

Saskatoon Skies

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2007

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



Saskatchewan Summer Star Party 2007

The Saskatchewan Summer Star Party held from August 9 to 11 at the Cypress Hills Interprovincial Park was another success, in spite of weather that was reluctant to cooperate.

Photo by George Charpentier



Saskatoon Centre

The Royal Astronomical Society of Canada

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SSSP 07 SEND OFF!

MEMBERSHIP? IT'S NEVER TOO LATE TO JOIN!

Regular: \$65.00 /year Youth: \$34.25 /year Lifetime: \$1100

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, Mike Clancy, or renew through the National Office and let Mike 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 (bimonthly)
 - SkyNews Magazine (bimonthly)
 - use of the Centre library
 - rent the Centre's Telescopes
<http://www.usask.ca/psychology/sarty/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 njensen@scs.sk.ca.

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 – Garry Stone, 857-4707

Secretary – Al Hartridge, 373-0034

Vice-President – Barb Wright, 249-1990

Treasurer – Norma Jensen, 244-7360



BOTTLE DRIVE & CANADIAN TIRE \$

by Darrell Chatfield

We have paid for a few more items for Sleaford with Canadian Tire money, namely hand sanitizer, and a utility knife. If you cannot make it to a meeting but would like to contribute, your Canadian Tire money please call me at 374-9278.

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

Newsletter Editors – Tenho Tuomi, Ken Maher **Copy & Collate**– Les & Ellen Dickson **Labels & Temps** – Mike Clancy **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 articles. 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 – preferred as plain unformatted ASCII text files without line breaks. Images sent by e-mail should be attached .JPGs (.GIFs also accepted). Send e-mail submissions to the editor at <tuomi@sasktel.net>. Please send articles in "generic" formats with simple formatting – one tab at the beginning of paragraphs, one space after commas and periods. 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 stated), but source credit is requested. DEADLINE for submissions is the 26th of each month. Saskatoon Skies accepts commercial advertising. Please call the editor for rates. Members can advertise non-commercial items free of charge.

RASC CALENDAR OF EVENTS

| | | | |
|-------------------|---|-------------|----------|
| Sept 11-16 | Northern Prairie Starfest , Black Nugget Lake, Toffield, AB | Rick Huziak | 665-3392 |
| Sept 17 | RASC Executive Meeting - 6:30 p.m., 175 Physics, U of S. | Garry Stone | 857-4707 |
| Sept 17 | RASC General Meeting - 7:30 p.m., 175 Physics, U of S. | Garry Stone | 857-4707 |
| Oct 12 | Observers Group - 8:00 p.m., Sleaford Observatory | Larry Scott | 934-5801 |
| Oct 15 | RASC Executive Meeting - 6:30 p.m., 175 Physics, U of S. | Garry Stone | 857-4707 |
| Oct 15 | RASC General Meeting (Elections) - 7:30 p.m., 175 Physics, U of S. | Garry Stone | 857-4707 |
| Nov 2 | Observers Group - 8:00 p.m., Sleaford Observatory | Larry Scott | 934-5801 |
| Nov 19 | RASC Executive Meeting - 6:30 p.m., 175 Physics, U of S. | Garry Stone | 857-4707 |
| Nov 19 | RASC General Meeting - 7:30 p.m., 175 Physics, U of S. | Garry Stone | 857-4707 |



BOOKS FOR SALE

by Bruce Brandell, Sales Coordinator

All items will be available at our next meeting or call 249-1119, or email bruce_brandell@yahoo.com

| <i>Title</i> | <i>Author</i> | <i>#Avail</i> | <i>Price</i> | <i>Title</i> | <i>Author</i> | <i>#Avail</i> | <i>Price</i> |
|---|------------------|---------------|--------------|--|------------------------|---------------|--------------|
| | | | | Books | | | |
| | | | | Binocular Highlights | G. Seronik | 4 | \$28.00 |
| | | | | Exploring the Sky by Day | T. Dickinson | 4 | \$9.50 |
| | | | | Exploring the Night Sky | T. Dickinson | 14 | \$9.50 |
| RASC 2007 | RASC | 20 | \$14.00 | Night Watch | T. Dickinson | 1 | \$33.00 |
| RASC 2007 | RASC | 3 | \$5.00 | Summer Stargazing | T. Dickinson | 5 | \$18.00 |
| Skywatcher's 08 | S. Schadick | ? | \$18.00 | Night Sky Atlas | R. Scagell | 3 | \$27.00 |
| Skywatcher's 07 | S. Schadick | ? | \$5.00 | Stargazing with a Telescope | R. Scagell | 2 | \$14.00 |
| Skywatcher's 06 | S. Schadick | 1 | \$2.00 | The Moon Observer's Guide | P. Grego | 5 | \$14.00 |
| | | | | The Sun Observer's Guide | T. Spence | 3 | \$14.00 |
| | | | | Stars | Zim, Baker & Chartrand | 1 | \$10.00 |
| RASC Centennial Mug | | 2 | \$5.00 | Firefly Planisphere | Firefly | 2 | \$19.00 |
| RASC Stickers, blue or white | | lots | \$1.00 | Firefly Astronomy Dictionary | Firefly | 2 | \$14.00 |
| SSSP 2001 Pin (Summer Triangle) | | 13 | \$2.00 | Night Sky Star Wheel | Sky Publishing | 4 | \$15.00 |
| SSSP 2002 Pin (Comet) | | 24 | \$2.00 | Patterns in the Sky | K. Hewitt-White | 5 | \$19.50 |
| SSSP 2006 Pin (10) | | 46 | \$4.00 | Scientific American Book of the Cosmos | D.H. Levy | 1 | \$48.00 |
| SSSP 2007 Pin (DSP) | | 35 | \$5.00 | Deep-Sky Wonders | W. Houston | 2 | \$24.50 |
| | | | | Mars Observer's Guide | N. Bone | 2 | \$14.00 |
| | | | | Deep Sky Observer's Guide | N. Bone | 1 | \$14.00 |
| The Backyard Astronomer's Guide | Dickinson & Dyer | 2 | \$45.00 | Practical Astronomy | S. Dunlop | 4 | \$14.00 |
| The Beginner's Observer's Guide | L. Enright | 4 | \$19.00 | Field Map of the Moon | Sky & Telescope | 8 | \$12.50 |
| Observer's Handbook 2006 | RASC | 5 | 10.00 | Moon Map (laminated) | Sky & Telescope | 3 | \$6.00 |
| Observer's Handbook 2005 | RASC | 1 | 5.00 | Messier Card | Sky & Telescope | 2 | \$5.00 |
| Isabelle Williamson Lunar Observing Program | RASC | 7 | \$10.00 | Saskatoon's Stone | Mysyk & Kulyk | 10 | \$3.00 |
| Skyways – Astronomy Handbook for Teachers | M.L. Whitehorne | 1 | \$16.00 | The Messier Objects | S.J. O'Meara | 1 | \$39.00 |
| Pocket Sky Atlas | R. Sinnott | 4 | \$24.50 | | | | |

To Make a Charitable donation to RASC Saskatoon Centre

write a cheque out to RASC and place on the bottom that the donation is to the Saskatoon centre – a tax receipt will be issued in December of that year . Mail or give to the current treasurer.

11th Annual Saskatchewan Summer Star Party

by Barb Wright



Thursday evening BBQ. *Photo by Tenho Tuomi*



Larry as Chef at the Thursday evening BBQ.
Photo by Ron Waldron



Keynote speaker, Dr. Luc Simard addresses visitors
Thursday night at the Amphitheater.
Photo by Ron Waldron



Registration, working hard or hardly working?
Photo by Ron Waldron

The 11th annual Saskatchewan Summer Star Party was held in the Cypress Hills Interprovincial Park August 9 to 12th. The weekend began Thursday with a BBQ held at the amphitheater, with Myrna Stone's fabulous salads for everyone to enjoy along with their hot dogs. Following the BBQ were talks hosted with the park in conjunction with SSSP, well attended by people staying in the park as well as SSSP attendees.

Dr Luc Simard's talks were made possible through the support of the Canadian Astronomical Society/Societe Canadienne d'Astronomie WESTAR lectureship program. This was the first time this support has been extended to a star party, so we are very grateful for this opportunity.

Friday morning, solar telescopes were set up close to the pool for people to take a look at the sun. This generated quite a gathering. Friday evening at the Wapiti room several short talks were presented, including the film done by SCN at last year's SSSP.

The weather did not exactly co-operate Friday evening for viewing. Ron Waldron's binocular star walk had to be postponed to Saturday night. This was certainly not the best weather SSSP has had, but there was some observing over the weekend in spite of the wind and cold. SSSP attendees take the weather as it comes, there is the socializing and the visiting that occurs regardless of what the sky is doing.

Saturday morning the swap table at the Meadows held a few things, but the vendors at the Meadows did seem to be attracting a gathering at their tables. Vendors were generous to SSSP with attractive door prizes, that filled the Wapiti room for the draws. The final scheduled event was the banquet, which sold out again this year. (and had a waiting list)

We recognized, again this year, those people who have attended 10 years of SSSP. It is so nice to see the same people back again year after year, as well as those who come for the first time to see what we are all about. This year there were 283 people at SSSP, a good gathering of observers for the weekend. The group photo will be posted on the web site, as well as dates for future SSSP and GENERAL ASSEMBLY 2009.

Mark your calendar.

Ron's hangout, it was the saving grace when it rained



Photo by Ron Waldron



Photo by Tenho Tuomi

Saturday afternoon get-togethers.

Moose visiting the Meadows on Friday morning.



Photo by Ron Waldron



Photo by Tenho Tuomi

Ron Waldron explaining at the Saturday evening Unveil Yer' Scope Social.

Children viewing the sun on Friday noon through Ron Waldron's 80 mm Antares refractor.



Photo by Ron Waldron



Photo by Tenho Tuomi

Vance Petriew giving a presentation to the public at the tennis court on Saturday night.



Photo by George Charpentier

Barb Wright thanking Dr. Luc Simard for his talk Saturday afternoon.



Photo by Tenho Tuomi

People lined up to look through the Regina scopes at the tennis court on Saturday night.

Observer's Group Notes

by Larry Scott

After five straight months of clear skies for the regularly scheduled Observers Group dates, we were clouded out on August 17th to end the streak.

Happily, the previous night was exceptional and brought out five members and a guest to Sleaford. We also had a few people, back from a very windy SSSP, go out on the 12th to watch Perseids under some very nice conditions. During these evenings I was checked out on the University's roll-off observatory and will now be able to open it up for those of you who wish to use the club's 16" schmidt-cassegrain.

Although it's unlikely this will reach the presses prior to our next session on September 7th, here's the info just in case. Our September dark sky period is from

September 6th to 20th so the weekends of the 7-8th and 14-15th should be perfect if the fall monsoons hold off. The combination of long nights, dead bugs, and hopefully no snow generally make for some of the best observing of the year.

The Observers Group date for October is the 12th which may end up being the same date as the Sleaford Open House. The dark sky period for October runs from about the 4th to the 19th but Thanksgiving weekend falls on the 6-7th which I wanted to avoid. Stay tuned to our Yahoo! site at:

<http://tech.groups.yahoo.com/group/rascstoon/>

for further updates.

See you at Sleaford.

Total Lunar Eclipse, August 28

August 28th saw Saskatchewan ideally placed to witness a total lunar eclipse. While not everyone had the same luck with weather, here are some of the pictures our members were able to capture ...



Photo by Tenho Tuomi

I had fog for the eclipse. I could see enough of the moon to take six 20-second exposures at 5 minute intervals through our living room window.



Photo by Ron Waldron

Three photos I took through my 80mm Antares Sentinel Telescope on Tuesday morning. Conditions in Saskatoon were perfect as the sky was clear after a prior rainfall. The camera was a Fujifilm S5100 set at 200 ISO and most exposures were 1 second at F4



Photo by Bob Johnson

Taken with 12" Intelliscope and Olympus digital camera.

The Meadows Nebula

by Darrel Chatfield

It was very foggy that Friday evening at the Meadows, and all we could do is visit.

As I was looking around the sky, I noticed how the fog created this nice red image from the tower lights. I decided to borrow George Charpentier's camera, and take a few pictures of this lovely scene. They turned out very nice.

I showed this picture at SSSP, just before the door prize draw, as a matter of interest. I called them the Meadows red shift galaxies !! This brought out quite a few laughs, which was the intent. It was a lot of fun.

Besides, what else could we do with a sky like that !!



A New Observatory for Bob

by Bob Johnson

Wayne Parker, bass player for glass tiger has his own company called "Skyshed Observatories", after many years in development, POD (Personal Observatory Dome) has been released to the masses. Very affordable and easy to put together.



no set up or take down time, if I see a break in the clouds, I walk out, open the dome, align the scope and I'm ready to go, about 10 minutes!

Because no set up or take down, my viewing isn't just on the weekends anymore. I'm able to go out whenever I want. The dew problem is all but gone as well, haven't had a problem since I purchased the observatory, sweet! The observatory is great for blocking out stray lights from neighbors and city light poles, takes care of the wind as well.. Oh and it looks great, a lot of compliments.

Since I purchased the observatory I'm finding myself under the stars a lot more,



After a night of viewing and back breaking take downs, turn off the scope, close the dome, throw a cushion down and good night. All around great addition to my hobby.

The Planets This Month, September 2007

by Murray D. Paulson, Edmonton Centre

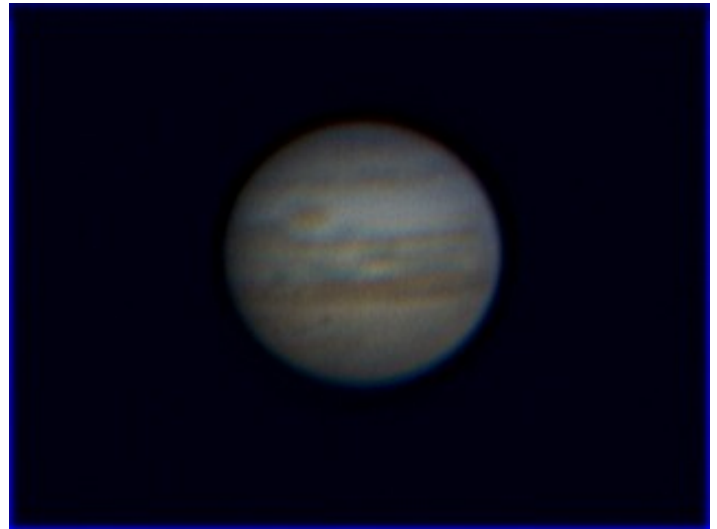
Summer has come and we watched Venus pass the sun in August and got a few good looks at Jupiter in the deep south. Uranus and Neptune are the next in line for observing this fall, so get out the scope and lets have a good look.

Mercury goes out to the greatest eastern elongation, which is an evening event. Once again the evening ecliptic is against us, as it is tipped down almost parallel to the horizon, so you will not be finding Mercury after sunset. Even when at greatest elongation of 26 degrees on September 28th, the sun sets at 7:29 p.m. and Mercury sets just 10 minutes later. For this reason, it is best to find Mercury in the daytime with setting circles or a goto scope. Dichotomy happens on October 3 when Mercury shows a 7.4" half disk and shines at magnitude 0.1. Use software to predict its placement and enjoy the view.

Venus passed 8 degrees below the sun on August 17, and it now has popped up in the morning sky. It always amazes me at how quickly Venus swings into the morning sky after passing between us and the sun. By the beginning of the second week of September, Venus is 22 degrees ahead of the sun, and rises 2 1/2 hours before it. Its shines at magnitude -4.4 and is shines as the beckoner of dawn. In the eyepiece it will

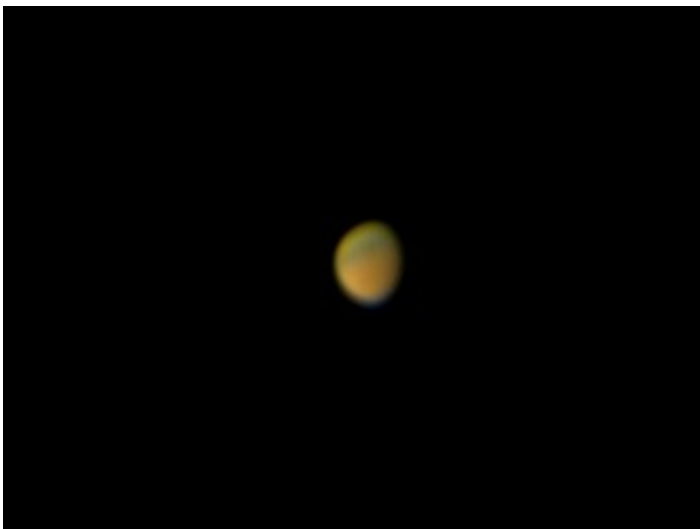
show you a delicate 49" crescent, 12% illuminated. It will shrink in size and fatten up over the month, and by months end, it will be a 33" diameter, 33% illuminated crescent. It shines at an amazing magnitude -4.5, sits 43 degrees from the sun and rises 4 hours beforehand. Watch for a conjunction of Saturn and Venus on the morning of October 14th, when they will be only 2.8 degrees apart.

Mars is on its way back, and will be at opposition in December of this year. It rises just after 11 p.m. and shines at Magnitude 0.2. You will find it between the horns of the bull and Gemini. On October 2, Mars and the moon will be just over 4 degrees apart, and M35 will be 3/4 of a degree above Mars. The cluster and M35 will make an excellent medium power view.



Jupiter: August 13th.

The magic of the fall sky keep the summer constellations and their inhabitants on for a long encore, so **Jupiter** hasn't left the realm of our evening sky. Jupiter is very low, but if you get a good evening, you can still see nice details on it. In August, I could see the Great Red Spot in the absence of the Southern Equatorial belt, and a lot of equatorial details. Jupiter shines at Magnitude -2.1 and shows a 37" disk in the eyepiece.



Mars: August 16th.

Saturn has been in close to the sun this summer, and has become visible in the morning sky in the constellation of Leo near Regulus. The two have very similar colors in the sky and will make a nice pair over the winter. Saturn shines at magnitude 0.7 and will show you a 16.4" disk in the eyepiece.

Uranus is a naked eye visible mote in Aquarius, near the 4.23 magnitude star phi Aquarius. The RASC handbook has a finder chart, or you can check your favorite magazine or software for one. Have a look at phi while you are there, as it is a M type star. Uranus shines at magnitude 5.7 and will show you a 3.7" blue green disk in the eyepiece. You need to use lots of power on it to resolve it. The challenge is to see it naked eye. Find it in binoculars first, then see if you can see it naked eye. Uranus has a few moons that are visible in moderate apertures, 12.5 and bigger. There

magnitudes are 13.9, 14.1, and 14.3. I tried with my 10" at Kobau, but had no luck. The glare from Uranus was just too much and the moons were too close to the scope limits.

Neptune sits above and half way between the eastern stars gamma and Iota Capricorn. The Handbook chart is quite poor, so I urge you to find a better chart. You can check with your star atlas, like Sky atlas 2000 and locate the field with the coordinates on the Handbook Uranus chart. Or make up one with your favorite planetarium software. Neptune has one moon worth chasing, Triton at magnitude 13.4. Triton orbits in an almost circular orbit as seen from earth -13 to 16" distance from Uranus. I glimpsed it in my 10" on several nights at Mt. Kobau using 275 to 425 x., and it was not too difficult to see.

Thank you for stopping by our display at the SSSP!

We have attended several SSSP's prior to opening All-Star Telescope this past year. It was great meeting you and sharing another great star party in Cypress Hills.

Would you like to do your astronomy shopping at a store of those who do **regular observing** and who host regular observing nights?

Would you like to shop for telescopes and accessories at a store of someone who is **an amateur telescope maker (ATM)** and who is passionate about astronomy?



Moose visit to SSSP on Friday

Do you prefer to order your astronomy supplies **online, by telephone or in person** from a store with over 30 telescopes on display?

Then we invite you to check out All-Star Telescope, Western Canada's newest astronomy store in Didsbury, AB (35 minutes north of the Calgary airport).



Shop:

Online: www.All-StarTelescope.com

By Phone: 1-866-310-8844

In Store: 31020 Hwy. 2A, Didsbury, AB



Celestron NexStar 6 SE
Regular - \$1199.95
Special - \$1079.95

Refer a Friend
& Receive a
Free Celestron
MiniMak 65



Refer a friend to purchase a telescope package of \$400 or more and you will receive the Celestron refurbished MiniMak 65 with tabletop tripod (new retail price, \$89.95) from All-Star Telescope. You or your friend must mention this promotion at the time of purchase to receive this offer. You may also be your own best friend and receive the MiniMak with a \$400 telescope purchase. Offer valid until October 31, 2007 or while supplies last.

Free shipping until October 31, 2007 when you mention that you are a member of the RASC. (Exceptions on Celestron CPC and CGE scopes.)

Check out our many online specials!

SKY BUYS & MIRROR CELLS

The Saskatoon Centre's Swap and Sale Page!

FOR SALE: 12" Orion SkyQuest Intelliscope with object locator. Regular \$1400.00, first \$850.00 takes it, never used.
Bob Johnson bjohnson53@shaw.ca

FOR SALE: Meade LX90GPS scope and Meade DSI color camera, both for \$1,500. Bob Johnson
bjohnson53@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 40 Herschel II
Explore the Universe, or 35 Binocular Objects 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*

| | |
|------------------|---------|
| Brent Burlingham | 109 |
| Ken Maher | Up! 109 |
| Ron Waldner | 105 |
| Donna May | 97 |
| Brent Gratias | 96 |
| Mike Oosterlaken | 93 |
| Norma Jensen | Up! 100 |
| Lorne Jensen | 89 |
| Kathleen Houston | 84 |
| Margo Miller | 77 |
| Wade Selvig | 75 |
| Garry Stone | 57 |
| Ellen Dickson | 30 |
| Jeff Swick | 24 |
| Barb Wright | 23 |
| Brian Friesen | 15 |
| Bruce Brandell | 5 |

FINEST NGC CLUB

Certified at 110 Objects:

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

| | |
|--------------------|--------|
| Larry Scott | 110 |
| Scott Alexander | 97 |
| Bill Hydomako | 55 |
| Sandy Ferguson | 23 |
| Mike Oosterlaken | 20 |
| George Charpentier | Up! 13 |
| Ken Maher | Up! 10 |
| Mike Clancy | 7 |

Chatfield BINOCULAR

CERTIFICATE (35 Objects):

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

| | |
|------------------|----|
| Brent Gratias | 36 |
| Mike Oosterlaken | 32 |
| Anna Clancy | 24 |

EXPLORE the UNIVERSE

Certified for Certificate:

*M.Clancy, T.Tuomi, K.Maher, Brent
Gratias*

HERSCHEL 400 CLUB

Certified at 400 Objects:

D.Jeffrey, R.Huziak, D.Chatfield

| | |
|------------------|-----|
| Gord Sarty | 251 |
| Tenho Tuomi | 222 |
| Scott Alexander | 117 |
| Mike Oosterlaken | 68 |
| Sandy Ferguson | 18 |

HERSCHEL 400-II CLUB

Certified at 400 Objects:

| | |
|-------------------|---------|
| Darrell Chatfield | Up! 304 |
| Richard Huziak | 211 |

The Messier & Finest NGC lists can be found in the Observer's Handbook. The Explore the Universe list is available on the National web site. The Herschel 400 list is available at the web site listed below. The Binocular List will be available at each general meeting or can be mailed out on request to distant members.



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

<http://www.rasc.ca/observe.htm>

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

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

M27

Photo by Al Hartridge

This photograph is a combination of 10 two minutes exposures in Oxygen three and 10 two minute exposures in Hydrogen alpha. Calibrated in MaximDL and further manipulated in photoshop CS2.

