

Saskatoon Skies

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

Vol. 50, No. 1

January 2019



*Great photo taken by Tenho Tuomi on December 9th.
Saturn and the new Moon setting in the west. Taken through a 200mm lens.*



Saskatoon Centre

The Royal Astronomical Society of Canada

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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

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 – Daryl Janzen
Vice-President – Jim Goodridge
Secretary – Marcel Müller-Goldkuhle
Treasurer – Norma Jensen
National Council Rep – Chris Martin

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

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

Newsletter Editor – Kris Ohnander, Colin Chatfield

Copy & Collate – Les & Ellen Dickson

Labels & Temps – Mark de Jong

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!**

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.

RASC CALENDAR OF EVENTS

January 21	RASC General Meeting	Daryl Janzen
January 28	Youth Astronomy Club Meeting	Ron Waldron
February 2	Observers Group at Sleaford	Larry Scott
February 25	RASC General Meeting	Daryl Janzen
February 28	Youth Astronomy Club Meeting	Ron Waldron
March 2	Observers Group at Sleaford	Larry Scott

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

January RASC General Meeting

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

Join us on January 21, 2019 at 8:00PM

Presentations by:

Marcel Müller-Goldkuhle – *What's in the Sky this January?*

Tenho Tuomi – *Update on Comet Wirtanen – with New Images*

Rick Huziak – *The online AAVSO Chart Plotter Utility and its other uses*

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

Speakers, Articles, and a Fun Club – *Rick Huziak*

Clubs, not just ours, seem to struggle to attract speakers for their meetings and to get articles for their newsletters. In the new world of instant social media, sit-down meetings and newsletters might seem like dying breed, but they are not. Each media serves a specific purpose. The purpose of a club meeting is to create a social event. We bring our members together for a few hours each month to exchange educational and informative ideas and programs, and to plan the activities of the Centre that are often best done through face-to-face discussion. The purpose of the newsletter is to provide the medium to write longer articles, to provide monthly and longer-term announcements, to record business and to become a permanent archive of Centre activities. In addition, the Centre has a web page where newsletters, a list of long-term activities and other links, such as for SSSP, are stored. The Centre also has a *Facebook* page and an *Instagram* account.

None of this “just happens”, so back to the main topic. The Saskatoon Centre holds ten monthly General meetings and puts out ten newsletters each year. At the 2018 General Assembly in Edmonton, in my acceptance speech for my President’s Award (see *Saskatoon Skies*, Sept. 2018, *One Small Act*, page 4), I told the crowd that the lack of speakers and newsletter content is not a hard problem to solve. Looking at this from a mathematical point of view, the commitment by each club member to write an article for the newsletter or give even a talk at a meeting is a relatively small effort. For instance, our club has about 80 members, so with 10 meetings a year, a member has to commit to give a talk *only once every 8 years* for our speaker agenda to be filled ... or to write one article every eight years ... or to occasionally help with outreach ... or ... Certainly, each of our members has joined because of an interest in astronomy, and how better can we learn about their interests (and needs) than from them talking about them? Of course, if we hear from you only once every eight years, we don’t get to know you very well.

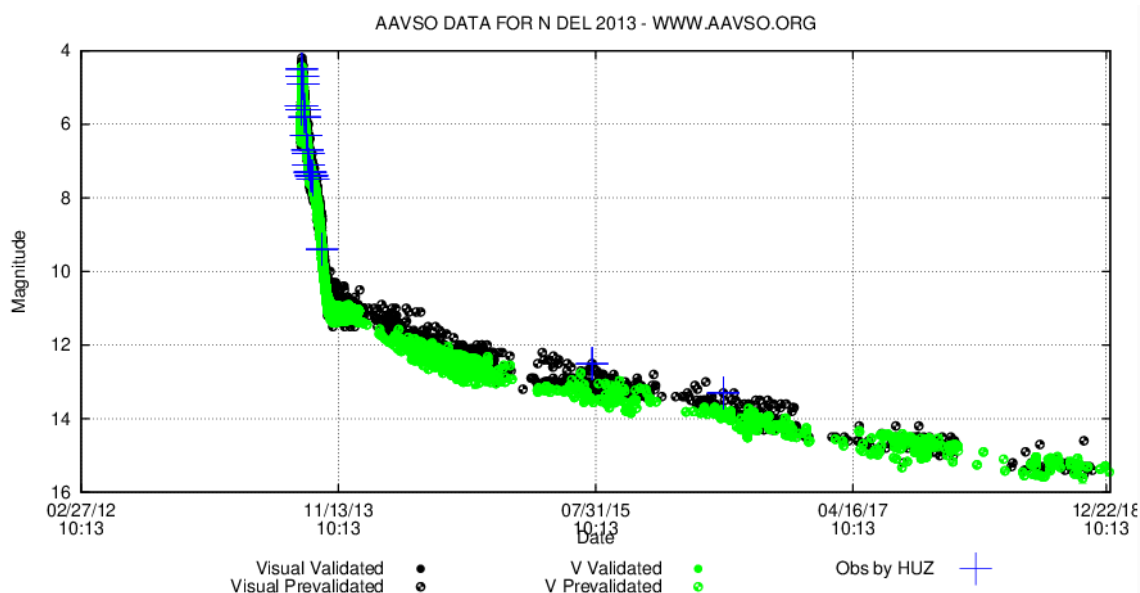
But the second part of my speech stated that *members’ contributions are really the most value when they are not solicited*, but just done without having to be asked. Assuming one or a few members of the club will organize all events, solicit all meeting speakers or compose the entire newsletter content each month is burdensome to those few. But having 80 at least occasional contributors sure makes it easier to have a fun, dynamic and active club. I’m pretty certain everyone has something to say. As the new Speaker Coordinator, I’d love to have the problem of just having to schedule speakers that are already raring to talk, instead of having to solicit people each and every month, and Kris and Colin would love to have an overabundance of articles to figure out how to get into the newsletter! Articles are also a great way for members who can’t get to meetings to let us know about your astronomy endeavors! All that it really takes is for each member to volunteer to do something *just once every few years*! We will, of course, be happy to talk to you at lesser intervals.

So, a simple email from you about what you’d love to present at a meeting and when you’d like to do it, would be warmly welcomed by me. Talks do not have to be fancy or even very long, and there is an entire universe of worthy topics! They can be basic, beginner level or advanced. Maybe you observed a meteor shower, took some great pictures, or finally got your telescope to work - we’d love to hear about it! At each meeting, we like to have one brief 5 – 10 minute talk and one longer 20 – 30 minute one. So, let’s hope to hear from you at an upcoming meeting!

A Tale of Three Novae — *Rick Huziak*

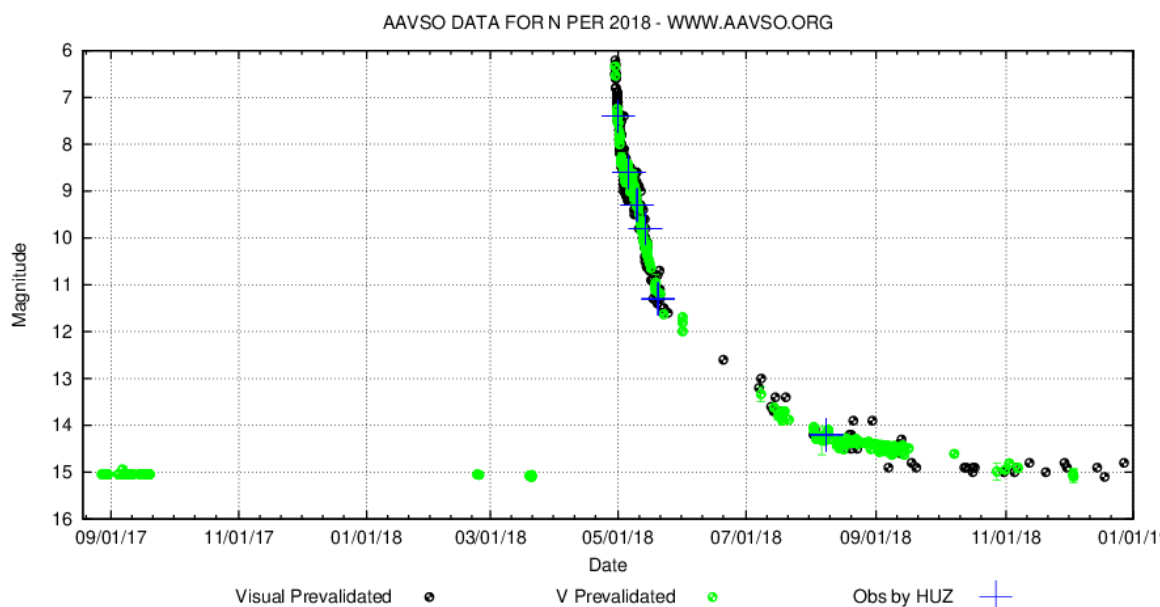
Adapted from a Jan. 1, 2019 RASClIst posting

On August 16, 2013, a "new star" appeared in the constellation Delphinus, reached 4.2 magnitude and remained visible to the naked eye for about two weeks. This event got me back into observing at least some variable stars after a few-years absence. Now, 5.7 years later, dedicated CCD *and visual* observers are still tracking the star and making measurements of its brightness. The star is still fading and is now around 15.3 magnitude, with the star's accretion disk (the source of this close double star's eruption) cooling at a rate of around 0.3 magnitudes per year. Below is the light curve of Nova Del 2013 (now named V339 Del) for the last 2500 days.



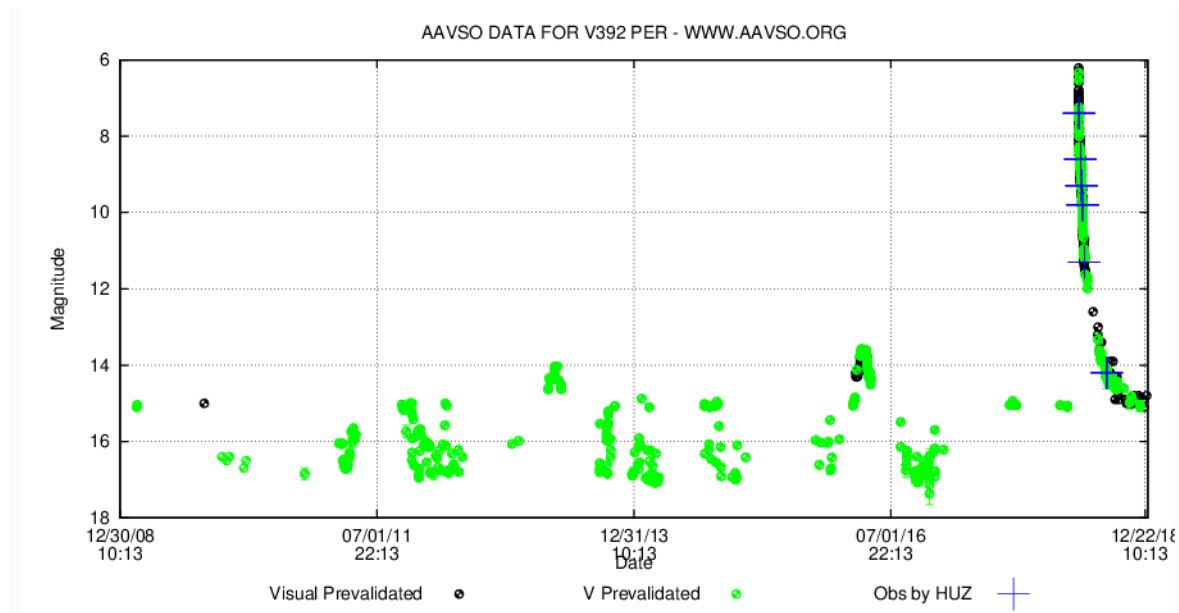
In the end, almost 240 different observers from around the world, of which 41 were Canadian, contributed observations for the above graph. Gaps in the light curve are from when Delphinus was behind the sun. The nova is now permanently named V339 Delphini ("variable star #339"), in little Delphinus! Can you imagine 339 variable stars in this tiny constellation? How many deep sky objects have you seen, and how much time have you spent, observing in this constellation?

On 29 April 2018, Nova Persei 2018 was announced, but it was quickly realized that this star was already being monitored for more than a decade as V392 Persei. Previously, this star was classified as "nova-like", since it flickered as an accretion-disk variable does. But then, unexpectedly, it had a major nova eruption - the first time a variable star had been identified *before* its nova eruption. This is the light curve for Nova Per 2018 (V392 Per) for the last 500 days.



Although V392 Per erupted about 250 days ago, I've plotted the light curve for the last 500 days, since someone had the hindsight to look at archival images and post *pre-eruption* magnitudes of the star, since it is quite important to understand what the star was doing before it decided to erupt. Note that this star would be in a great many wide-angle images taken in search of Perseid meteors, but astrophotographers have not bothered to go back through their images to see if V392 Persei was visible in their images and doing anything interesting closer to the eruption time. I think this is a lost opportunity.

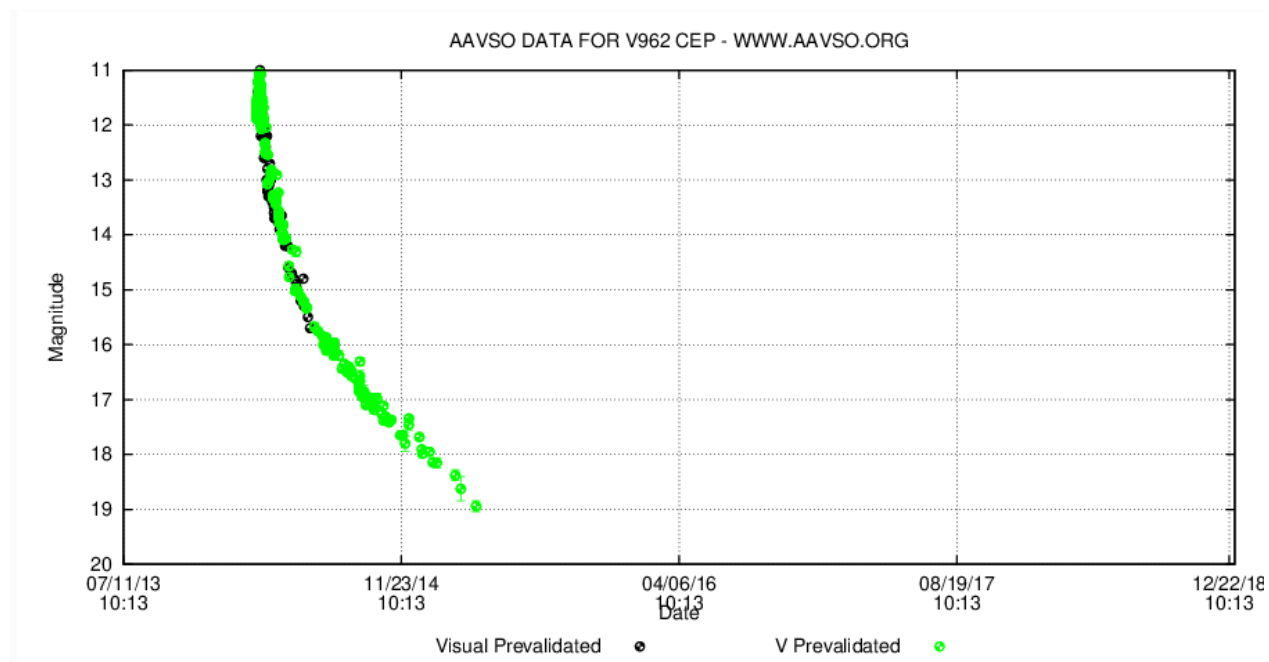
To demonstrate what V392 was doing, as monitored by dedicated variable star observers, I've plotted Nova Persei 2018 (V394 Per) for the last 3654 days (10 years).



You can see that the star flickers a lot, as (pre-) and post-novae do at quiescence. At times, V392 Per had mini-eruptions up to 14th magnitude, well within the DLSR imaging range (hint!) and the last mini-eruption was also caught by a visual observer (black dot.) More dedicated visual observers are showing

this star has now faded back down to 15.0 magnitude, just above the quiescent magnitude of around 16th. 152 different people from around the world, of which 16 are Canadian, contributed observations. It will take many years yet for the accretion disk to cool down to the pre-nova level, and when the star will start showing mini-eruptions again can only be determined through observation. So keep shooting Perseids, and check your images!

In between the two above, Nova Cephei 2014 (now V962 Cep) reached 11.0 magnitude on March 13, 2014. Being "dim" and with an unknown minimum quiescent levels (somewhere fainter than 21st magnitude), observations continued as long as they could with someone reporting an impressive 18.9 magnitude CCD observation! Here's the plot for the last 2000 days, followed by 48 observers, of which 4 are Canadian. Observers were able to follow the star's fade for over one year.



With all graphs, each black dot is an individual visual estimate, green dots are CCD measurements and blue crosses are my observations (all of which for these stars are eye-through-the-scope "visual".) Other Saskatoon Centre observers who contributed observations plotted on these graphs using CCD or DSLR cameras or just their eyes are: Daryl Janzen, Dale Boan, Mark de Jong, Jim Goodridge, Gord Sarty and Stan Shadick. Each graph is plotted showing "brightness verses time", with brightest at the top. The light curves were produced and copied from the *American Association of Variable Star Observers* (AAVSO) light curve plotting utility at www.aavso.org/lcg

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-Goldkuhle	81
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

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.astroloague.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>