

# Saskatoon Skies

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

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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>

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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
- Journal of the RASC (electronic format)
- borrow the Centre's projector to give astronomy outreach presentations – contact Les Dickson at [astrochem@sasktel.net](mailto: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** – Les Dickson

**Vice-President** – Brent Burlingham

**Secretary** – Tenho Tuomi

**Treasurer** – \*vacant\*

**National Council Rep** – Les Dickson

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](mailto:novachat@sasktel.net).

## NEWSLETTER INFO

**Newsletter Editor** – Colin Chatfield

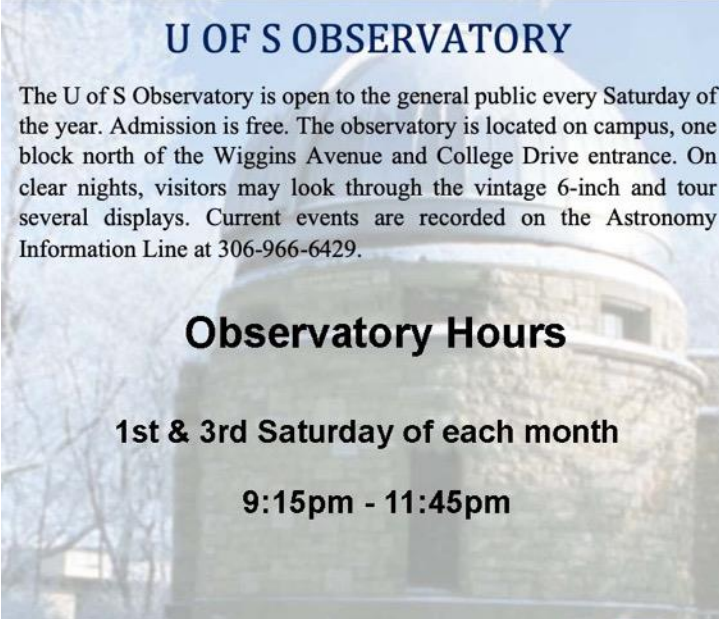
**Copy & Collate** – Les & Ellen Dickson

**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](mailto: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](mailto:colcha@gmail.com) for rates. Members can advertise non-commercial items for free.

A graphic with a background image of the U of S Observatory building. The text is centered and reads: "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".

**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

<b>June 17</b>	<b>Observer's Group - Sleaford Observatory</b>	Brent Gratias
<b>June 19</b>	<b>RASC Saskatoon Centre General Meeting</b>	Les Dickson

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>

## June RASC General Meeting

for all members and guests

**Join us on June 19th, 2023 at 8:00PM (Executive meeting at 7:00pm)**

Webinar (info below) or in person in room 175, U of S Physics building

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 who prefer meeting online.

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

**“The Discovery of Comet Petriew”** - Vance Petriew

(Write-up below)

## SPEAKER FOR JUNE MEETING

### **The Discovery of Comet Petriew**

In 2001, Vance Petriew of Regina, Saskatchewan discovered a brand-new comet at the Saskatchewan Summer Star Party. Vance will share his story of the discovery and some of the historical aspects of the comet over the years. Since the comet is here again this summer, Vance will provide a current update for it and look at what we can expect for future visits from this Saskatchewan comet.

Mr. Vance Petriew is an amateur astronomer whose lifelong interest in astronomy started when he was 5 years old. Growing up on the farm in rural Saskatchewan, he spent many nights looking up at the stars and using his 4 1/4" reflector to show family, friends and neighbors the wonderous views of the night sky. Vance joined the RASC in 1988 as a member of the Saskatoon Centre while attending the University of Saskatchewan.

Vance's passion for astronomy has led him to many accomplishments over the years. He's been president of the RASC - Regina Centre multiple times and has served on the SSSP Planning committee for over 15 years. In 2001, Vance discovered a brand-new comet in Cypress Hills and as a result, has been written about in many publications and textbooks. He was the first person from Saskatchewan to discover a comet and only the 8th person in all of Canada to do so.

Vance is an accomplished observer and has submitted over 350,000 variable star observations to the AAVSO. He appears in 25 scientific papers and has won many awards including the RASC Ken Chilton Prize, the AAVSO Director's Award and the Edgar Wilson Award. He was instrumental in getting the Dark-Sky Preserve started in Cypress Hills and played a significant role in getting the "100 Years of Astronomy in Regina" history book created. Vance Petriew is currently the President of the RASC - Regina Centre and lives in White City, SK, with his wife Jennifer and three wonderful daughters.

# COMETS FOR SSSP 2023

Tenho Tuomi

There will be three comets for SSSP this year though none very bright, all about magnitude 10 or fainter.

The brightest will be periodic comet 103P/Hartley with a period of 6.4 years. It will be up all night in the constellation Andromeda. It approached within 0.12 AU of earth in October 2010 and was naked eye at magnitude 4.5. I took many pictures of it. This year it will not come as close with the closest approach in September and perihelion in October at magnitude 7.

Next brightest will be comet C/2020 V2 (ZTF) in the morning sky on the north edge of Eridanus. It was closest to earth in May and will be at perihelion in September. Its first brightness peak was in January and it will peak again in August. I have been photographing it since January 2022.

Then there will be new comet C/2023 E1 (ATLAS) discovered in March. It will be up all night in Cygnus. Even though it will be closest in August it will reach perihelion on July 1 and will have faded to magnitude 12 by August. I took my first picture of it on May 16.

Yes, comet 185P/Petrew will be back this year also but very poorly positioned. It will be peak in July and rises at dawn.

One comet for the coming months is the new comet C/2023 H2 (Lemmon) which was discovered in April and possibly peaks at magnitude 10 around November 10. I hope to photograph it then.



*Picture of comet 103P/Hartley taken October 18, 2010 by Tenho Tuomi*

# MINUTES OF MAY MEETINGS

Tenho Tuomi

## **Minutes of the Monthly Executive Meeting - RASC Saskatoon Centre Monday, May 15th, 2023 - 7:00 pm Hybrid Online Zoom and In-Person**

**Attending:** In-person: James Wood, Les Dickson, Brent Burlingham, Ike Thiessen, Colin Chatfield, Yannis Pahatouroglou, James Gorkoff (guest), Ellen Dickson (guest and Recorder); on-line: Tenho Tuomi, Mark de Jong, Colin Chatfield.

- 1. Call to order** 7:06 pm – Les Dickson (President and Chair)
- 2. Call for additional announcements/items** to add to agenda
  - SSSP report under section 6.
- 3. Approval of the April Executive meeting minutes** as circulated in the May newsletter. **Moved:** Tenho Tuomi. **Seconded:** Les Dickson. Carried.
- 4. Announcements from the Chair** – Les Dickson
  - Acknowledge and welcome new attendees
- 5. President's Report**
  - 5.1 Reports filed with Corporate Services**
    - This is being handled by Jim Gorkoff
- 6. Reports from the Executive Council**
  - 6.1 Acting Treasurer:** Les Dickson
    - \$1800 transferred from SSSP sub-account to General account as first installment of repayment of deposits made to the Resort at CHIPPP
    - Les reported on the balances in the accounts
  - 6.2 National Council Rep:** Les Dickson
    - A detailed budget has been prepared and will be discussed at the June 4 National Council meeting
    - There will still be a deficit, but they hope to be back in the black the year after
    - National will have to write-down \$300,000 in bad debt for SkyNews
    - Jenna Hinds, the former Youth and Outreach Coordinator at National, is now the new Executive Director

### **6.3 Sleaford Site:** Les Dickson for Darrell Chatfield

- The main gate to the site needs repair or replacing, latter preferred; will need an estimate of cost and how much is left in the Sleaford budget for the expense; University will cover half the cost
- more discussion is needed on security cameras
- considering a sign indicating the site is under surveillance

### **6.4 SSSP:** Les Dickson

- Last meeting was May 11
- As of that meeting, 39 registrations with 60 people attending so far
- 10 campsites left unreserved in each of Meadows and Dark-sky campgrounds
- Looking for more speakers
- Need more volunteers

## **7. New Business**

### **7.1 March newsletter**

- The issue discussed was that Donna-Lee considered some statements made by Ron Waldron in the letter published in the March newsletter to be inaccurate and damaging to her reputation. She has asked several times since March to have the letter removed. She has indicated that she had engaged a solicitor who was awaiting her instructions on how to proceed.
- The threat of an expensive lawsuit, win or lose, was the immediate concern
- Jim Gorkoff gave his observations and opinions from a legal perspective and argued that the letter should be removed from the March newsletter and the edited newsletter be republished

**MOTION:** As Ron Waldron's letter is inconsistent with the objects of the organization, that the March newsletter be taken down from the website, that the letter from Ron Waldron be removed from the newsletter, that the newsletter then be republished to the website noting that the content has been edited. Moved by Jim Wood, seconded by Yannis Pahatouoglou.

- After much vigorous discussion, the motion was CARRIED.

## **8. Motion to adjourn. Moved:** Yannis Pahatouoglou CARRIED. Adjourned 8:18 pm

Minutes prepared by Les Dickson from notes taken by Ellen and Les Dickson



**Minutes of the Monthly General Meeting - RASC Saskatoon Centre  
Monday, May 15th, 2023 - 8:00 pm Hybrid Online Zoom and In-Person**

**12 members attending at beginning of meeting.**

- 1. Sharing / Networking Time 8:00 – 8:15 PM – all members**  
- Executive meeting went long, so start of General meeting delayed
- 2. Call to order – 8:30\_ PM – Les Dickson (President and Chair)**
- 3. Call for additional items or changes to the agenda**
- 4. Call out to new members/guests**
- 5. Adoption of the April General Meeting minutes as circulated in the May newsletter. Moved: Les, Seconded: Brent. CARRIED.**
- 6. Executive Meeting summary – Les Dickson**  
- Les presented a summary of the meeting, including information on financial status, SSSP, National Council discussion about National’s financial situation, Sleaford site updates from Darrell Chatfield and Daryl Janzen, and Ron Waldron’s letter in the March newsletter.

**NEW BUSINESS**

- 7. No new business.**
- 8. Program:**
  - *What’s Up This Month – Colin Chatfield*
  - *USask Campus Observatory Update – Daryl Janzen, U of S Physics Dept and Saskatoon Centre. Daryl discussed progress on a new functional display at the USask Campus Observatory.*
  - *Capturing the Wonders of Night – Jeanine Holowatuik, Hudson Bay SK. Jeanine gave a presentation on the basics of aurora photography and her displayed her passion for capturing the beauty of the night sky.*
- 9. Call to adjourn – 9:17 PM. Moved: Ellen Dickson. CARRIED.**

Minutes prepared by Les Dickson from notes taken by Ellen and Les Dickson



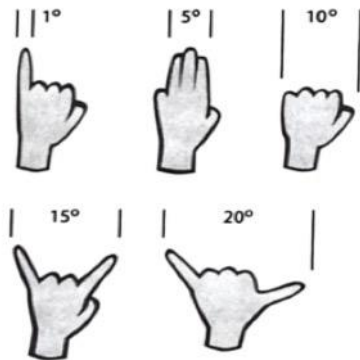
*Aurora with Moon and Venus taken April 23, 2023 by Colin Chatfield*

## JUNE NIGHT SKY EVENTS AND INFO

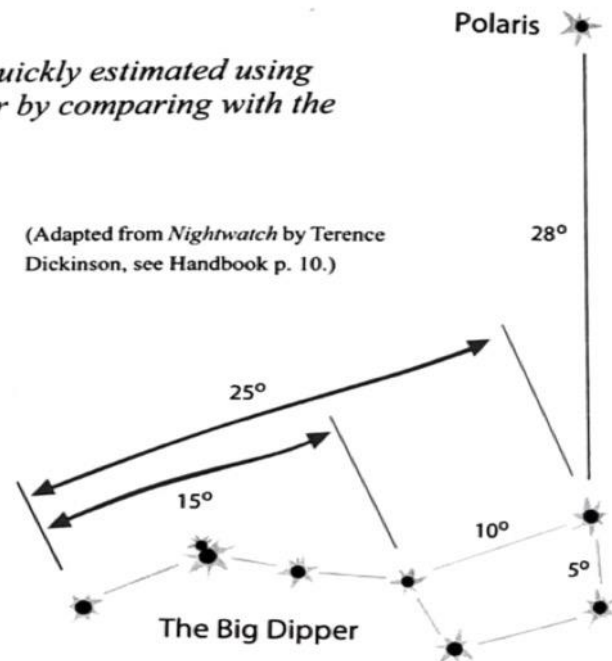
Images on the next few pages taken, with permission, from the 2023 Observer's Handbook. It can be obtained by joining the RASC here <http://rasc.ca/join> or ordered from <https://secure.rasc.ca/Portal/Shop/RASC/Store/StoreMain.aspx?Category=CURRPUB>



















### HANDY SKY MEASURES

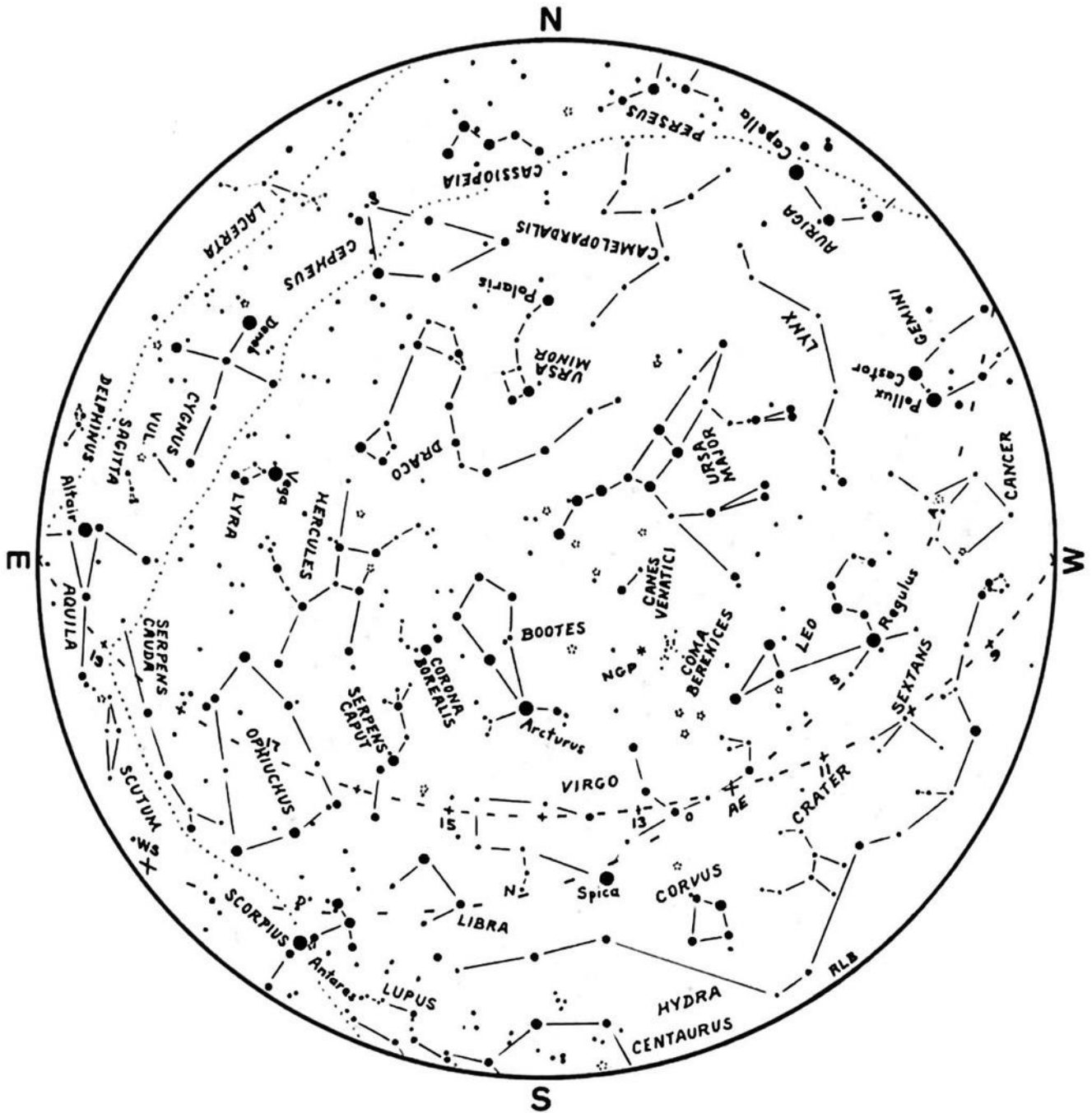
*Angular measure in the sky can be quickly estimated using the fingers of an outstretched arm, or by comparing with the star separations in the Big Dipper.*



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



Time (UT)			JUNE EVENTS		Jupiter's Satellites	
d	h	m			West	East
Thu.	1	6 23	Moon at descending node		1.0	
Fri.	2	18	Mars 0.1° S of Beehive (M44)		2.0	Io
Sat.	3	2 52	Algol at minimum		3.0	
Sun.	4	22	Antares 1.5° S of Moon		4.0	Callisto
		3 42	Mercury at greatest heliocentric lat. S		5.0	
		5	<b>full Moon</b>		6.0	
		5 09	Mercury 3° S of Uranus		7.0	Europe
11	11	<b>Double Shadows on Jupiter</b>		8.0		
11	11	<b>Venus greatest elongation E (45°)</b>		9.0	Ganymede	
Mon.	5	23 41	Algol at minimum		10.0	
Tue.	6	23	Moon at perigee (364 861 km)		11.0	
Wed.	7	18 28	<b>Double Shadows on Jupiter</b>		12.0	
Thu.	8	20 30	Algol at minimum		13.0	
Fri.	9	20	Saturn 3° N of Moon		14.0	
Sat.	10	19 31	<b>last quarter</b>		15.0	
Sun.	11	7 47	<b>Double Shadows on Jupiter</b>		16.0	
		8	Neptune 2.0° N of Moon		17.0	
		17 19	Algol at minimum		18.0	
Mon.	12				19.0	
Tue.	13	15	Venus 0.6° N of Beehive (M44)		20.0	
Wed.	14	0 05	Moon at ascending node		21.0	
		7	<b>Jupiter 1.5° S of Moon</b>		22.0	
		14 08	Algol at minimum		23.0	
21 06	<b>Double Shadows on Jupiter</b>		24.0			
Thu.	15	10	Uranus 2° S of Moon		25.0	
Fri.	16	1	<b>Moon 1.8° S of Pleiades (M45)</b>		26.0	
		10 57	Algol at minimum		27.0	
		21	Mercury 4° S of Moon		28.0	
Sat.	17				29.0	
Sun.	18	4 37	<b>new Moon (lunation 1243)</b>		30.0	
		10 25	<b>Double Shadows on Jupiter</b>		31.0	
		15	Saturn stationary			
Mon.	19					
Tue.	20	7 46	Algol at minimum			
		8	Juno in conjunction with the Sun			
		10	<b>Pollux 1.7° N of Moon</b>			
Wed.	21	14 58	<b>Solstice</b>			
Thu.	22	1	<b>Venus 4° S of Moon</b>			
		10	Mars 4° S of Moon			
		19	Moon at apogee (405 385 km)			
Fri.	23		Mercury at ascending node			
Sat.	24	4 35	Algol at minimum			
Sun.	25					
Mon.	26	1 24	Algol at minimum			
Tue.	27	7 50	<b>first quarter</b>			
			Mercury at perihelion			
Wed.	28	12 22	Moon at descending node			
Thu.	29	22 13	Algol at minimum			
Fri.	30					



## 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.

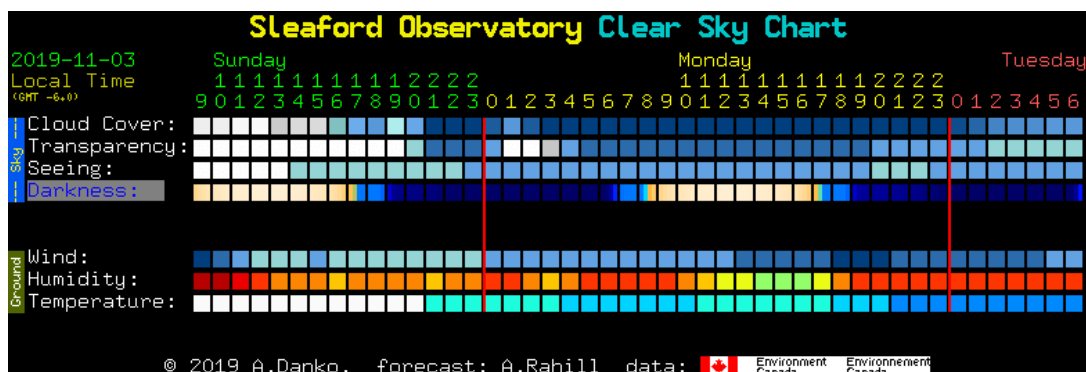
Please contact the Treasurer with any inquiries.

# 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](http://www.weather.gc.ca/astro)



Saskatchewan Light Pollution Abatement Committee -

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



[www.darksky.org](http://www.darksky.org)

## SASKATCHEWAN SUMMER STAR PARTY 2023

This is the final update before the “crunch”! The organizing committee is hard at work finalizing the details for another great weekend event under the dark skies of southern Saskatchewan.

SSSP is being held August 16th - 20th, 2023 at the Cypress Hills Dark-sky Preserve and Interprovincial Park south of Maple Creek, Saskatchewan. This star party is a joint effort of the Saskatoon and Regina Centres of the RASC and of dozens of volunteers who step up to plan, organize and run this popular event.

Our confirmed guests include our Fr. Lucian Kemble Memorial Presenter” Alan Dyer, noted astrophotographer, presenter, and author, and Tara Magee, local photographer, will present the “Under Living Skies Public Lecture” on Thursday evening after our BBQ. Pierre Schierle will be presenting a seminar on “Green Laser Pointer Safety and Certification”. Other guests will be announced once arrangements have been finalized.

Our programming includes the Thursday evening BBQ that will feature hamburgers as well as our usual hotdogs. The Saturday evening banquet menu includes roasted turkey, rice pilaf, your choice of potato salad, garden salad, or seasonal vegetables.

Shirts, pins, patches and other merchandise will be on-sale at SSSP. The shirt logo was designed by Vance Petriew. The pin design is based on the shirt logo (shown above). Patches with the logo will also be available.

Early registration prices are in effect until July 15. Current registration prices are: single - \$40, couples - \$50, and families - 60\$. Prices increase by \$10 after that date. These prices do not include camping or hotel costs, park entry fees or other incidental costs. You can register and/or order items on-line or by regular mail. If you have any questions, please contact the registrar Les Dickson by email to [sssp.sk@sasktel.net](mailto:sssp.sk@sasktel.net), at his cell number 306-270-9184 or call Rick at 306-280-1899.

Attendees have a choice of camping either in the Meadows Campground, where most of the activities and observing takes place, or in the Dark-sky Campground. There are about 9 open sites in the Meadows available, and the Dark-sky Campground is about the same number of open sites. If you are planning to stay in the Resort and have not yet booked your accommodations, note that our unreserved rooms in our block will be released June 16<sup>th</sup>. After that date, there will be no guarantee that any rooms will be available. The Resort’s website is <https://www.resortatcypresshills.ca/>. There are also accommodations available in Maple Creek, such as the Cobble Creek Lodge <http://cobblecreeklodge.com/>.

Check out our website often for updates, especially in the next few weeks as final arrangements are being made. You can find us at <https://sssp.saskatoon.rasc.ca/>.

See you there!



## 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](mailto: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.

“ <b>Deep-Sky Observers Handbook</b> ”	Volume 1-5	Enslow-Lutterworth	\$40.00
“ <b>International Encyclopedia of Astronomy</b> ”	1987	Patrick Moore	Color \$10.00
“ <b>Backyard Astronomers Guide</b> ”	T. Dickinson & Alan Dyer	2008	Color \$25.00
“ <b>Atlas of Deep Sky Splendors</b> ”	1978	H. Verhenberg	(50.00) B & W \$22.00
“ <b>Amateur Astronomers Catalog of 500 Deep Sky Objects</b> ”	Vol 1	1980	B & W R. Morales \$15.00
“ <b>Observing the Constellations</b> ”	1989	J. Sanford	Color charts \$10.00



*Andromeda Galaxy by Justin Lukan*

## 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](http://rasc.ca/certificate-programs) for details and contact the RASC Observing Committee Chair at [rasc.ca/contact/observing](http://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](http://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

#### 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](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>