

Saskatoon Skies

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

Vol. 42, No. 2

February 2011

Saskatoon Aurora at it Best



This photo was taken August 3, 2010 just east of Saskatoon. It was taken with a Canon 40D and a Tokina 10-17mm fisheye lens - ISO: 1600, Exposure: 20s, f/3.5, Focal Length: 10mm, cable shutter release. I was out with Bob Johnson and it was just about the first time using the fisheye lens and was the first time I'd ever seen purple in an Aurora display. Jupiter can also be seen on the bottom right. This photo appears in the December issue of GEO magazine, published by the Group on Earth Observations - <http://www.earthobservations.org/> (more on page 5).

Photo by Colin Chatfield



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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: \$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 .

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 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.

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

RASC CALENDAR OF EVENTS

Feb 24	New Members Night -- 7:30 pm, U of S Observatory	Patricia Gakis	249-1345
Feb 26	Observers Group – Dusk, Sleaford Observatory	Larry Scott	934-5801
Feb 28	RASC Executive Meeting - 6:30 pm, 175 Physics, U of S	Jeff Swick	173-3902
Feb 28	RASC General Meeting - 7:30 pm, 175 Physics, U of S	Jeff Swick	173-3902
Mar 21	RASC Executive Meeting - 6:30 pm, 175 Physics, U of S	Jeff Swick	173-3902
Mar 21	RASC General Meeting - 7:30 pm, 175 Physics, U of S	Jeff Swick	173-3902
Mar 26	Observers Group – Dusk, Sleaford Observatory	Larry Scott	934-5801
Apr 2	Messier Marathon – Dusk, Sleaford Observatory	Larry Scott	934-5801
Apr 18	RASC General Meeting - 7:00 pm, Frances Morrison Library	Jeff Swick	173-3902
Apr 18	Free Public Lecture, "High Energy Astronomy" by Professor Kinwah Wu of the Mullard Space Science Laboratory, 7:00 pm, Frances Morrison Library	Gordon Sarty	966-2321
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, February 28, 7:30 PM Room 175, Physics Bldg., U of S

**“On the Future of the Sask Summer Star Party
and Our Two Dark-Sky Preserves”**

by Richard Huziak

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

On the Future of the Sask Summer Star Party and Our Two Dark-Sky Preserves by Richard Huziak

In the last few years, the success of the two Dark-Sky Preserves (Cypress Hills and Grasslands) have piqued the interest of their managers and interest groups in ways that we barely perceived at the parks' conceptions. Astronomy programming is now a big part of both parks, and the Friends of Cypress Hills is building an observatory and Dark-Sky campground. The RASC can support these activities and is also

affected by them. For example, Grasslands has now requested us to run two yearly public star nights to feature the pristine darkness of their park. And the expansion of the Meadows campground at CHIPP may cause the SSSP to be moved next door into the Dark-Sky campground which may change the very nature of the star party. Rick Huziak will talk on what the DSPs may have in store for us over the next few years.

Minutes of the Executive Meeting, Jan 17, 2011

1. Meeting called to order at 18:38.
2. Approval of the minutes of the previous (November 2010) Executive Meeting: moved by Barb Wright, seconded by Lorin Briand, and carried.
3. Treasurer's Report—James Gorkoff for Norma Jensen: Gross income in 2009 was \$38,788, which includes income from GA/SSSP. Due to this level of income, we legally need to have an audit done. Motion: Give Norma the authority to spend up to \$500 to engage a recognized accounting professional to conduct a review of our books for the year ending 2010 September 30. Moved by James Gorkoff, seconded by Barb Wright, and carried.
4. Jeff Swick proposed that regular monthly reports from Membership Coordinator, Observing Coordinator, and Treasurer would not be necessary but could be given as needed.
5. Fundraising—Colin Chatfield: Colin will send a letter of appreciation to Marianne Hydomako for donating books for the Steak Night fundraiser.
6. Light Abatement—Rick Huziak: Rick mentioned that the next meeting of the Saskatoon Environmental Advisory Committee is Thursday February 10.
7. National Council—Rick Huziak: Next Council Meeting is in February.
8. There was a discussion of charging fees for public presentations by Centre members to raise funds. Further discussion was deferred to another meeting.
9. Les Dickson suggested that the Centre invest in a digital data projector. Les will look into cost and types of data projectors and report back at the March meeting.
10. The third Monday of February is a statutory holiday, so the next meeting will be Monday February 28th.
11. To help publicize Centre events and activities, the Centre web page should be linked to the Facebook Centre Events page.
12. Jeff will look into setting up a Centre e-mail address.
13. Meeting was adjourned.

Minutes of the General Meeting, Jan 17, 2011

by Les Dickson

1. Meeting began at 7:38 pm
2. Approval of the minutes of the previous (November 2010) General Meeting: moved by Michael Clancy, seconded by Rick Huziak, and carried.
3. Events Coordinator—Patricia Gakis: Messier observing night April 2nd; there may be a secondary date. Astronomy Weekend is May 7th. There was some discussion of setting up a forum on our USask site as a replacement for the Yahoo Group. Another discussion covered new members night, with astrophotography as a possible topic for new members; date of Thursday February 24th was proposed, event to be held at the Campus Observatory. The format would be similar to the last new members night.
4. Newsletter—Tenho Tuomi: The deadline for receipt of material for the newsletter is January 31st.
5. Site report—Rick Huziak: Rick and Darrell will be out at Sleaford in week or so to finish up renovations (insulation and wiring). Outside work to wait until warmer weather. They have the materials necessary to fix 16" controller which they hope will be fixed soon.
6. Gord Sarty mentioned that his collaborator who was to talk last year in Saskatoon will hopefully be here in April to give his talk at the Mendel Gallery or the Library.
7. SSSP—There was some discussion of possible guests. The web page will be up very soon.
8. Lorin Briand made a presentation on “Citizen Sky”.
9. Les Dickson showed an episode of a TV show about the Buzzard Coulee fireball and meteorite fall, and the Whitecourt crater.
10. Meeting was adjourned.

Photographing the Aurora

by Colin Chatfield

(Article appeared in the December 2010 newsletter of the Group for Earth Observation - <http://www.earthobservations.org/>)

Now that you have seen the splendid aurora images accompanying this article, some of you may now be encouraged to try this for yourselves. So what exactly is required?

First, particularly if you live near street lighting, you will have to relocate out of town to a location with minimum light pollution, on a clear night when the moon is below the horizon. Also, because exposure times are likely to be 10-20 seconds, a tripod is essential to prevent camera shake. But what about the camera?

Colin Chatfield's 'green curtain' aurora (see above) was made using a relatively simple Canon PowerShot A80. This is a fairly simple camera with a 3x zoom and several shooting modes. The image was obtained using 'Auto' mode, giving a 15 second exposure. In order to prevent camera shake with a point-and-shoot camera like this, try using the timer. For example, set the timer for a 10 second delay and let it snap the picture, with your hands off the camera.

For more ambitious photographs like figure 1, which displays the entire northern sky, a Tokina 10-17mm fish-eye lens was used, and with it a digital SLR camera. Colin acquired this superb image using a Canon EOS 40D SLR, a more advanced camera which allowed him to choose manual operating mode, setting exposure as 20 seconds and aperture to f/3.5. While a fish-eye lens is not required, a wide or super-wide angle lens with a range from 8mm-18mm is. The other factor when choosing a lens is its 'speed'. The lower the f number the better. For example, an f/4.5 lens is considered slow. Most kit lenses (those that are sold in camera packages) generally range from f/3.5 to f/5.6, so they are not so suitable for long exposure shooting.



When using exposure times above 10 seconds with a lens like that, star trails usually start to appear. With an f/3.5 lens, up to 20-25 second exposures can be taken and with an even faster lens, such as an f/2.8 or f/1.8, up to 60 second exposures can be taken before star trails appear.

A further advantage of this camera is that the sensitivity (ISO number) could be increased to a maximum of 3200 (the PowerShot has a maximum ISO of just 400). One consideration however, is that the higher the ISO number, the more noise that is introduced into the photograph. In order to prevent camera shake in a DSLR, the best way is to use either a wireless remote or wired shutter release cable. That way, your fingers are not touching the shutter release button, thus preventing shake. If you do not have a remote or a cable release, again try setting the timer. Most DSLRs have a 10 second (or longer) delay setting that will wait for 10 seconds after the shutter button is pressed to take the picture.

There are two more important aspects when talking about camera shake. The first is this: if a lens with image stabilization is being used with a camera mounted on a tripod, turn off the image stabilization. The second is to use exposure delay mode, if your camera is so properly equipped (usually just DSLRs are). This delays taking the picture for a second or so. The specific purpose of exposure delay is to eliminate the vibration caused by the mirror flipping up. It's mostly useful on short duration exposures on a tripod, where the slight and short-lived vibration is enough to cause blur. Of course, it's useful even for a long exposure if there's something bright in your image (such as Aurora) that you are capturing.

Lunar-X or Werner-X

by Tenho Tuomi

On Tuesday evening, January 11, I was looking for small challenge objects on the moon that I still needed for the Lunar Williamson Observing Certificate. The seeing was not good, only about 3 out of 5, and everything kept jumping on the moon. The temperature was -23C so I wasn't going to stay very long. However something caught my eye that I had forgotten about. There was a bright distinct X on the terminator. I quickly went to the house to get my Canon Rebel camera and took a couple pictures of it.

The X brought back memories of the winter of 2006-2007 when there was a lot of discussion on the RASCALS list about the bright X that can be seen near the crater Werner when lighting conditions are just right. The X is formed by the walls of the adjoining craters Blanchinus, La Caille and Purbach, though Werner is the prominent crater at the time and gives its name to the X. Many made predictions of when it would appear. The X is visible for only about four hours during the phase of the moon, so for any location it would appear only a few times during the year. Garry Stone and I made observations of it, and took pictures of it at the time.

I had not heard much about it since so I posted a message on the rasctoon and rascals lists as follows.

"Has everybody forgotten about the Werner X?
<http://rockpoint.dyndns.org/astro/WernerX.jpg>

I wasn't looking for it. It just jumped out at me.
Picture taken at -23C."

I did not expect the response that the posting received.
The X had not been forgotten.

"Tonight's attempt--almost too cold--27c." Garry

"Nice image Tenho, it's rather cold here in Regina @ -27C without the wind chill." Chris



Photo by Tenho Tuomi

Photo by Garry Stone

"The X was advertised in advance in Quebec and several reports and pictures have already circulated in Quebec astro circles." Hugues

"I started observing it in Saint John at 23:00 UT, when only the rim of Purbach was lit to form half the X. I followed the progression at 00:00 and again at 01:30. When I went out for a final check at 02:40 the clouds had taken over." Curt

"Not forgotten, just didn't get back home until it was too late. I'll try for it in March (I hope). Nice image! Do you have an exact time that shot was taken?" Larry

"Picture was taken at 1:34 UT, with Rebel XT through 12" Newtonian. Picture cropped to 1/3. Never know what you see when working on the Isabel Williamson Lunar Observing Program." Tenho

"Well done! Good photo; and thanks for sharing it." Andrew

"Well that's a big notch on the belt for sure. I can picture you out there doing casual observing when it happened and you had that 'Holy Cow' moment." Jeff

"Amazing - I'm going to watch for that one." Norma

"Your excellent photo of the X is evocative of my first observation of the X in August, 2004. Thanks for sharing!" Dave (certified RASC lunatic)

"That is a great image. While looking at it, it struck me that the x looks very reminiscent of images of chromosomes. Has anyone noticed this before?" Tony

"With your permission, I'd like to feature your recent photo of the Werner X in the February issue of the RASC's Bulletin." Ian

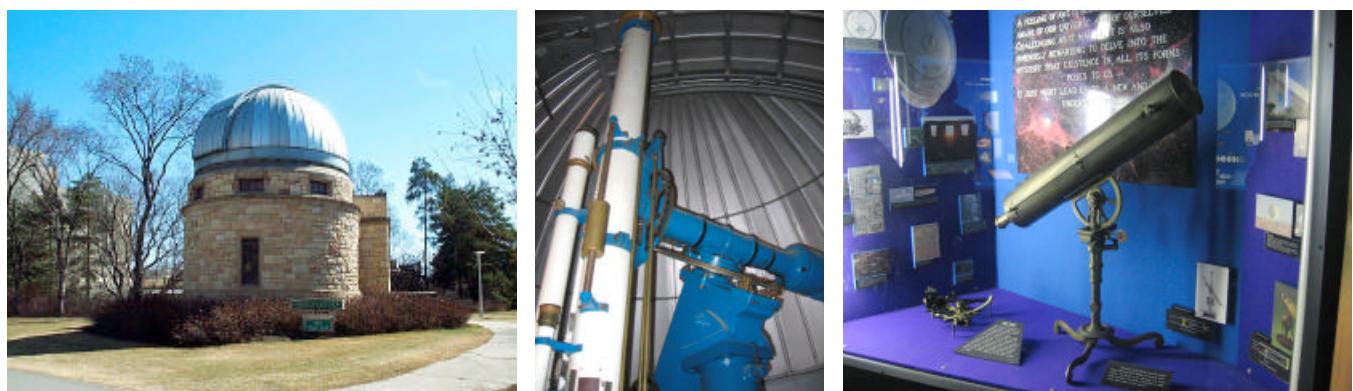
"It was a great photo of a landmark I'd never heard of. So, good job my fellow astro-photographer." Colin

New Members Night – February 24

by Patricia Gakis

Last May, due to demand, we organized a beginner's workshop to help get our new members started in astronomy. We're doing it again this year on Thursday February 24th from 7:30 – 9:30pm at the University of Saskatchewan Observatory. This is a rain or shine event as we will have some talks given by our members in the first part of the evening but hopefully, we will also have a chance to do some lunar observing if the sky cooperates. Everyone, regardless

of experience, is welcome to come out and meet some of our newest members. We are also opening up this event to the public so if you have a brother who's expressed some interest in what you've been doing at night or a coworker who's been bugging you to help her with the telescope she received for Christmas, please send them an invite! I'm looking forward to seeing everyone out that night!



University of Saskatchewan Observatory and telescope, and display rooms.



Rick Huziak and Mike Clancy at the June 17 New Members Night at the U of S Observatory, teaching about choosing the right telescope and getting started on the Explore the Universe certificate.

Photos by Colin Chatfield

More Pictures from the October 16 Open House at Sleaford

by Tenho Tuomi



All set up and waiting for the crowd to arrive.

Les Dickson, Jeff Swick and Mark de Jong admiring the sturdy mount

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The Planets This Month, February 2011

by Murray D. Paulson, RASC Edmonton Centre



The month of February starts off with **Mercury** sliding down the morning sky toward the sun. The snows of January prevented me from finding Mercury in the morning apparition, so I will have to wait until the more favorable apparitions later this year. At the beginning of the month Mercury is 13 degrees from the sun and shines at magnitude -0.5. If you can find it in the daytime, it will show you a 4.9" nearly full disc. On February 25 Mercury will be at superior conjunction and will pass 1.6 degrees below the sun. It will then move into the evening sky but will be lost in the twilight glare until next month.

Venus is disappearing from our morning sky due to the shallowing of the spring morning ecliptic, despite being almost 45 degrees from the sun. Early in the month, Venus shines at magnitude -4.2 and sits just below the M24 star cloud in Sagittarius. It rises 2 ½ hours before the sun and will exhibit a fat gibbous 18.5" disc. From here it will pass a few degrees below Pluto and then head on its way to Capricorn by month's end. Early in March Venus now rises 1 hour and 20 minutes before the sun, but the ecliptic is now so shallow that it will become hard to find despite Venus at 40 degrees elongation from the sun. It now shines at magnitude -4.0 and will show you a 74% illuminated 15.3" disc.

This month **Mars** and **Neptune** will be in conjunction on February 20th when they will pass only 35' apart. They sit in the constellation of Aquarius, but the bad news is they also will be in conjunction with the sun so we will not see them again until the summer star parties. Mars is in Conjunction with the sun on February 4th and Neptune will be in conjunction on February 17th.

Jupiter has moved into the South West evening sky and starts off the month just east of the circlet of Pisces. It shines at magnitude -2.1 and will show you a 35.3" disc in the eyepiece. It sets by 9:45 pm, so get it quickly in the evening before it gets too close to the horizon. By the beginning of next month, it will have faded slightly to magnitude -2.0 and its disc has shrunk to 33.7". It will set just around 8:30 pm at that time.

Saturn makes its significant return to the evening skies this month. At the beginning of February, Saturn rises just before 11 pm and it shines at magnitude 0.6. In the eyepiece you will see its 18.3" disc encircled by those gorgeous rings. They are tipped up at 10.2 degrees, so it is quite the show. Cassini's division is now fairly easy in a small scope. The storm on Saturn I reported last month is still active and visible. Its extent now reaches half way around the planet. It is in the Temperate zone of the planet and is quite white in color. By the month's end Saturn will rise just after 9 pm and is high enough to get a good glimpse of by midnight. It will show a 19" disc and will brighten slightly to magnitude 0.4.

You can still catch **Uranus** if you get out there and search early in the evening. Uranus shines at magnitude 5.9 and sets just after 9:30 pm. It sits about 4 degrees south of Lambda Pisces, the bottom left hand star in the circlet. It is low in the sky but you may be able to discern the 3.4" disc in a medium power eyepiece.

Till next month, clear skies!

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 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



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.astroleague.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>

Observers Group

by Larry Scott

Sadly, the January Observers Group was postponed due to weather conditions. Too cold, too cloudy, too lazy. There were a couple excellent nights in January, but the low temperatures kept me at home. As I'm writing this the sky is perfect and it's -32C. I do know that spring is coming though because I can see the summer triangle in the eastern sky on my way to work. So don't worry, only 6 more months of winter...

Next scheduled Observers Group March 26th. This will hopefully be a nice warm-up for the Messier Marathon a week later on April 2nd.

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!
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

Norma Jensen for Isabel Williamson Lunar Observing Certificate

(January 28) Tallied some old ones not submitted last time - and this morning, in spite of difficulties with low moon passing and high trees standing, I was able to get a couple in the west of Mare Imbrium - the great domes Mons Gruithuisen Gamma and Delta - very nice view! skies were unsteady so just hunkered down and watched - and got a just reward - stayed on the west side and got Deslisle(cr. and mons) and Diophantus with Mons Vinogradov - new total 101!! (108 after February 15)