stewart parking bumpers tape project - Greg Rohde: 1/3 are done. Hasn't had the necessary dry weather to do the rest.
- Submit an article for the website on the refurbished 12.5" library scope – Diana Fredlund is taking over responsibility for this. Will take a look over the next week or two. Will put the article in the newsletter.

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(Continued from page 12)

Update on proposal for "Think out loud" radio show – Diana Fredlund / Margaret Campbell. Waiting for a response from Dawn Nilson. Has information from "Think out Loud"; only needs notice of two or three weeks.

Update on Minor Catalogs Project – Margaret Campbell. Margaret may be providing some contributions for the newsletter, but we will remove this item from the list for now.

Send the name of the Hillsboro Commissioner who might want to be on the *Think Out Loud* program to Diana Fredlund - Greg Rohde. May have somebody to add.

Article in newsletter for 2009 RCA activities / accomplishments – Sameer Ruiwale.

Update on Dark Skies Symposium – Dawn Nilson. Already covered.

Formulate a club policy on Forum etiquette to review - Larry Godsey / David Nemo – DONE

Proposal on adding imaging equipment to Telescope Library – Matt Brewster. Tabled for now.

RCA 2010 Star Party Schedule final review – Matt Vartanian. Already discussed

Single night RCA only events.

Hancock in October – plan to book this date as discussed earlier.

OMSI Star Party moved from June 5th to June 19th. June 5th is the starlight parade.

Need information on Kahneeta.

New Business

Update on Non-profit Board Training – Larry Godsey. Larry Godsey and Duncan Kitchin attended, found to be extremely useful. Will no longer have to file a 990 from 2011 onwards, because the floor for total revenue is being raised to \$50000, our revenue is approximately \$40k.

2010 Goals for RCA – feedback / suggestions from all board members.

Listed so far:

Astronomy Day at two locations in the Portland metro area
Starlight Parade – continued participation. Margaret will be on the committee, along with Sameer Ruiwale, Greg Rohde, David Nemo & Dawn Willard. Meeting today for the first time this year. Application is due this month \$750 budget, but \$250 is the application fee.

Increase our media presence and visibility

Create RCA calendar. Suggested that we need to start getting material for 2011 in place now. We need to fix dates for next year much earlier; will need all of our schedules fixed by middle of October. This is much earlier than usual, so we should set this as a goal. Greg Rohde agreed to drive this project.

Items of equipment (long refractor tube and equatorial mount) belonging to the RCA in Lars Hedbor's garage. Need to decide what to do about them. Sameer will coordinate and let Greg Rohde know.

Adjournment

There being no further business, the meeting was adjourned at 8:11pm.

Science Special Interest Group

When: Saturday, May 1st, 3:00pm

When: Saturday, May 29th, 3:00pm

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

SIG Leader: Dan Gray

Email: sci-sig@rosecityastronomers.org

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

Astro-Imaging Special Interest Group

When: Monday, April 12th, 6:30pm

Location: Beaverton Public Library
Conference Room
12375 SW 5th St
Beaverton

SIG Leader: Greg Marshall

Email: ai-sig@rosecityastronomers.org

<http://www.rosecityastronomers.org/sigs/astroimage.htm>

Telescope Workshop

When: Saturday, May 1st, 10:00am - 3:00pm

When: Saturday, May 29th, 10:00am - 3:00pm

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

SIG Leader: John DeLacy

Assistant: Don Peckham

Email: tw-sig@rosecityastronomers.org

<http://www.rosecityastronomers.org/sigs/tmw.htm>

Downtowners Luncheon

When: Friday, May 7th, Noon

Location: Kell's

112 SW Second Ave. Portland

SIG Leader: Margaret Campbell-McCrea

Email: ai-sig@rosecityastronomers.org

<http://www.rosecityastronomers.org/sigs/astroimage.htm>

New Members Special Interest Group

When: Monday, May 17th, 6:30pm

Location: OMSI

Planetarium

SIG Leader: Howard Knytych

Email: ai-sig@rosecityastronomers.org

<http://www.rosecityastronomers.org/sigs/astroimage.htm>

ASTROPHYSICS / COSMOLOGY SIG

When: Wednesday, April 21st, 2010, 7:00pm

Topic: To Be Announced

Presented by: To Be Announced

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

SIG Leaders: Jim White & Lamont Brock

Email: cosmology-sig@rosecityastronomers.org

www.rosecityastronomers.org/sigs/cosmology.htm

APRIL 2010

Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1	2 Downtowners Luncheon Kell's Noon	3
4	5 Board Meeting OMSI 7pm-Classroom 1	6	7	8	9 Camp Hancock	10 Camp Hancock
11	12 Astro Imaging SIG Beaverton Library 7pm	13	14	15	16 Maupin	17 Maupin
18	19 General Meeting OMSI Auditorium 7:30pm	20	21 Cosmology SIG Linus Pauling Cntr 7pm	22	23	24 OMSI Star Parties Rooster Rock Stub Stewart
25	26	27	28	29	30	

May 2010

May 1	Saturday	Telescope Workshop	Swan Island	10am-3pm
May 1	Saturday	Science SIG	Swan Island	3pm
May 3	Monday	RCA Board Meeting	OMSI Classroom 1	7pm
May 7	Friday	Downtowner's Luncheon	Kell's	Noon
May 10	Monday	Astro-Imaging SIG	Beaverton Public Library	7pm
May 14-15	Fri-Sat	Star Party	Maupin	
May 15	Saturday	OMSI Star Party	Stub Stewart & Rooster Rock State Parks	7pm
May 17	Monday	General Meeting	OMSI Auditorium	7:30pm
May 19	Wednesday	Cosmology SIG	Linus Pauling Center	7pm
May 29	Saturday	Telescope Workshop	Swan Island	10am-3pm
May 29	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 the RCA web site for the latest information.

<http://www.rosecityastronomers.org>

Rose City Astronomers
Oregon Museum of Science and Industry
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Portland, OR 97214-3356