

Saskatoon Skies

The Newsletter of the Saskatoon Centre of the Royal Astronomical Society of Canada

Vol. 35, No. 11

November 2004



Taken at dawn after a successful night of observing at Meeting Lake Sask August 18, 2004. The CBC picked this photo to feature on their Saskatchewan Big Snap attack web feature. This was also the first night I used both my Starry Night software and Sky 2000 atlas. — JEFF SWICK

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Saskatoon Centre
The Royal Astronomical
Society of Canada

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Membership? It's never too late to join!

Regular: \$58.00/year Youth: \$31.25/year Lifetime: \$1000

The Saskatoon Centre operates on a one-year revolving membership. You will be a member for the next 12 months no matter when in the year you join. If you do not want to join at this time, ask to get onto our FREE 3-month Temporary Membership list. You will receive regular mailings of our *Saskatoon Skies* newsletter and will be invited to participate in Centre activities. Members are encouraged to renew early to avoid disruption in publications. Renew through the membership coordinator, Mike Clancy, or renew through the National Office and let Mike know that you did!

Benefits of Membership in the Saskatoon Centre

- knowledgeable & friendly amateur astronomers
- use of the Sleaford Observatory
- use of the U of S Observatory (after training)
- *Saskatoon Skies* Newsletter
- **Observer's Handbook**
- **The Journal of the RASC** (bimonthly)
- **SkyNews Magazine** (bimonthly)
- use of the Centre library
- discounts to **Sky & Telescope Magazine**
- free, no-cost, no-obligation, 3-month temporary membership if you don't want to join right now!

Saskatoon Centre's main officers:

President – Ron Waldron
Vice-President – Garry Stone
Secretary – Al Hartridge
Treasurer – tbd

U OF S OBSERVATORY

The U of S Observatory is open to the general public every Saturday of the year. Admission is free. The observatory is located on campus, one block north of the Wiggins Avenue and College Drive entrance. On clear nights, visitors may look through the vintage 6-inch and tour several displays. Current events are recorded on the Astronomy Information Line at 966-6429.

Observatory Hours:

January-February	7:30-9:30 pm
March	8:30-10:30 pm
April	9:30-11:30 pm
May-July	10:00-11:30 pm
August	9:30-11:30 pm
September	8:30-10:30 pm
October-December	7:30-9:30 pm

About this Newsletter...

Newsletter Editors – *Tenho Tuomi, Linda Janzen*

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Saskatoon Skies is published monthly by the Saskatoon Centre of the RASC. Distribution is approximately 100 copies per issue. *Saskatoon Skies* welcomes unsolicited articles, sketches, photographs, cartoons, and other astronomy or space science articles. Articles can be sent by mail in any format to the Centre's mailbox. Submitted materials can be returned upon request. Submissions may also be sent by e-mail – preferred as plain unformatted ASCII text files without line breaks. Images sent by e-mail should be attached .JPGs (.GIFs also accepted). Send e-mail submissions to the editor at <tuomi@sasktel.net>. Please send articles in "generic" formats with simple formatting – one tab at the beginning of paragraphs, one space after commas and periods. A separate by-mail subscription to *Saskatoon Skies* is available for \$15.00 per year. *Saskatoon Skies* is also posted on our Saskatoon Centre homepage as a .pdf file and can be downloaded free-of-charge. Members may choose to receive the newsletter by regular mail or via the Internet. Articles may be reprinted from *Saskatoon Skies* without expressed permission (unless otherwise stated), but source credit is requested. **DEADLINE for submissions is the 26th of each month.** *Saskatoon Skies* accepts commercial advertising. Please call the editor for rates. Members can advertise non-commercial items free of charge.



**Bottle
Drive
&
Canadian Tire \$**

by Darrell Chatfield

Canadian Tire Money collected to date is \$50. Thank you to all who contributed to our fundraising for the Centre. Please bring your bottles and Canadian Tire Money to the General meetings. I will collect them after the meeting concludes. If you cannot make it to the meeting but would like to contribute, please call me at 374-9278.

2004 RASC Calendar of Events			
DATE	EVENT	CONTACT	TELEPHONE
Nov. 11	North Taurid Meteor Peak	Rick Huziak	665-3392
Nov. 12	Observers Group – 8:00 p.m., Sleaford Observatory	Bill Hydomako	384-4781
Nov. 15	NO EXECUTIVE MEETING – replaced by the following workshop at 7:00 p.m. for all members.		
Nov. 15	RASC General Meeting – 7:00 p.m. sharp , 130 Physics, U of S – Planning for our Future – Ron Waldron	Ron Waldron	382-9428
Nov. 16-17	Leonid Meteor Shower Peak	Rick Huziak	665-3392
Nov. 30	The Rocky Planets by Simon Hamner (Geological Survey of Canada) – Sask. Geological Survey Public Lecture – 8:00 p.m., Delta Bessborough	Rick Huziak	665-3392
Dec. 10	Observers Group – 8:00 p.m., Sleaford Observatory	Bill Hydomako	384-4781
Dec. 13	Geminid Meteor Shower Peak	Rick Huziak	665-3392
Dec. 13	RASC Executive Meeting – 6:30 p.m., 175 Physics, U of S	Ron Waldron	382-9428
Dec. 13	RASC General Meeting – Program TBA – 7:30 p.m., 175 Physics, U of S	Ron Waldron	382-9428
Dec. 21-22	Ursid Meteor Shower Peak	Rick Huziak	665-3392



Monday, Nov. 15, 7:00 PM — Room 130 Physics, U of S

Presenting:

Planning for Our Future

An **APPRECIATIVE INQUIRY (AI)** Workshop
for all members of the Saskatoon Centre, R.A.S.C.

Note time and room change (above).

Attention all Members:

The November meeting has the potential to become an important watershed in the history of the Saskatoon Centre. All members in attendance will participate in a three-hour workshop designed to uncover and unleash our centre's possibilities and future direction.

Through a carefully developed set of questions and a process of dialogue, we will uncover together stories of our "peak experiences" in the history of our centre – those moments when we felt most effective, most connected, and most alive.

The stories you provide will demonstrate our Centre's actual capabilities and give rise to new images of what our future can be. It will raise our sights, energize us and give us the courage to dream and the capacity to create the kind of future we desire.

To accommodate the time and other requirements of this carefully choreographed workshop, we are cancelling the Executive Meeting for that month and moving the start time for the meeting one half-hour ahead. In addition, we are moving down the hall to **Room 130** and others to accommodate more flexible seating arrangements and break out sessions.

Please note that the November meeting will begin at **7:00 PM sharp!** The workshop will begin by 7:15 PM and there can be no allowances for late arrivals. Plan to attend with an open mind to the future of our centre and the possibilities for change. We look forward to having a large turnout and an excellent workshop.

Ron Waldron
Incoming President and Workshop provider

**NEW | R.A.S.C.
Web Site VI**

Check out our great new Saskatoon Centre web site:
<http://duke.usask.ca/~ges125/rasc/index.html>
 Thanks to Brent Burlingham for his work!

Minutes of the EXECUTIVE MEETING

Oct 18, 2004, 6:30pm – Rm 175 Physics, U of S

1. Meadows Update, Cypress Hills: There will be six lighting standards, each can be turned off separately by a local breaker near the pole. Cost to our centre is zero dollars.
2. Elections: Ron Waldron and committee drew up a tentative list and did a phone survey which was very successful in filling a number of the positions prior to the election night.
3. Sleaford Open House: Rick will show a number of slides of this at the general meeting.
4. Sciematics Tour to Sleaford will be held on Oct. 22. All wishing to help be at Sleaford at 7:00 p.m. A binocular starwalk and slide show will be given.
5. Total Eclipse of the Moon: Jim Young will be the contact person. Those interested in setting up meet at the U of S campus observatory at 7:00 p.m.
6. Saskatoon Hobby Show Friday Nov. 5 (4:00 p.m.- 10:00 p.m.) and Saturday Nov. 6 (9:00 a.m.-6:00 p.m.). Lots of volunteers are needed.
7. Motion: to split the present executive setup into three divisions (Executive, Councilor & non-executive job positions) by Ron Waldron, seconded by Les Dickson and carried.
8. Sleaford Site: Bill suggests that additional plugins and heaters be installed in the school. Also a cot to sleep on should be obtained. A green laser pointer for teaching will also be purchased.
9. Insurance: a motion was made by Les Dickson and seconded by Bill Hydomako and carried that the centre pay the SGI insurance premium of \$450.00.
10. Meeting adjourned at 7:30 p.m.

Our 2004-2005 Executive is:

- President **Ron Waldron**
- Vice-President **Garry Stone**
- Past President **Richard Huziak**
- Newsletter Co-editors **Tenho Tuomi & Linda Janzen**
- Secretary **Al Hartridge**
- Treasurer tbd
- National Council Representative tbd

Councillors:

- Events Coordinator tbd
- Fundraising Coordinator **Darrell Chatfield**
- Membership Coordinator **Mike Clancy**
- Observing Coordinator **Bill Hydomako**
- Sleaford Site Coordinator **Bill Hydomako**
- SSSP Coordinator **Les Dickson**
- Councillor at-large **Jim Young**
- Councillor at-large **Chris Martin**

Minutes of the GENERAL MEETING

Oct 18, 2004, 7:30pm – Rm 175 Physics, U of S

1. Observing award to Rick Huziak for completing the Chatfield Binocular List.
2. SkyNews: the tardiness of receiving this publication will be discussed at National Council meeting in October. The magazine delivery time to the Journal appears to be the main problem.
3. Sleaford Tour October 22. Those wanting to help with a tour by individuals attending the Sciematics conference should meet at Sleaford at 7:00 p.m. Note the tour could be cancelled on the spur of the moment.
4. Lunar Eclipse: Jim Young will be the contact person for those wishing to help at the U of S campus observatory on Oct. 27.
5. Hobby Show will take place Nov. 5-6. Many volunteers needed to help.
6. Election 2004: Ron Waldron explained the new divisions of the previous executive setup.
A motion: was made by Rick Huziak and seconded by Jim Young and carried that the 2004 Nominating Committee be dissolved.
A motion was made by Ron Waldron and seconded by Les Dickson and carried that the slate of candidates as described be accepted.
The non-elected positions were also described by Ron Waldron. Jim Gorkoff was nominated for the new position of Distant Member Coordinator.
A motion was made by Ron Waldron and seconded by Jim Young and carried that the slate of non-elected positions be accepted.
7. Motion by Yannis and seconded by Jim Gorkoff and carried that Ron Waldron be allowed to spend \$20 to \$30 for materials for the upcoming workshop.
8. Presentations:
 - November Workshop – Ron Waldron
 - The Cypress Hills Dark Sky Preserve – Rick Huziak
 - The Alberta Star Party and The Northern Prairie Starfest – Rick Huziak.
9. Meeting adjourned at 10:00 p.m.

Non-Executive Coordinators:

- Centre Photographer/Archivist **George Charpentier**
- Librarian **Darrell Chatfield**
- Meeting Room Coordinator **Graham Hartridge**
- New & Distant Members Coordinator **James Gorkoff**
- Publication Sales Coordinator **Bruce Brandell**
- Webmaster **Gordon Sarty**

A few positions remain to be filled, so if you want to get onto the executive, please contact new President Ron Waldron.

Northern Prairie Starfest 2004

by Warren Finlay (Edmonton RASC)

The very first Northern Prairie Starfest was held Sept. 17-19, 2004 at Black Nugget Lake campground, under dark prairie skies an hour's drive southeast of Edmonton. A total of 28 participants came together for this brand new star party. Alberta attendees joined us from as far away as Medicine Hat, while out of province attendees arrived from Prince Albert (Kathleen Houston), Saskatoon (Rick & Amy Huziak, Bill Hydomako) and the Yukon (David Millar).



NPS 2004 attendees enjoying the warmth of the wiener roast fire.

Friday afternoon showed promise as early arrivers set up their tents under a bright sapphire sky. Although a band of clouds loomed over us during supper, clearing skies began to prevail while our Friday night guest speaker, Dr. Carlos Lange (Canadian Scientist for NASA 2007 Mars Scout Mission) enlightened us on the "Phoenix Mars Lander: History and Cycle of Water on Mars", a Mars-bound spacecraft scheduled for launch in 2007. Flocks of geese heralded twilight as they noisily touched down on the nearby lake. Participants then enjoyed several hours of observing before a brief rain shower sent us running for cover, followed by another hour of clear skies that ended with clouds invading shortly before midnight. An optimistic lot stayed up chatting until the wee hours in the cookhouse, hoping for clearing that didn't materialize, but enjoying many hours of camaraderie instead. Light sleepers were treated to the occasional distant sound of white-fronted and Canada geese marshalling their numbers before continuing their southern journey to destinations unknown.



Tim, Paul and Sherry wondering if it's clear enough to get back to observing.

old Brendan Kulak relied on parental power by Mom Kim for his transportation. Excellent views were had of double-crested cormorants, greater and lesser yellowlegs, white-fronted geese, and various more common species. Two muskrats seemed oblivious to us despite being seen in eye-popping detail in Dan Kulak's 80 mm Pentax spotting scope. Rick Huziak enlightened us on several species of edible mushrooms, with hallucinogenic species attracting considerable attention.

Several sunny breaks during the day also allowed us some pleasant paddling on the lake, as well views of sunspots through Bill Hydomako's club C8.



NPS registrar taking a break on the lake.

A late afternoon bonfire outside the cookhouse brought out the hot dogs for roasting. Periodic rain showers sent people running between the fire and the cookhouse like an out of control aurora. A door prize draw raised rain-depressed spirits, with generous donations from *Heavens and Earth Science and Nature* and *SkyNews* going to several lucky participants. Dusk saw undulating waves of geese settling on the lake for the night while we settled out of the rain under the shelter of the cookhouse for an evening of presentations. Our first speaker was Bruce McCurdy whose talk, "The Sky's the Limit: Hands-on Radio Astronomy in Alberta Schools", explained the Sky Scan FM radio receiver meteor tracking project. Pounding rain on the metal roof prompted Rick Huziak to follow this talk with a presentation on fireballs and bolides. A bonfire ensued, around which we watched stars vainly trying to pierce thinning skies to no avail as the clouds thickened toward midnight. Donna-Lee May's bottomless urn of coffee was warmly sipped with Roy Ramdeen's assortment of cookies. With still no clearing by midnight, Tim and Roy declared the skies beyond hope and returned to the city. The usual suspects stayed up enjoying the warmth of fire and friends, this time being rewarded for their late night vigil with a half hour of clearing near 1:30AM that saw Paul Campbell squeeze in a couple variable star estimates. Several coyotes burst into eerie howls that competed with the wind as dementor-like low clouds moved in to strangle any hopes of more observing that night.

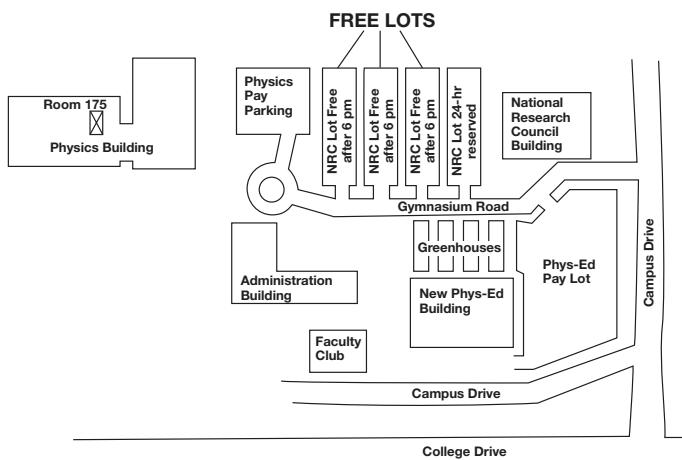
Sunday morning dawned bright and fresh, with campers stumbling from their tents with squinted eyes blinking in the full sunshine as if mimicking the nearby ever wary gophers. Thoughts of "why couldn't it have been this clear last night" were voiced by more than one attendee as tents and telescopes were jammed into protesting cars. Being the last star party of the year, farewells were harder than usual as thoughts of a long, cold winter hung between us and our next probable meeting with the more far flung attendees. Such thoughts were quickly dispelled though as heartfelt promises were made to rendezvous next year for Northern Prairie Starfest 2005. Dates for next year's event are Sept. 9-11. Those who like dark skies and deep sky observing in the company of fellow astronomers shouldn't miss this great new star party that is so close to home.



Bill, John, Kathleen, Amy and Rick observing the sun.

Even Cheaper Parking at the U of S... Is FREE good enough?

Parking for General Meetings might be a bit of a gamble if you try to find a spot on a university road. You can always pay \$2.00 to park underground at the Agriculture Building (access from Science Crescent). You can also try the new parkade at Griffiths field for a similar cost evenings. However, there is a FREE parking lot – the only one on campus – very near the Physics building. Take the field-house entrance onto Campus Drive, and turn left at the second road, headed for the Physics building from the west. The building on the right belongs to the National Research Council. After 6:00 p.m., three of their four parking lots become free public parking. Drive past the NRC building, and find the three skinny lots on the right, nearer to the Physics building. Check the signs to see which ones are free. Note that the first lot is reserved 24-hours for the NRC, and the Physics parking lot itself (furthest west) must have their meters plugged until 10:00 p.m. Monday through Friday.



BOOKS FOR SALE

by Bruce Brandell, Sales Coordinator

The following items are left from the Star Party and will be available at our first meeting on Sept. 20, '04 (the prices are the same as at the Star Party). Call 249-1119 or email <bruce_brandell@yahoo.com>

Title	Author	No. Avail.	Price Cdn\$
Calendar, RASC 2005	Rajiv Gupta, Editor	23	\$14.00
Calendar, Skywatcher 2005	Stan Shadick	10	\$15.00
Beginners Observer's Guide	Leo Enright	7	\$18.00
Skyways – Astronomy Handbook for Teachers	Mary L. Whitehorne	3	\$18.00
RASC Centennial Mug		9	\$ 8.00
Messier Cards, laminated	Sky Publishing	5	\$ 6.00
Messier Poster, colored	Sky Publishing	2	\$27.00
Milkyway Poster	Sky Publishing	2	\$32.00
Touring the Universe through Binoculars	Philip S. Harrington	1	\$58.00
The Moon Map	Sky Publishing	1	\$20.00
Pins SSSP 2004			\$ 5.00
Pins SSSP, other years			\$ 4.00

SKY BUYS & MIRROR CELLS

The Saskatoon Centre's Swap and Sale Page!

For Loan to Members: Slide set for talks on general astronomy and light pollution. You can borrow this set any time you want to give a talk to your favourite group. Contact Rick Huziak at 665-3392.

For Sale: RASC Royal Centenary coffee mugs. Pick yours up at the next General Meeting – \$9 each

For Sale: Upgrade your 6x30 finder to this 9x50 made by Synta of China – \$50. Contact Ron Waldron at 382-9428.

Pre-Christmas SKYWATCHER SALE

Most Skywatcher Telescopes at Special Pricing

Examples:

804TT	80mm. F5 Refractor, tabletop EQ1 mount, 2 eyepieces.	\$200
909EQ2	90mm. F10 Refractor, EQ2 mount, Al tripod, 2 eyepieces.	\$260
2001P-HEQ5	8" F5 Reflector, HEQ5 mount.	\$1155
	(5 only)	
25012P-HEQ6	10" F5 Reflector, HEQ6 mount.	\$1650
	(2 only)	
90-100-127	Maksutov scopes with mount.	Call.

Other Specials:

Vixen 130 F6.6 ED refractor + Sphinx mount.	Call.
Celestron 130GT. 5" F5 reflector + go-to mount.	\$500
Celestron 130Mak with case, 10x50 finder.	\$550 (1 only)
Celestron Nexstar 8-GPS-XLT.	\$3200 (1 only)

More than 15 SkyWatcher models on Sale. SHOP EARLY Quantities and prices are limited to in-stock items. Call to reserve your new scope or purchase for a friend. **Sale begins October 20, 04 Ends December 15, 04** or when sale inventory is depleted.

Sky Vue Telescopes
144 Edgehill Close NW
Calgary, AB T3A 2X1
(403) 239-8386



Ask AstroNut

The **Ask AstroNut** column is an anonymous question and answer advice column, where you can ask any question you want, boneheaded or brilliant, and the editor will find someone who will give you a somewhat educated answer.

Dear AstroNut: Four hundred years ago, a previously unseen star suddenly appeared in the night sky on Oct. 9, 1604. It soon became the brightest star in the sky. Johannes Kepler, a German astronomer, studied the star as it faded over the next year, and wrote a book about it called *De Stella Nova* ("The New Star"). In the 1940's astronomers found the object was a supernova, and it came to be known as Kepler's Star. No supernova in our galaxy has been discovered since the 1604. Books, however, often quote that supernovae occur once every 100 years in a galaxy. It's been 400 years for the Milky Way! Can anyone clear up the apparent contradiction?

AstroNut answers: Good observation on the 'discrepancy'! The 100 years between supernovae is an often quoted statistic that comes from theoretical studies back in the 1940's or 1950's and is loosely based on how many supernovae have been observed in history in our Milky Way (up to the 1604 event) and how many supernova remnants are recognized in our galaxy, with events seen or not. I've never seen that number change in popular literature. However, reality is that the true supernova rate per galaxy is not really known, but it is known that the rate is dependent on the type of galaxy. The reason for this is that supernova precursors are usually over-massive stars that have been "recently" born in a bout of massive star formation and are too large to remain stable. They evolve very quickly and live short lives. (i.e. The Orion Nebula, the largest star-forming area near the earth, has produced several supernovae in the past). So the galaxy must be capable of forming stars. Dusty spiral galaxies are good candidates since many still are actively producing stars. Other types of galaxies that 'overproduce' supernovae are 'starburst' galaxies, where recent collisions with other galaxies have mixed up the dust a

lot and hordes of new stars are being produced. On the other end, supernovae in old elliptical galaxies are rare since they often contain much less dust for star formation.

So, some galaxies produce a lot of supernovae, and others produce few. The Milky Way seems to produce a supernova every 100 years (plus or minus some error – obviously \pm 400+ years! for a visual one). However, most of the supernovae in the Milky Way will not be visible from the earth due to the huge dust clouds in the arms. And since the sun is in the plane of the dusty arms, we have the worst box seat for the show! Who knows what percent of bursts have been obscured? With neutrino telescopes, though, we will know when the next galactic supernova goes off due to the huge neutrino burst that will be detected. SN1987a in the Large Magellanic Cloud produced a neutrino shockwave 11 light-seconds thick, with billions of neutrinos per cubic centimeter passing through us for that time. Somewhere in our bodies is a genetic mutation as a result of that event. A galactic one will produce a far greater density of neutrinos. There may have been dozens between 1604 and the day before the first neutrino telescope came onboard, but none since in the Milky Way.

Currently, SN 2004et is visible at 13th magnitude in NGC 6946. This is by no means the first supernova in that galaxy. According to notes on the AAVSO chart for the galaxy, it has produced SN1917a, SN1939c, SN1948b, SN1963d, SN1969, SN1980 and now SN2004et. Presumably 1917 wasn't the first and 2004 will not be the last. The number of years between supernovae are 22, 9, 15, 6, 11, 24, provided we caught them all. This is an average 13 years between, so we can statistically expect another by 2017 – a whole order of magnitude greater than the 100 years cited for the Milky Way. This galaxy seems to be overproducing, whatever that means!

A chart can be found at:

<http://www.aavso.org/observing/charts/>

In the NAME box, type in NGC 6946, then pick the chart that suits your scope size and orientation.



PHOTO BY TENHO TUOMI

Thank you to all the volunteers who came to help and brought food for the pre-BBQ at the open house at Sleaford on October 16. The lamb burgers provided by Fred Davis were delicious despite the bitter cold. Unfortunately it was cloudy but about 30 visitors still showed up to tour the facilities and look at slides shown by Rick Huziak.

(clockwise from left front)

Les Dickson, Al Hartridge, Barb Young, Graham Hartridge, Ellen Dickson, Velma Tuomi, Sharon Hartridge, Amy Huziak, Rick Huziak, Jim Young, Bill Hydomako.

The Chatfield Binocular Challenge – Part 4 *by Rick Huziak*

This is Part IV of a 4-part series. This is the last installment in the Chatfield list. In modern days of larger telescopes and go-to electronic scopes, I often feel that “you might get to your destination, but along the way, you miss the trip”. Astronomy seems to be going higher tech all the time. And we can easily forget the beauty of a wide-field view. The next clear moonless night, find some of the Chatfield objects – they are all worth chasing down, because along the way, there are very many wonderful sights. Once you find an object, check a star atlas and see if you can figure out a star hop to the next object that will send you on a trip along the Milky Way. The Milky Way is full of excellent star clouds and dark dust lanes. Scanning the sky with binoculars is always rewarding. Good luck on this month’s Chatfield objects.

SCORPIUS – M6 (NGC 6405) – M6 and nearby NGC 6416 form a pair of adjoined open clusters that are informally known as the Butterfly Cluster. In binoculars, these form two fuzzy spots jointed together, but not much more detail is visible, likely due to the proximity to the south horizon as seen from Sleaford. Four degrees to the SE is M7 (NGC 6475). M7 is large, about 2-degrees in diameter with a bright core and surrounded with many very bright 6- and 7-magnitude stars. It seems to me that M7 would have been a better choice for a binocular challenge object. None of these objects are easy due to their far-southern location in the sky.

SCUTUM – M11 (NGC 6705) – This is a small but intense open star cluster – a round ball of light about 5' in diameter. A 9th magnitude star is barely following the cluster, and no other stars can be resolved with binoculars. Note the spectacular field surrounding. The top half is dark, and the bottom half is bright with star clouds. Note the trapezoid of stars nearby with red R Scuti prominent. The entire variable range of R Scuti can easily be followed in binoculars with changes noted daily.

SERPENS – M5 (NGC 5904) – M5 is a fuzzy ball about 3' in diameter and brighter to the center. It is sharper and more concentrated than M13. It is 6th magnitude. Slightly reddish 5 Serpentis is very near by.

SERPENS – IC 4756 – Note that this object is incorrectly listed on the Challenge as NGC 4756. It is indeed an Index Catalog (IC) object. About 50 stars to 9th magnitude are visible, loosely scattered in an open star cluster. However, the cluster is bounded by four or five 7th magnitude stars. The entire cluster is about 2 degrees in diameter. The exact extent and form of the cluster is hard to distinguish from the already-rich Milky Way background, but it does form a distinct glow in the center of the field. At the leading edge of the field, a smaller but brighter open cluster in noticeable – NGC 6633. It is 7th magnitude and shows about 15 stars and haze in a distinctly bar-shaped pattern.

TAURUS – M45 – The famous Pleiades is a wonderful binocular open star cluster with at least 60 cluster members

visible from 4th to 11th magnitude. The cluster fills 3-degrees of the binocular field and is mostly roundish. A curious curved line of 7 faint stars extends SE from eta Tauri (Alcyone). The 7th Pleiade, often commented on as “difficult to see”, has a good reason for this reputation. It is the irregular variable star, BU Tauri, and for the last few years, it has been pretty faint and around 6th magnitude, making the Pleiades look like a 6-sister team in poorer skies. All stars are white with a faint blue tinge, and the cluster contains virtually no colour.

TAURUS – MELOTTE 25 (Mel 25) – Taurus the Bull’s head is one of the closest star clusters to the earth. At one time, the sun was thought to have been a member of this cluster, but that is now believed not to be true. The 8-degree size of this cluster makes it too large for a single binocular field, so you have to scan around to see its great extent. The V-shape of the main bright stars is obvious naked eye, but is highlighted in binoculars by the wide double star of equal magnitudes, theta 1 & theta 2 Tauri. The stars in this cluster are basically white, except for Aldebaran, which contrasts strongly with an orange/red colour. There are 120 stars easily visible in the main V, but this extends to 150 or more when the area to the N around kappa 1, kappa 2, 50, 51, 53 & 56 Tauri are included on the count. This is a wonderful cluster to cruise around in with binoculars.

URSA MAJOR – M81 (NGC 3031) / M82 (NGC 3034) – This is a very easy binocular field. The two galaxies are separated by about 1-degree. M81 is bright and oval, with a very bright nucleus. The galaxy spans a 5' x 7' area. M82 is a long and flat homogeneous bar with no internal details visible. It is about 1/2 the size of M81, at 2' x 4' in area.

URSA MAJOR – Mizar/Alcor – Mizar is a 3rd magnitude whitish-blue star. Alcor is 4th magnitude and pale blue, but bluer than Mizar. A faint star forms a shallow triangle between the two. There is also a faint triangle of stars 2 degrees below Mizar to the SW. Mizar itself is a close double star, but at 8x magnification, I cannot split it.

VULPECULA – M27 (NGC 6853) – M27 is a planetary nebula situated in a very fine Milky Way field. Its rectangular shape is easy to distinguish in binoculars. The nebula appears bluish. The nebula is at the base of an M-shaped asterism of 7th magnitude stars where the 2 top peaks of the M are wide binocular doubles. To find this M, scan to the NE from the arrow point of Sagitta.

VULPECULA – COLLINDER 399 (Cr 399) – This is the “Coathanger”. It is an asterism, not an open star cluster. Asterisms are chance alignments of stars, and very few stars in the Coathanger are physically associated. Six or seven bright stars form a dead-straight bar, and 4 stars for the hook on this upside-down version of a hanger, or backward J. The Coathanger spans about 2 degrees in length. The surrounding field is slightly mottled.



The Planets This Month, November 2004

by Murray D. Paulson, Edmonton Centre

Mercury spends the month climbing out to its November 21st greatest eastern elongation, but to no avail for us northern viewers. It is the old problem of the fall ecliptic preceding the sun on its way to the winter solstice. To add insult to injury, Mercury also is 2 1/2 degrees below the ecliptic, so it will reside in the twilight glare too close to the horizon to become visible in the evening sky. Interestingly enough, Pluto and Mercury are in conjunction on the eve of the greatest elongation, November 20. Pluto will sit 10 and 3/4 degrees above Mercury which shines at magnitude -0.3. Mercury will sit 22.2 degrees from the sun at this time and it sets 3/4 hour after the sun. For daytime viewers, in the eyepiece you will see a 6.7" slightly gibbous disk.

As Mercury comes up, **Venus** is on her way back down in the morning sky. Venus starts off the month 34 degrees from the sun and shines at magnitude -4.0. It is the brilliant beacon in the dawn sky that will keep us company on our way to work over the next few months. In the eyepiece it shows a 13.2" gibbous disk that by months end will shrink to 11.6". Venus and Jupiter were in conjunction on the morning of November 5th, only 3/4 of a degree apart. Europe got to see the closest approach of 33 minutes of arc. If you missed this spectacle, the pair will dominate the morning sky for the first half of November. In the beginning of December, Venus joins Mars and they stay a close grouping over the first week of the month. Mars makes a very close approach to Zeuben Elgenubi on the morning of December 3rd, where the two are only 11 minutes of arc apart. Zeuben Elgenubi is a double star, and the grouping will make for a good sight in the eyepiece. The waning 26.7 day old moon joins the pair on December 9th, so mark it on your calendar!

We have mentioned **Jupiter**, and it has made the transition into the morning sky. I have a report from a novice observer in the rapture of their first telescope on observations of Jupiter's belts in the early morning sky. I agreed with her that this was a better use of your time than driving to work. At present, it shows a 32" disk in the eyepiece and shines at magnitude -1.7. It will not become an evening object until early next year, but we do have a close approach to the moon on the morning of November 9th. At this time, Jupiter will pass within 100 seconds of arc of the earthshine illuminated limb of the moon. The closest approach will occur at 10:30 am, but if you find it in the morning sky, you should be able to follow it well into the morning. At local sunrise, the pair will be separated by 10 minutes of arc. How long can you follow them?

Saturn has become an evening object, but unfortunately we have been veiled in clouds with this early onset of winter here in Edmonton. At the beginning of this month, Saturn rises at 9:30 pm and sits in between Gemini and Cancer. It shines at magnitude 0.0 and presents a 19" disk in the eyepiece. I mentioned in last month's installment that the rings have really tipped back down and this will be quite prominent over last year's views in the telescope. The ball of the planet projects quite prominently beyond the rings. By month's end, Saturn will rise at 7:40 pm and on the night of the 30th, a 19 day old waning gibbous moon passes just 4 1/2 degrees above Saturn. It is interesting to note that Saturn is only 4 minutes of arc below the ecliptic, but the moon is quite high above it. It is quite interesting to get a conjunction like this that shows off the inclination of the Moon's orbit.

Prospects for the Leonid & Geminid Showers *by Rick Huziak*

Leonids: Predicted Maximum – Nov 16/17 – 2:25 a.m. CST:

In theory, the strong Leonid storms between 1998-2002 will see a continuing decline in activity back towards its earlier Zenith Hourly Rates of 10-15. No enhanced activity is predicted, although as meteor observers know, surprises can occur! Observers should be alert to covering whatever the shower produces. The Leonid radiant rises after local midnight and the waxing crescent Moon will have set long before this on peak night, favouring sites across the Americas.

Geminids: Predicted Maximum – Dec 13/14 – 4:20 p.m. (before supper): This is one of the finest annual showers. This

year, the new Moon on December 12 gives perfect observing. The Geminid radiant is highest around 2 a.m. local time. The radiant rises around sunset, and is at a usable elevation all night long. This is an excellent shower of often bright, medium-speed meteors – sometimes colourful yellow fireballs with blue smoke. The main predicted timing favours European, North African, Russian and Chinese longitudes. However, the shower should still be strong when darkness arrives here only a few hours later. Check out the excellent meteor observing calendar that appears every year on the International Meteor Organization's website at: <http://www.imo.net/calendar/cal04.html>

The Messier, H-400 & H-400-II, FNGC, Binoc & EtU Club

Join the Club! Observe all 110 Messier, 110 Finest NGC, 400 Herschel I or 400 Herschel II, Explore the Universe, or 35 Binocular objects and earn great OBSERVING CERTIFICATES!

MESSIER CLUB

Certified at 110 Objects:

R. Huziak, G. Sarty, S. Alexander, S. Ferguson, D. Jeffrey, D. Chatfield, B. Christie, K. Noesgaard, M. Stephens, B. Hydomako, T. Tuomi, L. Scott

George Charpentier	Applied!	110
Mike Clancy		97
Brent Gratias	Up!	96
Mike Oosterlaken		93
Lorne Jensen		88
Brent Burlingham		85
Wade Selvig		75
Les Dickson	Up!	70
Garry Stone		57
Kathleen Houston		57
Ellen Dickson		23
Brian Friesen		15
Barb Young		6



RASC Observing Group Notes

by Bill Hydomako, Observing Group Coordinator

I'm taking over from Brent Burlingham as the Observing Group Coordinator. I've been talking to a few people as to what they would like to see happen for a program in the Saskatoon Centre's observing Group so here is what I've got planned until the end of December. I thought I would start off with a program geared more for the beginner astronomer.

The first Observers Group meeting out at the Sleaford Observatory is planned for Friday, November 12. I'm planning to be out there by 8:00 p.m. I plan to have a tour of the facilities out at Sleaford covering basic operation. The goal being to train new members on opening up the site, operation of the site and shutting the site down. This will entitle the new members to receive a key to the Sleaford Observatory if they wish. I also plan to start observing with identifying some of the major constellations and basic astronomy.

The Observing Group meeting in December out at Sleaford is planned for Friday, December 10, starting at 8:00 p.m. We'll continue on with a few more constellations and add some double stars.

We will also be looking at setting up a web site like a chat list for the observing group. The idea is to allow us to easily contact each other on observing topics including who may be going out to observe and when.

I will be taking over maintaining the Observing Club Lists. So contact me if you have updates to your Observing List count.

Clear Skies!

Bill Hydomako, Observing Group Coordinator

FINEST NGC CLUB

Certified at 110 Objects:

R. Huziak, D. Jeffrey, G. Sarty, D. Chatfield

Tenho Tuomi	Applied!	110
Scott Alexander		97
Sandy Ferguson		23
Mike Oosterlaken		20
Bill Hydomako		20
Larry Scott	New!	15
Mike Clancy		4

Chatfield BINOCULAR CERTIFICATE

Certified at 35 Objects:

M. Stephens, T. Tuomi, M. Clancy, R. Huziak

Brent Gratias	New!	36
Mike Oosterlaken		32
Anna Clancy		24

EXPLORE the UNIVERSE

Certified for Certificate:

M. Clancy, T. Tuomi

HERSCHEL 400 CLUB

Certified at 400 Objects:

D. Jeffrey, R. Huziak, D. Chatfield

Gord Sarty	251
Tenho Tuomi	Up! 143
Scott Alexander	117
Mike Oosterlaken	68
Bill Hydomako	19
Sandy Ferguson	18

HERSCHEL 400-II CLUB

Certified at 400 Objects:

Richard Huziak	211
Darrell Chatfield	Up! 196

The Messier & Finest NGC lists can be found in the *Observer's Handbook*. The Explore the Universe list is available on the National web site. The Binocular List & Herschel 400 lists will be available at each general meeting or can be mailed out on request to distant members. Each month I'll be posting updates.



October 27
total lunar eclipse,
by Garry Stone

On-line Messier List – For those who'd like an electronic Messier list (with DSS images), check out:

<http://www.seds.org/billa/dssm/messier.html>

On-line Finest NGC List – For those who'd like an electronic FNGC list, check out the Edmonton Centre's version at:

<http://www.edmontonrasc.com/catalog.html>

On-line Herschel 400 List – For those who'd like an electronic Herschel 400 list, check out the official site at:

<http://www.astroleague.org/al/obsclubs/hers400.html>