Saskatoon Skies

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

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Thank goodness that's over! Norma stands on top of a huge drift in front of the warmup shelter at Sleaford this past winter. Thanks to everyone who helped keep the site open this winter!

Saskatoon Centre
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To view *Saskatoon Skies* digitally, see our website:
http://www.usask.ca/rasc/newsletters.html

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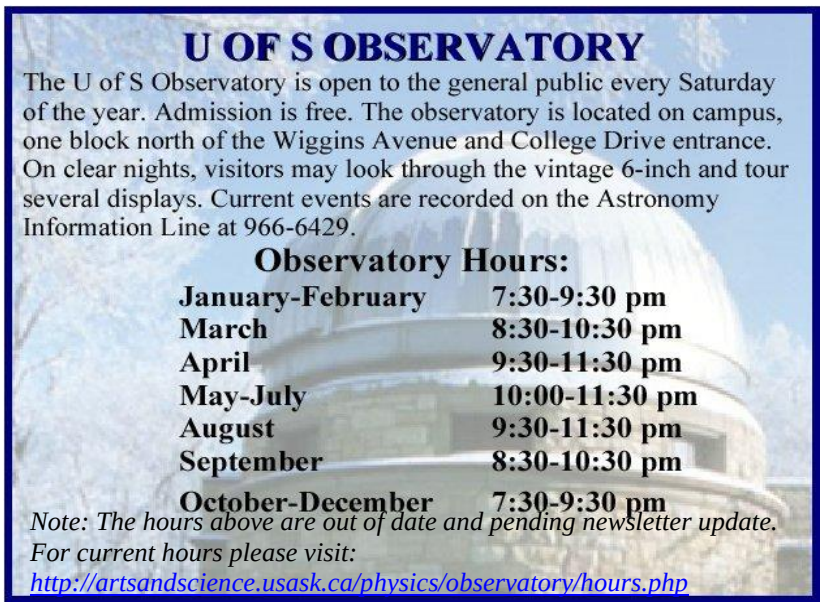
MEMBERSHIP? JOIN TODAY!

Regular: $85.00 /year **Youth: $45.00 /year** **Family: $80/year**

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-us

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)
- SkyNews Magazine (bimonthly)
- borrow the Centre's Data Projector to give astronomy outreach presentations – contact Les Dickson at astrochem@sasktel.net
- rent the Centre's Telescopes https://www.usask.ca/rasc/telescopes.html
- discounts to Sky &Telescope Magazine*
- use of the Centre library

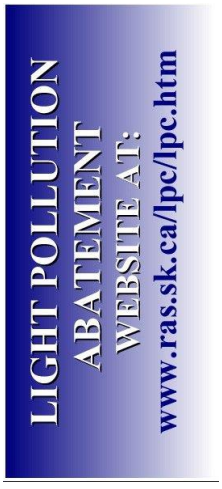


SASKATOON CENTRE'S
MAIN OFFICERS:

President – Tim May
Vice-President – Alan Duffy
Secretary – Marcel Müller-Goldkuhle
Treasurer – Norma Jensen
National Council Rep – Rob Shepard

Bottle Drive &
Canadian Tire $
By Les Dickson

If you cannot attend a meeting but would like to donate your Canadian Tire money please email me at astrochem@sasktel.net



Newsletter Editor – Kris Ohnander
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Web Posting – Gord Sarty
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 krisohn@gmail.com in msword or text format. Images: any format, less than 30MB, sent by e-mail as attached files. **Deadline for submission of all articles for an upcoming issue is the first Friday of the month!**

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RASC CALENDAR OF EVENTS

May 15	**RASC General Meeting**	Tim May
May 27	**Observers Group at Sleaford**	Larry Scott
May 29	**Youth Astronomy Club Meeting**	Ron Waldron
June 19	**RASC General Meeting**	Tim May
June 24	**Observers Group at Sleaford**	Larry Scott
July 22	**Observers Group at Sleaford**	Larry Scott

For a complete list of club events, please visit: http://www.usask.ca/rasc/activities.html

May RASC General Meeting

for all members and guests, Room 175 Physics Bldg
University of Saskatchewan, on

Monday, May 15th, 2017 at 8:00PM

Presented by Mark de Jong:

Variable Star Observing with a Small Telescope:

This talk will describe some of my experiences over the past several years using a 66 mm refractor for variable star observing. I will cover several techniques including visual, DSLR and CCD observations, and the advantages and challenges of each. I will also give examples of observations that I have done on various types of stars with each observing approach. Finally, I will describe some of the software tools available to assist with observing or data analysis, especially those provided by the American Association of Variable Star Observers.

Presented by Alan Duffy:

Remote Telescope Astronomy Basics:

A few pointers on getting started in remote astronomy using telescopes located around the world. A brief overview of available robotic telescope services, and some suggestions for getting good results.

Note: There will be an Executive Meeting at 7:00PM

Advertisements

Tim May, 306-341-3552

Ride Wanted for August Eclipse into Wyoming and to the SSSP

Hi, I'd like to share a ride, heading out Saturday August 19, or Sunday August 20, maybe aiming east of Caspar – wherever you're going, and then heading to SSSP for the week. Please let me know if you have room, I will share costs and have tent and gear. Thanks, Tim May.

Minutes of the April Meetings - *Marcel Müller-Goldkuhle*

Minutes of the Executive Meeting, April 17, 2017

Meeting called to order by Tim May at 7:10 PM
Minutes of March 20 Executive Meeting: Approval moved by Mark, seconded by Les, all in favour.

Reports:

Treasurer:	More than 10,000 CAD on the account, still nothing spent for the electrical installation at Sleaford.
Membership:	Total 94, +3 members from previous month.
National:	National Council Meeting (Webinar) on April 22nd; one concern raised is that membership information is unavailable after the revamp of the National Website.
Observers Group:	Next meeting at Sleaford planned for April 22nd.
Sleaford:	Electrical Installation hasn't been started yet. A window at the schoolhouse is broken.
SSSP:	Registration for event and camping is open now. Refund of registration fees is possible. Speakers: Kathryn McWilliams, Mel Stauffer. Coordinator positions have to be filled for the 2nd Night Telescope Clinic, Barbecue, and Meadows Campground.
Youth Club:	The club has 7 steady members. Last meeting on March 2nd, subject: How to navigate the sky. Next meeting's subject: Telescopes: How they work, how to use them.

Motion by Errol to nominate Ron Waldron as Executive Member (including the right to vote); seconded by Les, approved with all in favour.

Newsletter: Next closing date is May 5th.

Telescope Coord.: The club has currently 6 telescopes, 5 are reflectors.
Motion by Ron to purchase a collimator, seconded by Norma, approved with all in favour.

Old Business:

Open Positions: Coffee Supply Coordinator, Event Coordinator
Ellen is willing to support the person who takes over the Event Coordinator Position.

Events: Due to the lack of an Event Coordinator no activities were held at Earth Hour, Farmer's Market, and Beaver Creek. There was also no initiative by Beaver Creek to approach the Club.
Tim Yaworski approached the Club suggesting an event on the London Drugs parking lot on 8th street.

Yahoo Website: Discussions with Brent and Kris, currently the website runs on Jeff's web space. Rick to talk to Jeff.

Advertising: No update regarding business cards and banners.

New Business:

National AGM: 3 open director positions to be filled.
Rob is interested in joining the meeting.
Rob to check with National regarding refunding.

Speakers: National provided a list of speakers.

Memorabilia: Some old members have memorabilia, an inventory list and a safe place to store it is needed. Topic to be discussed in the next meetings.

Meeting adjourned at 8:00 PM.

Minutes of the General Meeting, April 17, 2017

Meeting called to order by Tim May at 8:15 PM.

Report:

Tim gave an update about the topics, which were discussed during the Executive Meeting.

Presentations:

Ron Waldron: Under the Aurora Oval - Astronomical adventures in Churchill, Manitoba.

Carl Finlay: A self-made roll-off telescope shelter.

Astrophotography Basics – *Colin Chatfield*

It's been a year since my last article, but I hope to contribute more regularly.

Last year in the article, I introduced myself and a little about the Saskatchewan Aurora Hunters group I started. I'd like to start looking at different aspects of night sky photography so those who are interested can get out and shoot the sky if they desire. While I mostly take aurora photos, I do also shoot the general night sky including the Milky Way and so on. I currently shoot with a Canon 7D MKII with a Canon 7D as a backup. They are both crop sensor cameras and are classed as semi-pro models.

Let's start with equipment needed. The first would ideally be some type of digital camera. DSLR's are preferred, but some point and shoot cameras can do the job. If the camera has manual settings on it, then that is the best way to go. Using the night settings on most cameras won't cut it. Some point and shoot cameras can allow for manual settings as well, so check if yours can do that. Nearly all DSLR's have manual settings (depicted by the 'M' on the dial).

There are three settings to be aware of for photography that make up the exposure triangle. Adjusting on of these three settings directly affects at least one of the other ones in that if one is changed, then one or both of the remaining two would need to be changed as well.

The first is ISO, which is the camera sensors sensitivity to light. ISO ranges generally from 50-6400. In a perfect world, taking the best pictures would entail shooting with the lowest ISO number. The reason for that is to reduce the amount of noise (grain) that appears on the picture. For most night shooting, depending on the cameras sensor, a typical ISO would be 800-3200 ISO to allow the sensor to pick up as much light as possible. For most Milky Way shooting, I am in the 6400 ISO range. Shooting at that range picks up a fair amount of noise, but also allows for a shorter exposure time and I have software that can help reduce the noise during editing. For daytime shooting a range of 100-400 ISO is typical, as the camera is more sensitive to light.

The second aspect is shutter speed. This refers to the speed at which the sensor takes the picture. The faster the number, the faster the picture is taken. Shutter speeds generally range from 30 seconds (30" on a camera) to 1/8000 of a second. The longer the shutter is open (30 seconds, for example) the longer exposure that will be taken. For action photography shooting, shutter speeds mostly need to be faster to reduce motion blur. However, for most night shooting, speeds can range up to 30 seconds or longer to allow the most amount light to hit the sensor. The problem however, is that the longer the time, the more possibly there is of blur. There's a couple of ways to combat this, which I'll talk about in an upcoming article.

Aperture is the last part of the exposure triangle. This is represented on cameras as f-stop numbers (example f/2.8, f/16, etc.). Aperture operates similarly to a human eye's iris. There are blades inside the lens that open and close depending on the amount of light required. For example, the lower the number, the larger the opening. F/2.8 is wide open for many lenses, while f/22 is a very small aperture, not allowing as much light in. There is a trade-off though called depth of field, which is the clarity or balance of the foreground and background in a picture. The lower the aperture (f/1.8, 2.8, etc.) the shallower the depth of field. What that means is that if one takes a picture at f/2.8, then part of the subject will be in focus, but the rest will be blurry. An example is if a portrait was taken of three people, the middle person would be in focus while the two outside ones are not. Increasing the aperture in turn

increases the depth of field. Using the same example, a larger aperture would help ensure the outside two people were more in focus. For night sky shooting, I typically don't use an aperture other than f/2.8, as I feel there is no real need to. Part of that does depend on the lens used, which I'll discuss further in a subsequent article.

In the next article I'll delve deeper into the needed equipment for night sky photography and more technical aspects of taking pictures.

Colin Chatfield
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306-717-6682

Comets this Winter – *Tenho Tuomi*

I have observed and photographed four comets this winter. All pictures are taken with a Canon T5i camera and stacked with RegiStax. All pictures are cropped to half original size.

[Left]
Comet 2P/Encke taken February 14 through 12" scope.
This was my third observation of comet Encke which has a period of 3.3 years. I photographed it in 2003 and 2013, and now again in February.

[Left]
Comet 41P/Tuttle-Giacobini-Kresak taken March 26 through 80mm scope.
I photographed 41P, which has a period of 5.4 years, in March when it became bright enough to be easily seen in the 80mm scope. It is moving fast north of the Big Dipper, and will start fading after April.

[Right]
Comet 45P/Honda-Mrkos-Pajdusakova taken February 17 through 80mm scope.
I photographed 45P, which has a period of 5.3 years, coming toward the sun at the end of December when it was low in the west at sunset, and then again going away from the sun in February when it was high in the sky, very close to earth and moving fast, but very spread out and hard to see. It is fading now.

[Left]
Comet C/2015 ER51 (PANSTARRS) taken April 5 through 12" scope in morning twilight, not cropped.
Comet PANSTARRS is very low to the south-east and stationary on the north border of Capricornus. It will be closest to earth on April 19 and closest to the sun May 10.

[Left]
Comet C/2005 V2 (Johnson) taken March 18 through 12" scope.
Comet Johnson is in the north part of Hercules and is slow moving, and supposed to be magnitude 7 by the beginning of June even though it will never come inside the orbit of Mars.

[Right]
Comet C/2017 E4 (Lovejoy) taken April 5 through 12" scope, not cropped.
Comet Lovejoy, the brightest and newest comet in the sky, is in Pegasus and moving fairly fast to the north. It was closest to earth on March 31 and will be closest to the sun on April 23.

Observer's Group – *Larry Scott*

The Observer's Group scheduled for April 22nd was cancelled due to cloudy skies and threat of rain. There were a few other nights with decent skies in April but I was unavailable those times.

Although our deep-sky observing will be curtailed for a few months by the encroaching twilight there are still lots of observing opportunities during May, June and July. Jupiter and Saturn will be nicely positioned for evening viewing this spring and summer. Also anyone interested in variable and double star observing will endure a smaller impact from the diminished dark skies. The summer night sky is a beautiful sight so get your telescope out and do some observing.

Our next Observer's Group is scheduled for May 27th with Moonless evenings from May 15th to 27th.

Observing Clubs and Certificates

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

Ron Waldron	108
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

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

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 on the National website.
On-line Messier and Finest NGC lists, charts and logbooks: **http://www.rasc.ca/observing**
On-line Herschel 400 List: **http://www.astroloeague.org/al/obsclubs/herschel/hers400.html**
Binocular List is at: **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**