

Saskatoon Skies

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

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June 2018



Star trails taken on a Pentax K1000, on TriX400 film. 50mm lens, approximately 1 hour exposure.
Taken by Kris Ohnander



Saskatoon Centre

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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

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	7:30 – 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

SASKATOON CENTRE'S MAIN OFFICERS:

President – Alan Duffy

Vice-President – **To be Filled**

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

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A separate by-mail subscription to Saskatoon Skies is available for \$15.00 per year. 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 krisohn@gmail.com for rates. Members can advertise non-commercial items free of charge.

LIGHT POLLUTION
ABALEMENT
WEBSITE AT:
www.ras.sk.ca/lpc/lpc.htm

RASC CALENDAR OF EVENTS

June 16	Observers Group at Sleaford	Larry Scott
June 18	RASC General Meeting	Alan Duffy
July 14	Observers Group at Sleaford	Larry Scott
August 8 – 13	Saskatchewan Summer Star Party	Les Dickson
September 8	Observers Group at Sleaford	Larry Scott
September 17	RASC General Meeting	Alan Duffy

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

June RASC General Meeting

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

Monday, June 18th, 2018 at 8:00PM

Talk by Tenho Tuomi discussing his various imaging projects he's done throughout the years. From the Messier list to the Herschel 400 and more Tenho has a vast amount of imaging experience and knowledge to draw on!

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

Saskatoon Centre Turns 50 This Year – What Are We Going To Do About It? – *Les Dickson*

The answer is: apparently, not much.

I do want to thank Tenho Tuomi and Jeff Swick for offering photos of past RASC centre events and people. Other than those offers, I have not been contacted by anyone else who has material to contribute to a special issue of the newsletter to be made ready to hand out at the SSSP this year. I will be gleaning past issues of our newsletter for articles that could be reprinted in the special issue. I would still like to hear from people with stories they would like to see included. Please contact me as soon as possible if you have something to contribute.

Final Update on SSSP 2018 – *Les Dickson*

Our yearly star party is fast approaching. Running from August 8th to 13th, it promises to be another great event.

Our confirmed guests are:

- Dr. Michael Earl (Saskatoon): He will be giving our Fr. Lucian Kemble Memorial presentation on Saturday afternoon, entitled "Astronomy – An Exciting Introduction to Science"
- Ron Waldron (Saskatoon): He will be giving the Thursday evening *Under Living Skies* public lecture, entitled "Astronomy Outreach with Saskatchewan's own STARMAN"
- Alister Ling (Edmonton): He will be doing one of our evening clinics in the Meadows.

We are still looking for other presenters, but hope to have our roster filled very soon.

The early registration period ends on June 29. If you have not registered yet, do so soon. Registration rates increase after that date. If you plan to camp, contact Rick Huziak soon as there are only a few spots left in the Meadows. If you want to stay in the Resort, book soon as we will likely be releasing most of the unbooked rooms in our block on June 27.

Given that this is also the Centre's 50th Anniversary year, we want (ie. EXPECT) the Centre to do a few things at the star party to celebrate. We will be discussing this with the Executive at the June meeting.

We hope to see you there.

You can contact us at:

- E-mail: sssp.sk@sasktel.net
- Les Dickson: astrochem@sasktel.net or 306-270-9184 (cell)
- Rick Huziak: 306-665-3392
- SSSP website: <https://sssp.saskatoon.rasc.ca/>

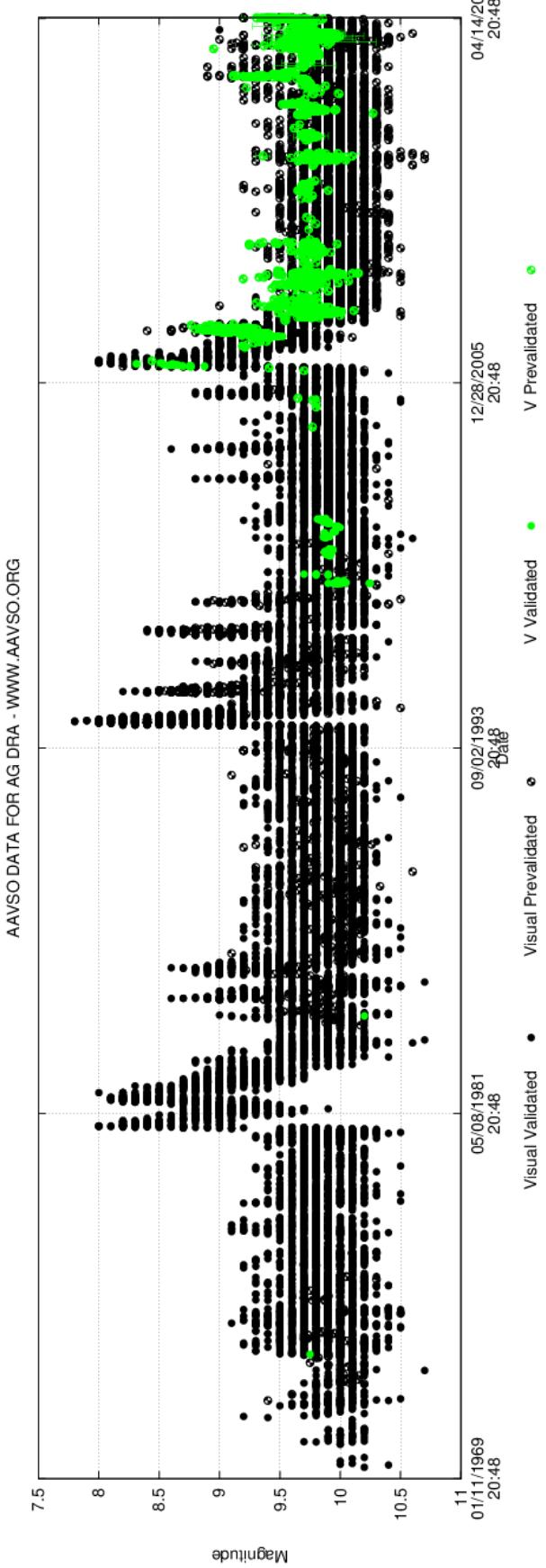
Things in the Sky that Change: AG Draconis

— Rick Huziak

Okay ... so you saw a nova, so let's get on with AG Draconis, or AG Dra, for short. The *American Association of Variable Star Observers* (AAVSO) recently put out an alert that this star is nearing its “eruptive phase” and should be monitored. The star is located at 16 01 41.01 +66 48 10.2, only 6-degrees from eta Draconis. Why is this star so special? Well – this one “erupts” only about every 15 years, going from about 9.8 magnitude up to about 8th magnitude where it sits for one to three years, oscillating in brightness for that time before it fades back to its base brightness for another 15 or so years. AG Dra is symbiotic variable of Z Andromedae type (Z And type) of eruptive variable stars. The more massive star (~1.5 solar mass) in the system is an orange giant (spectral type K3IIIep+WD, orange giant with peculiar emission lines, plus a white dwarf.) The K-type giant star has a white dwarf (~0.5 solar mass) as a companion that mutually revolves about in a 548.65 day orbit. Because the K-giant has swollen to exceed its Roche limit, it is pushing hot atmospheric gases out into space, which is then captured by the white dwarf. Well, not directly captured, since the gasses go into orbit around the dwarf in a flattened accretion disk. Eventually the gas falls onto the white dwarf, but in the meantime, something in the K-giant is causing increases in gas flow that overloads the accretion disk every 15 years, causing the flare-up outburst in the disk itself.

AG Dra recently started a brightening, but it is currently not known if this is *the* big outburst, or a smaller oscillation before the big one, since it is close 15 years since the last outburst. Only observation will tell. One nice thing about AG Draconis is that it is circumpolar for Canada, so there is no “sun gap” in the light that plagues the study of other stars. Of course, this also means no sun gap *only if* someone is observing the star! To observe the star, print out a chart from the www.aavso.org/vsp requesting AG Dra in the orientation and scale that fits your telescope. Choosing 180 arc-minutes (3°) works well, or 75 arc-min when the star is dim. If you have a Dobsonian scope, I have already “made” charts that you can request from the site by entering chart ID X228721G for the 180” chart or chart ID X228721E for the 75” chart. Observe the star every clear night to see what it is doing, and learn how to report your observations to the AAVSO. (It’s easy!) From the accompanying light curve over the last 50 years, you can see that the star is pretty busy and would be fun to observe since it will be a different brightness pretty well every time you observe it. While not as dramatic in amplitude as Nova Persei 2018 (V392 Per), this star represents yet another class of nova-like variable stars that have dramatic changes over long periods!

Since you are already in the area, you might as well observe R Draconis, a Mira-type variable at 16 32 40.23 +66 45 17.9. It has a period of 245.6 days and changes in brightness from mag. 6.7 to 13.2. It is currently at minimum brightness and will start rising up within a few weeks. (Download a chart for that, too.)



The light curve of AG Draconis for the last 50 years. Each dot is one observation by one dedicated observer! The 15-year periodic outbursts are clearly visible and you should notice that the next outburst is due! The large one-magnitude “scatter” in observations at the baseline magnitude is caused by pulsations of the atmosphere of K sub-giant star. Expanding sections of the graph would show a 350-day oscillation.

Prairie Dark-Sky Events in 2018: It's Not All SSSP!

– Rick Huziak

Many of you are already planning your most wonderful observing vacation at the *Saskatchewan Summer Star Party* this August, but there are numerous other astronomy events you might enjoy that are held on the prairies during the spring, summer and fall months. Many of the events are held in RASC-designated Dark-sky Preserves (DSP); some are open to astronomy club members; some are open to the public. Attending other peoples' events is an amazing way to meet all kinds of very interesting fellow (or fella) astronomers and naturalists. You can experience new ideas, get material for a club presentation in the fall, and support the dark-sky effort across the Prairies. Back in my heavy observing days, I had already attended 15 star parties before we even had inkling that maybe we should create the SSSP, and for SSSP we stole a lot of their ideas. Every group has a different way to do things, and everyone has excellent skies! Take some time this year to visit other places! Here's the list of astronomy events this summer, “**” indicates events that some Saskatoon members are already planning to attend:

Beyond the Big Dipper**, Grasslands West Star Party, (Aug. 11, Grasslands National Park DSP, West Block, Frenchman Valley Campground) <https://www.pc.gc.ca/en/pn-np/sk/grasslands/activ/decouverte-tours1/grandeourse-bigdipper>

Milky Way Days**, star party, (Sept. 1, Miquelon Lake Provincial Park/Beaver Hills DSP, AB) <https://www.pc.gc.ca/en/pn-np/ab/elkisland/activ/spec>

Milky Way Days, star party, (Sept. 2, Elk Island National Park/Beaver Hills DSP, AB) <https://www.pc.gc.ca/en/pn-np/ab/elkisland/activ/spec>

Thebacha & Wood Buffalo Dark-sky Festival (Aug. 23 – 26), Ft. Smith & Wood Buffalo DSP, NWT) <http://www.tawbas.ca/dark-sky-festival.html>

Yukon Star Party, (Aug. 24 – 26, Whitehorse, YT) <http://yukonastronomy.com/>

Northern Prairie Star Party** (Sept. 4 - 9, Black Nugget Lake, near Tofield, AB) <https://edmontonrasc.com/northern-prairie-star-party/>

Alberta Star Party** (Sept. 7 - 9, Starland Recreational Area, north of Drumheller, AB) <http://calgary.rasc.ca/asp2018.htm>

Spruce Woods Star Party** (Sept 7 - 9, Spruce Woods Provincial Park, south of Carberry, MB) <http://winnipeg.rasc.ca/spruce-woods-star-party/>

Northern Nights Festival (Sep. 21 – 22, Kathleen Lake Campground, Kluane National Park & Reserve DSP, YT) <https://www.pc.gc.ca/en/pn-np/yt/kluane>

Jasper Dark-sky Festival, Oct. 21 - 21, Jasper National Park DSP, AB) <https://jasperdarksky.travel/>

Light Painting – Colin Chatfield

In this last article before summer, I wanted to touch on light painting. What is this you may be wondering? Basically, it is lighting up a subject in a picture. It's important to note that I'm not an expert at what I do. I like to learn and what I talk about is what I've tried and learned myself and have found what works for me.

Light painting can make or break a night sky photo. Say, for example, you are taking a picture of aurora with a house in the foreground. The aurora would appear bright while the house could look like a silhouette. There is nothing wrong with a picture like that, but if you want the house to be brighter than it would be at night, try shining some light on it.

The difference in photos can be seen below. The first picture is not light painted, while the second is.



It doesn't take much light to make a subject lit up. It takes very little light, in fact. Sometimes all it takes is the light from a cell phone screen. In the example below, the rock formation was lit up with the screen of my cell phone. The elevator in the picture above was lit up with a flashlight.



What I've found is that there is a difference in flashlights. Older incandescent flashlights have a more yellow/orange light, while LED lights have a bluer look to them. The LED lights are often too bright as well to be effective for this technique. I prefer incandescent lights for this as it is more natural looking.

The technique can take a few attempts to get it right. What I do is start at one corner, then "paint" with the light source either up or down in even strokes until it's all covered. Sometimes though, that may still be too much light. So, if you can, turn down the brightness on the light source. Sometimes just a quick flash of light will be enough. Using a camera flash would often be too bright. Other times, it may take longer to properly light the subject. If you are doing a star trails picture or stacking pictures, then use the light painted one as the last photo in the stack, otherwise it will be lost in the mix and the picture will still be a silhouette type of shot. It takes practice, but good results can be achieved with patience and persistence.

Observer's Group – Larry Scott

The next few scheduled Observer's Groups will be June 16th, July 14th and September 8th at Sleaford Observatory. Members and their guests are welcome to join us for an evening of observing in a beautiful rural setting. Sounds awesome, right?

Last month I mentioned Venus and Jupiter in my monthly ramblings while completely ignoring the close approach of Mars. I believe this is the closest Mars comes to Earth till 2050 and I don't know about you but I don't think I'm going to wait till then. Keep an eye on the clear sky clock and head out to Sleaford when the seeing is good to get your best views of the red planet.

Now, having performed my monthly duty of writing this brief column since 2006, I would like to ask for a replacement. Although I will be happy to continue maintaining the yard at Sleaford and choosing appropriate dates for dark sky viewing, I have reached my limit on the Observer's Group Notes. October 2018 will be my last column and I hope someone is up to taking over. I'm bringing this up now to give people a chance to mull this over rather than springing it on you in October. Have a great summer and keep looking up.



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
Marcel Müller-	59
Goldkuhle	
Wayne	43
Schlakohl	
Ellen Dickson	34
Graham	9
Hartridge	

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	13
Charpentier	

EXPLORE the UNIVERSE

Certified at 55 to 110 Objects:

T. Tuomi,

Wayne	55
Schlakohl	
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	400
Chatfield	
Tenho Tuomi	378
Rick Huziak	246

LEVY DEEP-SKY GEMS

Certified at 154 Objects:

Tenho Tuomi	150
Darrell	70
Chatfield	



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.astroleague.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/TWLOP2015.pdf>

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