

Saskatoon Skies

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

Volume 56, Number 07

July/August 2025



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To view *Saskatoon Skies* digitally, see our website:

<https://saskatoon.rasc.ca/newsletters.html>

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MEMBERSHIP? JOIN TODAY!

Regular: \$111.00 /year

Youth: \$61.10 /year

Family: \$105.50 + \$42.90/additional adult + \$22.20/additional youth

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. Members are encouraged to renew early to avoid disruption in publications. Renew through the National Office at <http://www.rasc.ca/join>.

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
- borrow the Centre's projector to give astronomy outreach presentations - contact Les Dickson at astrochem@sasktel.net
- rent the Centre's Telescopes <https://saskatoon.rasc.ca/telescopes.html>
- use of the Centre library
- Journal of the RASC (electronic format)

SASKATOON CENTRE'S MAIN OFFICERS:

President - Brent Burlingham

Vice-President - John Takala

Secretary - Lorie Tedford

Treasurer - Les Dickson

National Council Rep - Joelle Sheard-Patrick

Canadian Tire money - Darrell Chatfield

If you cannot attend a meeting but would like to donate your old Canadian Tire money please to assist with club purchases, email Darrell at novachat@sasktel.net.

NEWSLETTER & U OF S OBSERVATORY INFO

Newsletter Editor - Colin Chatfield

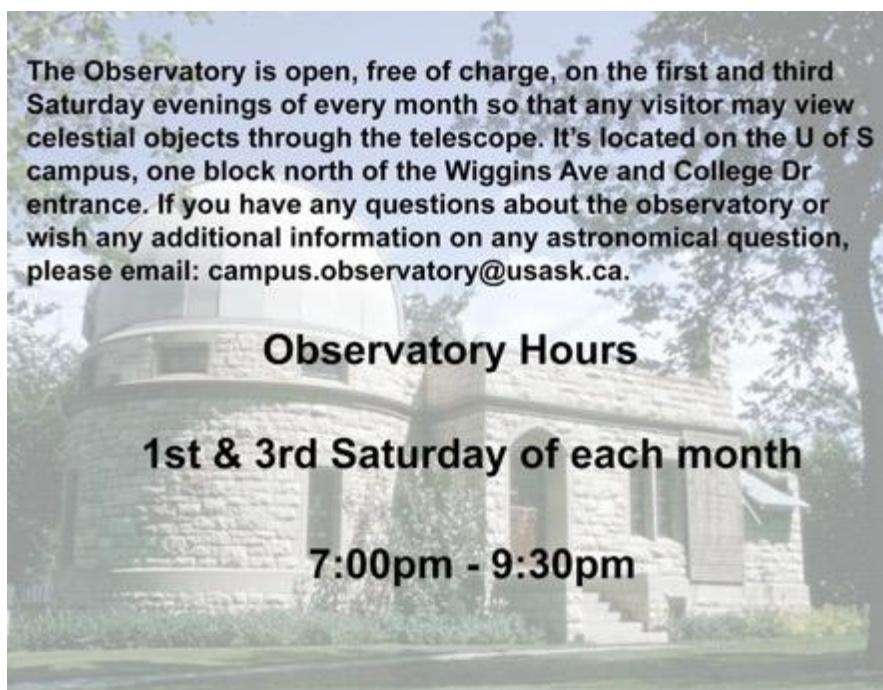
Copy & Collate - Les & Ellen Dickson

Labels & Temps - Mark de Jong

Web Posting/Content Editor - Tenho Tuomi/Andrew Kostiuk/Brent Burlingham

Saskatoon Skies is published monthly by the Saskatoon Centre of the RASC. Distribution is approximately 80 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 at colcha@gmail.com in MS Word or text format. Images (new or old): any format, less than 30MB, sent by e-mail as attached files. Send any articles of interest to the night sky or astronomy. **Deadline for submission of all articles for an upcoming issue is the first Friday of each month!**

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. Please email the editor at colcha@gmail.com for rates. Members can advertise non-commercial items for free.



Hours subject to change, so check below for more info -

Website - <https://artsandscience.usask.ca/physics/facilities/observatory.php>

Facebook - <https://www.facebook.com/usaskobservatory/>

RASC CALENDAR OF EVENTS & MEETING INFO

Aug 20-24	26 th Annual Saskatchewan Summer Star Party	Cypress Hills
Sept 15	RASC Saskatoon Centre General Meeting	Brent Burlingham
Sept 20	Observer's Group - Sleaford Observatory	Nick Larsen

Observer's group viewing starts at dusk at the Sleaford Observatory dark site. Get there early and set up for a great night of observing! Members and their guests only.

For a complete list of club events, please visit: <https://saskatoon.rasc.ca/activities.html>

September RASC General Meeting for all members and guests

Join us on September 15th, 2025, at 8:00PM (Executive meeting at 7:00pm)
Webinar (info below)

***Please note:** the meeting will be at the U of S Observatory at 108 Wiggins Ave (on the U of S Campus)*

7:00pm - **RASC Executive Meeting** (Members may attend the executive meeting as observers if they wish)

A Zoom registration link and phone-in numbers will be emailed to Members. After that, the procedure to register and join the meeting is the same as for the webinar (explained below).

NOTE: links to register to attend the webinar will be emailed out as well so we know who is planning to attend. After registering, an email invitation will be sent with a link to join via computer or a number to phone in. When joining via computer, participants will have to first download and install the Zoom app, if they have not done so already.

8:15pm - **Main Program -**
"What's Up This Month?" - Colin Chatfield

BOOKS AND EQUIPMENT FOR SALE

All books are in either new, or like new condition. Retail price in brackets. Please email at novachat@sasktel.net or text/call 306-222-0515 if you want a particular book or to make arrangements. All books being sold by Darrell Chatfield.

"Deep-Sky Observers Handbook"	Volume 1-5	Enslow-Lutterworth	\$40.00
"International Encyclopedia of Astronomy"	1987	Patrick Moore	Color \$10.00
"Backyard Astronomers Guide"	T. Dickinson & Alan Dyer	2008	Color \$25.00
"Atlas of Deep Sky Splendors"	1978	H. Verhenberg	B & W \$22.00
"Amateur Astronomers Catalog of 500 Deep Sky Objects"	Vol 1	1980	B & W
R. Morales			\$15.00
"Observing the Constellations"	1989	J. Sanford	Color charts \$10.00

Please email me if you want to see any items - novachat@sasktel.net. Darrell Chatfield

- 2 - 1.25" rack and pinion focusers for refractor type telescopes. Brand new. Never used. Inset diameter is 57mm. Heavy duty type with metal knurled knobs. All have boxes. \$20.00 each.

- Original Celestron orange tube C5" scope with tangent arm. Fork arms. SCOPE ONLY. No tripod or wedge. 5 x 30 finder, 1.25" visual back, diagonal, eyepiece, lens cap, metal case. Was used as a spotter scope. Not a mark on the tube. Clean looking. \$250.00

1	1.25" eyepiece extender - 3" long	\$20.00
1	1.25" Celestron off axis guider c/w 12.5mm ep. Can be illuminated.	New. \$45.00
1	Celestron 1.25" reticle. Can be illuminated	\$20.00
1	3.5" long 1.25" tele-extender	\$20.00
3	1.25" visual backs new	\$10.00 each
1	1.25" to 0.965" visual back	\$10.00
1	Camera to visual back adapter	Lightly used \$10.00
1	Threaded visual back to 16mm male threads camera adapter	\$10.00

- Original orange tube Celestron finder. 10 x 40mm. 304mm (12") long. Comes with bracket meant for a C8" telescope but would fit other scopes. Not a mark on these items. \$65.00

- 6" primary mirror in a 3-point adjustable mirror cell. Some mirror spots. Nice condition. \$85.00 (came from the following tube).

- 7" diameter x 48" long aluminum Newtonian style tube. Ivory exterior with blackened interior. Also has a focuser. Finder bracket supplied as is. There may be some packing tape on the outside that needs to be removed. \$75.00

Garry Stone's telescopes for sale:

Celestron C8 with f/6.3 reducer --- \$550.00

Meade 8" LX10 --- \$500.00

Meade 90mm x 800mm F/8.8 refractor --- \$50.00

Open for offers

Contact Cathy Stone stone611@icloud.com

Celestron

SkyMaster Pro Binoculars 15x70

Orion

Paragon-Plus Binocular Mount with Tripod with a carrying case.

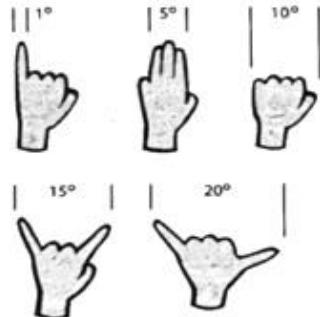
Both items have never been used and valued at \$850.00. I will take the best serious offer. Text Ron 306-381-6256 for more information.

AUGUST NIGHT SKY EVENTS AND INFO

Images on the next few pages used, with permission, from the 2024/25 Observer's Handbook. It can be obtained by joining the RASC here <http://rasc.ca/join> or ordered from <https://secure.rasc.ca/store>.

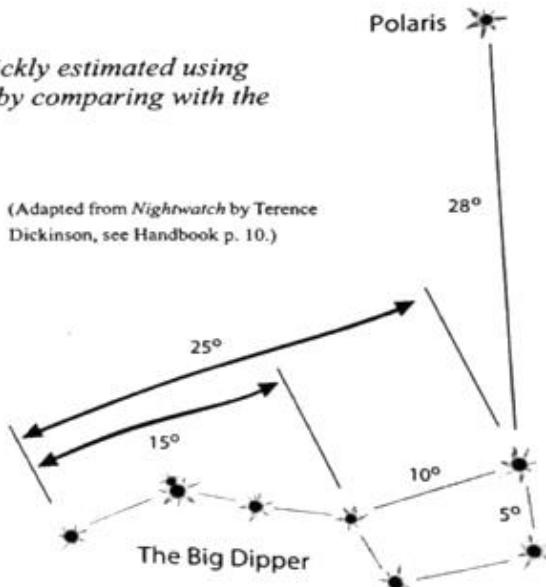


HANDY SKY MEASURES



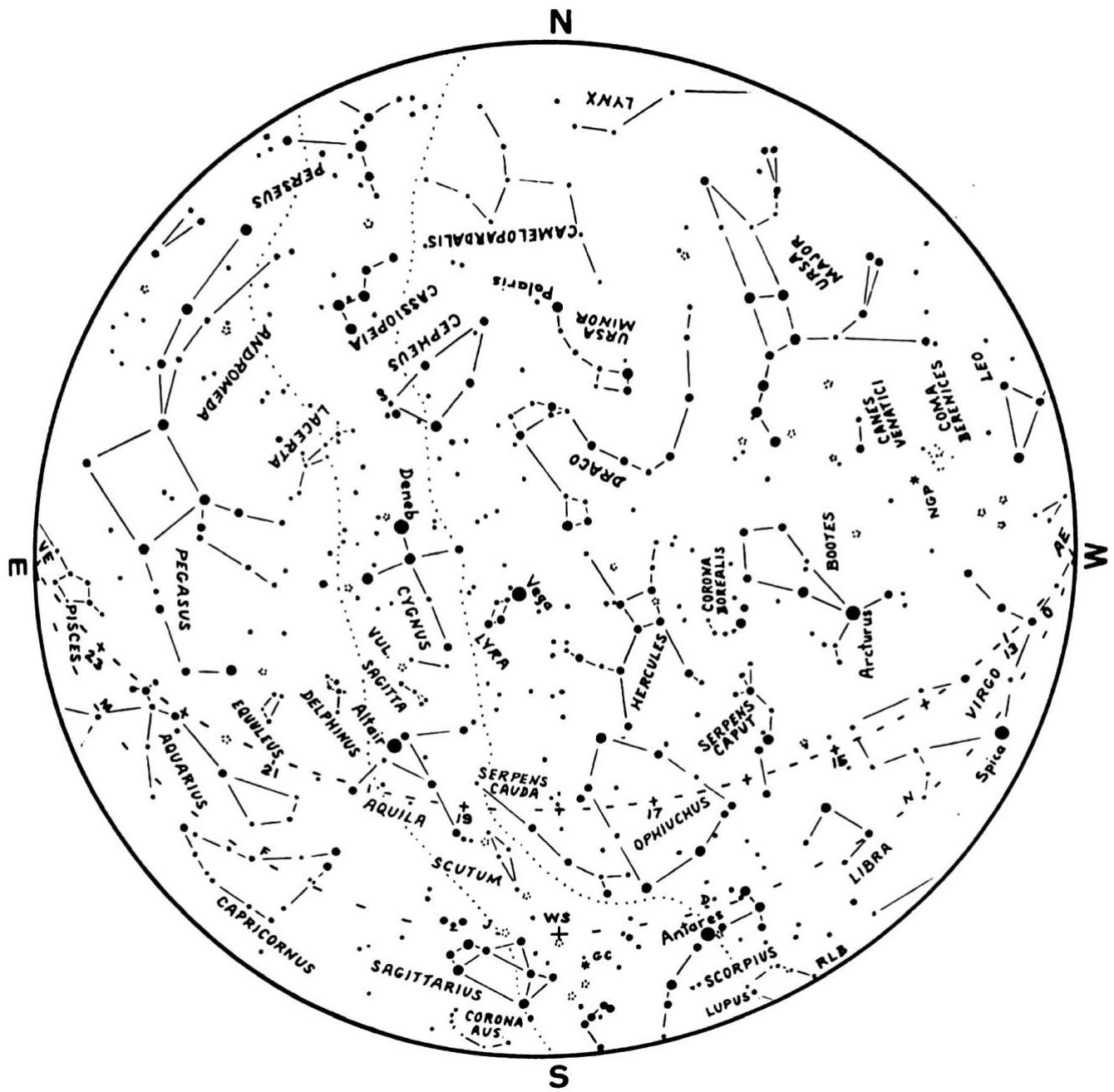
Angular measure in the sky can be quickly estimated using the fingers of an outstretched arm, or by comparing with the star separations in the Big Dipper.

(Adapted from *Nightwatch* by Terence Dickinson, see Handbook p. 10.)



Time (UT) d h m			AUGUST EVENTS	Jupiter's Satellites West East
Fri. 1	0		Mercury in inferior conjunction first quarter	
	12 41		Moon at apogee (404 161 km)	
Sat. 2	6		Venus 2° S of M35	
	12 17		Algol at minimum	
Sun. 3				
Mon. 4		2	Mercury at greatest heliocentric lat. S Antares 0.6° N of Moon, occultation¹	
Tue. 5	9 06		Algol at minimum	
Wed. 6	10		Saturn 1.1° S of Neptune	
Thu. 7	21		Pallas at opposition	
Fri. 8	5		Pluto 0.01° S of Moon, occultation ²	
	5 55		Algol at minimum	
Sat. 9	7 55		full Moon	
Sun. 10	18		Mercury stationary	
Mon. 11	2 44		Algol at minimum	
	14 53		Moon at ascending node	
Tue. 12	8		Venus 0.9° S of Jupiter	
	15		Saturn 4° S of Moon	
	16		Neptune 3° S of Moon	
	20		Perseid meteors peak	
Wed. 13	23 33		Algol at minimum	
Thu. 14	18		Moon at perigee (369 288 km)	
Fri. 15				
Sat. 16	1		Ceres stationary	
	5 12		last quarter	
	17		Moon 0.9° N of Pleiades (M45)	
	20 22		Algol at minimum	
Sun. 17				
Mon. 18				
Tue. 19	10		Mercury greatest elongation W (19°)	
	12		Mercury 2° S of Beehive (M44)	
	17 11		Algol at minimum	
	21		Jupiter 5° S of Moon	
Wed. 20	11		Venus 5° S of Moon	
Thu. 21	12		Moon 2.0° N of Beehive (M44)	
	16		Mercury 4° S of Moon	
Fri. 22		14 00	Mercury at ascending node	
	14 06		Algol at minimum	
Sat. 23	6 06		new Moon (lunation 1270)	
Sun. 24	15 41		Moon at descending node	
Mon. 25	10 49		Algol at minimum	
Tue. 26	17		Mars 3° N of Moon	
Wed. 27	15		Spica 1.2° N of Moon, occultation³	
Thu. 28		7 38	Mercury at perihelion	
	16		Algol at minimum	
Fri. 29			Venus at ascending node	
	16		Moon at apogee (404 548 km)	
Sat. 30				
Sun. 31	4 26		Algol at minimum	
	6 25		first quarter	
	11		Antares 0.7° N of Moon, occultation⁴	

¹S Polynesia, New Zealand, S tip of S. America, parts of Antarctica. ²E Polynesia.



REIMBURSEMENT FOR CENTRE EXPENSES

The Centre has a reimbursement procedure on submission of expense claims. A writeable pdf claim form can be found on the Centre webpage under the Executive tab. The expense form **must** be submitted *along with original receipts* to the Treasurer within 30 days of the transaction. All expenditures must be preapproved by the Executive or be within allocated budgets.

Please contact the Treasurer with any inquiries.

SLEAFORD REPORT

Darrell Chatfield

Here is a report of what Colin and I got done on June 30th, at our site.

- Installed the sharpened mower blades on the riding mower after cleaning the deck. Got it going for a bit. Filled the tires as needed. Swept out shed.
- Installed 2 mower blades on 2 push mowers and cut next to the shed
- Replaced the temporary extension roof screws with proper ones
- Sprayed the entire U. Of S. compound with roundup. Will need doing again in 2 weeks
- Painted the main breaker in the warm up shed WHITE
- I noticed that the man door to the U. Of S. roll-off was not locked, so I was able to lock it up. It needed a bit of persuasion.



A few notes:

- Our main warm up shed door is dragging a lot on the threshold, which I will attend to asap. You can use the 2nd door if you find the main one too hard to open and close.
- The RM has not cut the grass as of yesterday. I will assume it will be done this week.
- They will not cover the cost of damages they caused to our shed ramp. I did not press them on this issue because I do not want to jeopardize our relationship with them. We still need them out there, especially for snow removal.
- They now require a contract for 5 years if we want them to continue with custom work. Daryl, I will be contacting you about this last point.



And yes, there are still lots of ticks out there!

Well Lorie and I went out for another round of Sleaford maintenance on July 5th from 11-3pm. This is what we got done this time:

- Cut grass next to all buildings, piers, U. Of S. fence.
- Trimmed grass around all the above
- Caulked roof joiner ends on N. warm-up roof
- Trimmed weeds under U. of S. roll -off roof area

- Resprayed all the U. Of S. compound with Round-up
- Put out orange flagging around old dome area

The grass has been cut by the RM of Colonsay, so it looks a lot better out there.

Lorie put out flagging I had on hand to mark out the pilings of the old dome area, so the RM worker can see where NOT to cut grass in the future. (I had previously warned the RM about this area last Monday)

Thanks to Lorie for all her help in keeping our site usable.

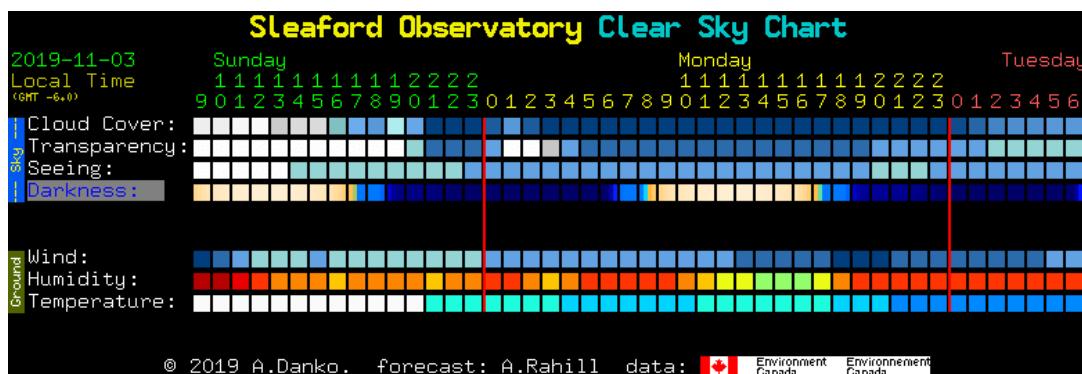


CLEAR SKY AND WEATHER INFO

To find clear skies, visit the Clear Dark Sky website -

<https://www.cleardarksky.com/csk/>

Once there, one can enter your location to find clear skies. The chart will appear as follows:



Environment Canada provides weather information for astronomy -

www.weather.gc.ca/astro



Saskatchewan Light Pollution Abatement Committee -

<http://myotherlife.net/slpac/>



www.darksky.org

SSSP 2025 - FINAL UPDATE

Les Dickson

This is the last update on the Saskatchewan Summer Star Party. The organizing committee has been hard at work to bring the amateur astronomy community of western Canada yet another great weekend under the stars! Activities at the Cypress Hills Interprovincial Park and Dark-Sky Preserve start Wednesday August 20 and run to Sunday August 24.

Our confirmed guests and presenters include:

- Dr. Chris Herd, Professor in the Faculty of Science – Earth & Atmospheric Science Administration, University of Alberta
- The RADSAT-SK2 Project Team, College of Engineering, University of Saskatchewan
- Kimberly Sibbald, Alberta
- Nick Larsen, Saskatoon Centre
- Ron Waldron, Saskatoon Centre
- Jack Milliken, Calgary Centre
- Jennifer Petriew, Regina Centre
- Joelle Sheard-Patrick, Saskatoon Centre
- Jeff Swick, Saskatoon Centre

I am pleased to announce that there will be a ceremony at the entrance to the Meadows Campground on Friday afternoon to unveil the new Comet Petriew Cairn. Thank you to all who have donated to make this possible.

This yearly event would not take place without the efforts and dedication of the volunteers on the organizing committee and those working on-site. These include Rick Huziak, Ellen Dickson, Greg Fusick, Brent Harrold, Joelle Sheard-Patrick, George Charpentier, Pierre Schierle, Vance Petriew, Jennifer Petriew, Andrew Kostiuk, and me. Special thanks to Barb Wright of Calgary, formerly President of the Saskatoon Centre, for stepping up to run our BBQ this year. We are always a bit short on on-site volunteers so I encourage our Centre's members, who benefit from the funds raised by this event due to the hard work of a small number of dedicated people, to volunteer to help make this year's star party another success. We hope to see you there!

For more information, see the website at <https://sssp.saskatoon.rasc.ca>. Contact us at sssp.sk@sasktel.net or call Rick Huziak for camping and registration information at 306-280-1899 (cell) or Les Dickson at 306-270-9184 (cell).

MINUTES OF JUNE MEETINGS

Lorie Tedford

Minutes of the Monthly Executive Meeting of the RASC Saskatoon Centre Monday, June 16, 2025 - 7:00 pm Hybrid: Online & In-person: U of S Observatory

Attending: Brent Burlingham, Lorie Tedford, Les Dickson, Joelle Sheard-Patrick, Darrell Chatfield, John Takala, Yannis Pahatourogloou, Nick Larsen, Colin Chatfield, James Wood

- 1. Call to order** 7:00 pm – Brent Burlingham (President and Chair)
- 2. Approval of the Executive meeting minutes for May 2025** as printed in the June newsletter. Moved by Les Dickson, seconded by Nick Larsen; carried.

3. Call for additional announcements/items to add to the agenda

4. Announcements from the Chair – None to present.

5. Old Business - Reports from the Executive Council

5.1 President's Report – Brent Burlingham.

- Thanks to everyone Nick Larsen for hosting the Introduction to Astrophotography workshop on May 24th as well as the Observing/Imaging Group at Sleaford on the same night.
- Thanks to Joelle for representing the club with me at the Saskatoon Open Doors event at the U. of S. Observatory on June 1st. There was approximately 100 visitors.

5.2 Acting Treasurer – Les Dickson.

- Financial report as of June 16th: The Centre Maximizer account balance is \$29,764.13. The Term deposit is \$2,379.67. The SSSP account balance is \$18,774.99.
- The reporting to SK is not yet done due to problems with accounting for years previous to 2023.

5.3 National Council Rep – Joelle Sheard-Patrick.

- The website is still being worked on
- Stellarium courses will soon be available on YouTube
- July 16th at 2 pm is the townhall meeting on Zoom
- There will be upcoming campaigns this summer focusing on membership

5.4 Activities Coordinator – Joelle Sheard-Patrick.

- The On the Moon event was missed on June 6th

5.5 Sleaford Update – Darrell Chatfield

- The weeds in the fenced area for the roll off telescope have been taken care of.
- The roof on the warm up shelter had to be fixed, coming apart with the wind.

5.6 Beginner's Astrophotography Workshop – Nick Larsen

- Hosted first workshop, it was a successful with good participation.

5.7 Telescope sales and plans for replacement loaners – Nick Larsen

- Few people are interested in the remaining scopes, Nick is in communication with those interested.

5.8 SSSP Update – Les Dickson

- On track, the upcoming deadlines and more information will be released in the newsletters.

5.9 Report on donations for the Vance Petriew Comet Discovery Cairn

Refurbishment at Cypress Hills – Les Dickson

- Motion made by Les: Motion that the Saskatoon center donate funds to restore and upgrade the Vance Petriew Comet Discovery Cairn located at the Meadows in Cypress Hills. The Saskatoon Executive Council to approve donating \$1250 with Regina centre to also donate \$1250 to match.
- Amendment to the motion that the amount donated by the Saskatoon Centre be increased to \$1500. The motion was seconded by Joelle Sheard-Patrick, carried.

6. Old Business – none to present

7. New Business

7.1 U. of S. Observatory House Keeping

- Discussion regarding the U. of S. Observatory could use minor house cleaning (cobwebs etc.) As part of our obligations in return for the use of the facility, it was suggested to schedule time to some cosmetic clean up.
- Yannis will contact the U. of S. regarding the observatory as it may interfere with the University staff employment contracts.

7.2 Astronomy Club at U. of S.

- Obsebi Daudu who is a grad student at the U. of S. has expressed interest in starting an Astronomy Club at the University.
- As outreach to younger members is one of our main goals, discussed fundraising opportunities to subsidize student memberships to the club as they cost \$71 through National. Individuals could sponsor students if they wish, or a fundraising campaign focused on raising funds for student memberships.

8. Motion to adjourn by Nick Larsen; carried. 7:46 PM.

**Minutes of the Monthly General Meeting of the RASC Saskatoon Center
Monday, June 16, 2025 - 7:00 pm Hybrid: Online & In-person: U of S Observatory**

Minutes taken and prepared by Lorie Tedford

- 1. Sharing/Networking Time** - 8:00-8:15 pm – all members
- 2. Call to Order** – 8:16pm – Brent Burlingham (President and Chair)
- 3. Call for additional announcements/items to add to the agenda**
- 4. Call out to new members/guests:** None
- 5. Adoption of the May General meeting minutes** as printed in the June newsletter.
Moved by Jeff Swick, seconded by Lisa Caldwell carried.
- 6. Executive Meeting Summary** – Brent Burlingham
 - Nick Larsen hosted the Introduction to Astrophotography Workshop at the U. of S.
 - Joelle and Brent represented the club at the Saskatoon Open Doors event at the U. of S.
 - The weeds inside the fenced area at Sleaford have been dealt with. The roof of the warm up shelter has been fixed after some damage from the wind.
 - Les gave a financial report of our current balances.
 - The centre is donating \$1500 towards the refurbishment of the Vance Petriew Comet Discovery Cairn located at Cypress Hills.
 - There is some interest in the remaining telescopes that were posted for sale, Nick Larsen is communicating with those interested.
 - Discussed options about fundraising or sponsoring student memberships to engage students in joining the RASC.
- 7. Program**
 - 7.1.**“The Upcoming Sky” presented by Colin Chatfield
 - 7.2.**“Saskatchewan Summer Star Party” presented by Les Dickson
 - 7.3.**“Meteorites... a Down to Earth Subject” presented by Darrell Chatfield
- 8. Call to adjourn** – Moved by Les Dickson, seconded by John Takala; carried.

RASC SASKATOON CENTRE ELECTIONS

Brent Burlingham

NOTICE - AGM & ELECTION OF OFFICERS

Official Notice to the Members of the Saskatoon Centre of the Royal Astronomical Society of Canada (RASC).

Annual General Meeting and Election of Officers - To be held on October 20, 2025 starting at 8:15 pm at the U. of S. Observatory (108 Wiggins Ave., University of Saskatchewan Campus) and by Zoom video teleconference.

Anyone in good standing with the Saskatoon Centre can be nominated for and run for a position as an Officer on the Executive Council. For more information, contact President Brent Burlingham or the Nominating Committee (that will be formed at the September General Meeting). More information on open positions and job descriptions will be published in the September and October newsletters.

Please note that the positions of President, Vice-President, Secretary, and Treasurer will need to be filled in the Centre elections coming up this October.

OBSERVING CERTIFICATES AND CLUBS

RASC OBSERVING PROGRAMS AND CERTIFICATES

The RASC offers four observing certificates for members who observe all objects in each of the following observing lists in this chapter:

- THE MESSIER CATALOGUE (p. 312)
- THE FINEST NGC OBJECTS (p. 316),
- THE DEEP-SKY CHALLENGE OBJECTS (p. 320),
- DEEP-SKY GEMS (p. 322).

See rasc.ca/certificate-programs for details and contact the RASC Observing Committee Chair at rasc.ca/contact/observing for further information.



The RASC also offers the **Explore the Universe Certificate** for novice observers (who do not have to be RASC members), the **Explore the Moon Certificate** for beginning members, and the **Isabel Williamson Lunar Observing Certificate** and the **Double Stars Observing Certificate** for intermediate to advanced members. In addition, **Astroimaging certificates** are available for those members with a photographic bent. See rasc.ca/astro-imaging-certificate

RASC OBSERVER'S HANDBOOK 2023 – STANDARD EDITION

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. Chatfield, T. Tuomi, L.
Scott, G. Charpentier, B.
Johnson, L. Dickson,
B. Burlingham, Norma Jensen,
Donna-Lee May*

Ron Waldron	108
Brent Gratias	104
Marcel Müller-Goldkuhle	94
Wade Selvig	75
Wayne Schlapkohl	43
Ellen Dickson	34
Graham Hartridge	9

CHATFIELD BINOCULAR CERTIFICATE

Certified at 35 to 40 Objects:

T. Tuomi, R. Huziak

Jim Goodridge	12
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FINEST NGC CLUB

Certified at 110 Objects:

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

Larry Scott	110
Scott Alexander	97
Norma Jensen	83
Sandy Ferguson	23
George Charpentier	13
Brent Burlingham	97

EXPLORE THE UNIVERSE

Certified at 55 to 110

Objects: *T. Tuomi, B. Gratias*

Wayne Schlapkohl	55
Jim Goodridge	35

ISABEL WILLIAMSON

LUNAR OBSERVING CERTIFICATE

Certified at 140 Objects:

T. Tuomi, N. Jensen

EXPLORE THE MOON CERTIFICATE

T. Yaworski

Brent Gratias	37
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HERSCHEL 400 CLUB

Certified at 400 Objects:

*R. Huziak, D. Chatfield,
T. Tuomi*

Gordon Sarty	251
Scott Alexander	117
Larry Scott	45
Sandy Ferguson	18

HERSCHEL 400-II CLUB

Darrell Chatfield	400
Tenho Tuomi	378
Rick Huziak	246

LEVY DEEP-SKY GEMS

Certified at 154 Objects:

Tenho Tuomi	150
Darrell Chatfield	70

Messier, Finest NGC, and David Levy's Deep-Sky lists in the *Observer's Handbook*.

The Explore the Universe list is available here <http://www.rasc.ca/explore-universe>
Messier and Finest NGC lists, charts and logbooks: <https://www.rasc.ca/certificate-programs>

Herschel 400 List: <http://www.astroloegue.org/al/obsclubs/herschel/hers400.html>

Chatfield Binocular List is at: https://saskatoon.rasc.ca/Chatfield_Binocular_List.pdf

"Isabel Williamson Lunar Observing Program Guide" program details can be found at:

<https://www.rasc.ca/isabel-williamson-lunar-observing-program>