

Saskatoon Skies

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

Volume 55, Number 01

January 2024



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
- 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

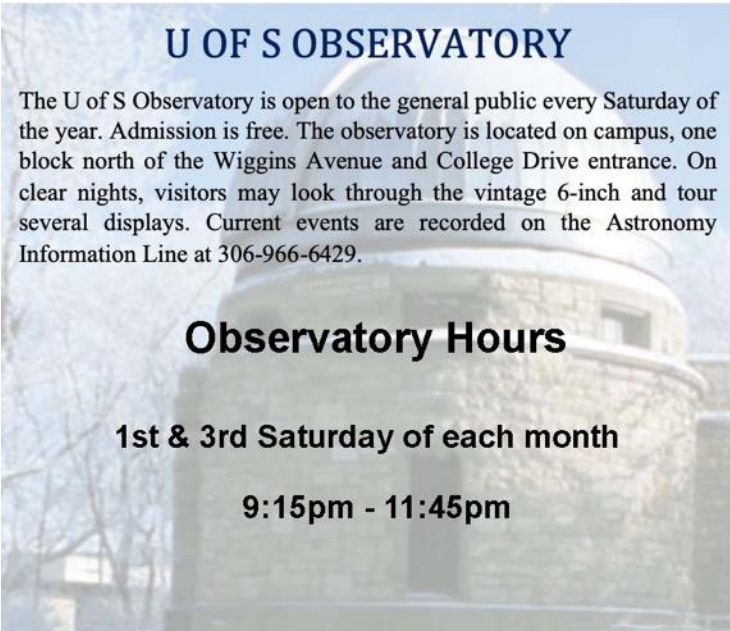
Copy & Collate – Les & Ellen Dickson

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

Jan 15

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>

January RASC General Meeting

for all members and guests

Join us on January 15th, 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

"Celestron Polar Scope Improvements, Celestron StarSense Auto-align" - Brent Burlingham

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.

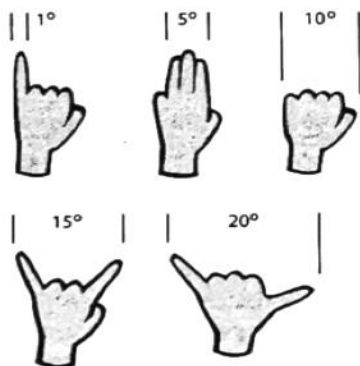
"Deep-Sky Observers Handbook" Volume 1-5	Enslow-Lutterworth	\$40.00
"International Encyclopedia of Astronomy" 1987	Patrick Moore Color	\$10.00
"Backyard Astronomers Guide" T. Dickinson & Alan Dyer 2008	Color	\$25.00
"Atlas of Deep Sky Splendors" 1978	H. Verhenberg (50.00) B & W	\$22.00
"Amateur Astronomers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

JANUARY NIGHT SKY EVENTS AND INFO

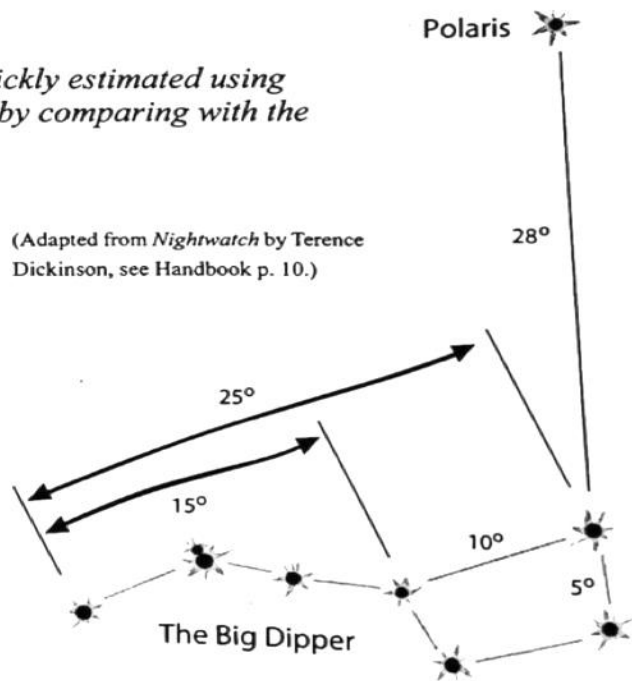
Images on the next few pages taken, with permission, from the 2024 Observer's Handbook. It can be obtained by joining the RASC here <http://rasc.ca/join> or ordered from <https://secure.rasc.ca/store/product/observer-s-handbook-2024>

HANDY SKY MEASURES






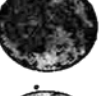
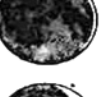
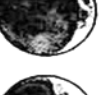
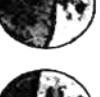












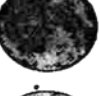
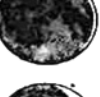
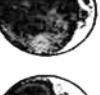
Angular measure in the sky can be quickly estimated using the fingers of an outstretched arm, or by comparing with the star separations in the Big Dipper.



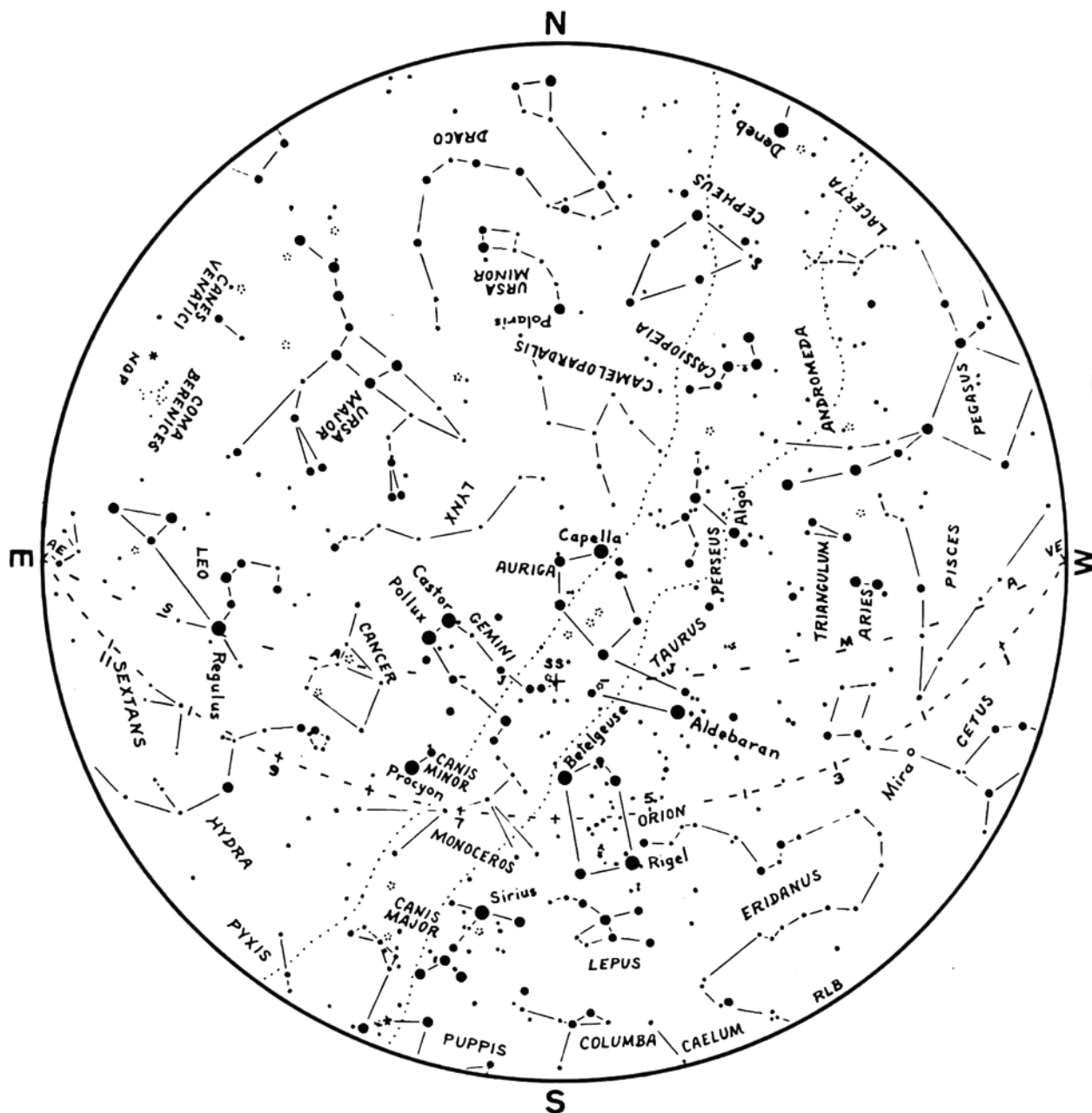
(Adapted from *Nightwatch* by Terence Dickinson, see Handbook p. 10.)



RASC OBSERVER'S HANDBOOK 2024 – STANDARD EDITION

Time (UT)			JANUARY EVENTS		Jupiter's Satellites	
d	h	m			West	East
Mon.	1	7 12	Algol at minimum		1.0	
		15	Moon at apogee (404 909 km)		2.0	
Tue.	2	4	Mercury stationary		3.0	Ganymede
Wed.	3	1	Earth at perihelion (147 100 632 km)		4.0	Europa
Thu.	4	3 30	last quarter		5.0	
		4 02	Algol at minimum		6.0	Io
		9	Quadrantid meteors peak		7.0	
		18 50	Moon at descending node		8.0	
Fri.	5	0	Spica 2.0° S of Moon		9.0	
Sat.	6				10.0	
Sun.	7	0 51	Algol at minimum		11.0	Callisto
		2 20	Double Shadows on Jupiter		12.0	
Mon.	8	15	Antares 0.8° S of Moon, occultation†		13.0	
		20	Venus 6° N of Moon		14.0	
Tue.	9	21 40	Algol at minimum		15.0	
Wed.	10	9	Mars 4° N of Moon		16.0	
Thu.	11	11 57	new Moon (lunation 1250)		17.0	
Fri.	12	15	Mercury greatest elongation W (24°)		18.0	
		18 29	Algol at minimum		19.0	
Sat.	13	11	Moon at perigee (362 267 km)		20.0	
Sun.	14	10	Saturn 2.0° N of Moon		21.0	
Mon.	15	11	Juno stationary		22.0	
		15 19	Algol at minimum		23.0	
		20	Neptune 0.9° N of Moon, occultation‡		24.0	
Tue.	16				25.0	
Wed.	17	14 05	Moon at ascending node		26.0	
Thu.	18	3 53	first quarter		27.0	
		12 08	Algol at minimum		28.0	
		21	Jupiter 3° S of Moon		29.0	
Fri.	19	20	Uranus 3° S of Moon		30.0	
Sat.	20	14	Moon 0.8° S of Pleiades (M45)		31.0	
Sun.	21	8 57	Algol at minimum			
Mon.	22					
Tue.	23		Mercury at descending node			
Wed.	24	5 47	Algol at minimum			
		20	Pollux 1.7° N of Moon			
Thu.	25	17 54	full Moon			
Fri.	26					
Sat.	27	2 36	Algol at minimum			
		11	Uranus stationary			
		16	Mercury 0.2° N of Mars			
Sun.	28					
Mon.	29	8	Moon at apogee (405 777 km)			
		23 25	Algol at minimum			
Tue.	30					
Wed.	31	20 17	Moon at descending node			

†Most of N. America



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.

COMET NOTES

Tenho Tuomi

Satellite bisecting a comet.

On December 9 I photographed 14th magnitude comet C/2022 E2 (ATLAS). This comet is slow moving, discovered March 2022, and will not reach perihelion until September 2024, and will not come any closer than the asteroid belt. This picture is cropped to 1/4 size.

But how often do you see a satellite bisecting a comet?

The satellite track took nine minutes to cross the approximately one degree field of view, and it was flaring about every 40 seconds. It was a very unusual satellite that required further examination so I asked two experts about it, both incidentally named Richard.

Richard Legault, author and free-lance journalist from Ottawa who has written articles for the RASC Journal, and who also happens to be my wife's brother-in-law, replied as follows:

"I can think of several possible explanations.

First I thought maybe it was astronaut Frank Rubio's lost tomato.

But now we know that the remains of the tomato were found and it never left the Space Station.

<https://www.space.com/international-space-station-lost-tomato-frank-rubio-found>

Second, I wondered whether it might be Elon Musk's Tesla roadster. However, I don't think the direction of your shot is right for that.

https://en.wikipedia.org/wiki/Elon_Musk%27s_Tesla_Roadster

Third, I got to thinking about this being a December shot, right?

So next I considered you might have caught a shot of Rudolph out on an early shake down run. However, I eliminated this idea based on the evidence. The nose glow would be steady and not show anything like a forty second flare.

So my fourth possibility is that you have captured a very rare image of the descending Hark.

We all know who Hark is. He is in all those songs people sing this time of year. You know Hark - the Herald Angel. He is good friends with Gabriel, only Hark can't afford a trumpet.

Every year around this time, Hark re-enacts his descent in commemoration of the first Noël and the Annunciation to the Shepherds.

The forty second blink seems to be just about in sync with archangel wingbeats. The diagonal trajectory is perfectly consistent with an angle of descent from the Coelvm Empirevm Habitacvlvm Dei et Omnivm Electorum (Latin for: The Empire of Heaven - the abode of God and of all the Elect), otherwise known to medieval cosmology as the Eleventh Celestial Sphere, according to Peter Apian's *Cosmographia* (Antwerp, 1539).

Your report of the slow speed is interesting. You say it took 9 minutes of time to cover 50 arcseconds of celestial angle. I'm not sure how to do the math but a good test of my hypothesis would be to calculate how long it would take, at the observed speed, to arrive on Earth over the "fields where they lay." If the timing jives with a 25 December arrival time, then that is proof positive my hypothesis is exactly right.

I am sure you will want to consider alternative hypotheses. But this is my explanation and I'm sticking to it."

Then I asked our local expert Rick Huziak who is just as well qualified with many RASC awards, and he replied as follows:

"My first thought was that the comet was at -7 degrees (south of the ecliptic), then the satellite would be a geosynchronous satellite. But the ephemeris shows the comet is at +12 degrees in Cancer. So what you've likely imaged is an Atlas-Centaur launch vehicle that years ago delivered a geo-sync satellite to orbit and that is still orbiting at about geo-sync distance, but at an angle to the ecliptic."

You as reader can help me decide who is right.



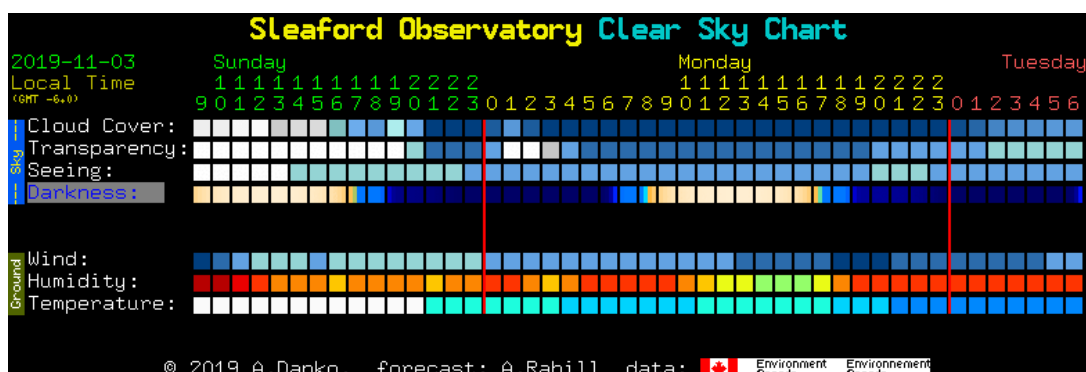
Comet C/2022 E2 ATLAS photo taken by Tenho Tuomi

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

TRIBUTE TO MERLYN MELBY

Darrell Chatfield

I was saddened to learn of Merlyn Melby's passing on Dec. 9, 2023. He was one of our dear fellow club members and an RASC life member. Merlyn was a gifted electrician, having worked for the City of Saskatoon for many decades. He used his many talents to wire our club warm up shelter and dome originally on farmland located near Grasswood Esso. When we had the shelter and dome moved from there to Sleaford in 1997, Merlyn was again involved with re-wiring the shelter and the old schoolhouse that sits on the site.

When Merlyn did anything, he always overbuilt whatever he was working on at the time. Things like countersinking holes for the lag bolts that hold the shelter doorjamb in place, to adding conduit to run all the shelter wiring through which HE bent with his tools are just a few, but extensive work he has left for us to enjoy.

I had the honor of working with Merlyn on a few earlier Sleaford projects. He faithfully attended club meetings, and quite often had a bag of bottles which were de-capped and washed out for me to help with our fundraising efforts. Visiting Merlyn at his home here in Saskatoon was always fun, since he always had his own project ideas, which he shared freely.

I kept in touch with him these last few years by way of phone calls. He was eager to listen to what our club was doing etc., even though his health was declining.

Merlyn leaves a lasting legacy through those he touched with his kindness and generosity. And he leaves an on-going legacy at Sleaford which we all will enjoy for decades to come. His RASC National Service Award of 2022 is testament to the kind of person he was!





Christmas light under Orion, the Pleiades, and Jupiter about 6 kms east of Saskatoon by Colin Chatfield

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>