

Saskatoon Skies

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

Volume 55, Number 03

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Royal Astronomical Society of Canada
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To view *Saskatoon Skies* digitally, see our website:
<https://saskatoon.rasc.ca/newsletters.html>

In This Issue:	
Membership Information / Officers of the Centre	2
Newsletter Info / U of S Observatory Info	3
Calendar of Events & Meeting Info	4
Comet Notes & Aurora Tracking	5
Books and Equipment For Sale	6-7
March Night Sky Events & Info	8-10
Reimbursement for Centre Expenses	10
Clear Sky Chart / Weather Info / Light Abatement Info	11
Minutes of February Meetings	13-15
Observing Certificates & Clubs	16-17

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
- Journal of the RASC (electronic format)
- 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
- SkyNews Magazine (bimonthly)

SASKATOON CENTRE'S MAIN OFFICERS:

President – Brent Burlingham

Vice-President – John Takala

Secretary – Lorie Tedford

Treasurer – *vacant* (Les Dickson interim)

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 INFO

Newsletter Editor – Colin Chatfield

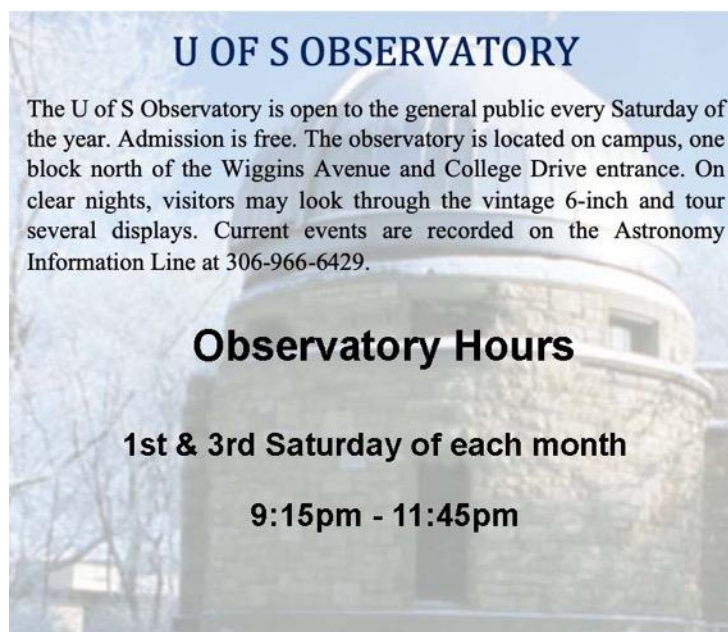
Copy & Collate – Les & Ellen Dickson

Labels & Temps – Mark de Jong

Web Posting/Content Editor – Tenho Tuomi/Andrew Kostiuk

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 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.



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 306-966-6429.

Observatory Hours

1st & 3rd Saturday of each month

9:15pm - 11:45pm

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

Mar 9	Observer's Group	Brent Burlingham
Mar 18	RASC Saskatoon Centre General Meeting	Brent Burlingham

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>

March RASC General Meeting

for all members and guests

Join us on March 18th, 2024 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

"Solar, lunar and deep sky imaging using the revolutionary ZWO SeeStar S50 telescope" - Tim Yaworski

COMET NOTES & AURORA TRACKING

Tenho Tuomi

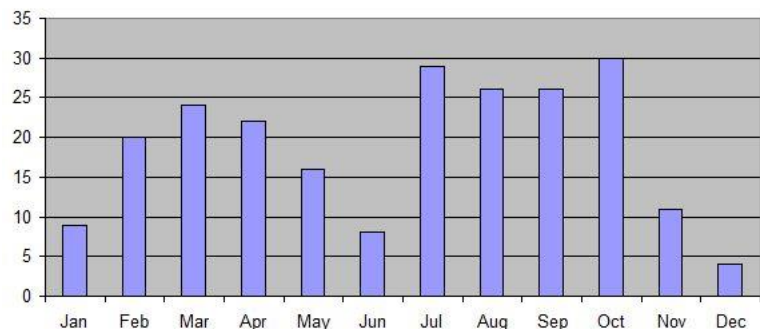
On February 11, I took a picture of Comet 62P/Tsuchinshan, with galaxies NGC 4608 and NGC 4596 in the Virgo cluster. It is the distances in one picture that are interesting. The comet is .5 au away, or 4 light minutes. The brightest star, Rho Vir, is 118 light years distance. The two galaxies are 55 million light years distance. The light from all three sources arrived at the same time for this picture even though they started at vastly different times.



Photo by Tenho Tuomi

Since 2003 I have taken 442 pictures of auroras on 225 separated nights with my digital cameras, plus previously with film cameras. I made a graph of the number of nights that I have taken aurora pictures in each month over the 21 years.

I did this to see if my pictures could show that auroras favor equinoxes as many claim. I think it does. The pictures probably have a lot of biases such as warmer nights to be out photographing in the fall than the spring. I can't explain the large number of nights with aurora pictures in July.



A better graph for that claim was shown recently in SpaceWeather.com, <https://spaceweather.com/archive.php?view=1&day=01&month=03&year=2024>

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 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	(50.00) B & W \$22.00
“Amateur Astronomers Catalog of 500 Deep Sky Objects”	Vol 1	1980	B & W \$15.00
“Observing the Constellations”	1989	J. Sanford	Color charts \$10.00

***NOTE: “I will be advertising the astronomy equipment and accessories from the Melby Estate in the next few newsletters. I will also bring a selection of eyepieces, etc. to the next few meetings for your perusal. Some items were never used. All monies go to the Estate. Thank you.”* Darrell Chatfield**

FOR SALE FROM THE MELBY ESTATE - A PARTIAL LISTING

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

- **Marksman 7 x 50 binos.** Great condition. Hard shell case \$25.00
- **Celestron Skymaster 15 x 70 binos.** Like new. Soft sided case \$65.00
- **Essential Optics 11 x 80 binos.** Like new. Hard shell case. \$85.00
- **Bushnell Astralis 20 x 80 binos.** New. Never used. Built in tripod mount. Hard shell case with soft sided Velcro case for binos. \$145.00

- **Celestron Sky Scout Planetarium.** Brand new. Never used. Uses 2-AA batteries. Padded case, earphones, wrist strap, USB cable, instructions. Will locate/identify over 6000 objects. With original box. \$85.00

- **Star theatre by Uncle Milton.** Brand new. Never used. Educational and learning item. Projects a 360 degree image. Uses 2-AA batteries. Original box. \$20.00

- **3 - 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

- **Original Celestron orange tube Nexstar C6SE scope**. Starbrite coatings. We have not found the arm/base as of yet. Comes with tripod, Starpointer red dot finder, eyepiece, metal case, manual. New condition. Price TBD

- **Original orange tube C14" scope**. Comes with fork arms, base, wedge, lens cap, 2" visual back, huge 2" diagonal, 5 x 70 finder, swing through locking tripod; 40, 25, 12, and 6mm Kellner eyepieces, 2" – 32mm. Konig eyepiece, 2x barlow, tele extender, hand toggle controller box for slow motion controls, counterweights and 2 rails, power cord, fitted carrying case. All in like new condition. Great looking scope. Hardly used! \$3000.00

- **3" Tasco refractor**. Fl is 1200mm. 6 x 30 finder. Slow motion controls. Counterweight. Sits on an equatorial mount base with an adjustable wooden tripod. The tripod is missing the spreader however. Comes with 0.965 eyepieces, barlow, extender. A more detailed list will be provided if interested. \$300.00

2	T mount adapters for Miranda cameras	\$5.00 each
3	1.25" diagonals 2 new in boxes	\$15.00 each
1	2" – 32mm Erfle eyepiece new in box	\$85.00
1	2" – 60mm Kelner eyepiece new in box	\$85.00
1	1.25" Celestron volcano top eyepiece in box	\$15.00
1	1.25" Celestron volcano top eyepiece in box	\$15.00
1	1.25" eyepiece extender - 3" long	\$20.00
1	5x24mm Celestron orange tube finder new in box	\$20.00
3	1.25" rack and pinion refractor focusers new in boxes	\$25.00 each
1	1.25" Celestron off axis guider c/w 12.5mm ep. Can be illuminated. New.	\$45.00
1	Celestron 4x 1.25" eyepiece turret new in box	\$65.00
1	Porro prism – 1.25" new	\$25.00
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



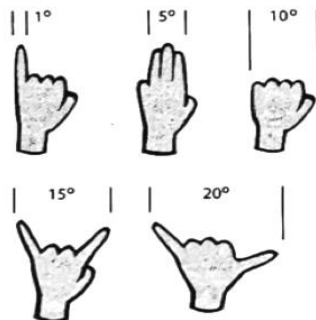
This view of the Rosette Nebula was captured by Tim Yaworski from his driveway in the city. It is a stack of 210 three minute exposures using both a narrowband filter for some frames and a light pollution filter for the others.

MARCH NIGHT SKY EVENTS AND INFO

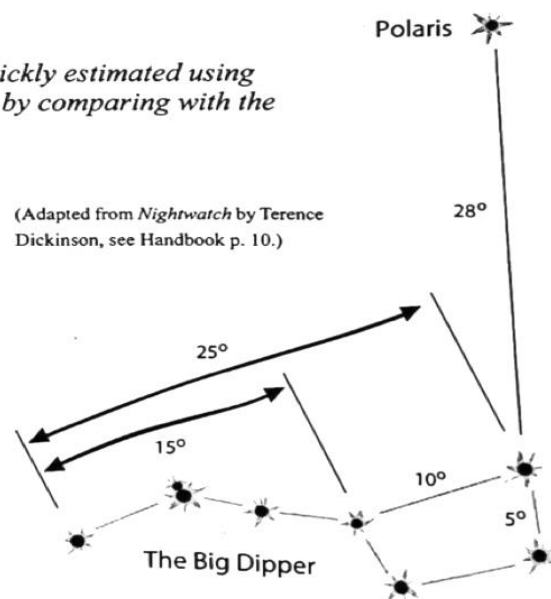
Images on the next few pages taken, with permission, from the 2024 Observer's Handbook. It can be obtained by joining the RASC here <http://rasc.ca/join> or ordered from <https://secure.rasc.ca/store/product/observer-s-handbook-2024>

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.



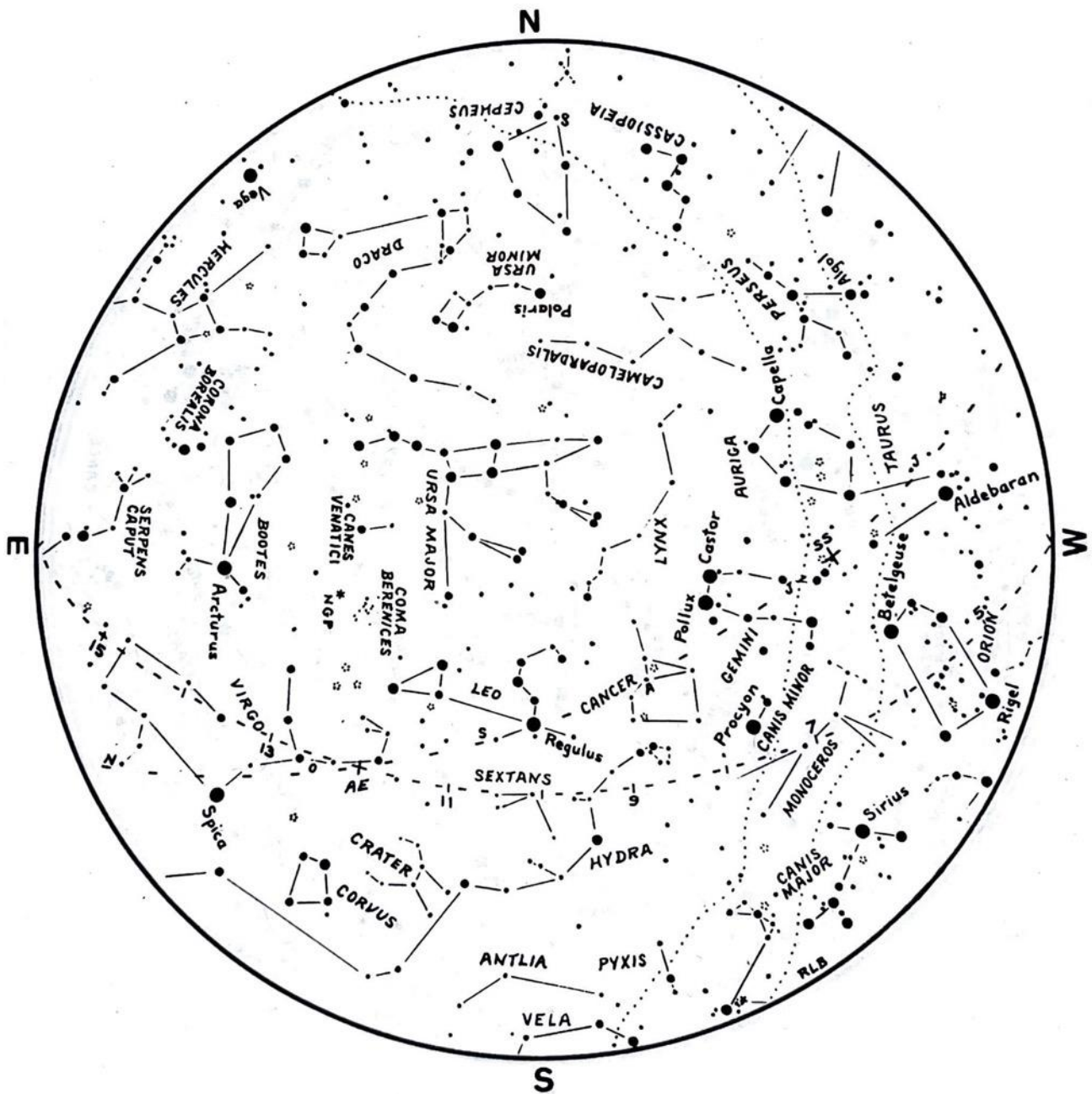
(Adapted from *Nightwatch* by Terence Dickinson, see Handbook p. 10.)



RASC OBSERVER'S HANDBOOK 2024 – STANDARD EDITION

Time (UT)			MARCH EVENTS		Jupiter's Satellites	
d	h	m			West	East
Fri.	1	12 28	Algol at minimum		1.0	
Sat.	2				2.0	
Sun.	3	9	Antares 0.3° S of Moon, occultation†		3.0	
		15 23	last quarter		4.0	Io
		18	Juno at opposition		5.0	
Mon.	4	9 17	Algol at minimum		6.0	
Tue.	5				7.0	
Wed.	6				8.0	
Thu.	7	6 06	Algol at minimum		9.0	
Fri.	8	5	Mars 4° N of Moon		10.0	
		17	Venus 3° N of Moon		11.0	
Sat.	9				12.0	
Sun.	10		DAYLIGHT SAVING TIME BEGINS		13.0	
		2 56	Algol at minimum		14.0	
		7	Moon at perigee (356894 km) Large tides		15.0	
		9 00	new Moon (lunation 1252)		16.0	
Mon.	11	14 41	Double Shadows on Jupiter		17.0	
Tue.	12	1 18	Moon at ascending node		18.0	
		23 45	Algol at minimum		19.0	
Wed.	13		Mercury at ascending node		20.0	
Thu.	14	1	Jupiter 4° S of Moon		21.0	
		12	Uranus 3° S of Moon		22.0	
Fri.	15	3	Moon 0.4° S of Pleiades (M45)		23.0	
		20 34	Algol at minimum		24.0	
Sat.	16				25.0	
Sun.	17		Mercury at perihelion		26.0	
		4 11	first quarter		27.0	
		11	Neptune in conjunction with the Sun		28.0	
Mon.	18	17 24	Algol at minimum		29.0	
Tue.	19		Venus at aphelion		30.0	
		7	Pollux 1.5° N of Moon		31.0	
Wed.	20					
		3 06	Equinox			
Thu.	21	14 13	Algol at minimum			
Fri.	22	2	Venus 0.3° N of Saturn			
Sat.	23	16	Moon at apogee (406294 km)			
Sun.	24	11 08	Algol at minimum			
		23	Mercury greatest elongation E (19°)			
Mon.	25	7 00	full Moon			
			Penumbral Lunar Eclipse (p. 126)			
Tue.	26	4 07	Moon at descending node			
		20	Spica 1.4° S of Moon			
Wed.	27		Zodiacal light vis. in N lat. in W after evening twilight for next two weeks			
			Mercury at greatest heliocentric lat. N			
		7 51	Algol at minimum			
Thu.	28					
Fri.	29					
Sat.	30	4 41	Algol at minimum			
		15	Antares 0.3° S of Moon, occultation‡			
Sun.	31					

†CENT. A. ... ‡ ... America Ascension Is., W. Africa, W Central Africa.



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.

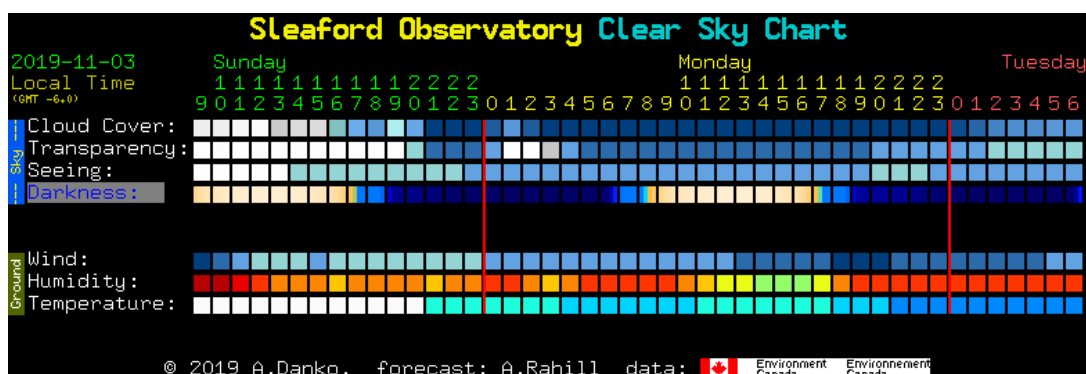
Please contact the Treasurer with any inquiries.

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

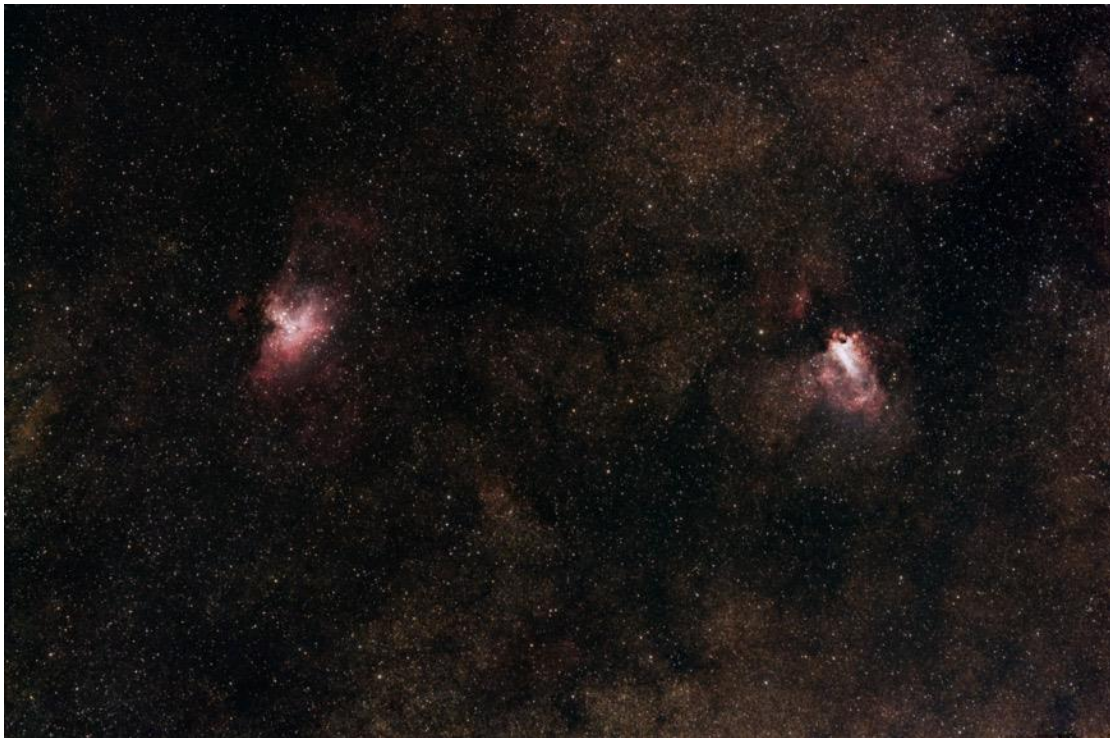


Saskatchewan Light Pollution Abatement Committee -

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



www.darksky.org



Eagle and Omega Nebulae taken by Justin Lukan



Sun taken by Joelle Sheard-Patrick

MINUTES OF FEBRUARY MEETINGS

Lorie Tedford

**Minutes of the Monthly Executive Meeting of the RASC Saskatoon Center
Monday, Feb 12, 2024 - 7:00 pm Hybrid: In person U of S Observatory and Online**

Attending: Brent Burlingham, Lorie Tedford, Les Dickson, Yannis Pahatouroglou, Joelle Sheard-Patrick, Colin Chatfield, Darrell Chatfield, John Takala

1. **Call to order** 7:00 pm – Brent Burlingham (President and Chair)
2. **Approval of the Executive meeting minutes for January 2024** as printed in the February newsletter. Moved by Les Dickson, seconded by Joelle Sheard-Patrick; carried.
3. **Call for additional announcements/items to add to the agenda.**
4. **Announcements from the Chair** – Brent Burlingham. No announcements presented.
5. **Old Business - Reports from the Executive Council**
 - 5.1. **President's Report** – Brent Burlingham.

Brent discussed the Kona Winter Festival occurring on February 23rd from 5-7 pm and the centre's involvement. Daryl Janzen and SuperDARN will be giving presentations along with a few members bringing scopes for viewing. Mensa had requested to tour the Sleaford Observatory but the offer to tour the U. of S Observatory was made instead but no response from Mensa. The Wildwood School Star Party on March 20th, 2024 requested the centre for presentations or telescopes for observing.
 - 5.2. **Acting Treasurer** – Les Dickson.

Les reviewed the financial report for national. There was a deficit from having an additional insurance payment in the same fiscal year, the theft and damage at Sleaford was a significant expense with insurance only covering a portion of the cost as well as the SSSP had expenses of two star parties with the same fiscal year.
 - 5.3. **National Council Rep** – Joelle Sheard-Patrick

There were discussions regarding increasing membership fees, digitizing the Observer's handbook and other publications, reminders about the centre's reports are due within the coming months. There is a general assembly on May 4th and 5th.
 - 5.4. **Bylaws Committee** – Les Dickson. Les reviewed his progress of updating the bylaws.

5.5. SSSP 2024 Update – Les Dickson

The SSSP committee is looking for additional committee members. The website will be opening the end of March/beginning of April for the SSSP 2024. There are current discussions with the Cypress Hills resort about negotiating prices for the sites.

5.6. Sleaford Update – Darrell Chatfield

Darrell discussed the issues of snow-blowing the site with limited manpower and no easy access to see what the state of the yard is. There was a discussion of purchasing new cameras and additional Wi-Fi for Sleaford.

6. Old Business

- 6.1.** Discussion about what to do with the Meade 16” Telescope at Sleaford. A survey of the options discussed will be sent to members to vote on. Discussion of the survey will take place at the March meeting.

7. New Business

- 7.1.** Discussion about what to do with the Meade 12” and 5” telescope in the library will occur in the March meeting.
- 7.2.** Potential of hosting an event for the upcoming solar eclipse on campus for April 8th, 2024.

- 8. Motion to adjourn** moved by Darrell Chatfield, seconded by Joelle Sheard-Patrick; carried. 8:00 PM.

Minutes of the Monthly General Meeting of the RASC Saskatoon Center Monday, Feb 12, 2024 - 7:00 pm Hybrid: In person U of S Observatory and Online

Minutes taken and prepared by Lorie Tedford.

- 1. Sharing/Networking Time** - 8:00-8:15 pm – all members.
- 2. Call to Order** – 8:20 pm – Brent Burlingham (President and Chair)
- 3. Call for additional announcements/items to add to the agenda**
- 4. Call out to new members/guests:** Roland Dechesne, Peter Brackett.
- 5. Adoption of the January General meeting minutes** as printed in the February newsletter. Moved by Les Dickson, seconded by John Takala; carried.

6. **Executive Meeting Summary** – Brent Burlingham
- Brent discussed the request of the centre at various outreach events. The Kona Festival on February 23rd from 5-7 pm. will have scopes set up by members as well as presentations from Daryl Janzen and SuperDARN.
 - Les reviewed the financial report submitted to National. Deficit seen from having expenses from two fiscal years within the same period as well as the theft and damage that occurred at Sleaford with insurance only covering a portion of the cost.
 - National Council has discussed increasing membership fees, digitizing the Observer's handbook and other publications. An eclipse task force and t-shirts have been created for the upcoming solar eclipse on April 8th, 2024.
 - The SSSP committee is looking for more members.
 - A survey will be sent to all members to vote on possibilities of what to do with the Meade 16" Telescope at Sleaford.
7. **New Business** – no items brought forward to discuss.
8. **Program**
- 8.1. The Upcoming Sky presented by Colin Chatfield
- 8.2. Peter Brackett (RASC Calgary Centre), member of the RASC Light Pollution Abatement Committee – **“The 25th Anniversary of the RASC Dark Sky Site Program”**
9. **Call to adjourn** – Moved by Darrell Chatfield, seconded by Joelle Sheard-Patrick; carried. 9:25 pm.



*Meteor over the Caribbean Sea, moving between Piscis Austrinus and Aquarius.
Taken on January 10, 2024 8:13pm Grand Anse Beach, Grenada. Canon 6D Mark II
with a Canon 24-70mm lens at 35mm; F2.8; 10 seconds ; ISO 3200 by Tammy Vallee*



Andromeda Galaxy taken by Lorie Tedford

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

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.astroloague.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>