

Saskatoon Skies

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

Vol. 40, No. 10

October 2009

Get Set for Galilean Nights October 22-24



With plenty of hot chocolate and warm gear at hand, stargazers (like this group of telescope enthusiasts photographed at the 2009 GA/SSSP) will be out in force for Galilean Nights this fall. (See page 3 for details.)

Photo by Frank Tomaras



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To view *Saskatoon Skies* in colour, see our Website:

<http://homepage.usask.ca/~ges125/rasc/newsletters.html>

MEMBERSHIP? IT'S NEVER TOO LATE TO JOIN!

Regular: \$77.00 /year

Youth: \$41.00 /year

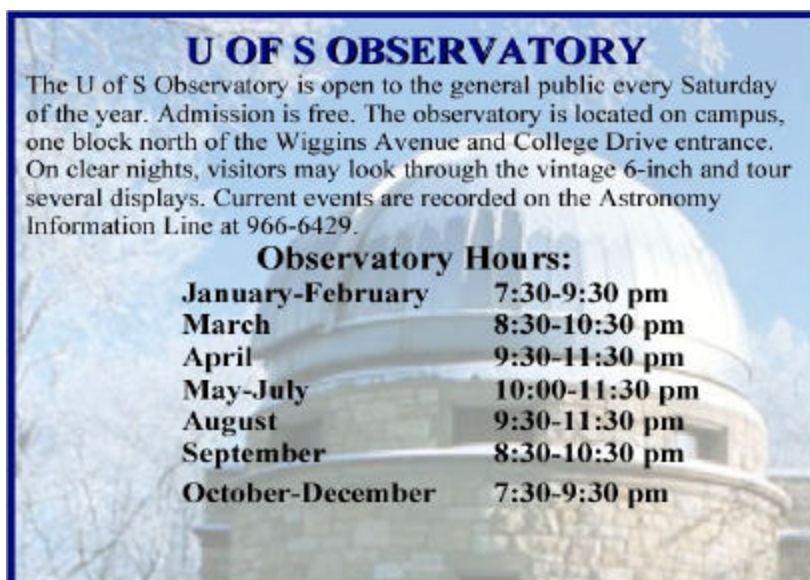
Associate: \$33 /year

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, Mark de Jong, or renew through the National Office and let Mark 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 (electronic format)
- SkyNews Magazine (bimonthly)
- use of the Centre library
- rent the Centre's Telescopes
<http://homepage.usask.ca/ges125/rasc/telescopes.html>
- discounts to Sky & Telescope Magazine*
- free, no-cost, no-obligation, 3-month temporary membership if you don 't want to join right now!

*New subscription or renewal of Sky & Telescope? Send new info or renewal notice, plus credit card # to Norma Jensen, 128 – 4th Street East, Saskatoon, SK S7H 1H8, or email her at norj@sasktel.net .



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

SASKATOON CENTRE'S MAIN OFFICERS:

President – Barb Wright, 249-1990
Secretary – Al Hartridge, 373-0034
Vice-President – Jeff Swick, 373-3902
Treasurer – Norma Jensen, 244-7360

**Bottle Drive &
Canadian Tire \$**
By Darrell Chatfield

If you cannot make it to a meeting but would like to contribute your Canadian Tire money please call me at 374-9278.

Newsletter Editors – Christine Kulyk & Tenho Tuomi

Copy & Collate – Les & Ellen Dickson

Labels & Temps – Mark de Jong

Web Posting – Gord Sarty

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 material. **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 to the editor at ckulyk@sasktel.net – preferred as plain unformatted ASCII text files without line breaks. Images sent by e-mail should be attached files.

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 indicated), provided that proper source credit is given. DEADLINE for submissions for each month's issue is the 20th of the preceding month. Saskatoon Skies accepts Commercial advertising. Please call the editor 306-858-2453 for rates. Members can advertise non-commercial items free of charge.

LIGHT POLLUTION
ABATEMENT
WEBSITE AT:
www.ras.sk.ca/lpc/lpc.htm

RASC CALENDAR OF EVENTS

Oct 16	Observers Group – 7:30 pm, Sleaford Observatory	Larry Scott	934-5801
Oct 19	RASC Executive Meeting - 6:30 pm, 175 Physics, U of S	Barb Wright	249-1990
Oct 19	RASC General Meeting - 7:30 pm, 175 Physics, U of S	Barb Wright	249-1990
Oct 21	Orionid Meteor Shower – Everywhere!	Larry Scott	934-5801
Oct 23-24	Sleaford Observatory Open House	Barb Wright	249-1990
Nov 13	Observers Group – 7:30 pm, Sleaford Observatory	Larry Scott	934-5801
Nov 16	RASC Executive Meeting - 6:30 pm, 175 Physics, U of S	Barb Wright	249-1990
Nov 16	RASC General Meeting - 7:30 pm, 175 Physics, U of S	Barb Wright	249-1990
Nov 17	Leonid Meteor Shower – Sleaford Observatory	Larry Scott	934-5801
Dec 11	Observers Group – 7:30 pm, Sleaford Observatory	Larry Scott	934-5801

RASC SASKATOON CENTRE GENERAL MEETING

MONDAY, OCTOBER 19, 7:30 PM

Room 175, Physics Bldg, U of S

**Annual General Meeting
&
Election of Officers**



Note: There will be an Executive Meeting at 6:30 pm.

“Galilean Nights” at the Sleaford Observatory October 23-24

Our annual Open House at the Sleaford Observatory this year doubles as a celebration of “Galilean Nights,” an International Year of Astronomy event. Everyone is invited. Bring your family and friends and let neighbours in your community know about it.

We’ll be needing volunteers for setup, telescopes, and providing information to the public. Please get in touch with Barb Wright (249-1990) for details.

Galilean Nights will be celebrated worldwide on October 22-24. Over three nights, amateur and professional astronomers will share their knowledge and enthusiasm for the universe by encouraging as many people as possible to look through a telescope at our neighbouring planets. The focus is on the observations made by Galileo 400 years ago, including

those of Jupiter and the Moon, which will be well-positioned in the night sky for observing. For many members of the public, it will be their first look through a telescope, when they can see such breathtaking sights as the cloud bands of Jupiter and intricate details on our cratered Moon.

Anyone, from any background and with any level of experience, is encouraged to organize events, from one person sharing the night sky through a telescope with a small group of neighbours and friends to groups holding major observing sessions in public areas. To keep track of developments and to help people find local Galilean Nights activities, all events can be registered on the project Website at <http://www.galileannights.org>

Minutes of the Executive Meeting September 21, 2009 by Al Hartridge

1. Meeting called to order at 6:30 pm.
2. Approval of the minutes of the previous (June 15) meeting: Moved by Norma Jensen, seconded by Les Dickson, and carried.
3. Treasurer's Report (Norma Jensen): Net revenue from the 2009 SSSP is approximately \$500. The Hydromako Fund has had two recent donations totalling \$600.
4. National Report (Les Dickson): No new Life Memberships. New dark-sky preserves will be established in Saskatchewan Grasslands and in New Brunswick.
5. IYA Activities:
 - Celebrating the Night Sky art display at Frances Morrison Library till October 1.
 - Open House at Sleaford Observatory Oct. 23-24. IYA Galilean Nights activities will be part of the program at Sleaford.
 - Children's Discovery Museum would like a display from our Centre at their Market Mall presentation on Nov. 20.
 - IYA concert conducted by George Charpentier on Oct. 17 will be playing astronomy-related music. He would like some telescopes set up for observing. The RASC and IYA will be mentioned by the MC.
 - A Brownies group is requesting an astronomy night. Norma Jensen volunteered to take care of this.
 - Ron Waldron suggested setting up along the Meewasin Trail next time a public star night is put on by our Centre.
6. December Meeting: The date for our December meeting will remain unchanged.
7. Insurance Coverage for events should be clarified. Liability is the greatest concern. Norma Jensen and Jim Gorkoff will look into this.
8. Nominations Committee for October elections will consist of Les Dickson, Jeff Swick, and Barb Wright. Nominations open for all positions except President and Vice President.
9. Gordon Patterson Astrophoto manual: Our club has the rights to this book. Moved by Les Dickson, seconded by Tenho Tuomi, and carried: that we give consent to National to digitize and load the contents of the manual to their Website for free download.
10. Meeting adjourned at 7:25 pm.

Minutes of the General Meeting September 21, 2009 by Al Hartridge

1. Meeting called to order at 7:30 pm.
2. Approval of the minutes of the previous (June 15) meeting: Moved by Mike Clancy, seconded by Chris Martin, and carried.
3. Treasurer's Report (Norma Jensen): 2009 Star Party net revenue \$500. Hydromako building fund: recent donations totalling \$600 by two parties.
4. National Report (Les Dickson): No new Life Memberships from National will be available. Two new dark-sky preserves have been added: Sask Grasslands and in New Brunswick. New observing challenge called David Levy Deep Sky Gems.
5. IYA Activities:
 - Canada Parks Day at Pike Lake
 - Narrow Hills Park (Mike Clancy)
 - Meadow Lake (Rick and Kathleen)
 - Ron Waldron: Assembly of Galileoscopes at Fairhaven School
 - Also see Executive Minutes.
6. Observers Group: 11 people turned out for the latest event.
7. Sleaford Site: Darrell Chatfield will go out to the site next weekend to touch up the deck.
8. Light Abatement (Rick Huziak): The official Grasslands dark-sky preserve opening ceremony will be held Oct. 2 at 2:00 pm. There will be an upcoming meeting with City representatives regarding proper lighting.
9. Newsletter (Christine Kulyk): The anniversary issue was paid for in large part by advertising revenue (\$250).
10. Nominations Committee: Will consist of Les Dickson, Barb Wright, and Jeff Swick.
11. More IYA Activities:
 - After a presentation at Coronac, Mike Clancy was asked by the science teachers about the possibility of forming a liaison with our Centre.
 - Mike and Tenho asked to do a presentation aboard a refurbished steam locomotive train while travelling along its designated route.
12. Presentations:
 - "Meteorite Hunting at Buzzard Coulee" by Rick Huziak, Tenho Tuomi, and Darrell Chatfield
 - GA/SSSP 2009 Committee Reports
13. Meeting adjourned at 9:30 pm

As Events Coordinator Patricia Gakis reported at our last meeting, many of our members spent their summer vacations bringing astronomy to the public at events such as Canada Parks Day, as well as our own record-breaking GA/SSSP at Cypress Hills. At that same meeting, Ron Waldron reported that he was set to help the kids at Fairhaven School assemble 150 Galileoscopes. What better way to get them ready for the premier fall event of the International Year of Astronomy: Galilean Nights on October 22-24!

As the IYA turns into its home stretch, we can look forward to lots more exciting stuff ahead. Be sure to

send us an announcement about your planned activities well in advance, so that we can publicize them in the newsletter. We also want photos and reports from those who organize or attend any astro-events, local or otherwise. To keep things to a manageable size, aim for about 500 words of text plus 3 or 4 of your best pictures. (See bottom of page 2 for details about submitting material to *Saskatoon Skies*.)

Correction and apologies: The photo at bottom of page 5 in the September issue was incorrectly credited. The picture was actually taken by Chris Novak and provided courtesy of Frank Tomaras.

Moon Walking Along the Terminator

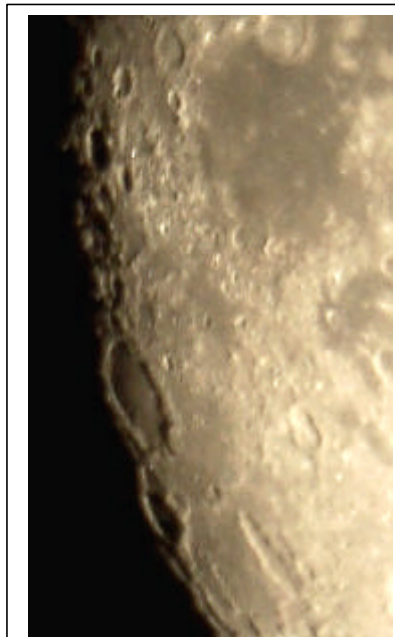
by Norma Jensen

During the second week of September, I spent a few hours before and after dawn with my sturdy 8" Dob watching Moon. For four days, I rose to Orion and Taurus blazing in the dark, with Jupiter bright to the south. Venus came with the dawn each day. Formations of geese crossed the sky, their underwings bright with the Sun not yet risen in the backyard.

I followed the Moon's changes from quarter to crescent, finding new things and old favourites. At quarter Moon, I crater-hopped from Sinus Medii's south shore (Herschel) to deep into the south polar region (Moretus). I travelled through steep-walled craters, craters heavily impacted, mountain peaks, and ranges with passes into walled plains, intact or with crumbling walls. One new discovery was in Regiomontanus, a crater pit at the top of the central peak. What an incredible sight.

Crescent Moon brought some favourite sights. Fra Mauro is one. I like the entire formation running from Gambart in the mountainous plains to the north, south through Fra Mauro with its three associated craters, through a trail of debris, ending with a

small crater. All very artfully done. Noteworthy as well are the Rhipaeus Mountains and Rupes Recta (the Straight Wall). But of all, the Aristarchus Plateau and the Schoterii Valley is one of the most beautiful areas of the Moon. Situated in northern Oceanus Procellarum, it is captivating. The winding valley, rills extending from crater floors, mountain ranges, and varied light and dark patches on the plateau — it is a place to spend time when you can.



Crater Schickard
Photo by Tenho Tuomi 2003

Sliver-crescent viewing was dangerous fun as I moved south from Grimaldi past Sirsalis, the twins, and Mencenius. At last, I arrived at another favourite, Schickard and friends (Inghirami, Wargentini, and Phocylides). Schickard is a huge walled plain with a diameter of 227 kilometres. (By comparison, Copernicus has a diameter of 99 kilometres.) The latter two are lava-flooded. Wargentini is much darker and has a raised floor, very interesting.

We are now at 60 degrees West, 54 degrees South, and the terminator's edge is very close. Great views from here!

IYA and the Narrow Hills Provincial Park

by Mike Clancy

I was asked to speak on astronomy at the Narrow Hills Provincial Park on Friday and Saturday, July 17-18, as part of their 75th Anniversary celebrations. I loaded up with IYA materials and left for the park so as to arrive at the campsite they offered me in time to set up my tent and otherwise get ship-shape.

The weather, which had been fine all afternoon, turned nasty about suppertime, with a line of thunderstorms breaking over the area with heavy rain and lightning. Apparently, several small fires were started in the vicinity, although none were close to Lower Fishing Lake where I gave my evening “Stories and Stars” presentation to 35-40 people in the Narrow Hills hall. The audience was mostly middle-aged couples, with eight small children, although a number of grandmothers also attended and were most appreciative of the free material as they wanted such things for their visiting grandchildren later in the summer.

I started with a rendition of “The Cremation of Sam McGee” by Robert Service and then discussed IYA, what all the handouts were for and how to use them. I was keeping an eye on the weather (which stayed miserable) and had to extend the performance until things cleared a bit, so I gave them “Swamp Witch Hatty” (always a favourite with the children) and a presentation on lunar observing until about 23:00, when the clouds finally parted somewhat. I tried to lead the group on a binocular-oriented tour of the



View of Cub Hills from the esker ridge at Narrow Hills Provincial Park

Photo by Mike Clancy

night sky through a series of “sucker-holes” until about 23:30, but it was evident that the skies would not cooperate, so the presentation ended with a promise to do some solar observing the next morning.

When I got back to my somewhat sodden campsite 15 minutes or so later, the skies miraculously cleared and I dug out my scope to begin observing on my own. I no sooner had it ready to begin observing Albireo in Cygnus when suddenly it appeared as though I was trying to look through a glass of milk! I stepped back from the eyepiece and got to watch a fog line descend on Lower Fishing Lake as the ambient air temperature plummeted; the lowest temperature recorded at the park’s admin. building was 2°C that night! As you might have surmised, that ended my observing for the night.

The next day, I had arranged to demonstrate solar observing with my telescope and the Baader filter I’d made for it. The skies were once again milky with high, thin clouds, so the views were none too spectacular, not to mention that we are at a low point for solar activity anyway, so the people I’d invited from the night before had little to actually look at.

What I hadn’t counted on was that the parking lot where I had my telescope set up was also used by the folks coming for the free lunch (hot dogs, ice cream, etc.) in celebration of the park’s 75th anniversary. As they arrived, they saw me and a



Narrow Hills hall at Lower Fishing Lake

Photo by Mike Clancy

small knot of people, assumed that's where all the goodies were, and showed up only to find me handing out IYA materials to the kids while trying to keep the Sun centred in my scope and repeat the talk about solar activity and how that affects the Northern Lights every five minutes or so!

It was very busy for an hour or so, with perhaps 300 people (probably an exaggeration, but I was far too busy to keep count – the parking lot was pretty full though!) stopping by to hear me out and help themselves to the trading cards, planispheres, and magazines I'd brought; I had so little left that I gave it to the park interpreter for her own presentations later in the summer. I doubt that I did much good for the IYA side of the presentation as I had so little time for each person, but everyone seemed pleased with the goodies; they were free after all! The park celebrations

began at 12:00, by which time I was finished anyway (in more ways than one!), so I simply packed up and drove home.

I also took the opportunity to stop in at Zeden Lake to visit St. John Bosco Camp, a residential summer camp, to speak with the staff there about the International Year of Astronomy and hand out some free material to give their 300 or so campers (over the course of the summer) a taste of astronomy. In all, I had a chance to speak to three groups over the weekend: the Bosco staff (leaving 25 copies of the IYA materials for their programming), 40 people at the Friday evening session at Narrow Hills, and perhaps 300 people at the Saturday morning solar observing session. The participants really enjoyed it, so much so that I've been invited back for next summer.

Pictures from the GA/SSSP 2009



Last hope for a clear night
...not so lucky
...still a whole lot of fun

Photo by Jeff Swick



Telescopes waiting for the sky to clear

Photo by Jeff Swick



Thursday evening BBQ Substitute

Photo by Jeff Swick



A little blue sky uncovers telescopes

Photo by Jeff Swick



Ron Waldron with Galileo Galilei

Photo courtesy of Ron Waldron



Looking through a replica of Galileo's telescope

Photo by Jeff Swick

Establishment of the Grasslands National Park Dark Sky Preserve - October 2

(News Release From the RASC National Office)

On Friday, October 2, Parks Canada and the Royal Astronomical Society of Canada will be designating the Grasslands National Park as a Dark Sky Preserve (DSP). The ceremony, to be held at 2:00 pm at the Larson Prairie Dog Town in Grasslands National Park West Block, near Val Marie, Saskatchewan, will celebrate our continued commitment to protecting natural areas from the adverse effects of artificial lighting.

The RASC and Parks Canada, the provinces, and others have worked together to establish 11 Dark Sky Preserves across Canada. The Grasslands National Park, located approximately 100 kilometres south of Swift Current, Saskatchewan, near the Saskatchewan-Montana border, will be the largest Dark Sky Preserve in the world, with a current area of 527 square kilometres. Over time, land acquisitions by the Park will expand the DSP to 921 square kilometres (92,100 hectares).

The Dark Sky Preserve Program of the RASC helps protect the ecology of large areas from the impact of ever-encroaching artificial lighting. The light from bright, unshielded fixtures disrupts the natural nocturnal behaviour and biochemistry of wildlife, and it can even affect human health. Light pollution also overwhelms the faint light from stars and the Milky Way. By protecting the Grasslands National Park from excessive artificial light, Parks Canada and the RASC are preserving the natural environment into the future so that visitors can enjoy the vitality of the nighttime wildlife and the awesome spectacle of a remarkably dark star-filled sky.

For more information on the RASC's Dark Sky Preserve Program and other DSPs, see: <http://www.rasc.ca/lpa/darksky.shtml>

BOOKS FOR SALE

by Bruce Brandell, Sales Coordinator

NOW AVAILABLE!

2010 RASC *Observer's Calendar*.....\$15.00

This colourful calendar features photos by RASC members from across Canada, with monthly info about conjunctions, eclipses, meteor showers, etc. Makes a great Xmas gift!

SPECIAL PRICE! COSMOS

by Sylvia Arditi & Marc Lachièze-Rey.....\$25.00

A stunning collection of 188 images taken by space-borne cameras including space probes and the Hubble. (Normally sells for \$49.95.)

SPACE STATION FLARES

[News From SpaceWeather.com]

Lately, a growing number of observers are reporting intense "flares" coming from the International Space Station (ISS). During some nighttime flybys, the luminosity of the space station surges tenfold or more. Some people have witnessed flares of magnitude -8,

or 25 times brighter than Venus. Currently, the flares are unpredictable. ISS flyby times are available from the Simple Satellite Tracker:

<http://spaceweather.com/flybys>

GigaGalaxy Zoom: An Interactive Panoramic View of the Entire Night Sky

[News Release From the European Southern
Observatory HQ]

The first of three images of ESO's GigaGalaxy Zoom project — a new magnificent 800-million-pixel panorama of the entire sky as seen from ESO's observing sites in Chile — has just been released online. (See: <http://www.gigagalaxyzoom.org/B.html>) The project allows stargazers to explore and experience the universe as it is seen with the unaided eye from the darkest and best viewing locations in the world.

GigaGalaxy Zoom features a Web tool that allows users to take a breathtaking dive into our Milky Way. With this tool, users can learn more about many different and exciting objects in the image, such as multicoloured nebulas and exploding stars. The projection used in GigaGalaxy Zoom places the viewer in front of our Galaxy with the Galactic Plane running horizontally through the image, almost as if we were looking at the Milky Way from the outside.

“The vision of the IYA2009 is to help people rediscover their place in the universe through the day- and nighttime sky, and this is exactly what the GigaGalaxy Zoom project is all about,” says project coordinator Henri Boffin.

SKY BUYS & MIRROR CELLS

The Saskatoon Centre's Swap and Sale Page

5" Astroscan telescope. Red exterior. Good condition.

8" Celestron Celestar Deluxe S/C telescope. Includes many extras and upgraded items, such as finder, W/O diagonal, Feathertouch focuser, Telrad, Bob's Knobs, Dry Eye dew heater system, padded main scope case, and tripod bag. This scope has great optics, as attested to by a former Celestron employee at a previous SSSP. This scope has seen me through 3 certificates, and will track for hours on end. If you want a great scope, then please consider this one. Over \$3,300 invested. Asking \$1,700. Will consider offers. Please contact Darrell (306-374-9278; novachat@sasktel.net).

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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. Hydromako, T. Tuomi, L. Scott, G. Charpentier, B. Johnson, M. Clancy, L. Dickson, B. Burlingham

Ken Maher	Done!	110
Norma Jensen		108
Ron Waldron		105
Kathleen Houston	Up!	90
Margo Millar		77
Wade Selvig		75
Garry Stone		57
Ellen Dickson		32
Wayne Schlapkohl	New!	31
Jeff Swick		24
Barb Wright		23
Bruce Brandell		5

FINEST NGC CLUB

Certified at 110 Objects:

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

Larry Scott	Done!	110
Scott Alexander		97
Sandy Ferguson		23
George Charpentier		13
Ken Maher		10
Mike Clancy		7

Chatfield BINOCULAR CERTIFICATE

Certified at 35 to 40 Objects:

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

Isabel Williamson Lunar Observing Certificate

Norma Jensen	Up!	61
Jeff Swick		13

EXPLORE the UNIVERSE

Certified at 55 to 110 Objects:

M. Clancy, T. Tuomi, K. Maher, B. Gratiias

Wayne Schlapkohl	New!	55
Sharon Dice		23

HERSCHEL 400 CLUB

Certified at 400 Objects:

D. Jeffrey, R. Huziak, D. Chatfield

Tenho Tuomi		398
Gordon Sarty		251
Scott Alexander		117
Sandy Ferguson		18

HERSCHEL 400-II CLUB

Darrell Chatfield		315
Rick Huziak		211

The Messier & Finest NGC lists can be found in the *Observer's Handbook*.

The Explore the Universe list is available on the National website.

The Binocular List will be available at each general meeting or can be mailed out on request to distant members.

On-line Messier and Finest NGC lists, charts and logbooks – check out:

<http://www.rasc.ca/observing>

On-line Herschel 400 List – check out the official site at:

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

Copies of the Isabel Williamson Lunar Observing Program Guide can be purchased from Bruce Brandell.

Program details can be found at: <http://www.rasc.ca/williamson/index.shtml>



Observers Group Notes

by Larry Scott



Our beautiful late-summer weather managed to hang around for most of the September dark-sky period. This was reflected by 11 members and guests attending the Observers Group on September 18. Warm weather and good observing conditions

found us sprawled over the knoll with telescopes spilling out into the parking lot. Highlights included an ISS pass, some new eyepieces, and visitors from North Battleford. There's been excellent attendance all summer, so let's keep it going.

Next Observers Group is scheduled for Friday, October 16. We have moonless evenings for our viewing pleasure from the 10th to the 25th.

For those early risers, the Orionid meteor shower peaks on the morning of October 21, and the Leonids on November 18. There are reports these showers may experience increased activity this year, and both occur near New Moon. (For details, see:

<http://www.amsmeteors.org/showers.html#PER>)

NEW!!! A revised **Sleaford Users Manual** has been posted on our Website at:

<http://homepage.usask.ca/~ges125/rasc/activities.html>