Saskatoon Skies

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

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Great Work at Sleaford

Renovations to the Sleaford Observatory warm-up shelter progressed rapidly last fall with Rick Huziak and Darrell Chatfield spending many days and evenings there. A wall was removed to the cold storage area to make more room, which meant extensive rewiring, insulating and refinishing. Other volunteers came to cut grass, paint, clean, do repairs, and provide food. Thank you to every one who helped to make Sleaford a more usable and pleasant site.

Photo by Jeff Swick

Saskatoon Centre
The Royal Astronomical Society of Canada
P.O. Box 317, RPO University
Saskatoon, SK S7N 4J8
WEBSITE:
http://www.rasc.ca/saskatoon
E -MAIL: jjswick@shaw.ca
TELEPHONE: (306) 373-3902

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

Happy New Year!

MEMBERSHIP? IT'S NEVER TOO LATE TO JOIN!

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 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 .

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 Editor – 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 ttuomi@yourlink.ca – any format, but 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.

RASC CALENDAR OF EVENTS

Jan 17	**RASC Executive Meeting** - 6:30 pm, 175 Physics, U of S	Jeff Swick	173-3902
Jan 17	**RASC General Meeting** - 7:30 pm, 175 Physics, U of S	Jeff Swick	173-3902
Jan 29	**Observers Group** – Dusk, Sleaford Observatory	Larry Scott	934-5801
Feb 26	**Observers Group** – Dusk, Sleaford Observatory	Larry Scott	934-5801
May 28	**Grasslands NP DSP - East Block Star Party**	Rick Huziak	665-3392
July 30	**Grasslands NP DSP - West Block Star Party**	Rick Huziak	665-3392
Aug. 25	**Sask Summer Star Party**	Rick Huziak	665-3392

RASC SASKATOON CENTRE

MONDAY, January 17, 7:30 PM

Room 175, Physics Bldg., U of S

"Meteor Men" video

&

"Epsilon Aurigae: Mystery and Opportunity"

by Lorin Briand

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

Meteor Men

In this the premier episode of their series, the "Meteor Men" (Geoffrey Notkin and Steve Arnold) look for meteorites at the Buzzard Coulee and Whitecourt sites in April 2009. They have a website with a photo gallery covering their search of the Buzzard Coulee strewnfield at http://www.aerolite.org/expeditions/bc/buzzard-coulee-meteorite.htm .

Epsilon Aurigae: Mystery and Opportunity

Lorin Briand is a former Master's student at the University of Saskatchewan. During his training he became involved in the Citizen Sky initiative to help analyze the data from citizen scientists. In the presentation "Epsilon Aurigae: Mystery and Opportunity", Lorin will outline the Citizen Sky project, the scientific questions that the project seeks to answer and ways in which individual club members can get involved.

International Space Station
Taken November 7 at 6:25 pm.
Only one picture out of 30 turned out.

Photo by Garry Stone

Latest picture of Jupiter
Taken New Year's eve at 7:40 pm. The missing equatorial belt is starting to come back.

Photo by Garry Stone

Solstice Eclipse

Photo by Tenho Tuomi

Photo by Ron Waldron

Photo by Bob Johnson

Photo by Garry Stone

Photo by Colin Chatfield

The year came to grand climax with a total lunar eclipse on December 21, on the day of the winter Solstice with the moon about as high in the sky as it could be. Even though the eclipse was late at night and the weather was not good, it was well observed and photographed by our members as you can see on the left.

Norma Jensen wrote, "8 women astronomers gathered in a back yard on the evening of the 21st to watch the lunar eclipse - lawnchairs, quilts and binoculars were well used - we were able to see the moon enter totality - then the serious clouds rolled in, but mulled wine, a fresh batch of brownies from Marianne Hydomako, and a fire in the wood stove to warm by (firekeeper Sharon Hartridge) kept us from any great disappointment".

December Musings, by Norma Jensen

It's the amateur astronomer's lot to plan for a special event - eclipse, meteor shower, lunation - and then to be stopped short. It could be cloud, wind, various precipitations, extreme cold or (add personal experiences here). These blocks are also part of the quest for dark skies. The Clear Sky Clock and Environment Canada predicts cloud so you make other plans, only to step outside in the evening to clear skies.

The end of December gave an opportunity for moon studies: a lunar eclipse, and clear morning skies under a gibbous to quarter waning moon. I had two mornings of decent viewing , seeing some new and many old favourites.

Places visited:

1. Always the southern highlands
   - ✓ Interesting pairs - Sacrobosco & Playfair, Maurolycus & Barocius, Abenezra & Azophi
   - ✓ Walk south through - Ptolemaeus to Arazehel, Deslandres, Maginus and Clavius

2. The Frozen Sea of the north and others with names like the Lake of Death bordering the Lake of Dreams, the Lake of Fear and the Marsh of Epidemics. No lunar landings here!

3. Some great mountains to view if the time is right. Memorable this time round were the impressive Apennines including Mons Huygens with a crater on its peak. Always interesting are Pico and Piton, the Juras and Teneriffe.

Some general comments to those embarking on this study.

Words and phrases that cause apoplexy - disintegrated wall, craterlets, narrow rille, craters/summit pits on domes and rimae under favourable lighting conditions

Fun to find - dark halo craters, domes, dark patches and ghost craters.

'Tis the Night Before…

From the Naval Oceanography Portal website http://www.usno.navy.mil/ *with permission.*

'Tis the Night Before Christmas and high in the sky
The stars are a-twinkling sight for the eye.
The Moon from the Earth's umbral shadow returns
Then slides on by Saturn as the old year adjourns.

The Last Quarter Moon in the morning sky wanes
On the 27th evening that phase she attains,
Moving from winter to spring's rising stars
By the New Year she's close to the Rival of Mars.

Old Jupiter shines in the south and southwest
Early evening's the time when he's still at his best.
His four bright moons dance back and forth, to and fro
The return of a dark belt is causing a show.

The ringed planet Saturn is high up at dawn
His rings are now opening; last year they were gone.
A giant white spot has appeared on his face,
Early risers with telescopes try to keep pace.

In the gathering twilight bright Venus does flare
To dazzle the pre-sunrise hours with her stare.
She's brightest right now in the morning sky's light
But soon after the New Year she'll fade from our sight.

Orion is rising high in the southeast,
Shield raised in defiance of Taurus the beast.
The Great Winter Circle surrounds his bold shape,
While faithful dog Canis leaps up in his wake.

Late night brings Sirius, the Dog Star on high,
By New Year's he transits as midnight draws nigh.
The brightest of stars warm the long winter's night,
His cohorts all add to the breathtaking sight.

Nine of the brightest of stars in the sky,
Light these dark nights of winter as Old Sol plays shy.
But the solstice is past us and now we are glad,
For the days getting longer than the ones we've just had.

So Peace to your families, neighbors, and friends
We wish you the best that the holiday sends.
The stars mark the comings and goings of time,
So stop to enjoy them, and so ends my rhyme.

From all of us at the U.S. Naval Observatory!
And most sincere apologies to Clement Clark Moore.

President's Message

by Jeff Swick

Well another holiday season come and gone. It was fun sharing pot luck with the members. Thank you very much to Cam McLelland for the door prizes and to Bernice Friesen for doing the reading from her forthcoming book.

I was pleased to see Norma present The Cambridge Encyclopedia of Stars to Rick Huzaiak, Darrell Chatfield and Larry Scott for all the hard work they do for our club out as Sleaford. There are other volunteers that do so much and hopefully the club will be able to thank them in a meaningful way as well.

I also thought forward to some of the upcoming activities this year. It will soon be time to begin planning the Messier Marathon, Astronomy Day, New Members Night, Earth Hour at the Center Mall and of course SSSP.

I remember when I started to volunteer for club activities and how daunting it seemed at first, not really knowing anybody or what needed to be done and how to do it. After a little while it didn't seem like the work I thought it would be. It's actually not just fun but rewarding as well. The more fun I had, the more I volunteered and the more I got to learn.

If you are considering volunteering your time, please do so. It will help you get your astronomy fix in until the weather warms. It will benefit the center and it will benefit you.

Christmas Potluck Supper

Reader
Bernice Friesen
Photo by Jeff Swick

Door prizes
Cam McLelland
Photo by Tenho Tuomi

Goto Telescopes are not for Beginners!

by Tenho Tuomi

GOTO telescopes are not for beginners, or for some experienced astronomers either.

Velma won a Meade XT80 GOTO telescope as a door prize at the 2010 Saskatchewan Summer Star Party. I thought it would be fun to try it out immediately, for that night was the first clear night we had at the star party.

First thing I found out was that it asked for the time. What, a computerized telescope without a clock? When it was lost I would have to turn it off and get my flashlight and see what the time was and enter it again. Later, I found that there would have been a reset command, but I was hoping that somehow I could get it working quickly without having to read the manual. It was not self-teaching.

Next it asked for a location. The default seemed to be California. The closest I could find on its list was Regina, but that wasn't close enough for I never did get it to find an alignment star. At least it did pick its own alignment stars without my needing to know the sky. Later, after a lot of reading in the confusing manual, I found that location coordinates could be entered manually, and they did stay in memory. Now let's see, is 107 degrees West a positive or minus figure? First guess was wrong.

By this time it was several days after the star party and I still had not been able to get it working. According to instructions it had to be set level. That was no problem for it came with a neat compass-level that fit in the eyepiece. Then it had to be pointed straight north. That was a problem. There was nothing in the manual about compensating for magnetic declination for one's area. Oddly when the compass was dropped into the metal eyepiece holder, it did point north. Obviously the telescope was made for the North American market. However it was impossible to read a 1.25-inch compass to one degree in hopes of finding an alignment star within an eyepiece field of view. This telescope had no finderscope or red-dot finder to help. Later I discovered that I could ignore the compass and simply lift the telescope to point to Polaris, and then level it again, and have good results. That was not in the manual.

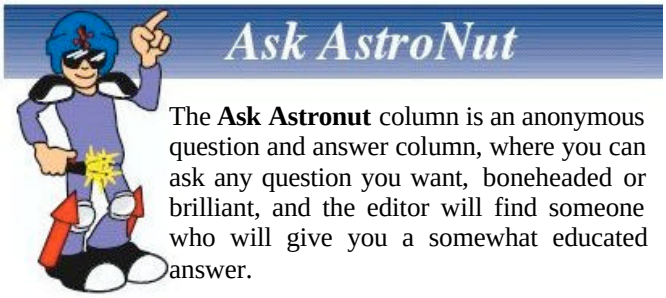
The menu had a neat list of suggested objects to look at, in increasing level of difficulty. That was good for testing the capability of the telescope, but it didn't take long to exhaust that list with an 80mm telescope. However, good descriptions of each object could be brought up, and a person could learn a lot. Now what do I do the next night? Run through the list again? Remember that I am a beginner, at least with GOTO telescopes. The advertising says, "Observe land or over 1400 sky objects in stunning high resolution". Maybe over-hype for an 80mm scope!

On the Internet I found why I was having so much difficulty. One site said that if you don't know how to set the clock on your VCR, a GOTO telescope is not for you. That was my problem. I always leave the programming of the VCR to my wife. Maybe I should have let her set up the telescope in the first place. After all, it was her telescope.

I found other comments on the Internet saying that beginners used to bring their department store telescopes to sidewalk star parties for help. Now it is GOTO telescopes. Some others boasted about the good cheap GOTO telescopes that they are able to buy from beginners who can not get them to work.

Six years ago someone who had received a GOTO telescope from his wife for a present brought it to where some of us were doing a Messier marathon. We were not able to help him for we had never seen a GOTO telescope before. If he had read any of the manual, he knew more about it than we did. Last I heard he has not touched the telescope since that night. Anyone want to buy an unused Celestron NexStar?

Maybe that last example is an extreme case, but I have decided that GOTO telescopes may be great for experienced astronomers, but for some beginners they can only be frustrating and therefore I do not encourage beginners to buy one.



The **Ask Astronut** column is an anonymous question and answer 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.

Hey Astronut! When I look into sky everything seems white to me. Maybe there are a few things with colour but other observers keep talking about seeing the sky in *full colour*. Can this be real? I really don't see much more than white and maybe a hint of green in the Orion Nebula.

Astronut responds: Seeing colour in the sky has as much to do with *knowledge that it exists* as it does with skill or visual acuity. If no one has ever *told you* that you can see colour, you might simply never look for the subtle colours of most objects. For years, I saw fuzzy white or green things for nebulae but now I rarely observe anything without looking for colour *and seeing it.* It is colour that often can distinguish one thing from another. For example, it was the blue-green colour of Comet Petriew on the discovery night in 2001 that told me right away that this is a comet and not a faint galaxy. Colour exists at all observing levels, from naked eye through all sizes of scopes. You don't need large scopes to see colour in the sky. Here's a short list to get you looking:

- stars - most brighter naked eye stars have some sort of colour - the brightest might cause saturation on the retina because they are pinpoints and more so when looking though a telescope because they are *bright* pinpoint. So a simple useful technique is to slightly defocus to see the star's colour. (Too much defocus can turn it white again!) But stars are most of the colours of the rainbow – blue, white, yellow, orange and red. (Check out blue Vega). Double stars almost always have colour differences that are apparent (Alberio).

- red giant stars vary from light orange (like Arcturus, the nearest red giant) to deep, deep red (like R Leporis); sometimes so red that they almost disappear from the sky.

- star clusters are not all white. They have lots of white and blue-white stars if they are young since they are made up of O and B spectral type early stars (Owl Cluster). But older clusters have yellow stars and are spotted over by red giants – these giants are easy to pick out (Double Cluster)

- Jupiter - read the descriptions of Jupiter (and everything else!) in Rev. T. Webb's *Celestial Objects for Common Telescopes*. (This is an old reference compilation predating *Burnham's Celestial Handbook* by a century, now reprinted, but *essential reading for the amateur*!) It is amazing what those guys saw in the 1700's and 1800's with telescopes mostly inferior to yours. Their amazing descriptions drove me to see colours on all planets. Jupiter is yellow with blue-grey poles and brown, rusty, grey and blue bands, and every colour in between. The Great Red Spot is now a nice light pink. Each of Jupiter's moons has a distinct colour. Why bother checking out the corkscrew diagrams in the *Observer's Handbook* for their identification? Just observe the colours of each and you'll know which is which immediately. They are all different colours! (And they also have a small size – they aren't point – they are discs!)

- Saturn is yellow with blue-gray poles, light brown and blue bands and each ring has a distinct colour. (Titan is yellow).

- brighter galaxies are often yellow with blue arms. (M51, the Whirlpool Galaxy). Fainter ones are also light blue or yellow, depending on the general age of their stars.

- the Orion Nebula is a wealth of turquoise and pink streamers; it is not just green or white! Planetary nebulae are blue (Dumbell) or blue-green (Saturn Nebula) or even contain hints of pink (Ring Nebula).

- eclipses of the moon - the partial phases especially nearing totality and throughout totality are not just gray and red; every colour of the rainbow - green, yellow, orange, red - can be seen at the edge of the shadow and within the umbra. The light has been broken into a spectrum as it refracts through the earth's atmosphere and projects into space.

- the International Space Station passing over is not white - it is yellow. After all, it *is* reflecting sunlight. The Station then goes through sunset colours as it fades into the earth's shadow.

- noctilucent clouds are a brilliant steel-blue.

- aurora is everything from green though pink, purple, red, yellow, and even black, but it is never white!

I love the colours of the sky. *Observe the sky*; don't just find an object and quickly check it off! The longer you observe and *demand detail*, the more you will start to notice colour - *and always notice it*!

Observers Group

by Larry Scott

We had a successful Observers Group on December 4th despite having barely any observing. Three new members and a grizzled veteran showed up around 20:00 for a tour of Sleaford. After familiarization, each member received a key to Sleaford which allows use of the facilities. Following the tour, around 21:00, everyone bolted for home. It may have been the hazy skies, the cold temperature, or possibly they were just tired of me talking. I held out till 22:00, sitting inside reading Burnham's, but it was still cloudy. Convinced that the skies were not going to cooperate I went back into the shelter to pack up my junk. As I headed out the door about 20 minutes later the sky was clearing and Kris showed up. With a new audience I managed to talk for another half hour and gave away another key. Kris also set up his telescope and we had a look at the Orion Nebula before I left. As always, a very cool sight. Anyone interested in getting their own key to Sleaford should contact me and we'll set up a date for another tour.

Missed the Geminid meteor shower on the morning of the 14th due to iffy skies and too darn cold. Caught the lunar eclipse in the early morning hours of the 21st through my dining room window and some high, thin clouds.

Next scheduled Observers Group is for January 29th. Moonless evenings for our viewing pleasure run from about January 22nd till February 6th.

Photo and follow-up comments by Jeff Swick, as posted in the rasctoon lists

As you know we held a training session at Sleaford on Saturday.

It was good to see some of the new members and put a face to the names. (as much as you can do so in the dark and covered in winter wear I mean)

You're now fully trained and should feel quite comfortable using the facility on your own and in taking friends and family out with you.

A BIG Thank You to Larry for conducting the session and also for clearing the entire yard of snow.

Larry didn't just move snow around to make some paths, he cleared the entire observing pad, in and around the warm up shelter, roll off and the parking lot. More than a couple of hours work.

We certainly look forward to conduction more sessions like this and getting every one using what I consider to be one of the best benefits of RASC membership

Wanted: SSSP Organizers

The SSSP Committee requests volunteers to help with planning of the ever-popular Sask Summer Star Party. We are about to start planning for the next (hopefully rainless) SSSP and we can use your organizing talents! We meet about once a month, and more frequently closer to the party. If you would like to help out (we provide cookies!) please contact Rick Huziak at 665-3392 or rickhuziak@shaw.ca

The Planets This Month, January 2011

by Murray D. Paulson, RASC Edmonton Centre

January 2011 comes in with two inner planets at Greatest Western Elongation within the same 24 hour period. **Mercury** shines at magnitude -0.2 and will show you a 64% illuminated 7" disk in the eyepiece on January 9th. Dichotomy occurred on January 3rd but due to the eccentricity of Mercury's orbit the dates of GRE and Dichotomy are quite different. Mercury is travelling away from us around the sun, so its disk will shrink as the phase expands. Mercury will take its time heading back from elongation to its late February date with the sun, so this may give you a long observing window to look for it.

As I mentioned in the introduction, Mercury and **Venus** arrive at Greatest Western Elongation within 24 hours of each other. Venus has been the beacon of the morning sky for the last month, and will continue to dominate the morning sky for the next while. Venus has a much more circular orbit than Mercury and on January 8th, displayed a 50.1% illuminated disk. At the beginning of the month it shines at magnitude -4.4 and will show you a 25" disk in the eyepiece. By the beginning of next month it will shrink slightly to 18.5" and the phase will grow to 64%. The inner planets catch up with Earth in a hurry, but they linger in their trip away to the far side of the sun. The moon will join Venus on the morning of January 29th but it will be a distant 7 degree separation. The Orient will see the two pass 3.9 degrees apart.

Mars remains lost in the twilight glow and will arrive at conjunction with the sun on Feb 4th. This will mark the half way point towards the next opposition in 2012.

January also marks the close conjunction between **Jupiter** and **Uranus**. Closest approach occurred on January 4th when the two were separated by only 31'. They will remain closer than 1 degree until January 10th and closer than 2 degrees until January 18th. In the eyepiece Jupiter presents a 38" disk and shines at magnitude -2.2. In early February we will see the disk shrink to 35" and it will then shine at magnitude -2.1. Consult the handbook for a listing of satellite events over the month.

Saturn rises just before 1 am early on this month. It shines at magnitude 0.7 and shows a 17.4" disk in the eyepiece. If you are up late and get the opportunity to see it you will be surprised by the tilt of the ring system about the planet. They lie at a 10 degree tilt to our line of sight and are glorious. By the first week in February, Saturn will brighten slightly to magnitude 0.6 and the disk will expand to 18.4" It will now rise just before 11 pm, and may be worth waiting up for. There has been a white disturbance in the northern hemisphere and Alan Whitman reports it to be easier to see than Cassini's division. It is brighter than the equatorial zone. Storms of this magnitude are a once in a lifetime opportunity, so it is worth your while to get out and see this before it dissipates. The storm will be visible at the following times …

Jan 9th at 5:41 AM
Jan 12th at 8:16 AM
Jan 13th at 5:35 AM
Jan 14th at 2:00 AM
Jan 16th at 7:13 AM
Jan 17th at 4:28 AM etc…

(times courtesy of Alan Whitman & MP) Saturn rotates in 10 hr and 40 minutes, so you can predict when the next observing window will be.

Neptune joins Mars lost in the twilight. It will be summer before we see it again at our high latitudes.

Eclipse pictures by Murray Paulson

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 II, 140 Lunar, 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

Ken Maher	Done!	110
Norma Jensen		108
Ron Waldron		105
Kathleen Houston		90
Margo Millar		77
Wade Selvig		75
Garry Stone		57
Barb Wright		40
Wayne Schlapkohl		36
Ellen Dickson		34
Jeff Swick		24

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 / 140

Tenho Tuomi		136
Norma Jensen	Up!	92
Jeff Swick		25

EXPLORE the UNIVERSE

Certified at 55 to 110 Objects:

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

Wayne Schlapkohl	Done	55
Sharon Dice		31

HERSCHEL 400 CLUB

Certified at 400 Objects:

D. Jeffrey, R. Huziak, D. Chatfield

Tenho Tuomi	Done!	400
Gordon Sarty		251
Scott Alexander		117
Sandy Ferguson		18

HERSCHEL 400-II CLUB

Darrell Chatfield	346
Rick Huziak	225

The Messier & Finest NGC 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 – check out:
http://www.rasc.ca/observing
On-line Herschel 400 List – check out the official site at:
http://www.astroloeague.org/al/obsclubs/herschel/hers400.html
The Binocular List will be available at each general meeting or can be mailed out on request to distant members.
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.shtml**

Editor's Corner

by Tenho Tuomi

I would like to thank every one who contributed to the Saskatoon Skies newsletter last year. I look forward again to many new articles and pictures from you. It is your newsletter and it is what you make it out to be.

Looking over the past year at the contents of this page, there has been almost no activity except in the Isabel Williamson Lunar Observing Certificate and Hershel 400-II Club areas. I think working on these lists can help us. They can help to organize our observing, and they provide targets when planning our observing. Make a new year's resolution to update your totals if you want this page to continue.