

Saskatoon Skies

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

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October 2013



Tenho Tuomi's first picture of comet C/2012 S1 (ISON) taken the morning of Monday, September 16th. It was about 3 degrees to the left of Mars. To find out more about this upcoming comet, see page 9 of this issue



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

In This Issue:

Membership Information / Bottle Drive / Officers of the Centre	2
U of S Observatory Hours / Light Pollution Abatement Website	2
Calendar of Events / Notice of Meeting	3
Minutes of September Executive Meeting	4
Minutes of September General Meeting	5
Do You Have Something to Offer Our Centre? – <i>Ron Waldron</i>	5
Of Stories and Stars – Summer Travels 2013 – <i>Mike Clancy</i>	5,6
Sky Buys and Mirror Cells	7
Guess Who Visited the Air and Space Museum in Washington DC	7
Imaging the Herschel 400 Objects with DSLR Camera – <i>Tenho Tuomi</i>	7,8
Comet ISON – Coming to a Sky Near You	8,9
Observer's Group Notes – <i>Larry Scott</i>	9
Observing Clubs and Certificates	10

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 – James Gorkoff, 644-1343

Secretary – Tenho Tuomi, 306-858-2453

Vice-President – Jim Goodridge, 370-8530

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 Editor – Ron Waldron
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 rmwaldron@shaw.ca 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. **Deadline for submission of all articles for an upcoming issue is the first Friday of the month!**

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.ras.sk.ca/lpc/lpc.htm

RASC CALENDAR OF EVENTS

Sept. 1	Observer's Group at Dusk - Sleaford Observatory	Larry Scott
Sept. 16	Executive and General Meeting – 175 Physics – U of S – 6:30 and 7:30 PM respectively	Jim Gorkoff
Sept. 28	Observer's Group at Sleaford	Larry Scott
Oct. 5	Sleaford Open House and Bbq	Barb Wright
Oct.11	Triple Shadow Transit on Jupiter	see Sky News
Oct.12	International Observe the Moon Night	Jim Goodridge
Oct.18	Penumbral Eclipse of the Moon	Handbook
Oct. 21	Executive and General Meeting – 175 Physics – U of S – 6:30 and 7:30 PM respectively	Jim Gorkoff
Oct. 26	Observer's Group at Sleaford	Larry Scott
November	Comet C/2012 S1 (ISON) visible all month	see Sky News
Nov. 2	Observer's Group at Sleaford	Larry Scott
Nov. 18	Executive and General Meeting – 175 Physics – U of S – 6:30 and 7:30 PM respectively	Jim Gorkoff
Nov.29	Comet ISON reaches perihelion	see Sky News
Nov. 30	Observer's Group at Sleaford	Larry Scott
Dec. 28	Observer's Group at Sleaford	Larry Scott

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



General Meeting for all members

October 21st at 8:00 PM

Room 175 Physics Building
University of Saskatchewan

PROGRAM

THE CITY DARK

A feature documentary about the loss of night. After moving to NYC from rural Maine, filmmaker Ian Cheney asks a simple question - do we need the stars?

Featuring stunning astrophotography and a cast of eclectic scientists, it is the definitive story of light pollution and the disappearing stars.

Note: there will be an executive meeting at 7:00 PM

September Executive Meeting Minutes by Ron Waldron

Chairman Jim Gorkoff opened the meeting at 6:40 PM.

Minutes of the June Executive meeting to be approved. Moved by Barb Wright, seconded by Les Dickson. Approved.

Mark de Jong reported that the RASC National Website is undergoing some significant updates which require approval by each of the centres across Canada. Jim Gorkoff and Jim Goodridge will review these changes and submit our centre's approval.

Sleaford Site Report – Rick Huziak reported that the concrete for the shed base has been poured and that construction of the shed package should begin the week of the 16th of September. Completion of the interior of the warm-up shelter is ongoing but should be finished before the snow flies. Mouse droppings in the roll-off will be dealt with by spraying with bleach and then sweeping. Barb Wright will check with Stan to try and ascertain if it can be done and completed before the Sleaford Open House this year.

Events Report – Barb Wright confirmed that the date for this year's Sleaford Open House will be Saturday, October 5th. There will be a BYOBQ beginning at 5 PM. Advertising will be a little bit difficult due to the short time line involved but Jeff Swick stated he thought he could have a poster ready for distribution. Barb will try emailing the surrounding townships. Cookies, hot chocolate and coffee will be provided for public visitors. Ron Waldron was asked to be prepared to present a short

Motion that the minutes of the June General Meeting be accepted. Moved by Ron Waldron, seconded by Les Dickson

digital presentation on the side of the warm-up shelter if it is cloudy.

Light Pollution Abatement Committee – Rick Huziak has sent a letter of suggestions to the city regarding billboard signage along the new south bridge. The suggestions remind the city to adhere to light pollution minimum standards.

A **Nomination Committee** was struck for preparation of a slate of officers for the October Annual General Meeting. Members of the committee are Jim Gorkoff and Jim Goodridge.

New Business

The current structure of Executive and General Meetings was introduced by Les Dickson and discussed. The following motion was presented:

"Moved that the current structure of Executive and General Meetings be changed to the following: Executive Meetings are to start on the third Monday of each month at 7 PM and end no later than 8 PM. The General Meeting to start at 8 PM with only announcements and any special Centre business that requires decisions by the membership, followed by the keynote speaker or presentation."

Moved by Ron Waldron and seconded. Approved.

Tenho Tuomi did an astrophotos clinic. The dates for SSSP next year will be August 21st – 24th, 2014.

September General Meeting Minutes by Ron Waldron

Committee Reports – see Executive Minutes

SSSP Report – Barb Wright reported that 330 people attended at Cypress Hills this year. Jim Goodridge did a scope tour on Saturday night which was well received.

Presentation – Paul Lehmkuhl introduced his movie entitled *"The U of S Observatory – A Brief History"*. The video is posted on the U of S Archives website; will be used as a resource for campus tour guides, and is posted on YouTube.

Do You Have Something to Offer our Centre? – Ron Waldron

Each year at the October General Meeting, elections are held for places on our Executive Council. Positions on the Executive are open to any member in good standing, and positions are nominated then elected by show of hands by the general membership. Some positions are two-year terms (President and Vice-president) but most are single year terms.

To expedite the elections this year, a nominating committee was struck at the September meeting of the executive. The purpose of the committee is to poll members to fill the known positions that will be vacant. The nominating committee will exist only until just before the election and will bring a suggested slate of officers to the October meeting for the general membership to vote. Any member in good standing can become a part of the nominations committee.

What positions are needed? In the words of Vice-president Jim Goodridge, “*We are going to have to find an Events Coordinator as Barb Wright will be stepping down due to a lifestyle change. She will be available to assist the new person until spring. This is a key function and you get to meet everyone in the club if you take it on. At our elections next year we are also going to need a vice-president so please start thinking about taking that role on. If you take on the events co-coordinator we promise that you will not be made vice-president so your best bet to avoid becoming vice-president is to volunteer to be events co-coordinator. We are hoping that everyone else will continue in their positions as things are running quite well and we will need continuity while we get a new events co-coordinator up to speed.*”

If you would like to serve in some capacity on the executive, please contact the president, Jim Gorkoff - jgorkoff@yahoo.ca or the vice-president, **Jim Goodridge** - djgoodridge@shaw.ca. They would be delighted to see that you are nominated for the position you desire. Call them if you are interested, or know someone who might be.

Finally, all jobs are subject to possible reclassification as executive positions if deemed necessary by the nominating committee and executive. If you would like an explanation of what any of the executive or nonexecutive position entails, simply call your president.

Of Stories and Stars – *Summer Travels 2013*

Mike Clancy

Once again I spent a few happy weekends this past summer travelling around the province to bring my “Stories and Stars” astronomy outreach program to Saskatchewan’s park patrons. For those who aren’t familiar with the program, what I do is recite several Robert Service poems (The Cremation of Sam McGee, The Shooting of Dan McGrew and so forth) interspersed with short discussion of various astronomy-related such as the northern lights, binocular design and use, what’s in the sky tonight, and what is the RASC. I hand out free planispheres, collector cards and whatever other materials I can obtain, and answer any questions the audience may have; we even take a binocular-oriented tour of the night sky! The entire program takes a couple of hours (depending on the weather) and seems to be generally well accepted; here is a synopsis of the places we went and the audiences we had:

- 09Apr13 – Presentation to Parks Interpretive Staff - ~150 people in attendance but we did no observing!
- 29Jun13 – Narrow Hills Provincial Park (Lower Fishing Lake) – 24 people in attendance
- 30Jun13 – Narrow Hills Provincial Park (Zeden Lake) – 17 people in attendance
- 06Jul13 – Douglas Provincial Park – 24 people in attendance

- 03Aug13 – Danielson Provincial Park – 32 people in attendance
- 24Aug13 – Meadow Lake Provincial Park (Grieg Lake) – 14 people in attendance
- 25Aug13 – Meadow Lake Provincial Park (Kimbal Lake) – 15 people in attendance
- 28Sep13 – Ogema Stargazer Train – 35 people in attendance

Regrettably, of the entire summers' travels only the last presentation was under those brilliantly clear night skies we've come to expect! The other nights were spent either rained out or trying to peer between gaps in the clouds – about all I could do was go through the stories and hope for the best. Still, the last night made up for it as I got to lead a group of people from as far away as Big River to Coronach (in Saskatchewan) and one young lady from Wales on a tour of a stunningly beautiful night. It was so clear the Milky Way cast a shadow, and I could even find the Triangulum Galaxy with my binoculars! The Andromeda Galaxy was a naked-eye find as was the Perseid Double Cluster; the problem I was having was not what to show the audience but how to keep the train schedule intact while trying to "name the zoo" so to speak.

For those of you unfamiliar with the Stargazer Train, it departs Ogema, Saskatchewan about sunset and returns roughly 3 hours later. It stops at Horizon, SK which is aptly named – there are 3 streetlights about 1km distant, and the horizons seem limitless except for the nearby heritage elevator – where the tour operators have laid out a square of red Christmas lights where patrons set out their lawn chairs. The train is heated which is a blessing on a crisp autumnal evening, because after an hour or so of viewing the painstakingly-refurbished Pullman car is a haven.



Figure 1: Danielson Park, photo courtesy Tenho Tuomi

The trip back was filled with happy amateur astronomers chatting about the sights they'd seen, and I feel certain we'll be doing this again next year; hopefully the skies cooperate once again!

Guess Who Visited the Air and Space Museum in Washington, DC



Sky Buys and Mirror Cells

Telescope for Sale - \$550

- Skywatcher 13065-EQ-2 Newtonian Reflector with Finder Scope and Equatorial Mount (D=130mm, F=650 mm)
- Motor Drive on Right Ascension Celestron T-Ring Mount for Nikon Camera
- Two Eyepieces
 - Televue Plossl 25mm
 - Televue Plossl 10mm
- 2X Barlow Lens
- Telescope Bag
- Leather case for parts storage



Contact **Barbara Nelson** - 374-2055 or e-mail: hobbit.hole@shaw.ca

Imaging the Herschel 400 Objects with a DSLR Camera

By Tenho Tuomi

On June 11 I finished imaging all of the Herschel 400 objects with my Canon Rebel XT 350 Digital Single Lens Reflex camera and Orion XT12 Newtonian telescope on a Byers 812 mount. I started this project in 2012 after I finished imaging the FNGC objects. I have all images on my website at <http://www.lex.sk.ca/astro/DeepSky/>. There is no separate listing for the Herschels yet.

Imaging the Hershel 400 objects is not hard with an unmodified DSLR camera, for over half of the Herschels are galaxies, and another third are open or globular clusters. These are not red like many nebulae, which require a CCD imager or a DSLR camera that has its infra red filter removed or replaced.

The Herschel 400 objects are small, only four are bigger than half a degree. That meant that I could crop almost all pictures in half. Therefore I didn't have to worry about taking darks to eliminate the camera amp glow on the corners, and I didn't have to worry about taking flats to get even lighting across the whole picture. It made picture taking simple.

My XT12 telescope is a fairly fast F/4.9 so I did not need long exposures. I started by taking two-minute exposures at ISO 1600, but found that one-minute exposures were long enough even for the dimmest objects, except for the nebulae. Since I did not do any guiding, I ended up throwing fewer pictures away with one-minute exposures. Ten to twenty minutes worth of pictures were taken of each object and stacked with DeepSkyStacker.

The biggest challenge was focusing. Since my camera did not have a live view screen, I did my focusing through the viewfinder using Canon's angle finder. It was difficult and I had to take some repeats.

I love my DSLR camera for deep sky imaging for it has worked faultlessly down to -35 degrees Celsius. With it do not need a computer at my observatory. Laptop screens don't work in winter anyway. The DSLR camera is perfect for a project like this where I am looking for quantity, not quality in my pictures.



Photo:

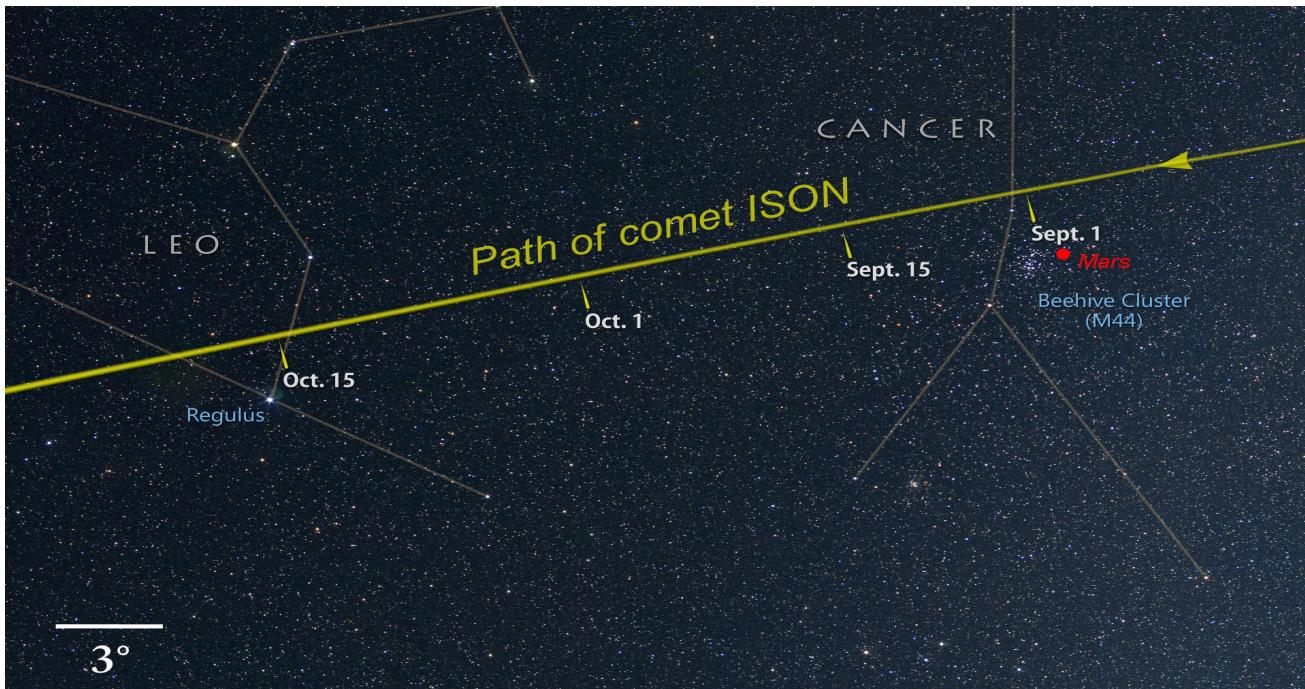
NGC 1055, one of the Herschel 400 objects. This galaxy is almost in the same field as Messier M77 and directly above it. With the two stars it may be a ghost for Halloween, or is it the Cheshire cat from Alice in Wonderland?

Comet ISON – Coming to a Sky Near You

Editor's Note:

Maybe like me you been waiting patiently for "Comet of the Century" **C/2012 S1 (ISON)** to brighten and reappear in the dawn sky. Well, now it's beginning to and if you're like me, you're chomping at the bit for a look at it in your telescope. However, before you set the alarm and venture into early morning dawn, you need to prepare yourself with what to expect. The better you know your target, the easier it will be to find. Below is a summary for the month of October describing where the comet is, how bright it should be and where to look.

Chart from newswatch.nationalgeographic.com



October

On October 1st, Comet ISON is at its closest to Mars at about 11 million km and may begin to be bright enough to spot with binoculars. Early in the month, ISON will be close to the bright star Regulus and both Mars and the Moon will be close by too. Jupiter will be in the same area of the sky. On October 15th, Regulus, Mars and ISON will be tightly grouped and easy to find. At the end of October, the comet will be below Leo, heading down the sky towards Virgo. In late October the comet's proximity to the Sun will make it very hard to observe. (*see chart on previous page*)

November

This will hopefully be the start of ISON's glory days when it should be easily seen in the eastern sky before dawn with binoculars or by the end of the month even with the unaided eye. At the beginning of November the comet will be between Virgo and Leo, reaching Virgo by the middle of the month. By November 20th the comet will be so close to the Sun that it will be almost sunrise before its head clears the horizon, so viewing it at all at this time might be challenging, demanding a clear view of the horizon and crystal-clear skies. You might just see the tail sticking up from beyond the horizon before the Sun comes up.

The comet is at its closest to the Sun (perihelion) on November 28th when it is just a million km or so above our star. If the comet's brightness meets the most optimistic predictions, on this day it might be possible to see the comet in the daytime when it is very close to the Sun (**DO NOT TRY THIS WITH A TELESCOPE OR BINOCULARS!**) To try to catch it, the Sun must be blocked out by say a building leaving just the part of the sky with the comet in it visible. This feat will be tricky as the Sun will rise late, set early, and never climb very high in the sky. What happens during this phase of the comet's orbit determines how visible it will appear to us. The intense radiation of the Sun will cause material to explosively evaporate off the comet. This could mean the comet will rapidly brighten and develop a more impressive tail, delighting observers. In the worst case, the comet will disintegrate when it is at its closest to the Sun, turning into a plume of debris that will rapidly disperse. If this happens this will be the end of the show for amateur observers.

Observer's Group Notes – Larry Scott

Although I had high hopes for some observing in early September the skies mostly didn't cooperate again. However, on September 10th three members were out to Sleaford for a nice evening under the stars. Temperatures were cool with only two or three mosquitoes remaining to pester us. Skies were turbulent but the transparency was good so I spent most of the night looking at nebulae: M17, M16, M27, Veil, etc. Although I was unable to attend, I'm told two members showed up for the Observer's Group on September 28th and also had a good evening.

Future deep-sky observing opportunities at Sleaford run from about October 25th till November 8th with an Observer's Group scheduled for October 26th.

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	110
complete	
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	Up!	12
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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		66
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	Up!	35

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	20

HERSCHEL 400-II CLUB

Darrell Chatfield	Done!	400
Rick Huziak		246

LEVY DEEP-SKY GEMS

Certified at 154 Objects:

Tenho Tuomi	150
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.astroleague.org/al/obsclubs/herschel/hers400.html>

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

"Isabel Williamson Lunar Observing Program Guide:

<http://www.rasc.ca/observing/williamson-lunar-observing-certificate>

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