



Stargazer

RASC – Regina Centre Newsletter

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2005-2006 RASC Regina Centre Executive

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Regina Centre Public Meetings

Public meetings take place at 7 P.M. on the 4th Friday of the month at the Saskatchewan Science Centre Imax Theatre Boardroom, 3rd floor.

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In person:

Come to one of our public meetings.

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Article submissions may be sent to the editor by e-mail (editor@ras.sk.ca) or given to a member of the Executive to forward.

Club calendar

June	
2	Kalium Observatory open to the public 9 P.M. – 11 P.M.
24	Public general meeting.
30	Kalium Observatory closed.
31	Kalium Observatory open to the public 9 P.M. – 11 P.M.
July	
7	Kalium Observatory open to the public 9 P.M. – 11 P.M.
21	Kalium Observatory open to the public 9 P.M. – 11 P.M.
August	
4	Kalium Observatory closed.
18	Kalium Observatory open to the public 9 P.M. – 11 P.M.
24	Saskatchewan Summer Star Party 2006
25	Saskatchewan Summer Star Party 2006
26	Saskatchewan Summer Star Party 2006
27	Saskatchewan Summer Star Party 2006
September	
1	Kalium Observatory open to the public 8 P.M. – 10 P.M.
15	Kalium Observatory open to the public 8 P.M. – 10 P.M.
22	Public general meeting.
29	Kalium Observatory open to the public 8 P.M. – 10 P.M.

A crash course in astronomy and observing

by ALDEN FORAIE

UNLESS YOU ARE A NEW MEMBER to the club you've probably heard about the dark sky preserve created in 2003 at Cypress Hill Inter-Provincial Park (CHIPP). As if having a unique geography to the province with stunning vistas wasn't enough it is also home to some wonderfully clean dark skies and the Saskatchewan Summer Star Party.

One of our primary goals/roles in the RASC is public education

To further promote these spectacular dark skies the park acquired some astronomy equipment to use for showing park visitors some of these celestial treats and public education. The RASC centers for Regina and Saskatoon already had a close relationship with the park through the annual Saskatchewan Summer Star Party and the creation of the CHIPP dark sky preserve so when it came time to select the equipment some advice and direction was sought from Vance Petriew. They then took Vance's input and found a dealer and prices they were comfortable with. In the end a 10 inch SkyWatcher dobsonian and some Celestron 20x80 binoculars with a SkyMentor parallelogram were ordered from Khan Scopes along with a few other accessories. One thing they were not able to order though was any experience in using this equipment and the know how to find things in the night sky. They asked their RASC connections if they could get

some help assembling everything and showing them how to use it.

When I heard this I told Vance Petriew I would be happy to help out if needed. He then put me in touch with the CHIPP park staff and we set a date of the May 13th weekend for training. The CHIPP staff had by this time received all the equipment and were very excited about learning how to use it. From when the staff arrives for the summer and when the park opens is only a few weeks. With the park opening the following weekend the May 13th weekend was our only opportunity.

It is hoped that other parks will follow the CHIPP example and creating dark sky preserves as well. I thought that if other parks do follow CHIPPS example in creating dark sky preserves that they as well may be acquiring telescopes themselves in the future.

As one of our primary roles/goals in the RASC is public education I also thought that documenting what I had hoped to teach the people at CHIPP could then be reused for other parks or groups with a similar need in the future. I discussed this with my observing partner Norm Leier and he was equally excited about the idea. We then set out to put together a crash course for field observing and the related set up and care of a dobsonian telescope in order to provide the public with an introduction to the summer's night sky.

We put together an outline of what we wanted to teach the interpreters starting with how telescopes work and ended it with a summary of some of the brightest and most spectacular objects in the summer to show the public. As we added more information to the outline we realized that this information could be handy for the people to have themselves after we left and now focused our efforts on creating a handbook to leave with them. We knew they already had some good beginner's books with copies of *Nightwatch* and *Turn Left At Orion* and we did not want to write yet another beginner's how-to book about. In the end we left a handout that included our writings along with a set of Messier telrad charts from the national RSC website along with a collection of the various handouts we give out at public events. This enabled each interpreter to have an individual handbook they could keep for themselves.

Armed with our newly created handbook entitled "A Crash Course in Astronomy an Observing" we set off to Cypress Hills.

We arrived and met Melody Nagel-Hisey and her staff of interpreters Joan Hodgins, Mimi Martin, Nicole Dancey and Tyler Guillemin. Joan had already assembled the equipment and was anxious to see if had been assembled right, to her credit she had done terrific job and within a short time the equipment and staff were all ready to go. As the skies for Friday night were not good for doing any observing so we decided to spend the evening teaching the 'basics' about telescopes and using the equipment they had acquired.

We knew the staff would be novices and sure enough they hardly knew an eyepiece from a finderscope and constellation knowledge was the big dipper, Orion and not much more.

They were just like me when I first interested became interested in astronomy!!

It turned out that teaching them the basics meant everything had to be learned from scratch including such things as how to put an eyepiece into the focuser, how to attach the finderscope to the OTA and what the heck the thing called a barlow was for. It was a challenge for Norm and I to keep up with the questions but their enthusiasm was truly contagious. We were concerned about information overload as we felt they had so much to learn in such a short time.

For the next three hours everyone had a chance to ask questions, tweak this and adjust that. We talked about basic seasonal knowledge of the constellations, how to use your equipment, what size eyepieces to use, observing goals and special events for the night such as meteor showers, comets, seeing conditions, public observing tips, iridium flares, eyepiece sizes and types, why department store telescopes are junk and on and on.

Norm and I were amazed at how much information we had passed on in a few hours



and I think the staff were in turn amazed by how much they had learned. By the time we finished that evening everyone was able to assemble and dismantle the scope, knew all the parts, and could even collimate the 10 inch dob. Unfortunately the sky was thick with clouds that evening and we were not able to do any observing. A distant street light on the other side of the lake proved to be a handy target though for teaching everyone how to do align the finder scope and use the Rigel quickfinder. In a way it was somewhat of blessing that it was cloudy that night as I think everyone already had more than enough to absorb for one day.

The following evening before we went to the Meadows for an observing lesson we showed Joan and Tyler how to remove the primary mirror and clean it (using my crude encrusted telescope). Any fear or uncertainty Joan had about handling the equipment was pretty much gone by this point. Although it had been cloudy and windy throughout the day the sky cleared off quite nicely once it got dark. Joan and Tyler had the telescope and binoculars set up very quickly and within a matter of minutes after everything was set up Tyler had the dob collimated and ready to go, no help required. So these guys really were paying attention the previous night!! Norm and I were impressed. Our observing goal and objective was to teach the staff how to find some of the brightest easiest to find deep sky objects. Even though the moon was full it did not have a big impact on our observing as our targets were all pretty bright and the light of the moon would be something the interpreters would have to deal with on a regular basis anyway. We started off nice and simple with Mizar and Alcor and by the evenings end Joan and Tyler were able to find the M57 the ring nebula, M13 the Hercules

cluster, M81/M82, Alberio, Jupiter, Saturn and a few more deep sky objects as well as a number of constellations. They learned and tried different combinations of eyepieces and barlows learning how and when to use more magnification. Again It was A LOT off information to absorb in a few hours.

The 20x80 binoculars and parallelogram worked really nice, very easy to move about for finding things on a very solid mount. We had a view of Saturn and M44, the beehive cluster, together that I must say was my observing highlight of the night. Saturn was a nice yellowish/cream color with its rings clearly visible while the entire cluster hung above it glistening with brilliant white stars.

When the evening ended I must say I had never enjoyed such a fun evening of observing on the night of a full moon. The thing I enjoy the most about doing public outreach volunteering is the look on peoples faces and the sounds they make when they see things like Jupiter or the millions of stars in M13 for the first time. It was exciting to think of how many times Joan and Tyler's excitement and enthusiasm would be repeated by others as they visit this wonderful and special place. The staff was all very thankful for everything we did but I truly think Norm and I benefited from the whole experience every bit as much as they did. I look forward to returning to the Cypress Hills this summer for the star party and the chance to see my new astronomy friends in action.

Five spring asterisms

by CHRIS ANDERSON

THE WORD **ASTERISM** comes from the Greek word *asterismos* with *aster-* meaning stars. It is an interesting alignment of stars that look like something—a chance grouping with greatly different distances.

None of the asterisms on our observing list have NGC numbers.

Probably the best-known asterism is M73, familiar to

anyone who has completed Messier's list. It is a Y-shaped group of stars which Messier perceived to be surrounded by some nebulosity. Herschel saw things differently, he describes M73 as a "cluster, extremely poor, very little compressed, no nebulosity."

Another well-known asterism was brought to our attention in the 1980s by our own Fr. Lucien Kemble. It is a two-degree-long chain of 5th-to-8th-magnitude stars in dim Camelopardalis and was dubbed Kemble's Cascade by author Walter Scott Houston.

I like observing groups of stars that look like something. Two of my favourite clusters are NGC 457, the E.T. Cluster and NGC 2169, the "37" Cluster in Orion. But I also enjoy hunting down objects that are well off-the-beaten-path—none of the asterisms on our observing list for tonight have NGC numbers.

Spring is fading fast, so let's get started!

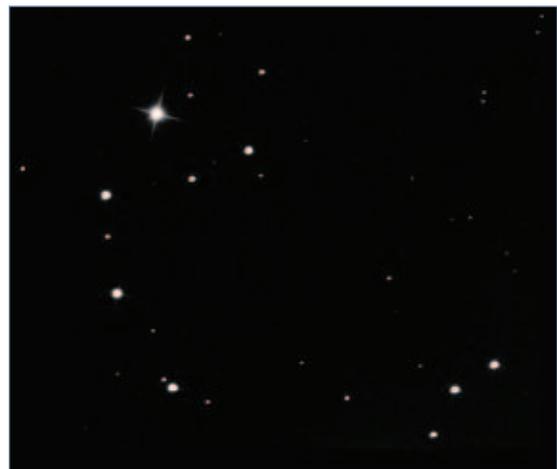
The first object on our list is a 45'-wide circle of stars dubbed the **Engagement Ring** by Robert Burnham Jr. The Ring is easy to find, the

sparkling jewel in the ring is Polaris, the North Star.

The **Seven Arrows** was named by Pierre Borel. He envisioned the stars as arrows representing the United Dutch seven provinces. Author Phil Harrington calls this asterism the Broken Engagement Ring, due to its battered appearance, and author Sue French imagines it as a "flat boat with a billowing sail, perhaps a Chinese junk." She also says that "at other times it reminds me of the Coathanger asterism in Vulpecula or the Mini-Coathanger in Ursa Minor."

The Seven Arrows is a loop of 7th-through-10th-magnitude stars forming a 15' oval. It is easy to find—it's just southeast of Merak in Ursa Major.

Picot 1, discovered by French astronomer Fulbert Picot, consists of seven, 9.7-to-10.2-



The Seven Arrows.

magnitude stars in the shape of a bell-curve. Picot gave the asterism the name Napoleon's Hat, for obvious reasons. Using a low-power eyepiece that will show you at least a 2° of sky, point your scope at Arcturus in Boötes and both the star and Picot 1 will be in the same field-of-view.

Next up is the **Mini-Coathanger**, discovered by Pennsylvania amateur Tom Whiting. If you've seen the Coathanger Cluster in Vulpecula, you know what we're looking for. It is composed of ten 9th-through-11th magnitude stars – seven stars make up the bar and three form the hook. It can be found 1.9° south-southwest of Epsilon Ursae Minoris.

The final object on our list is **Kemble 2**, so-named, of course, in honour of the late Fr. Lucien Kemble. Kemble wrote about it in a

letter to his friend, Arild Moland, "Do you want something neat to observe? ...On page 30 of Uranometria, I noticed a wonderful cluster of bright stars in Draco. ...Very charming asterism."

Moland gave the group the nickname the Mini-Cassiopeia and Phil Harrington calls it the Little Queen due to its striking resemblance, obviously, to the constellation Cassiopeia – there is even a sixth star corresponding to Eta Cassiopeiae!

Kemble 2 is made up of six 7th-to-9th-magnitude stars. It is centred 1.1° east-southeast of Chi Draconis.

Chris observes primarily from his Hillsdale backyard, is the editor of this newsletter and welcomes e-mails at c.anderson@accesscomm.ca.

Name	Con	Size	Mag.	RA	Dec
Engagement Ring	UMi	40'	–	02 31.8	+89 16
Seven Arrows	UMa	15' x 9'	6.8	10 50.6	+56 08
Picot 1	Boo	20' x 7'	–	14 19.5	+19 04
Mini-Coathanger	UMi	17'	9-11	15 38.9	+81 22
Kemble 2	UMi	20'	7-9	18 35.0	+72 23

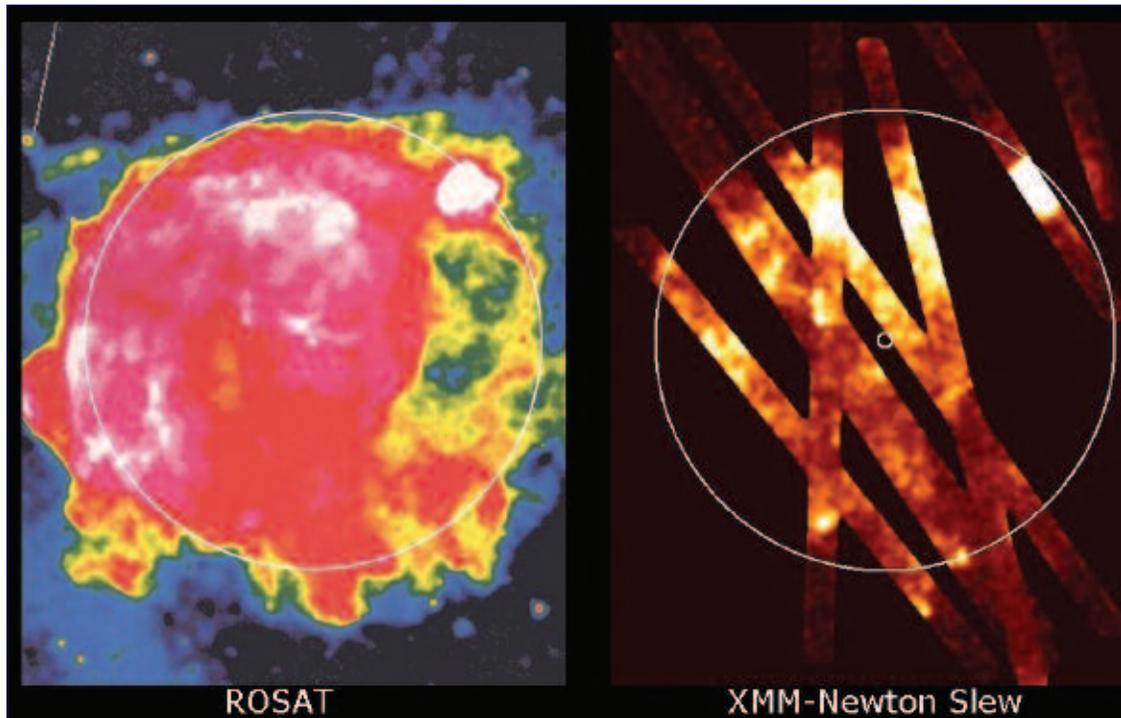
Not a moment wasted

by DR. TONY PHILLIPS

THE RING NEBULA. CHECK. M13. CHECK. NEXT UP: THE WHIRLPOOL GALAXY. You punch in the coordinates and your telescope takes off, slewing across the sky. You tap your feet and stare at the stars. These Messier marathons would go much faster if the telescope didn't take so long to slew. What a waste of time!

Don't tell that to the x-ray astronomers.

"We're putting our slew time to good use," explains Norbert Schartel, project scientist for the European Space Agency's XMM-Newton x-ray telescope. The telescope, named for Sir Isaac Newton, was launched into Earth orbit in 1999. It's now midway through an 11-year



Vela supernova remnant.

mission to study black holes, neutron stars, active galaxies and other violent denizens of the Universe that show up particularly well at x-ray wavelengths.

For the past four years, whenever XMM-Newton slewed from one object to another, astronomers kept the telescope's cameras running, recording whatever might drift through the field of view. The result is a stunning survey of the heavens covering 15% of the entire sky.

Sifting through the data, ESA astronomers have found entire clusters of galaxies unknown before anyone started paying attention to "slew time." Some already-known galaxies have been caught in the act of flaring—a sign, researchers believe, of a central black hole gobbling matter from nearby stars and interstellar clouds. Here in our own galaxy, the 20,000 year old Vela supernova remnant has been expanding. XMM-Newton has slewed across it many times, tracing its changing contours in exquisite detail.

The slew technique works because of XMM-Newton's great sensitivity. It has more collecting area than any other x-ray telescope in the history of astronomy. Sources flit through the field of view in only 10 seconds,

but that's plenty of time in most cases to gather valuable data.

The work is just beginning. Astronomers plan to continue the slew survey, eventually mapping as much as 80% of the entire sky. No one knows how many new clusters will be found or how many black holes might be caught gobbling their neighbors. One thing's for sure: "There will be new discoveries," says Schartel.

Tap, tap, tap. The next time you're in the backyard with your telescope, and it takes off for the Whirlpool galaxy, don't just stand there. Try to keep up with the moving eyepiece. Look, you never know what might drift by.

See some of the other XMM-Newton images at <http://sci.esa.int>. For more about XMM-Newton's Education and Public Outreach program, including downloadable classroom materials, go to <http://xmm.sonoma.edu>. Kids can learn about black holes and play "Black Hole Rescue" at The Space Place, <http://spaceplace.nasa.gov/>, under "Games."

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

Astronomy Day 2006

by PETER MACKINNON

ASTRONOMY DAY, MAY 6TH, 2006, can be marked down as a great success for the Regina Club. The Regina Club set up its display booth at the Southland Mall just inside the main entrance. The display was positioned

Dave did more for binocular sales that day than any advertising agency.

in front of the Wall-Mart entrance close to the mall information booth, this positioning of the display allowed for maximum exposure to a great many people entering the mall and Wall-Mart. A big thank you is passed on to Bob Brann, Paul Meyer, Alden Forai, Jason Cosford and Shane Ludtke who arrived early at the mall to set up the display booth and start the ball rolling, they were later joined by James Edgar and Dave Barrie.

Three scopes were set up for public viewing. Paul's 9.25 inch Celestron SCT, Bob's 8-inch Celestron, James' 10-inch Orion XT Dobsonian. Dave had his 20 x 80 binoculars on tripod set up. Also, on display was astrophotography equipment and binoculars loaned by Darcy Kozoriz.

During the course of the day it is estimated that between 3 and 4 hundred people passed by the Astronomy display with a great many stopping for a few minutes to chat and collect pamphlets.

Although viewing was slightly marred by having to view through the mall skylight, sun spot viewing through the scopes proved very popular. There were two sun spots visible throughout the day with one being more

prominent. Many people gave out a small cheer when they managed to locate one of the spots, and all showed surprise when informed that each spot was as large or larger than our planet Earth, this put into some perspective the size of our Sun.

Dave's binocular display also proved very popular. Dave had set up some small posters down the mall hallway for people to look at and discover the power of his binoculars. I believe Dave did more for binocular sales that day than any advertising agency and also by demonstrating and informing people of the benefits of binoculars as a great and relatively cheap way to begin observing.

The day at the mall started to wind down at around 4:00 p.m. (nothing to do with the return of Alden) as many people started to head home, a few people returned for a last look



James Edgar and Alden Forai.

through the scopes but by this time the Sun was nearly out of view due to us being inside and also some cloud cover had arrived. At about 5:15, the scopes and display booth were packed away and we left the mall at about 5:30 saying goodbye to James as he was returning to Melville and arranging to meet outside the IMAX at around 8:30pm for the public viewing.

Six club members showed up for the evening viewing: Paul Meyer (Celestron 9.25-inch S.C.T.), Bob Brann (8-inch Celestron S.C.T.), Alden Foraie (8-inch Dob), Carter Smith (Celestron ?), myself (130 mm Skywatcher Newtonian Reflector), Dave Barrie (20 x 80 binoculars).

We had the scopes set up outside the main entrance to the IMAX theatre by about 8:45. There was some cloud cover but reasonable viewing of the Moon, Jupiter and Saturn was possible.

Public attendance was slow for the first 45 minutes or so with a few evening strollers stopping by, but as it got darker around 9:30 pm more people arrived, several were people we had spoken to at the mall earlier in the day. At about 9:30 after the last IMAX film showing we were joined by around 50 people who all wanted to view the Moon and planets. Unfortunately, by this time, Saturn was completely clouded out but the Moon and Jupiter stayed visible along with one or two of the brighter stars.

Coincidentally, the Regina Symphony Orchestra was performing *The Planets*, by Gustav Holtz this same night, and several people came along to view the planets after being at the performance.

Both the Moon and Jupiter proved very popular. The Moon more so as it is our closest neighbour and many exclamations of its beauty were heard, and many questions asked and answered as best as possible.

People moved from scope to scope and Dave's binoculars again proved a big hit. Quite a few people were surprised to discover that there is a telescope situated on the roof of the Science Centre and that Regina had an Astronomy Club and many stated that they would return on public viewing nights (just to look).

There was a great deal of fun and chatter for around an hour or so, but one incident especially sticks in my mind. There were three teenage girls, aged about 13 or 14, along with two or three adults, who had been moving from scope to scope to binoculars finally arriving to where I was viewing Jupiter. One of the girls asked what I was looking at and when I told her she very politely asked if she could have a look. I showed them how to operate the focus and slow motion control to keep Jupiter in view.



Bob Brann and his Celestron CPC 800 XLT.

They took turns at viewing, however, when the third girl tried to look through the eyepiece, she could not reach high enough to see. Not once did I think of taking the few seconds to lower the tripod, she tried her best to reach the eye piece, but was always an inch to low. Finally, she gave up trying but still managed a smile and thank you and left with her companions. About 5 minutes later, the three girls came back and the shorter one asked if she could try seeing again adding, "I may be able to reach this time," and held up a pair of shoes with soles about 3-inches thick – "I borrowed these from another girl," she explained. Sure enough, she was able to reach the eye piece with an inch to spare (I still had not thought to lower the scope). She spent maybe 5 minutes looking at Jupiter, using the slow motion control to keep it in view, all that time she never said a word, one of the adults came over and told the girls it was time to go, so she left the scope, took off the shoes and

started to leave, she then stopped, turned around and said, "that was really, really, neat, thank you, I saw the bands and the moons," and then she left with her friends, still discussing Jupiter.

It was now about 10:30 p.m. and the sky was starting to cloud over so we all started to pack up our equipment and head home or for a last coffee, very pleased with the way the day had gone.

Astronomy Day 2006 had been a great deal of fun with lots of good promotion for this intriguing hobby of ours and much interest shown by the public. Hopefully, more than just a passing interest in astronomy was ignited in one or two of all the people who we had met throughout the day. As an outreach exercise for the Regina RASC Club, I believe, as I mentioned at the outset that Astronomy Day 2006 was a great success.



James Edgar and Dave Barry with James's Orion XT10 Intellescope.