

Saskatoon Skies

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

Vol. 43, No. 05

May 2012

Messier Smile



Congratulations to Kathleen Houston for her Messier certificate which was awarded to her at the April meeting.

Photo by Rick Huziak



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To view *Saskatoon Skies* in colour, see our Website:
<http://homepage.usask.ca/~ges125/rasc/newsletters.html>

MEMBERSHIP? JOIN TODAY!

Regular: \$80.00 /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 National Office at <national@RASC.ca>!

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
- 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 – Jeff Swick, 373-3902
Secretary – Ron Waldron, 382-9428
Vice-President – James Gorkoff, 644-1343
Treasurer – Norma Jensen, 244-7360

Bottle Drive & Canadian Tire \$

By Colin Chatfield

If you cannot make it to a meeting but would like to contribute your Canadian Tire money please call me at 934-7046.

Newsletter Editors – Kathleen Houston & 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 e.b.a@sasktel.net as a .doc, no indents, no tabs, one line between paragraphs. Images: .jpg please, no larger than 1 – 1.5 MB, sent by e-mail as 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 1st of the month. Saskatoon Skies accepts commercial advertising. Please call the editor 306-665-3392 for rates. Members can advertise non-commercial items free of charge.

**LIGHT POLLUTION
ABATEMENT**
WEBSITE AT:
www.rassk.ca/lpc/pc.htm

RASC CALENDAR OF EVENTS

May 12	Astronomy Day. Farmer's Market – 8:00 – 14:00	Barb Wright	249-1990
May 12	Alan Dyer, "The Transit of Venus", 8:00 - 9:00 pm Venus gazing, 7:00 - 8:00 pm, Star Gazing, 9:15 - 11:00 - Bethlehem Catholic High School theatre and grounds	Kathleen Houston	665-3392
May 14	RASC Executive Meeting – 6:30 pm, 175 Physics, U of S	Jeff Swick	373-3902
May 14	RASC General Meeting – 7:30 pm, 175 Physics, U of S	Jeff Swick	373-3902
May 18-19	Grasslands DSP East Block Star Party	Rick Huziak	665-3392
May 19	Observers Group – Dusk, Sleaford Observatory	Larry Scott	934-5801
May 20	Partial Eclipse of the Sun – 6:10 to 8:13 PM, Diefenbaker Park	Barb Wright	249-3392
June 4	Partial Eclipse of the Moon – 4:00 AM to sunrise		
June 5	Transit of Venus – 4:05 PM to sunset, Diefenbaker Park	Barb Wright	249-3392
June 16	Observers Group – Dusk, Sleaford Observatory	Larry Scott	934-5801
June 18	RASC Executive Meeting – 6:30 pm, 175 Physics, U of S	Jeff Swick	373-3902
June 18	RASC General Meeting – 7:30 pm, 175 Physics, U of S	Jeff Swick	373-3902
June 23	Ogema Tourist Train and Astronomy Night	Mike Clancy	
June 28 –	2012 General Assembly - Edmonton		http://www.rasc.ca/programs/ga2012
July 1			
July 14	Observers Group – Dusk, Sleaford Observatory	Larry Scott	934-5801
Aug 16-19	Saskatchewan Summer Star Part – Cypress Hills		http://www.usask.ca/rasc/starparty.html

For a complete list of club events, please check out: <http://www.usask.ca/rasc/activities.html>



RASC SASKATOON CENTRE GENERAL MEETING

MONDAY, May 14, 7:30 PM
Room 175, Physics Bldg., U of S

Speaker: To Be Announced

NOTE: There will be an executive meeting at 6:30 PM



Aurora Below Canopy of Milky Way
Photo by Dick Kirk, April 10, 2012

PRESIDENT'S MESSAGE

by Jeff Swick



Well after a pleasant winter we find ourselves getting ready to ramp up our spring activities.

As you know we have Solar Observing at the Farmers market, and Tales of the Transits of Venus with Alan Dyer on the 12th. We also have the partial solar eclipse and actual Transit of Venus itself as well. The latter two events will feature viewing on the hill at Diefenbaker Park. Barb is doing a wonderful job putting all of this together and she will be asking for volunteers to assist. In fact don't wait for her to call you, why not speak to her at the General meeting and ask how you can help?

The thing I like best about the Farmers Market aside from the food of course is that we get time to visit with each other as well in a relaxed atmosphere.

Planning for the 2012 edition of the Saskatchewan Summer Star Party is moving into the final stages and the SSSP web page is now live and being updated as developments occur.

Our centre met with our counterparts from the Regina centre in Craik and Les will have more to say on that at the General Meeting as well.

Les and Rick as I am told are planning a trip to Cypress Hills themselves soon to have a first hand look at the new and improved facilities in the Meadows. Look for updates on their findings soon.

Hey it's getting to be summer time and the observing is easy....not to mention the summer milky way.

See you all at the club events if not sooner.

The Royal Astronomical Society of Canada Presents

Tales of the Transits of Venus

MAY 12. 2012

Free Public Astronomy Events

Bethlehem Catholic High School
110 Bowlt Crescent, Saskatoon, Saskatchewan

7:00 – 8:00 pm : Sun and Venus observing

8:00 – 9:00 pm : Public multimedia presentation by
Alan Dyer, Astronomer at TELUS Spark Science Centre of Calgary:

“Tales of the Transits of Venus”
The Last Transit In Our Lifetime

9:15 p.m. - 11:00 pm : Urban stargazing

Minutes of the Executive Meeting, April 16, 2012

by Ron Waldron

- 1 Meeting began at 6:29 PM
- 2 Approval of Minutes of the March Executive Meeting – moved by Les, seconded by Norma
- 3 Jim Gorkoff spoke to the executive regarding Saskatchewan's non-profit organization legislation and National's bylaws and bylaw changes. He also spoke of the liabilities that elected Board of Directors are responsible for. He suggests having two directors that our elected officers report to. Jim will do a more thorough presentation of his ideas and suggestions at the May meeting. He also spoke about insurance costs (\$450 annually) quoting facts and figures and what is covered. He suggested that our directors should be insured. Finally, he spoke of our property insurance needs for the sites we own (specifically Sleaford)
- 4 Motion by Jim Gorkoff – that we purchase \$5,000,000 liability insurance for our directors. Seconded by Norma. Carried
- 5 Committee Reports
 - a) Treasurer's Report – Norma Jensen – nil report
 - b) Fundraising Report – Colin Chatfield
 - Colin is in the process of writing a letter to the Potash Mine in Colonsay asking for a \$5000 grant for construction purposes at Sleaford
 - c) Centre Rep Report – Rick Huziak
 - d) Sleaford Site coordinator – Darrell Chatfield
 - Bottle drive is ongoing

- Rick and Darrell are planning a trip to Sleaford in a month or two to put plywood on the walls, followed by carpet.
 - e) Events Coordinator – Barb Wright
 - Astronomy Day activities and Alan Dyer's Venus Transit talk are combined and scheduled for the weekend of May 11th, 2012
 - The Friday evening telescope viewing at Lakewood Civic Centre is cancelled due to the lateness of twilight
 - Saturday, May 12th activities at the Farmer's Market is from 8:00 AM – 2:00 PM
 - 700 pairs of solar glasses have been ordered for these events
 - Telescope viewing will be happening both before and after Alan Dyer's talk at Bethlehem High School
 - The actual viewing of the transit of Venus will take place from Diefenbaker Park
 - f) Membership Report – Mark de Jong
 - Executive members were e-mailed an up-to-date members list. We have 67 members and 10 temporary memberships.
 - Ellen signed up 9 new temporary members at the Earth Day event
 - g) Light Abatement – Rick Huziak – nil report
- 6 Meeting adjourned at 7:30 PM

Minutes of the General Meeting, April 16, 2012

by Ron Waldron

- 1 Meeting began at 7:45 PM
- 2 Approval of Minutes of the March General Meeting – moved by Ellen Dickson, seconded by Barb Wright
- 3 Jim Gorkoff presented Kathleen Houston her Messier Certificate and pin.
- 4 Committee Reports – see minutes of the April Executive Meeting. In addition are these items:
 - a) Larry Scott will try having an Observing Night this Friday or Saturday evening at Sleaford, April 20th and 21st
 - b) Stan Shadick will be offering a Solar Eclipse talk in Room 107 at the U of S beginning at 3:00 PM on Sunday, May 20th.
- c) Newsletter Deadline is Thursday, April 31st
- d) Jeff Swick demonstrated some of the advantages of the Great White North Astro
- e) SSSP – Les Dickson
 - Demonstrated the changes to the SSSP website on the Saskatoon Centre website. Registrations are now being accepted.
- 5 Video: Mystery in the Sky – How thousands of amateur astronomers help solve the enigma of a bright star and its dark companion.
- 6 The meeting adjourned at 9:45 PM

DSPs and Buffer Zones

by Rick Huziak, SLPAC Chair



One issue with dark-sky preserves is that they are fragile. They are created by partnership agreements between the park and the RASC, and although endorsed by the provincial government, they have no status in legislation. Therefore, preserving the darkness of the park for the long-term is an exercise in education and compromise. And if you catch wind of a project that might compromise the darkness of the sky, you have to jump on it. One good thing is that “light pollution” is no longer a mysterious term, and the majority of people understand what is trying to be accomplished, and often will support dark-sky initiatives. As such, development companies now seem to be more aware that even being near to a DSP means they should become a “partner” within the surrounding “buffer zone”.

For example, not long after our 2004 signing of the Cypress Hills DSP, a wind power farm was proposed for an area in Alberta just northwest of the park. To our surprise, the developers contacted us, and asked what they could do as not to adversely affect lighting at the park! We advised that they should put steady red lights at the top of their turbines, and they accepted this suggestion. In the end, the project didn’t go through.

Similarly, when Grasslands National Park applied for DSP status, the TransCanada PipeLine Monchy natural gas compressor station, just south of the park, was identified as the single and brightest light pollution source in the area. From the light pollution maps, it mimicked a large town for its misdirected light output. But TransCanada partnered with the

Park, retrofitted the station, and now turn the lights off when the station is not being serviced. It is rumoured that the retrofit also saves the company thousands of dollars per year in energy costs! It was a good move on all sides.

Recently, I made an inquiry to Vantage Pipeline regarding their plan to build two pump stations along a new pipeline that routes north of Grasslands DSP. The pipeline will carry ethane from Tioga, ND to Empress, AB. In reality, the station of concern is near to Assiniboia, a fair distance away, but depending on how invasive the design could be, it might be seen a *long* way in dark southern Saskatchewan. With the pre-retrofitted lighting of the Monchy Compressor Station in mind, I inquired as to what their nighttime installation would look like, explaining that Grasslands was a DSP. One of their engineers called me back and said, *“We designed it with fully-shielded fixtures, and will likely have the lights off whenever there is no one there. We identified this as part of our environmental assessment”*. Although they have no official policy for dark-sky lighting, they are aware of the issue and considered this just good practice, and, *“Why not do it if you can during the design, since there is no cost to it!”* The stations are small; only 500 hp pumps, one in Saskatchewan and one in Alberta. It was refreshing to talk to a common sense kind of guy! He was very pleased that Grasslands and CHIPP are DSPs, and had recently looked at the light pollution maps of Saskatchewan, and frowned on the gas-flaring (more light and air pollution) that he saw in southeast Saskatchewan and North Dakota. He also said that Saskatchewan will soon have a policy regarding gas conservation and no, or reduced, flaring. He lamented that it was not necessarily the same policy for North Dakota.

SKY BUYS & MIRROR CELLS

The Saskatoon Centre's Swap and Sale Page

FOR SALE: One 7x50 Newtonian-view straight-through spotter c/w dovetail mount. (No scope-side dovetail, though). \$40 obo. Contact Rick Huziak 665-3392. Proceeds to the RASC.

TO GIVE AWAY: Bound copies of *Sky & Telescope* from 1962 to 1991. 180 pounds of books! I enjoyed going through them. Who wants them next? Tenho Tuomi, 858-2453, ttuomi@yourlink.ca

STAR GAZER: All Aboard the Star Train!

by Michael Clancy



Ever wonder how to find the North Star? What is the closest galaxy to our own? What is a constellation and what's an asterism? How can we find planets, nebulae, star clusters and other neat night-sky stuff? Well, now you can by joining the Star Train as it departs Ogema, SK and your destination: the stars! Your presenters, members of the Royal Astronomical Society of Canada, will lead you in using your own binoculars to find a host of near and deep-sky objects sure to interest young and old alike. The train departs Ogema at sunset, travelling by rail to Horizon where we will spend an hour looking at the world-famous Saskatchewan night sky. World famous? We here in Saskatchewan can celebrate having one of the darkest skies that yet exist on the entire planet, and taking a train to discover it is certainly one of the coolest star parties on Earth! Your journey will include an evening with Robert Service poetry, a chance to learn the night sky from a trained amateur astronomer, and take place from a passenger train, one of the last from the romantic age of steel that

once joined our nation from coast to coast. If Mother Nature decides not to cooperate a slide show on general astronomy will be presented; there are no refunds.

All of this is due to the many hours of volunteer labor put into the Southern Prairie Railway whose home is in Ogema, Saskatchewan, 115km south of Regina. Everything is ready, and the train is ready to run; the Ogema Train Station (originally built in 1912) has been faithfully restored to pristine condition. The engine, a GE "44Tonner" centre-cab switching engine built in 1945, has also been brought back to pristine condition, and the fully-restored 1922-era Pullman passenger car is waiting for you; check out their website for more information at:

www.southernprairierailway.com

Departure times are variable, depending on sunset, each tour lasts approximately 3 hours, and tickets cost \$80 per adult fare, \$64.00 per youth and \$55.00 per child, including entry to the Deep South Pioneer Museum during regular museum hours that day.

Departure Dates/Times:

23 Jun 12:	Depart – 2000hrs	Sunset – 2114hrs	Twilight – 2159hrs
20/21 Jul 12:	Depart – 2040hrs	Sunset – 2058hrs	Twilight – 2139hrs
24/25 Aug 12:	Depart – 1930hrs	Sunset – 1958hrs	Twilight – 2033hrs
15 Sep 12:	Depart – 1845hrs	Sunset – 1911hrs	Twilight – 1943hrs

To book passage, contact the Southern Prairie Railway directly at: ☎ PO Box 82, Ogema, SK S0H 0B0 ☎ (306) 459-7808 or from their website www.southernprairierailway.com



Another successful astronomy night at the Lucky Lake Library on April 24, by Tenho Tuomi and Garry Stone. At 7:30 we showed Venus in the daytime. With Venus so close to the moon, most were able to find it naked eye. At 8:00 I gave a talk on the upcoming May 20 partial eclipse, and the June 5 transit of Venus. At 9:00 we showed Saturn to those still remaining. We had 17 adults and 11 children at the outreach.

Photo by Velma Tuomi

Pocket Sky Atlas Challenges for May

by John Kulczycki, member RASC London Centre



Sky and Telescope's "Pocket Sky Atlas" is a wonderful resource for all amateur astronomers. These challenges are designed for spicing up your observing.

Sky and Telescope Magazine's "Pocket Sky Atlas" has found a place in the tool kit of many amateur astronomers. The convenient size makes it easy to use at the telescope without requiring a separate chart table.

These challenge objects are indexed to the star chart pages containing those objects. The idea is to have fun and perhaps expand your observing past the "usual suspects" that can be found because of past experiences. Seeing conditions may not allow finding these objects every night, but they should be visible at some point during the month.

I've indexed the object to its star chart page.

Naked Eye:

Castor and Pollux Page 25;
Izar, Page 53;
Zubeneschamali, Zubenelgenubi Page 56;
Eltanin, Page 63.

Late May:

Alphecca, Page 53;
Antares, Page 56;
Sulafat and Sheliak, Page 63.

Small Scopes and Binoculars:

Mebseta Page 25 ;
M71, Page 64:

May Sky

We find ourselves beneath the Great Bear. She has woken from winter's long sleep and slowly makes her steady journey to summer's feeding grounds; as do so many amateur astronomers, finding themselves empty, needing as many full meals of starlight as possible.

May skies do not leave us starving or even wanting. Twilight and cloudlessness cause us to strain our eyes, looking for those first flecks of distant light. Even the moon seems more attractive. We start to look for those familiar sign posts that have guided us in these hunting grounds. The patterns are recognized, and our minds find images start to form from past experience, of treasures we have seen. And we are beckoned, drawn into the night, with just a little euphoria, knowing that sensations await.

Brocchi's Cluster, Page 65;
NGC 6814, M72, M73, Page 66;
M11, M26, M18, Page 67;
NGC 7662, M103, M52, Page 72;
NGC 7039, M39, M29, Page 73.

Larger Scopes:

NGC 5363, NGC 5364 Page 44;
NGC 4612, UGC 6887, M60, Page 45;
M59, M58, NGC 4435, NGC 4435, Page 45;
NGC 4038, NGC 4039, Page 47.

Bonus objects:

NGC 5694, NGC 5850, NGC 5846, Page 46;
NGC 6760, IC 4756, Page 65,

Happy Hunting!

Material originally published on <http://john-kulczycki.suite101.com/>
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The Planets This Month, May 2012

by Murray D. Paulson, RASC Edmonton Centre



Mercury descends from its poor, from our hemisphere, morning elongation in late April to a May 27th conjunction with the sun. It passes only 14' of arc above the sun, just days after crossing the ecliptic, a near miss to see it transit the face of

the sun. We do however have the last chance of our lifetimes to see Venus transit the sun on June 5th, but I am getting ahead of myself. I have one "easy" observing challenge for the astronomical extremophiles this month. Observe Venus and Mercury 6 1/2 degree from the sun. On June 1st Mercury and Venus will have their closest approach of 11.8', and they will comfortably fit into the same high power field. Venus will be an absolutely huge thin crescent on our side of the sun while Mercury will be a tiny disc on the opposite side of the sun. Their relative sizes will be 57.27" and 5.19" and magnitudes -3.8 and -1.6 respectively. Their mean surface brightness will be comparable. As I mentioned, they will also be 6 1/2 degrees east of the sun. If you set up your scope and solar filter on the sun and turn the drive off, 26 minutes later, Venus and Mercury will be 1.0 degrees due north of the center of the sun. Just remove the solar filter and they should be there. Just make absolutely sure that the scope hasn't been bumped back to point at the sun!!! You will need a well placed tree or building to cast a shadow on your scope, or an incredibly well baffled scope. Use medium high power - 50 to 100 power and move your scope north in declination, not just up with an alt az scope. Once you have them, turn the drive back on. Alternatively just move the scope 6 1/2 degrees east which is 26 minutes of right ascension. This is a once in a lifetime spectacle. I have never witnessed the likes of this before.

I have alluded to it in the prior paragraph, the Transit of **Venus** is upon us. Hopefully we will all have luck in our ventures to observe it. For this transit we are in the zone that gets to see all but the last minutes of it unlike the last time around when we had to head to Saskatchewan or North eastern Alberta to catch just the very last minutes of the transit. The spectacle is just amazing, a perfectly circular hole in the sun, and it is so big! Perfectly wonderful! The transit starts at 16:05:17 (16:05:00 toon) local time here in Edmonton for first contact. Venus will take 17 minutes to completely enter the sun's disc. Watch for the black drop effect at C2, and see if you can note exactly when the disc of Venus is completely on the sun. This confounded the

observers in prior transits from getting that data that they so dearly wanted. The Transit would allow astronomers to determine the AU, which was the yardstick of their universe. The sun sets at 22:05 and the transit officially is over at 22:48, well after sunset. If you want to see it all you have to go to Hawaii and east or north to the Yukon. Good luck!

Mars is still a fine object to turn a telescope toward. Over Astronomy day, it showed the public a nice polar cap and a hint of some features on the notoriously blank side. Many of the public did manage to see the diminutive polar cap and some convinced themselves that they had seen some of the Maria. At the beginning of May, Mars shines at magnitude 0.0 and will show you a slightly gibbous 9.44" disc in the eyepiece. It will shrink as it moves on and by the time Venus passes in transit, it will shrink to 7.6" and will fade to magnitude 0.5. It has lost that fire that I love to see in the twilight sky and is a fading ember. It still holds interesting details to the devoted observer who is willing to tease them out with high magnifications and the patience to wait out for those steady nights.

Jupiter is in conjunction with the sun on May 13th, so we will not see it again until the late summer star parties in the hours before dawn.

Saturn was great over Astronomy days. A bit low, but everyone got a chance to see the rings and marvel at them. This month starts off with Saturn shining a magnitude 0.3 and you can see the 18.9" disc in the eyepiece. The rings are tipped up at 13.1 degrees and are just a treat. Look for the C ring at the innermost edge of the B ring. It is just the subtlest thing, a slight lightening of the blackness in the ansae of the rings. It is easier seen against the ball of the planet, a slight gray band above the rings where they pass in front of the planet. Give it a whirl. By the beginning of June, Saturn will have faded slightly to magnitude 0.5 and it will shrink imperceptibly to 18.3". If you wish to give yourself a challenge, besides seeing the innermost moon Enceladus at magnitude 11.8 in the harsh glare of Saturn, look for Hyperion. It shines at magnitude 14.3 and orbits Saturn in 21.3 days. Look for it at its extreme elongations with high power to exclude Saturn, a clean eyepiece and a chart made up for the night you are out hunting for it.

Good luck on your observing challenges and hopefully we will have the fine weather needed for the transit.

Observing Clubs and Certificates

Join the Club! Observe all 110 Messier, 110 Finest NGC, 400 Herschel I or II, 140 Lunar, 154 Sky Gems or 35 Binocular objects, or Explore the Universe 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, G. Charpentier, B. Johnson, M. Clancy, L. Dickson, B. Burlingham, K. Houston

Norma Jensen	109
Ron Waldron	105
Wade Selvig	75
Garry Stone	57
Bernice Friesen	45
Wayne Schlapkohl	43
Barb Wright	40
Ellen Dickson	34
Jeff Swick	24
Graham Hartridge	9

Chatfield BINOCULAR CERTIFICATE

Certified at 35 to 40 Objects:

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

Jim Goodridge	New!	9
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FINEST NGC CLUB

Certified at 110 Objects:

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

Larry Scott	Done!	110
Scott Alexander		97
Norma Jensen		58
Sandy Ferguson		23
Kathleen Houston		23
George Charpentier		13
Mike Clancy		7

EXPLORE the UNIVERSE

Certified at 55 to 110 Objects:

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

Wayne Schlapkohl	Done	55
Sharon Dice		31
Jim Goodridge	New!	14

Isabel Williamson Lunar Observing Certificate

Certified at 140 Objects:

T. Tuomi

Norma Jensen	133
Jeff Swick	29



HERSCHEL 400 CLUB

Certified at 400 Objects:

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

Gordon Sarty	251
Scott Alexander	117
Sandy Ferguson	18
Larry Scott	Up!

HERSCHEL 400-II CLUB

Darrell Chatfield	Done!	400
Rick Huziak		246

LEVY DEEP-SKY GEMS

Certified at 154 Objects:

Tenho Tuomi	Up!	145
Darrell Chatfield		70

The Messier, Finest NGC and David Levy's Deep-Sky Gems lists can be found in the *Observer's Handbook*.

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

On-line Messier and Finest NGC lists, charts and logbooks: <http://www.rasc.ca/observing>

On-line Herschel 400 List: <http://www.astroloegue.org/al/obsclubs/herschel/hers400.html>

Binocular List is at: http://homepage.usask.ca/%7Eges125/rasc/Chatfield_Binocular_List.pdf

Copies of the Isabel Williamson Lunar Observing Program Guide can be purchased at meetings.

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

Observers Group

by Larry Scott



Although our April 14th Observers Group was clouded out, we had some very good skies on other nights last month. On April 9th, four members were treated to a brief, pleasant evening at Sleaford before the Moon came up shortly after midnight. This was followed by another good night on April 17th. Norma and I had to wait till midnight for the sky to clear, but we were

rewarded for our patience with some excellent observing conditions. Finally, on the 21st we had eleven members and guests out to Sleaford for a night that had a little bit of everything including the Lyrid meteor shower.

Next Observers Group is scheduled for May 11th with Moonless evenings from about the 9th to the 23rd.