

# Saskatoon Skies

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

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Royal Astronomical Society of Canada  
Saskatoon Centre Incorporated  
Box 31086, RPO Broadway  
Saskatoon, SK S7H 5S8

WEBSITE: <https://saskatoon.rasc.ca/>  
E -MAIL: [sk\\_centre@rasc.ca](mailto:sk_centre@rasc.ca)  
FACEBOOK: [RASC Saskatoon Centre](#)  
INSTAGRAM: [@RASCYXE](#)

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

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## MEMBERSHIP? JOIN TODAY!

**Regular: \$96.00 /year**

**Youth: \$52.00 /year**

**Family: \$90.50 + \$41/additional adult + \$21.10/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** – Mike Dolan

**Vice-President** – \*vacant\*

**Secretary** – Rick Huziak

**Treasurer** – Donna-Lee May

**National Council Rep** – Les Dickson

Canadian Tire money - Darrell Chatfield

If you cannot attend a meeting but would like to donate your Canadian Tire money please 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** – Gord Sarty/Tenho Tuomi

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.



*Aurora taken by Tenho Tuomi in November 2021*

**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.**

January – February	7:00 – 9:30 pm
March	8:00 – 10:30 pm
April – August	9:15 – 11:45 pm
September	8:30 – 11:00 pm
October – December	7:00 – 9:30 pm

*Temporarily Closed. Check the website for updates!*

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

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



*Image of the aurora over the Northeast Swale. Taken October 2021 by Tara Magee*

## RASC CALENDAR OF EVENTS & MEETING INFO

<b>Jan 17<sup>th</sup></b>	<b>RASC General Meeting - 8:00pm (info below)</b>	Mike Dolan
<b>Jan 29<sup>th</sup></b>	<b>Observer's Group - Sleaford Observatory</b>	Larry Scott

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 17th, 2022 at 8:00PM (Executive meeting at 7:00pm)**

Webinar (info below)

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).

8:00pm - **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.

8:30pm - **Main Program - TBD**

**Colin Chatfield & Tara Magee "What's up this month"**

# SPEAKERS FOR MEETINGS

Rick Huziak

The Centre always needs speakers for meetings - plain and simple. Email [rickhuziak@shaw.ca](mailto:rickhuziak@shaw.ca) to volunteer to give a short or long talk. We want to hear about what you are doing! Thanks in advance.

## MINUTES OF DECEMBER MEETINGS

Rick Huziak

### **Minutes of the Executive Meeting - RASC Saskatoon Centre Monday, December 13, 2021 - 7:00 pm Online (ZOOM)**

**Attending:** Mike Dolan, Ron Waldron, Rick Huziak, Darrell Chatfield, Les Dickson, Tim Yaworski, Ike Thiessen, Tenho Tuomi, Colin Chatfield, Donna-Lee May, Mark de Jong

1. **Call to order** 7:00 pm. Mike Dolan.
2. **Approval of the November Executive Minutes** as circulated in Dec. newsletter  
**Moved:** Les Dickson. **Seconded:** Darrell Chatfield. **CARRIED.**
3. **Call for additional announcements/items** to add to agenda.
  - Treasurer's position added under New Business.
4. **Old business**
  - **Keys and Sleaford locks** – Darrell Chatfield – Darrell will head up the lock change in the spring. Rick Huziak suggests a large key fee as an incentive to return keys. The Sleaford Committee should decide the final cost. Donna-Lee suggests a ledger and receipts be kept up. Tabled for now, but Committee can do the work later and create a proposal for the Executive to approve.
  - **National Web site shortcomings** - Les Dickson describes Phil Groff's email regarding website issues. Mark de Jong: Web utilities for membership does not serve the purpose of the Centres. Mark struggles to understand the accuracy of the membership reports & the additional questions we ask are not recorded anywhere. Walter McDonald (National IT Committee) may be able

to help. Colin Chatfield: No option for Centre newsletter uploads – seems to have been dropped. Les will look into this.

- National office is moving to 203-489 College Street, Toronto M6G 1A5 week of Dec. 13.
  - Office manager & membership coordinator have left and are just now being refilled.
  - Handbook deliveries are late due to the supply chain issue, so we should be patient.
  - Les will write a longer National status for the January newsletter.
- **Upcoming Sleaford Observatory Committee** meeting considerations – Ron Waldron. The committee will design the observatory in the early new year and plan to have the observatory built by June 2022, pending approval of budget at the March meeting. Ron will send the schedule to the members.

## 5. New business

- **Reporting to National** – Secretary and Treasurer – Mike Dolan states reports are due by February. Donna-Lee May will check what actual formal dates are.
- **Web content** – Mike Dolan requests a formal method of updating. Donna-Lee & Rick Huziak suggests that approval by the President is required where web content would represent the Centre, otherwise standard monthly content can just be done as usual.
- **Request to purchase one new Telrad for one of the rental telescopes at \$80 plus a few bases.** Ike Thiessen. **Moved:** Ron Waldron – To purchase the Telrad and bases as requested. **Seconded:** Darrell Chatfield. **CARRIED.** Ike can buy and get either paid and get reimbursed or can get an invoice from *All-star Telescope* to be paid at the time of order. Darrell may have a spare Telrad base. This year's rentals generated \$490.
- **Treasurer's Position** – Donna-Lee May remarked about her absence over the last three months regarding her family Covid emergency and how this has resulted in delay of reporting and SSSP payments. Discussion ensued.

## 6. Call to adjourn. 7:57 PM. **Moved:** Ron Waldron. **CARRIED.**

**Minutes of the RASC General Meeting - RASC Saskatoon Centre  
Monday, December 13, 2021 - 8:00 pm Online (ZOOM)**

**Ten members attending on-line at the beginning of the meeting.**

1. Sharing / Networking Time 8:00 – 8:15 pm – all members
2. **Call to order.** – 8:13 PM - Mike Dolan
3. **Call out to new members/guests:** None
4. **Adoption of the November General meeting minutes** as circulated in Dec. newsletter. **Moved:** Tim Yaworski. **Seconded:** Tenho Tuomi. **CARRIED.**
5. **Executive meeting summary** – Mike Dolan provides a summary ... see Executive minutes.
6. **Reports:**

**SSSP Committee** – Rick Huziak reports on the first SSSP'22 meeting was held December 9. Request were made for new committee members and suggestions for programming and speakers. This will be SSSP's 25<sup>th</sup>, the 100<sup>th</sup> anniversary of the birth of Fr. Lucian Kemble and the Park's 60<sup>th</sup> anniversary.

**7. New Business**

- Web content requests summary - Mike Dolan.
- Sleaford Keys update – Mike Dolan. See Executive minutes for details

**8. Program:**

*The Upcoming Sky*– Colin Chatfield

**Astro-Jeopardy** – hosted by Mike Dolan & played by all. **The NEW Astro Jeopardy champion is Tim Yaworski!**

9. Adjournment 9:20 p.m. **Moved:** Colin Chatfield. **CARRIED.**



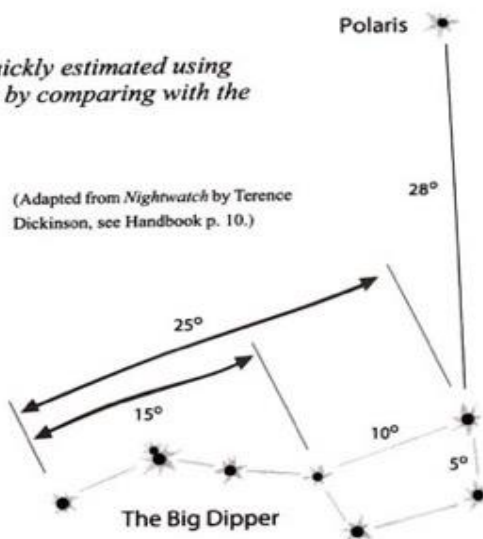
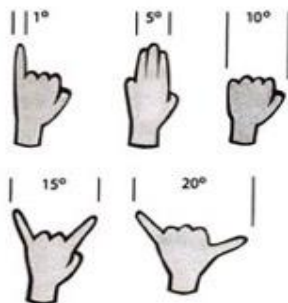
*“One of my last pictures of comet C/2021 A1 (Leonard) before it went too low for us in Canada.”  
Taken by Tenho Tuomi on December 9th through the 12" telescope with a modified Canon T3i camera.*

## JANUARY NIGHT SKY EVENTS AND INFO


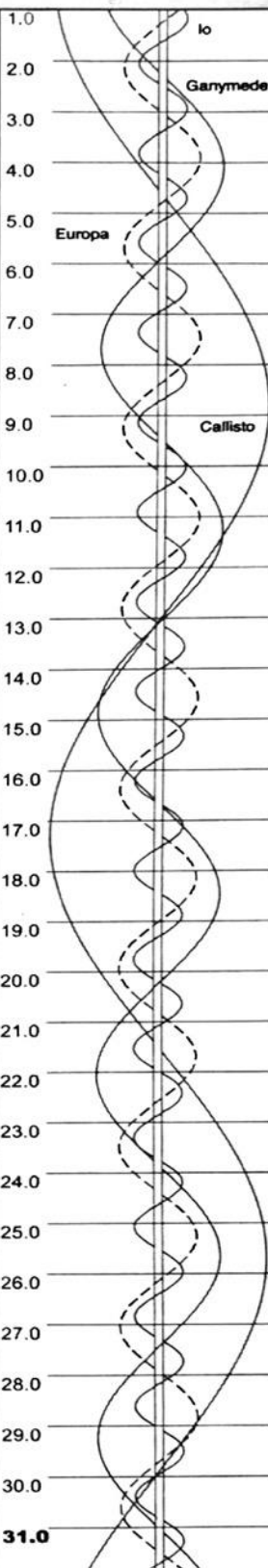








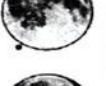


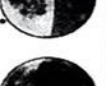
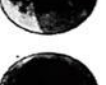




Images on the next few pages taken with permission from the 2021 Observer's Handbook. It can be obtained by joining the RASC here <http://rasc.ca/join> or ordered from <https://secure.rasc.ca/Portal/Shop/RASC/Store/StoreMain.aspx?Category=CURRPUB>

### HANDY SKY MEASURES

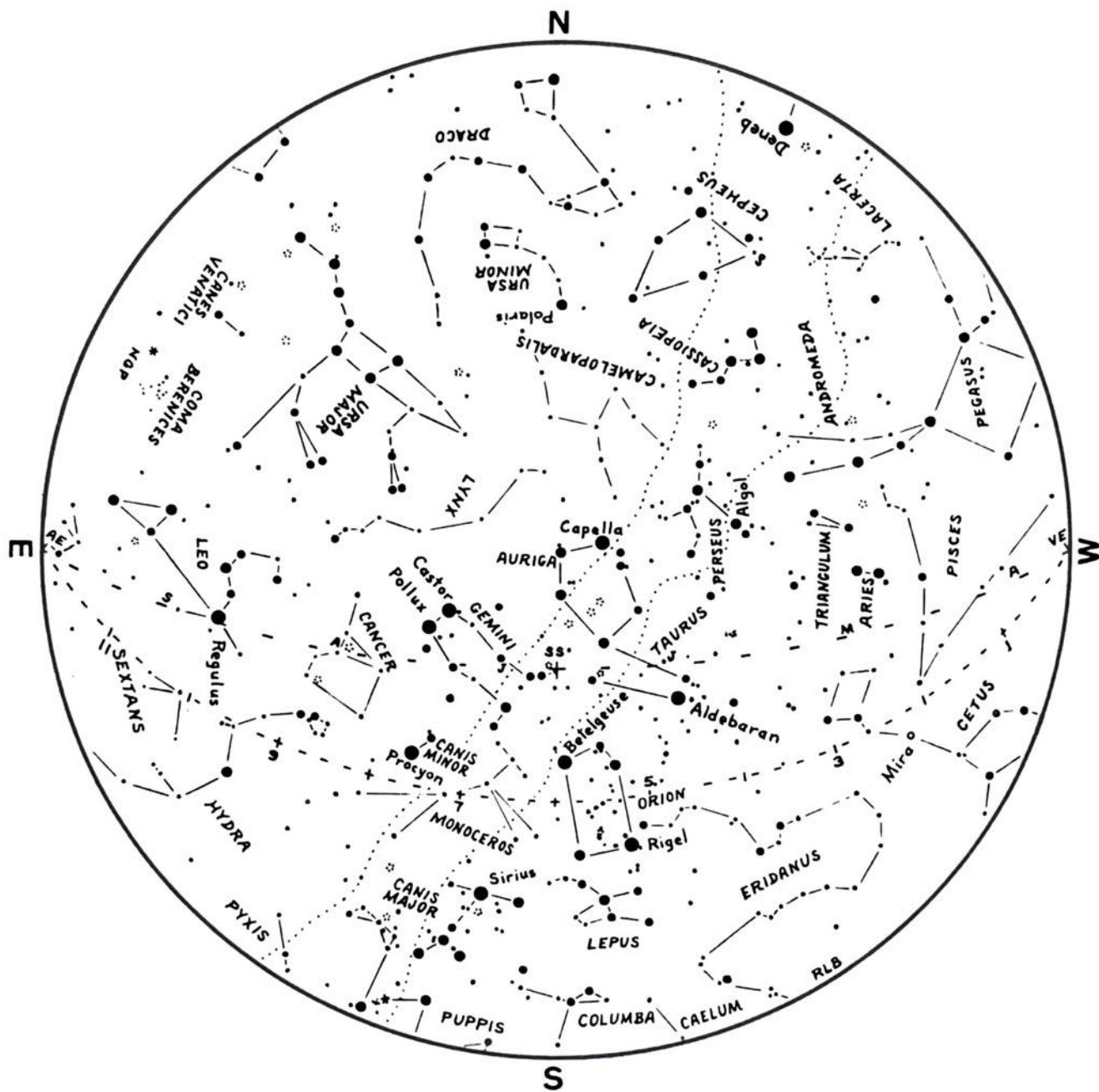
*Angular measure in the sky can be quickly estimated using the fingers of an outstretched arm, or by comparing with the star separations in the Big Dipper.*



RASC OBSERVER'S HANDBOOK 2020

Time (UT)			JANUARY EVENTS		Jupiter's Satellites	
d	h	m			West	East
Sat.	1	23	Moon at perigee (358033 km) <b>Large tides</b>		1.0	
Sun.	2	18 33	<b>new Moon (lunation 1225)</b>		2.0	
Mon.	3	0 42	Algol at minimum		3.0	
		21	<b>Quadrantid meteors peak</b>		4.0	
Tue.	4	1	Mercury 3° N of Moon		5.0	
		7	Earth at perihelion (147 105 052 km)		6.0	
		17	Saturn 4° N of Moon		7.0	
Wed.	5	21 31	Algol at minimum		8.0	
Thu.	6	0	Jupiter 4° N of Moon		9.0	
Fri.	7	11	<b>Mercury greatest elongation E (19°)</b>		10.0	
Sat.	8	18 20	Algol at minimum		11.0	
Sun.	9	1	Venus in inferior conjunction		12.0	
		18 11	<b>first quarter</b>		13.0	
Mon.	10				14.0	
Tue.	11		Mercury at ascending node		15.0	
		11	Uranus 1.5° N of Moon		16.0	
		15 09	Algol at minimum		17.0	
		22	Juno in conjunction with the Sun		18.0	
Wed.	12				19.0	
Thu.	13	0	<b>Ceres 1.2° S of Moon, occultation†</b>		20.0	
		6 50	<b>Double shadow transit on Jupiter</b>		21.0	
Fri.	14	1	Mercury stationary		22.0	
		9	Moon at apogee (405 805 km)		23.0	
		11 58	Algol at minimum		24.0	
Sat.	15		Mercury at perihelion		25.0	
		21	Moon 1.8° N of M35		26.0	
Sun.	16	22	Ceres stationary		27.0	
Mon.	17	8 47	Algol at minimum		28.0	
		23 48	<b>full Moon (smallest in 2022)</b>		29.0	
Tue.	18	20	Uranus stationary		30.0	
Wed.	19				31.0	
Thu.	20	5 36	Algol at minimum			
Fri.	21					
Sat.	22					
Sun.	23		Venus at perihelion			
		2 24	Algol at minimum			
		10	Mercury in inferior conjunction			
Mon.	24					
Tue.	25	13 41	<b>last quarter</b>			
		23 13	Algol at minimum			
Wed.	26		Mercury at greatest heliocentric lat. N			
Thu.	27					
Fri.	28	20 02	Algol at minimum			
Sat.	29	8	Venus stationary			
		15	<b>Mars 2° N of Moon</b>			
Sun.	30	7	Moon at perigee (362 252 km)			
Mon.	31	16 51	Algol at minimum			

†Westernmost Canada, Alaska, NE edge of Russia



## NATIONAL COUNCIL UPDATE

### Les Dickson - National Council Rep for Saskatoon Centre

This is a summary of significant items arising in the last two RASC National Council meetings and other announcements.

#### ***Proposed changes to the By-law regarding membership in National and in Centres***

It has been proposed that every member of a Centre must be a member of the Society. This issue has arisen due to recent expulsions of certain members of the Society. Now, expulsion from National does not automatically mean they stop being a member of a Centre. This was the case in the past and National wants to reinstate that. This provision change will soon go directly to Centre Presidents and their councils for discussion and feedback. If this proposed change goes through, we as a Centre will have to ensure our by-laws and policies are not in conflict with National. Note that the opposite is not true: if a member is expelled from a Centre, that member is still a member of the Society.

#### ***Volunteer screening policy and codes of conduct***

There has been much discussion in National Council on the issue of conducting public outreach events, especially with youth and other vulnerable groups. The conduct—or misconduct—of members of the RASC has significant liability and insurance implications. The Education and Public Outreach committee is drafting a code of conduct and a document on best practices that can be used by Centres to develop their own policies. It was noted that each province (and city perhaps) has their own requirements for security screens for people working with the public. It is hoped that in the next few months drafts of the documents may be available to Centres for discussion and feed back.

#### ***Production and shipping of the Observer's Handbook***

Some RASC members have yet to receive their Observer's Handbooks and calendars. Some of the problems were internal to the RASC and some with the printers and the shippers. During the crucial period late in the Summer and into Fall, the Society was working out the kinks in the new computer system and coping with the loss of two important staff members. There was a paper supply issue that affected the printers. Also, the shipping company originally contracted to handle the delivery of the publications was having so many problems that the Society changed shippers mid-stream. Due to complications from COVID-19 at a distribution centre, over 700 Handbooks were processed for shipping but never left the facility. These Handbooks were shipped out early in January and should arrive shortly.

### ***Staff Changes at the National Office***

There have been many recent staff changes in the office. Renata Koziol, who served in many key administrative and financial roles for over ten years, most recently as Director of Finance, left in August. Her duties are being temporarily covered by Marsha Bailey of Charity Accounts who served as Controller and Bookkeeper. The Membership Coordinator Adela Zifi went back to school in the Fall; Mike Gourlie and Aline Alcaraz are the new Membership Coordinator and Membership Assistant, respectively. The very outgoing Jena Hinds, the Outreach Coordinator, has left for greener pastures. She will be sorely missed. The new Education and Outreach Coordinator is Lauren Knowles. The Society has hired Shannon Dales as Science Communicator. Her 6-month appointment is being funded by a Bio Talent Canada Science Horizons grant. Her job will be to and expand the Society's publication portfolio with a focus on increasing sales and circulation of RASC books and magazines. The Society is recruiting for a new Office Manager.

### ***The National Office has moved!***

The National Office and the Dorner Telescope Museum has moved from its Dundas St. location to 489 College Street #203. The location is just to the west of the University of Toronto campus. The new space, about 55% larger than they had at the old location, will have room for the office staff in addition room for outreach activities, displays, and the telescope museum. The Society has signed a 10-year lease on the new suite.

Note that the monthly Bulletins and to a lesser extent the Weekly Newsletter give updates on the activities of the RASC at a national level and updates on the goings-on in the National Office.



*Slim Crescent Moon from April 2021 by Colin Chatfield*

# LIGHT POLLUTION NOTES - JANUARY 2022

Rick Huziak - rickhuziak@shaw.ca

If I receive positive feedback more or less monthly, I'd like to summarize light pollution issues in and around Saskatchewan in this newsletter. I don't have a lot of time to devote to the solutions for these issues, and I'd like to retire from this initiative sometime soon, but I don't want to drop what work we have been able to do to date since *dark skies* and *dark sky policy* seem to be buzz words understood by city councils and provincial tourism bodies these days. So, it seems we have made some inroads over the last two decades.

Some current members have indicated that they might be interested in carrying on the work, but we haven't formed an official Saskatoon Centre LPA Committee yet, but we do have advocates around Saskatchewan in Yorkton, Saskatoon, Regina, Eastend and Swift Current who are working on local and regional issues. The goal is to hopefully create awareness *and policy* regarding preserving darkness in our environment. We are the *Land of Living Skies*, but lights abound and are getting brighter all the time. Light pollution advocacy has no issue with lighting the night environment *where it makes sense*, but where wasted light and light pollution are created, we, as lovers of the dark sky, should be commenting publicly on a regular basis. Some of you do, some of you don't. Here are some current issues:

**Electronic Message Boards (Saskatoon):** You might have noticed a few new billboards going up, especially on Idylwyld Drive downtown and on the main thoroughfares. These billboards, especially those by *Directwest* are horrifically bright for over 90 minutes after sunset or before sunrise (These are located at 29<sup>th</sup> Street West & Idylwyld Drive and Broadway & 8<sup>th</sup> Street). I've made a few Bylaw 8770 complaints and occasionally the boards are bumped down only to return to full brightness a few weeks later. A similar billboard at *Britebox Storage* (Wanuskewin Road & Marquis Drive) is so bright it threatened the darkness of the Northeast Swale three kilometres away. An inquiry to the City has provided a surprising response in that later this year they intend to strengthen the Bylaw such as to "... [comply] with *Dark Skies principles* and what can be done to further regulate the intensity of light from the boards, in addition to several other issues related to signage ...". That would be nice! There is a bingo form for complaints here: <https://www.saskatoon.ca/city-hall/city-bylaws-policies/making-bylaw-complaint>.

**LED String Lights on the Nutrien/RBC Towers (Saskatoon):** Jan Shadick and I stood in front of the Meewasin Valley Board of Directors and the building developers a few years ago and managed to have the building design changed to reduce light pollution and prevent bird collisions. Originally the buildings were advertised (being all glass) "to blend into the blue skies as to be almost invisible". Not being good for birds, we got balustrades added

to the lower external façade and ceiling lighting recessed higher up as not to shine directly out of the buildings. The buildings were certified to LEED requirements which means they were supposed to use much less energy. Of course, this preceded a change of ownership/tenancy, and once RBC and Nutrien became tenants, up went colored strings of LED lights on the outside. When I inquired how this was permitted, the City and MVA said, “We didn’t see a problem with the lights.” They seem to have forgotten the MVA Board discussions and the Dark-sky Policy. The LED light bars immediately drew criticism from residents on the far side of the riverbank who thought it was tacky and destroyed (dominates) the view of downtown. In a flurry of emails, it seems that the City is fine with corporations deciding what the nighttime city will look like. We had previously proposed the City make a Master Lighting Plan so that lighting is coordinated, planned for an overall look, and complies with Dark-sky Policy, which currently apparently does not apply to corporate lighting. The lighting also violates the River Landing dark-sky requirements in Bylaw 8770, but again, the City and MVA seem not to be able to make the connection! There is also great concern by certain people that the lights will kill migrating birds, especially in foggy nights. Note that the Edmonton-based LPA group is fighting this issue on the 69-story Stantec tower, which would also sport a 3-story high billboard at the top! That building would then be visible at night for over 100-kilometres!

**Tourism Saskatoon Dark-sky Viewing:** In *TOURISM SASKATOON Destination Strategy 2020 – 2022*, page 10 contains a single line statement under topic Destination Innovation, “... we have identified the following priorities for development that align with and authentically represent our community: ...[among other things] *Dark sky viewing* ...”. Somewhere along the line, someone thought it would be good marketing idea for Saskatoon. It would be if *Tourism* and the City truly understood what they were talking about. Although the Dark-sky Policy was passed by Council in 2006, it is yet to be written down and interpreted with any vigour. It also doesn’t apply to commercial or industrial lighting. However, it is good to see statements like this in *Tourism* or City plans. I have contacted *Tourism Saskatoon* about their intent but have not yet heard back from them. See the whole plan at:

[https://assets.simpleviewinc.com/simpleview/image/upload/v1/clients/saskatoon/Destination\\_Strat\\_2020\\_2022\\_FINAL\\_4eced084-78de-434e-bc02-816c98bb9a62.pdf](https://assets.simpleviewinc.com/simpleview/image/upload/v1/clients/saskatoon/Destination_Strat_2020_2022_FINAL_4eced084-78de-434e-bc02-816c98bb9a62.pdf)

**Meewasin Dark-sky Promotion (Saskatoon):** A recent conversation with the Meewasin Valley Authority (MVA) regarding potential future astronomy programming has them thinking about enlisting the RASC to help promote dark skies as a theme for environmental conservation. Potential programming in conjunction with the MVA has been suggested to take place the Beaver Creek Conservation Area, at River Landing and at the Northeast Swale. We worked with the City of Saskatoon and the MVA over the last half decade to assure that the lighting adjacent to the Swale, on the North Commuter Parkway, and on MVA pathways was dark-sky compliant. It is, though it could also be better. However, as I state often, dark-sky lighting in Saskatoon does not apply to commercial, industrial or

residential properties at this time, so all we need is a single billboard to ruin the darkness of the swales.

**Proposal to Light Up the Water Tower (Yorkton):** Very similarly to the RBC/Nutrien Saskatoon LED lighting, in November, the City of Yorkton was presented with a preliminary idea to light up the city water tower. It is currently unclear how they would do this; whether they would use LED light bars or spotlight the tower from the ground. Note that the tower is in a park surrounded by residential neighbourhoods. The idea is to provide a lighting feature that can be “programmed for celebrations” and as a tourist attraction.

Exactly why anyone would come to Yorkton to see a lit tower is not addressed in the article. Neither is the nuisance lighting it would produce to the residents of the area and across the city for line of site views or bird migration issues. Note that lighting of this type falls under Yorkton Bylaw No. 14/2003 which states: ***Nuisance:** Anything that in the opinion of Council interferes with the use or enjoyment of property, endangers personal health or safety, or is offensive to the senses.* We think the tower would fall under the nuisance definition, even if lighting is not generally associated with nuisance, though excess lighting and light pollution certainly can be. And, of course, since it is “*in the opinion of Council*”, Council can simply overrule their bylaw because they think the lights are pretty. We might disagree. Of course, any change of markings on a tower fall under federal aviation regulation *Standard 621 – Obstruction Marking and Lighting*. Note that the Yorkton *Painted Hand Casino* (in its old location) managed to kill thousands of migrating warblers with the tepee lights. Thankfully, those are gone forever, so maybe we should learn and not erect other migration obstacles or darkness destroyers.

See the article at: <https://www.sasktoday.ca/central/local-news/locals-hope-to-light-up-water-tower-4761523>

Casino lights killing birds (14 years ago) here:

<https://www.cbc.ca/news/canada/saskatchewan/casino-spotlights-stack-odds-against-birds-yorkton-man-says-1.738544>

**Grasslands Dark-sky Preserve:** In the fall, I made a trip down to the Grasslands DSP East Block (near Assiniboia, SK) and did a light audit in conjunction with the maintenance manager for the park whom I worked with a decade ago to design an awesome activities building that produces virtually no light pollution. We reviewed over-bright washroom lighting, area lighting and dark-sky observing sites with the intention of reducing light pollution by changing or shielding lights. Unfortunately, lights dim enough to go into dark-sky preserves really don't exist, so we had to “light hack” existing fixtures to reduce light spill and glare. Our work was suspended by an early fall, but we will pick this up again in the spring.

Then again it may not make a difference if Elon Musk continues to launch satellites. With Musk's launching of 60,000 Internet satellites, the amazing sky of Grasslands will be transformed into 20,000 visible "moving stars" visible simultaneously each night, with 5 deorbited satellites lighting up the skies every night depositing 5 tons of aluminum ash into the upper atmosphere every day. The effect of this is unknown but predicted to be "not good!" The most compromised "environment" will be 50-deg N latitude and 50-deg S latitude since the satellites spend most of their visible time there in their orbits ... i.e. just south of us over Grasslands latitudes. I also say "environment" in quotations, since space and the upper atmosphere are not recognized as "environments" and so there are no laws that try to prevent the destruction of these parts of earth and near-earth. We are also very concerned about the effect on migrating birds that use stars as guideposts. With so many moving stars the effect of disorientation is still to be studied.

Great paper by Dr. Samantha Lawler et al. of the University of Regina (and out SSSP 2021 keynote speaker) on this: <https://arxiv.org/pdf/2109.04328.pdf>

She was also recently on *As It Happens*:

[Government intervention needed to save endangered night sky, says scientist | CBC Radio](#)

**Cypress Hills Dark-sky Preserve:** We continue to monitor lighting at Cypress Hills DSP, home of the Saskatchewan Summer Star Party. Last August, we addressed a new very blue unshielded light that originated from the golf course. And of great concern is the currently red-lit CBC microwave tower. A change of one of the lights to a white strobe would effectively destroy the DSP and shut down the SSSP. On our list of things to do is to get a commitment from CBC to never change the lights to white and at the same time to recognize the Cypress DSP and the night sky with their towers everywhere. We currently do not know if they have any policy around this.

**Cell Towers:** 5G services expansion means a great increase in the number of cell towers. Recently two towers (RM of Aberdeen and just outside of Danielson Provincial Park) have generated complaints. The tower at Danielson has a very bright strobe light that lights up the entire park. We also are now seeing issues with line-of-site strobes entering the Grasslands DSP. Some communication with SaskTel is positive, in that they seem to erect towers with red rotating lighting, but Rogers Communication uses white strobes. A horrific Rogers tower is located just north of Maple Creek, and its flashes can blind you on the highway. Luckily, it is too far away from the Cypress DSP to have an effect. But over the next three years, over 100 new towers will be appearing around Saskatchewan. Communication with SaskTel and Rogers should be followed up before the province is nothing but white flashing strobes.

**Adam Pollock's Nuisances** (Saskatoon): Adan owns one of the oldest and most historic housed in west Saskatoon but is affected by noise, light, trains, dust and vibration from

Cindercrete and other businesses. He is fighting City Administration to actually follow their own nuisance bylaws. On the good side, after a few years of nagging, Saskatoon Light & Power, in response to a letter of request from Adam, placed shields on nearby streetlights and committed to straighten leaning poles to help remove light trespass from his property. Saskatoon Light & Power usually responds well to light pollution requests these days. They have placed a few banners around town advertising the benefits of well-designed LED streetlighting and that they are dark-sky complaint. (They indeed are.) So, there is some good news. City streetlights meet IDA requirements. And we as we state over and over, industrial and commercial lighting doesn't have to comply at this time, as Adam has found out.

**Epilogue:** This is a short list of things we have our fingers into. With the diversity of issues related to light pollution, the perpetual question is whether light pollution abatement activities should remain as part of astronomy clubs, or whether such activities should split off into their own organizations; its own ENGO, and only provide *services on demand* to astronomy clubs. Opinions on this, too, are welcome. **Of course, astronomy clubs should also be working on preserving the sky and protecting the darkness of their observatory environments, IMHO.**

### **New Scholarship for U of S Students**

In part due to the Cypress Dark-sky Preserve and Cypress Observatory, the *Friends of Cypress Hills Park*, on behalf of Friends Gerald & Joan Johnson, have created a scholarship for students of fine arts, environmental and astronomy programs. Gerald was one of the drivers and builders of the observatory. If you are interested in such a scholarship, check out this article: [New scholarships will support USask students in fine arts, astronomy and environmental programs - News - University of Saskatchewan](#)

### **IAU Calls for Survey of Amateur Astronomers**

The International Astronomical Union would like to survey amateur astronomers all over the world in an initiative that involves potential cooperation of professional and amateur astronomers. As IAU members, Gord Sarty (full member) and I (honorary member) would like to encourage every Saskatoon RASC member to take the survey, even if you do not immediately see a benefit in pro-am cooperation. However, potential cooperation may be access to professional astronomers to provide presentations to Centres, a portal through which amateurs can ask questions of professional astronomers, the opportunity to contribute to pro-am research, the opportunity of student members of the society to inquire about becoming astronomers, fighting earthly and space light pollution and much more. However, the IAU Committee mandate is just being developed and the wants and needs of amateur astronomers will help to form their mandate. **The survey only takes a few minutes to complete.** It is also important for the IAU to hear if you are *not* interested!

Here is the list of IAU Working Groups with many topics that might be of interest to amateur astronomers: [https://www.iau.org/science/scientific\\_bodies/working\\_groups/](https://www.iau.org/science/scientific_bodies/working_groups/)

Here is the IAU's announcement:

### **Calling all amateur and professional astronomers!**

The International Astronomical Union (IAU) is the major professional organization for astronomers throughout the world, with nearly 12,000 members in 90 countries. The IAU is working to foster stronger relations between the large community of amateur astronomers in many countries and professional astronomers.

The IAU Pro-Am Working Group sees many mutual benefits for professional and amateur astronomers alike through greater collaboration. To this end, we have initiated a survey to explore interest and potential barriers. Please consider taking a few minutes to complete the survey before January 31, 2022 at: [https://www.surveymonkey.com/r/IAU\\_ProAm](https://www.surveymonkey.com/r/IAU_ProAm)

LINK to the IAU announcement:

<https://www.iau.org/news/announcements/detail/ann21064/>

Your feedback will be very helpful as we consider how best to move forward. <snip>  
Thank you for taking the time to share your thoughts. **PLEASE share** this notice and the link to survey with members of your organization or others who may be interested.

The **IAU Pro-Am Working Group** consists of: **Aniket Sule**, HBCSE-TIFR, Mumbai, India – Chairperson, **John Hearnshaw**, University of Canterbury, Christchurch, New Zealand – Co-Chairperson, **Tim Spuck**, Associated Universities Inc. – Deputy Chairperson, **Yuko Kakazu**, Subaru Telescope & NAOJ TMT Project – Secretary, **Lina Canas**, IAU Office for Astronomy Outreach, **Beatriz Garcia**, Institute of Technologies for Detection and Astroparticles-ITeDA (CNEA, CONICET, UNSAM), **Moein Mosleh**, Shiraz University, Iran, **Antonia Varela Perez**, Instituto de Astrofísica de Canarias & Starlight Foundation, **Clementina Sasso**, Osservatorio Astronomico di Capodimonte, Naples, Italy, **Mayra Lebron**, University of Puerto Rico, San Juan, Puerto Rico, **Kaz Sekiguchi**, National Astronomical Observatory of Japan, **Boonrucksar Soonthornthum**, National Astronomical Research Institute of Thailand and **Ilya Usoskin**, IAU EC liaison.

### **An Asteroid for Jack (Ed) Kennedy**

We are proud that one of our founding members has been awarded an asteroid! John Edward (Ed) Kennedy was a Physics professor at the University of Saskatchewan and, with the help of others\* founded the RASC Saskatoon Centre in 1968. Over the years, Ed held a number of positions with the Centre. Here is the IAU citation...

**(10085) Jekennedy = 1990 QF5**

John Edward Kennedy (1916-1999) was a physicist who studied at Queen's University and McGill University. He worked with the University of New Brunswick, the Defence Research Medical Laboratory and the University of Saskatchewan. Meteor studies were among his research interests. He was a charter member of the Canadian Astronomical Society. [www.wgsbn-iau.org/files/Bulletins/latest.pdf](http://www.wgsbn-iau.org/files/Bulletins/latest.pdf)

(\*Others who signed the 1968 charter were: Malcolm MacMillan Thomson, Kenneth Osborne Wright, Henri Simard, Jack Lambourne Locke, Norman Green and John Frederick Heard.)

### **The 2022 Saskatchewan Summer Star Party – Planning Continues**

Our first 2022 planning meeting occurred on Dec. 9. We determined that our committee has not changed from the last few years, but thankfully everyone is back: Les Dickson, Ellen Dickson, Greg Fusick, Rick Huziak, Donna-Lee May, Darrell Chatfield, George Charpentier, Andrew Kostiuk, and Vance Petriew and Pierre Scherle from Regina. Of course, we are always looking for new members, so please let me know if you are interested in joining our group!

Some things we are looking at is either shifting the star party from Wednesday through Monday to Tuesday through Sunday to put less pressure on park camping numbers. Or, we could reduce the days to only four, from the current five. We will have the same number of campsites (M31 through M143 and dark-sky sites). Unfortunately, we do not have the attendance to ask for the other 30 campsites, which would be ideal. We will also likely be changing camping rules to assure each campsite actually registers, instead of friends of astronomers taking up spaces we could otherwise get paid for.

We also have to worry about planning in the Age of Covid. Last year we managed okay and have had no reports of Covid spread, but until the majority of people are vaccinated, we have to assume the worst and hope things get better. So, we are currently looking for more local speakers and the activities will be planned to be split between indoors and outdoors. We are wondering if we will be able to do the wiener roast in the Community Centre cabin since that has more room than the Wapiti Room and can be ventilated.

All-star Telescope was also sold and has moved from Didsbury to Edmonton. All-Star was one of our best supporters, so we will have to reach out and make friends with the new owners and invite them to the star party. There are always a lot of jobs to do, so we can always use new ideas and a lot of help! **If so, then next Zoom meeting is at 7:30 pm on January 13. Send me an email if you want to participate!**

# OBSERVERS GROUP COORDINATOR(S) NEEDED

Larry Scott

The Saskatoon Centre of the RASC is seeking one or more volunteers to take over the Observers Group Coordinator/Yard Monkey position currently held by me (Larry Scott). This position has many perks - fresh air and exercise in beautiful surroundings; works in close proximity to many bird species, butterflies, racoons, deer and gophers; the appreciation of your fellow club members; free parking; and more! Below is a list of opportunities for energetic club members that need to be passed on or not as the club sees fit.

If possible I would continue doing this for years but I'm planning a move in a few years and simply won't be here. My hope is to give the club time to consider its options and that I can pass on some tips to whomever(?) comes next.

## **Observers Group Coordinator**

- Set schedule for Observers Group based on dark skies(new moon) and not on a long weekend.

(Also Messier Marathon)

- Interpret weather reports to base a go/no go decision the day of Observers Group and notify club members.

## **Yard maintenance**

- Mow grass or blow snow as required so yard is useful and combustibles near buildings are kept to a minimum.

- Care and feeding of snow blower and lawn mowers. \*\*\*Important\*\*\*

## **Key Master**

- Give tours of Sleaford to club members and hand out keys to the kingdom.

## **Sleaford Open House**

- Set a date

- Nag George for posters.

- Distribute posters

- Nag everyone to show up.

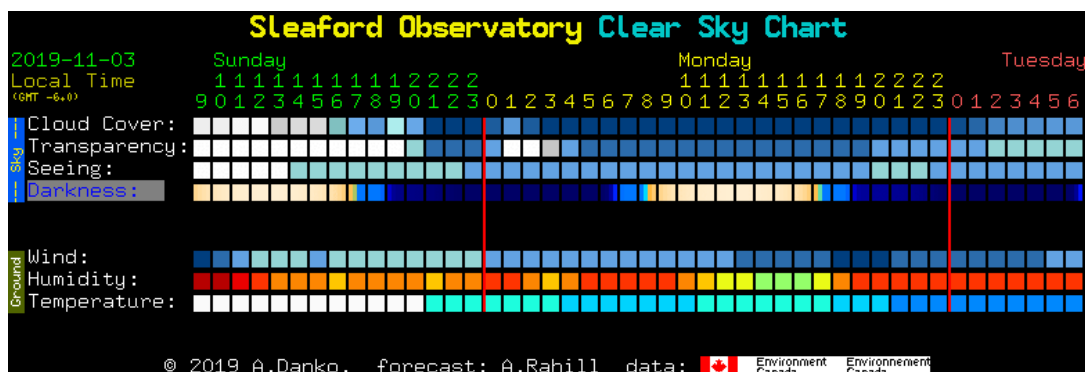
Starting in 2006 I began hosting Observer's Group meetings and as the years went on I accumulated some other responsibilities as listed above. Not sure if everything will be picked up by the members but I am hoping someone will step up to host the Observers Group and assist with these other responsibilities. Cheers for now, hope to see some of you out at Sleaford before I'm gone.

# 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)

## BOOKS 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 \$15.00
R. Morales			
<b>“Observing the Constellations”</b>	1989	J. Sanford	Color charts \$10.00

## 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. 314)
- THE FINEST NGC OBJECTS (p. 318),
- THE DEEP-SKY CHALLENGE OBJECTS (p. 322),
- DEEP-SKY GEMS (p. 324).

See [www.rasc.ca/certificate-programs](http://www.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** for intermediate to advanced members. In addition, **Astroimaging certificates** are available for those members with a photographic bent. See [www.rasc.ca/astro-imaging-certificate](http://www.rasc.ca/astro-imaging-certificate)

### RASC OBSERVER'S HANDBOOK 2020

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
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,*

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*

#### 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

The Messier, Finest NGC and David Levy's Deep-Sky Gems lists can be found in the *Observer's Handbook*.

The Explore the Universe list is available here <http://www.rasc.ca/explore-universe>

On-line Messier and Finest NGC lists, charts and logbooks:

<http://www.rasc.ca/observing>

On-line Herschel 400 List:

<http://www.astroleague.org/al/obsclubs/herschel/hers400.html>

Binocular List is at: [https://www.usask.ca/rasc/Chatfield\\_Binocular\\_List.pdf](https://www.usask.ca/rasc/Chatfield_Binocular_List.pdf)

"Isabel Williamson Lunar Observing Program Guide":

<http://www.rasc.ca/sites/default/files/IWLOP2015.pdf>

Program details can be found at: <http://www.rasc.ca/williamson/index.shtm>