

Saskatoon Skies

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

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Launch of STS 52 by Randy Atwood October 1992 on Fuji Velvia film – 50 ISO



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

MEMBERSHIP? JOIN TODAY!

Regular: \$85.00 /year

Youth: \$45.00 /year

Family: \$80/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 <http://www.rasc.ca/join-us>

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
- borrow the Centre's Data Projector to give astronomy outreach presentations – contact Les Dickson at astrochem@sasktel.net
- 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 – Jim Gorkoff (acting)

Vice-President – **to be filled**

Secretary – Tenho Tuomi

Treasurer – Norma Jensen

Bottle Drive &
Canadian Tire \$
By Jim Goodridge

If you cannot make it to a meeting but would like to contribute your Canadian Tire money please call me at 306-370-8530

Newsletter Editor – Les Dickson (temporary)

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. Submissions should be sent by e-mail to the editor in msword or text format. 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. Saskatoon Skies accepts commercial advertising. 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

Nov 16	Executive Meeting and Annual General Meeting	Jim Gorkoff
Dec. 12	Observer's Group at Sleaford	Larry Scott
Dec. 13-14	Geminid Meteor Shower	Larry Scott
Dec. 14	Annual Christmas Social	
Jan. 9	Observer's Group at Sleaford	Larry Scott

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



November RASC General Meeting

for all members and guests
beginning at 8:00 PM
Room 175 Physics Bldg
University of Saskatchewan
on

Monday, November 16th, 2015

***Annual General Meeting and
Elections for Centre Executive***

Note: There will be an EXECUTIVE MEETING beginning at 7:00 PM

Minutes of the Executive and General Meetings – *Les Dickson*

The regular Executive meeting which would have been held before the General Meeting of October 19th was postponed to November 1 to accommodate a dinner with guest Randy Atwood, who presented at the General Meeting later that evening.

The meeting opened at 7:30 pm.

Present: Jim Gorkoff, Darrell Chatfield, Les Dickson. Guests: Ellen Dickson, Rick Huziak.

- There was a discussion on what to do with the power to the Sleaford site if the Sleaford School has to be demolished: place the existing box on a standalone pedestal or move it to the storage shed; subject to be brought up at the management committee meeting.
- Darrell and Rick will investigate the possibility of replacing the boards on the decking around the Warm-up Shelter at Sleaford with Trex composite boards; the material may need an anti-slip surface; any installation would start next Spring.
- Larry Scott requested a new self-propelled mower for Sleaford; estimated cost \$1000; the Executive voted to approve the request.
- One Al Duffy has expressed an interest in taking possession of the Patterson dome at Sleaford rather than having it demolished; he will be contacted to confirm his interest and make further plans.
- The UofS roll-off at Sleaford needs to be mouse-proofed before it can be properly and safely used by us; since it is not clear what the University wants to do with the site, mouse-proofing and future plans will be discussed at the management committee meeting.
- Loaner scopes: Errol Frazer-Harrison is coordinating the loaner scope program; one scope needs repair and some accessories and eyepieces need replacing.
- The Nominating Committee for the Executive (Jim Gorkoff, Les Dickson, Darrell Chatfield) discussed open positions and how to fill them; it was considered important to fill the open Newsletter Editor position; other positions open include: President, Vice-President, Activities Coordinator, Activities Coordinator. The committee decided to do a mass phoning of all members regarding our club executive status, headed up by myself and Jim.
- The present members of the SSSP Committee discussed plans for next year, especially the need to move the observing field to the Ball Diamond adjacent to the Meadows Campground and the options to set up electronic payments for registration.

The meeting adjourned about 10:00 pm.

The October 16th General Meeting opened at 8:15 following a coffee break.

- Rick Huziak announced elections for Centre Executive to be held next month at the Annual General Meeting.
- Rick Huziak gave a short summary of the Sleaford Open House. (See Rick's article below - Ed.)

- Our special guest Randy Atwood, Executive Director of the RASC, gave two very interesting presentations: "Society News", and "Space Shuttle." Randy has contributed an article for this newsletter related to his talk about covering Space Shuttle launches (See Randy's article below - Ed.)

The meeting was adjourned about 10:00 pm.

Nominations for Centre Executive – *Jim Gorkoff*

It is Centre convention to conduct elections of officers and directors of the Centre at our November general meeting. We elect directors and certain members of the executive, a list of current holders of such positions can be found in the November 2014 newsletter on our Centre website at: <http://www.usask.ca/rasc/newsletters.html>.

The executive offices to be elected are as follows:

President
 Vice-President
 Secretary
 Treasurer
 National Advisory Council Representative

The other offices appointed by the executive officers on the recommendation of the membership are as follows:

Newsletter
 Events Coordinator
 Sleaford Site Coordinator
 Observing Coordinator
 Fundraising Coordinator
 Councillor(s) at Large
 Meeting Room Coordinator
 Photographer and Archivist

A nominating committee was appointed by the outgoing executive in September and an attempt was made by individuals of the said committee to personally contact most members of the Centre to encourage each to consider letting their name stand for election to any of the above mentioned positions. Some members have responded positively and some members have let their name stand for positions they currently hold. To all those whose names have been added to the slate: Thank you very much, your contributions are greatly appreciated. Unfortunately, the list of offices without contenders is woefully long. Although a slate of officers will be proposed by the committee at the general meeting, nominations from the floor will be requested, accepted and greatly appreciated. Please consider or reconsider letting your name stand for one or more of these positions. The success of the Centre is best served by very active membership.

In connection with our Annual Meeting and election of officers, members will be asked to elect the directors of "The Royal Astronomical Society of Canada Saskatoon Centre Incorporated". The current directors are Richard Huziak, Norma Jensen, Tenho Tuomi, Ron Waldron, Les Dickson and James Gorkoff.

I propose that we have 5 directors and in that regard I will be moving the following resolutions for the approval of the members at our annual meeting:

"Be it resolved that the number of directors of the corporation be 5 and that the election of the following directors be approved, they being Richard Huziak, Norma Jensen, Tenho Tuomi, Ron Waldron and Les Dickson."

"Pursuant to subsections 150(1) and (1.4) of the Act, the members of the corporation resolve not to appoint an auditor nor a person to review the financial statements of the corporation."

Let this serve as prior notification of these proposed resolutions. They will be discussed and names can be added or removed from the proposed slate of Directors in accordance with convention and usual rules of order. Additional names would be greatly appreciated. Therefore, along with electing and appointing officers at the November General Meeting, please be prepared to select the directors and discuss and vote on each of the above two motions.

Respectfully Submitted
Jim Gorkoff, Past President and Current Acting President

Chasing the Space Shuttle – *Randy Atwood*

I was very fortunate to be able to follow the Space Shuttle program from the beginning to the end. For 12 launches and one landing, I was able to witness the event in person.

A bonus was that I was able to obtain press accreditation – which means getting access to the press site for the launch. The Press Site at the Kennedy Space Center is next to the large Vehicle Assembly Building – the building where the shuttle components are stacked on the mobile launch platform, and transported the 5 kilometres to the launch pad. During the first two years of the program, the press was treated to tours during the days before launch. NASA was interested in promoting the new program so we were treated royally. We were taken to the other shuttle pad – not yet ready to use, the old Mercury and Gemini launch pads and the long runway where the shuttle would ultimately land.

During the days before launch, things get busy rather quickly. Press conferences are held where all aspects of the upcoming mission are discussed. Three days before the launch the press is taken to the landing strip to meet the astronauts who would land in their sleek T38 jets. The evening before the launch, we would be taken out to the launch site to see the shuttle bathed in the brilliant xenon lights. If you were fortunate you could get your hands out on a walkout pass. 3.5 hours before launch, the crew leaves the Operations and Checkout Building – where their quarters are. They would walk 50 feet into the astrovan – a quick 30 second opportunity to wish them well and take a few pictures.

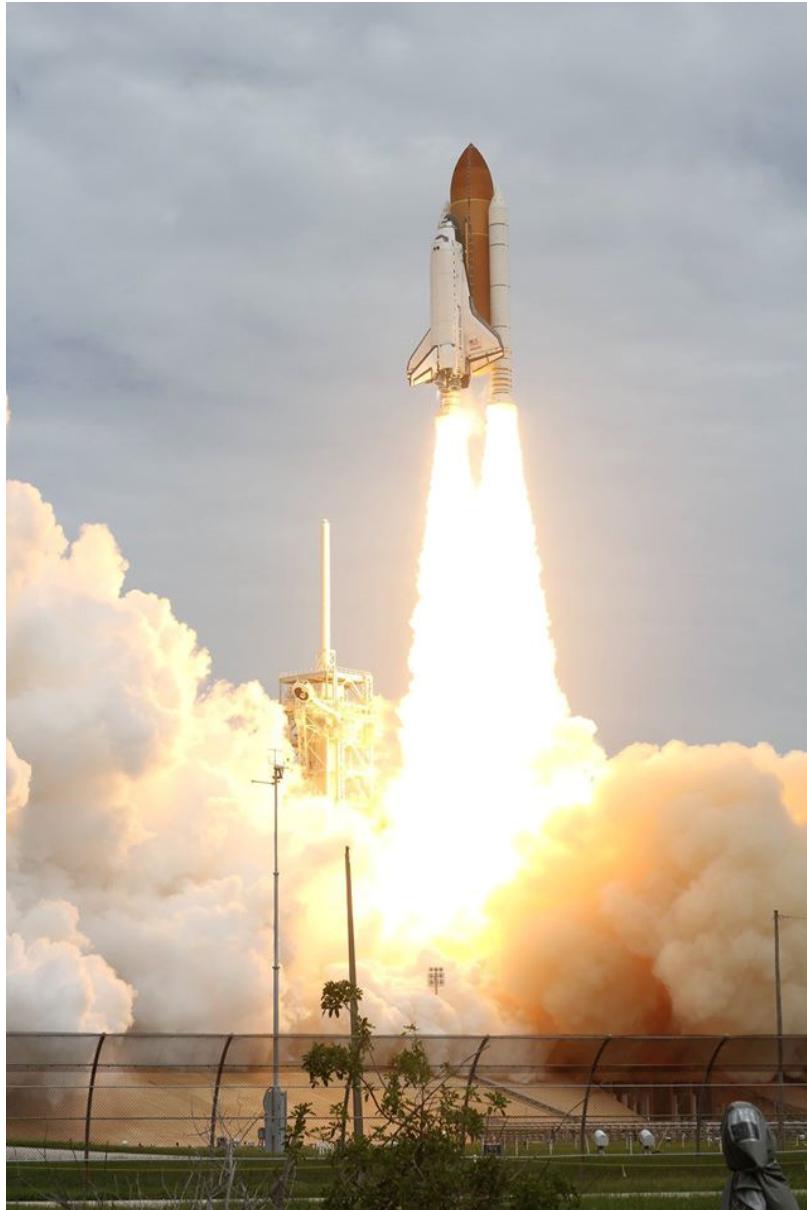
Back at the launch site, the last few hours of the countdown ticked off. If the weather was bad in Florida or at the potential landing sites, the mission would be scrubbed and we would go through the same routine the next day. Fortunately for me I went through just a few scrubs.

Counting down to launch is very exciting. A few seconds before launch, the three liquid engines on the shuttle are ignited. They increase in thrust to 100% and are checked out by the shuttle's computer. If they are running properly, the two solid rockets are ignited, large bolts holding everything to the launch pad are exploded and the shuttle lifts off. All of this is happening in silence – it takes a while for the sound to travel the 5 kilometres. Only after the shuttle clears the tower, do you hear anything. It increases in intensity until the noise is shaking your insides. Meanwhile the flame shooting out of the solid rocket boosters is nothing at all like on tv or in photos – it is like a welder's torch – so bright your brain is telling you to look away – but you don't of course. Within a couple of minutes, it is gone from sight.

To get close up photographs, I started to set up remote cameras, starting with STS 8 in 1983. 24 hours before launch you set up cameras out by the launch pad – the perimeter fence actually, about 500 m away from the shuttle. The camera system must be self-contained. It must decide when to take pictures, triggered by sound or light or on a timer. I had mixed success with the remotes, but as you can see, STS 52 and STS 135 were both successful.

I saw one landing, in White Sands New Mexico in 1982 for the third mission. This is the only time this backup runway was used – the primary runway in California was flooded. Unlike the launch which was loud and bright, the landing was silent. The shuttle Columbia appeared over the mountains as a white dot and gracefully made a steep dive and a pinpoint landing.

I am very lucky to have been able to experience a piece of human space exploration history.



Above: Launch of STS 135 by Randy Atwood July 2011 with a Canon 60D DSLR

The 2015 Sleaford Open House – *Rick Huziak*

Despite an initial call to cancel the Sleaford Open House for this year, changing circumstances made us change our mind, and in the end the event turned out, so we were pleased that we carried on. What got the event back on track was a clean-up of mouse intrusion in the Roll-off Observatory that restored its usability. With this clean-up, Stan would be able to bring students out to help with the event. With Stan's commitment to round up a crowd and lead them out from the Saskatoon Field House, I committed to get the rest of the RASC on-board and get the event organized.

With all that done, and a beautifully warm and clear October 17th, I arrived at Sleaford at 3:45 pm with anticipation of the event! Already, Norma Jansen and Larry Scott were out cutting grass. I set up coffee and drinks and did a bit of quick maintenance and cleaning. I was a little concerned about our participation when our 4:30 potluck was attended by only the three of us, but in spite of the low turnout, we had a delicious meal together.

But my worries were short-lived when a few other members started to arrive, and in the end, we had added Dirk Kirk, Murray and Kathy Strankay, Ron Waldron, Marcel Muller-Goldkuhle, returning member Brent Burlingham and new member Gordon Harold. Stan's students, Ashley Stock and Tyler Bell arrived soon after, and then Stan Shadick showed up with his promised crowd that numbered around 60 people. Others came from around the community.

Although not the largest crowd we've had, they made up for it with their enthusiasm, and many stayed from 7:30 pm until after 10:00 pm, seeing the moon and the wonders of the summer Milky Way through our 10 available telescopes. They also enthusiastically ate up all of our 3-dozen doughnuts and went through two large pots of coffee. We signed up a handful of temporary members, too, since that is one of the main reasons why we want to do these types of events.

Once the crowd disappeared, a few of us took the opportunity to continue observing under the clear October sky and entertained ourselves with variable stars, deep sky objects and flaring geosynchronous satellites, as they tend to do in October.

Thanks to everyone who came out and helped. Thanks also to Tenho Tuomi who alerted all of our members, Jeff Swick and Dale Boan who did our advertising with posters, interviews, tweets and an RASC Facebook page update. I hope I haven't left anyone out, and if so, I'll get you next time!



*Rick Huziak provided these pictures taken at the 2015 Sleaford Open House.
Left: Gord Harold with his scope; Right: The Warm-up Shelter set up for munchies.*

Observers Group Notes – Larry Scott

The Sleaford Open House, on October 17th, was held on a perfect fall day. Clear skies and pleasant temperatures brought three members out early for a pot luck. Some few small moments of concern passed as more and more members appeared before sunset for the open house. A small, enthusiastic crowd arrived after sunset and we were busy for the next two hours touring the night sky with our guests. After the crowd thinned, many members and some guests stayed for viewing. We were treated to some fine outbursts of aurora and deep sky viewing as they subsided. Thanks to all who were able to make it out, especially Rick who brought potato salad and chicken wings.

Sadly, this was the only viewing I got to in October. Hopefully others were more successful. November gives us moonless skies from the 3rd to the 17th with an Observer's Group scheduled for the 7th.

Looking ahead to December the dark sky period runs from the 1st to the 15th with an Observer's Group on the 12th. Keep an eye out for the progress of comet C/2013 US10 (Catalina) as it may (or may not) brighten to naked eye visibility in late November, early December morning skies. This year's Geminids peak on the nights of December 13th and 14th under ideal Moonless conditions. Highly recommended if weather permits and you can make it out on a Sunday or Monday evening.

A Miscellany of Astro-Events - *Les Dickson*

Material below taken from www.seasky.org/astronomy/astronomy-calendar-current.html (© J. D. Knight)

November 17, 18 - Leonids Meteor Shower. The Leonids is an average shower, producing an up to 15 meteors per hour at its peak. This shower is unique in that it has a cyclonic peak about every 33 years where hundreds of meteors per hour can be seen. That last of these occurred in 2001. The Leonids is produced by dust grains left behind by comet Tempel-Tuttle, which was discovered in 1865. The shower runs annually from November 6-30. It peaks this year on the night of the 17th and morning of the 18th. The first quarter moon will set shortly after midnight leaving fairly dark skies for what could be a good show. Best viewing will be from a dark location after midnight. Meteors will radiate from the constellation Leo, but can appear anywhere in the sky.

December 13, 14 - Geminids Meteor Shower. The Geminids is the king of the meteor showers. It is considered by many to be the best shower in the heavens, producing up to 120 multicolored meteors per hour at its peak. It is produced by debris left behind by an asteroid known as 3200 Phaethon, which was discovered in 1982. The shower runs annually from December 7-17. It peaks this year on the night of the 13th and morning of the 14th. The crescent moon will set early in the evening leaving dark skies for what should be an excellent show. Best viewing will be from a dark location after midnight. Meteors will radiate from the constellation Gemini, but can appear anywhere in the sky.

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*

Ron Waldron	108
Wade Selvig	75
Garry Stone	57
Bernice Friesen	45
Wayne	43
Schlakohl	
Barb Wright	40
Ellen Dickson	34
Jeff Swick	24
Graham	9
Hartridge	

Chatfield BINOCULAR

CERTIFICATE

Certified at 35 to 40 Objects:

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

Jim Goodridge	12
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FINEST NGC CLUB

Certified at 110 Objects:

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

Larry Scott	110
Scott Alexander	97
Norma Jensen	83
Sandy Ferguson	23
Kathleen Houston	23
George	13
Charpentier	
Mike Clancy	7

EXPLORE the UNIVERSE

Certified at 55 to 110 Objects:

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

Wayne	55
Schlakohl	
Jim Goodridge	35
Sharon Dice	31

Isabel Williamson Lunar

Observing Certificate

Certified at 140 Objects:

T. Tuomi

Norma Jensen	140
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	400
Chatfield	
Tenho Tuomi	398
Rick Huziak	246

LEVY DEEP-SKY GEMS

Certified at 154 Objects:

Tenho Tuomi	150
Darrell	70
Chatfield	



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.htm>