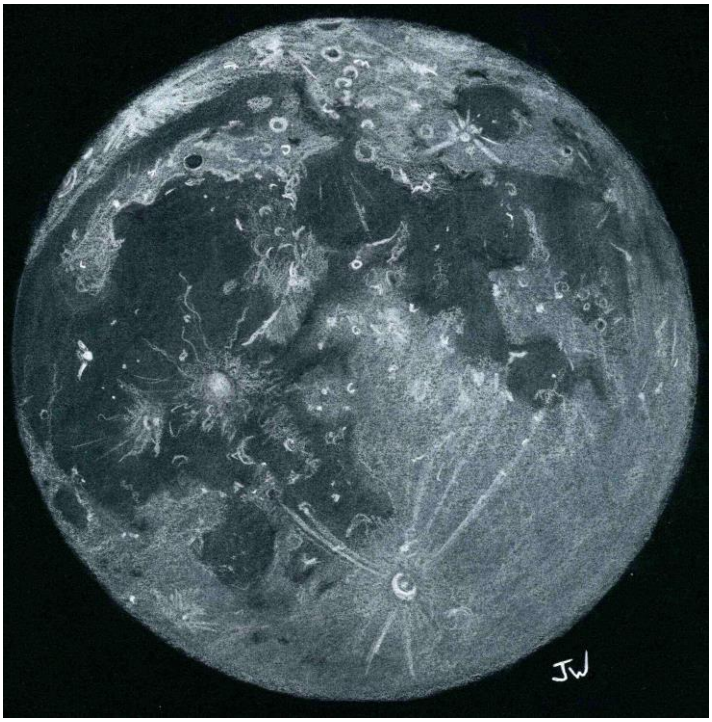
Saskatoon Skies

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

Vol. 50, No. 5 May 2019



No, that's not a photo! An incredible sketch of the full moon submitted by Jason Worobec. Jason started sketching this at the eyepiece of his C114/900mm reflector at 36x, but was clouded out. Sketch finished from photos he had taken himself. Black and white charcoal on black paper. Incredible work!

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

In This Issue:	
Membership Information / Bottle Drive / Officers of the Centre	2
U of S Observatory Hours / Light Pollution Abatement Website	2
Calendar of Events / Notice of Meeting / Elections Notice	3
Minutes of the March Meetings – Jim Goodridge	4-5
The U of S Observatory – A personal Perspective - *Ron Waldron*	6-9
Outreach Opportunities at Saskatchewan Parks – *Rick Huziak*	10
Report on Awasis Conference – *Norma Jensen*	10-11
Observing Clubs and Certificates	12

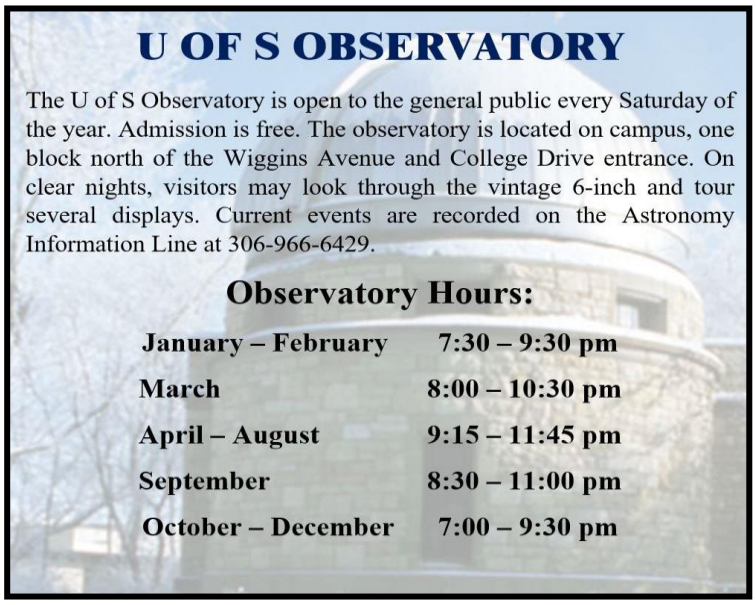
MEMBERSHIP? JOIN TODAY!

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 – 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

May 13	**RASC General Meeting**	Daryl Janzen
May 27	**Youth Astronomy Club Meeting**	Ron Waldron
June 1	**Observers Group at Sleaford**	Larry Scott
June 17	**RASC General Meeting**	Daryl Janzen
July 5-7	**Alberta Star-BQ Star Party**	*Info Online*
July 27	**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

Join us on May 13, 2019 at 8:00PM

Presentations:

What's in the Sky this May? - Marcel Müller-Goldkuhle

A summary of events you can observe over the next month.

Designing a Radio Receiver for the 8.5-m Radio Telescope – Ashley Stock

As part of an undergraduate engineering design course, a dual-frequency radio receiver has been designed and built for the U of S Physics and Engineering Physics department. This receiver will allow simultaneous measurement of astronomical radio signals at 1420 MHz (neutral galactic hydrogen) and 408 MHz (synchrotron radiation from AGN, supernovae, and galaxy clusters). This talk will discuss the design and observational opportunities of the receiver once it is mounted to an 8.5 m radio telescope dish.

Ashley recently finished bachelor degrees in engineering physics and physics specializing in astronomy. She has worked with Gordon Sarty on research projects involving black holes and neutrinos, and at *SNOLAB* on supernova early warning detection. She will be starting her PhD in astrophysics this upcoming fall.

The Skynet Robotic Telescope Network – Riley Whyte

Over the past year I have been fortunate enough to use the *Skynet Robotic Telescope Network* both as a research and teaching tool. The research was done as a student during my time at a radio astronomy education experience called *Education Research in Radio Astronomy* (ERIRA) at the Green Bank Observatory in West Virginia. The teaching was done here at the U of S through the lab portion of the Astronomy 113 class. In my talk I will talk about my experiences at ERIRA and the benefits of using Skynet in both research and education.

Riley is a current undergraduate Physics and Astronomy student at the U of S. He works as a tour guide at the campus observatory and as a TA for undergraduate astronomy classes.

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

Minutes of the March Meetings

— Jim Goodridge

Minutes of the Executive Meeting March 18, 2019

Attendees: Daryl Janzen, Jim Goodridge, Jim Gorkoff, Rick Huziak, Les Dickson, Ellen Dickson, Norma Jensen, Tenho Tuomi, Mark DeJong, Ron Waldron, Patricia Gakis, Errol Frazer-Harrison, Ike Thiesen, Darrel Chatfield

Meeting Called to order by Daryl Janzen at 7:04

Les Dickson handed out printed minutes to those who normally receive bulletins via surface mail.

Minutes: Approval of the minutes from the February 25, 2019 executive meeting, moved by Norma Jensen, seconded by Darrel Chatfield - carried

Voting Rights: A discussion ensued pertaining to voting rights at executive meetings. It was decided that all members of the "broad executive" who are at the meeting can vote and the core executive consisting of President, Vice President, Secretary and Treasurer can accept that advice if they so decide. In the history of our club the vote of the broad executive has never been overturned but the core executive members are the true legal voting members and will retain the right to overturn a decision made by the larger group.

April Meeting: Big event, the 90th birthday celebration of the observatory will likely be held in Physics 107 at 7:30 PM. The executive meeting for April is cancelled.

Moved by Darrel Chatfield, seconded by Norma Jensen that the April executive meeting be cancelled and the general/public meeting will take place at 7:30 PM in a room chosen by the University. Carried.

Treasurer's report: Norma Jensen currently running the bank account lean and money needs to be taken out of the term deposits and put into the chequing account.

RASC Brochure and Publications update, Jim Gorkoff, The RASC brochure no longer exists, Jim will order 500 Moon Gazer cards and 500 Star Finders. A discussion ensued about business cards and resurrecting the Saskatoon Centre Brochure. 200 Sky News need to be ordered as well.

Moved by Jim Goodridge, seconded by Patricia Gakis, that $100 be set aside for design work by Florence Editing for the centre brochure. Carried

Sleaford Committee Report: Darrel Chatfield Saskpower update, they will be replacing a power pole with buried line. This will result in a no-build zone and a discussion ensued regarding the proper place to put the new panel and where new poles will be positioned. The University people will put questions to SaskPower. Internet is to be installed for the roll-off building so that the robotic telescope can be used.

Youth Astronomy Club: Ron Waldron, in November the decision was made to terminate the club due to lack of a critical mass of members. It will continue to the end of May at the request of the current members. Ron Waldron and Mark DeJong have been running it. Daryl Janzen will do the talk in April.

Les purchased a toner cartridge for $110.58 as per the motion in February. He is currently getting updated quotes on the new projector.

Motion to Adjourn by Rick Huziak.

Minutes of the General Meeting March 18, 2019
26 members in attendance

Meeting Called to order by Daryl Janzen at 8:15

Les Dickson handed out printed minutes to those who normally receive bulletins via surface mail.

Minutes: Approval of the minutes from the February 25, 2019 general meeting, moved by Ellen Dickson, seconded by Les Dickson - carried

Recognition was made of Rick Huziak's birthday.

Women in Astronomy: To celebrate International Women's Day, University of Saskatchewan Astronomy students gave a public talk on Women in Astronomy. It was well received and quite successful.

On March 16 Tim Yaworski and Daryl Janzen led a random act of astronomy function on Broadway. Quite successful with about 50 participants. Another event is planned for April 13th. A discussion ensued about how to promote it.

Awasis Conference, April 17th at the Saskatoon Inn, Ike Thiessen, Norma Jensen, Tim Yaworski and Jim Goodridge will participate.

SSSP: everything is going well, one clinic still needs to be filled and the web pages have been updated.

A discussion took place about organizing a clean-out of the school house at Sleaford.

Yannis indicated that there could be a joint activity with the USASK Retirees.

Tim Yaworski is continuing photography workshops with Evan Hardy School.

Speakers:

Marcel Muller-Goldkuhle/Jim Goodridge; What's up for March/April

Velma Tuomi - The Perks and Perils of Being an Astronomer by Marriage

Colin Chatfield - Social Media in a Nutshell

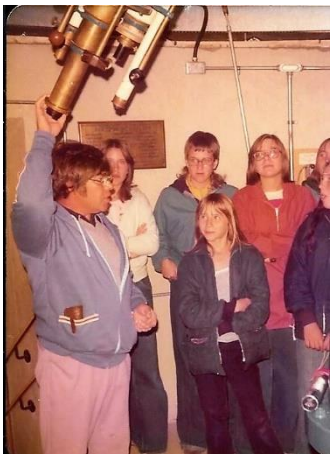
Tim Yaworski - Photographing and Processing Star Trails

Motion by Chris Marten to adjourn.

The U of S Observatory 1970-1985, a Personal Perspective
– Ron Waldron

My connection with the U of S Observatory began in May of 1970. I was a grade 12 student about to graduate from Aden Bowman Collegiate when one of my teachers approached me about a job possibility over the summer. It was through the College of Arts & Science at the U of S and it was for a position as Observatory Assistant at the U of S Campus observatory in Saskatoon. The teacher knew I already was pretty "spaced out" about astronomy so I was encouraged to apply.

Sometime in June of that year, I met with **Prof. Ed Kennedy**, assistant dean of the College of Arts & Science. I do not recall much about the actual interview except that he insisted I register as a student in his Astronomy Class for the fall term which I did. I was hired and my responsibilities began in July, opening the Observatory for three hours of public viewing on Wednesday evenings. Later that fall, we added school tours of the building and its telescope. These were initially offered in conjunction with Wednesday evening Open Houses but as the numbers attending increased, they were changed to Thursday and Friday evenings.



It was not long after beginning there that I met **Mr. Wendel Frenzel** who was a regular at the observatory and expressed an interest in working alongside me. Wendel was an amazing individual of German background. His self-taught knowledge of practical astronomy, command of the English language and ability to relate to people in the building was astounding. Together we ran the observatory, taking turns working upstairs behind the telescope and downstairs in the classroom, greeting people and explaining astronomical concepts. I began planning special events at the observatory including special openings for the close approach of mars, planetary configurations, and partial solar eclipses. It rapidly became clear that it was not only helpful but essential to have two people working in the building. Wendel was soon added to the payroll. At that time the observatory only had two levels open to the public and the only reason anyone would venture into the basement area was to navigate the narrow and precarious stairs to use the single antiquated washroom facility.

I learned a lot about myself in those early years. I discovered that I was happiest if not "at my best" when surrounded by crowds of people waiting their turn to view through the telescope. I seemed oblivious to the outdoor temperatures even when it was -30 degrees Celsius. The same thing was true of the classroom downstairs. I truly enjoyed discussing and explaining the wonders of our universe to anyone who was interested in learning.

An attendance book kept track of all visitors including monthly meetings of the Saskatoon Centre, RASC which were being held on Monday evenings. This is where I first met **Mr. G.N. Patterson** (Gordon). He was an amateur astronomer and

machinist for the Physics Dept. responsible for upkeep of the 7-inch Duncan telescope.

In 1971 under his direction and with help from members of the Centre, the telescope was completely dismantled, moved over to the Physics Building, repainted and reassembled approximately six months later. There was considerable disagreement between Prof. Kennedy and Gordon Patterson over the repainting of the telescope. Ed Kennedy, whose expertise was historical astronomy felt strongly that it should be repainted the original color which was a moss or olive green. Gordon Patterson, on the other hand was doing the work and wanted a fresh new look. In the end, Gordon won, and the telescope was reassembled in its new blue white and gold tones. The refurbishing of the telescope made for some tough times, opening the observatory on Wednesday evenings knowing there was no telescope available for viewing.

Following the refurbishing of the telescope, attendance at both Wednesday evening open houses and Friday night tours began to grow to the point that it was decided to add another Open House time slot on Sunday afternoons from 2 pm to 5 pm. (see Appendix A) This proved very popular as many people were on campus on Sundays and looking for places to explore. It was not uncommon to see a hundred visitors on a Sunday afternoon. In November of 1972, **Miss Halyna Kornuta** was added as a tour guide so a rotation could be setup among the Open House tour guides. The practice of opening on Sunday afternoons as well as on Wednesday evenings continued for five years until the end of October of 1977.

In 1974, I began a teaching career with the Saskatoon Public School Division as a middle years teacher with a science specialty. I enjoyed this and trust me all my students got a healthy dose of astronomy in their science classes. With these new responsibilities, I still continued to "moonlight" at the Observatory unable to part with this avenue to spread my passion.

In 1975, Prof. Kennedy announced he had managed to procure $30 000 through the Museum Committee to renovate the Observatory building. The funds would be put first toward replacing the dome which rumour had it was being held together by the layers of paint on its exterior surface. The remaining funds would be to upgrade the flooring and walls in the building, create two proper washrooms and a darkroom in the basement, as well as proper display cases directly under the dome and in the transit room.

It was an exciting time as we watched the renovations unfold. In April of 1976, I watched as a crane removed the old dome and lifted the new one purchased from Ash Dome into place. This new dome was motorized so gone was the effort of using brute arm strength on the rope attached to a pulley system to move the old dome. That same year renovations began in earnest and by Christmas of that same year were completed.

The newly renovated observatory was a real pleasure to work in. Walls and ceiling freshly plastered and painted, floors tiled, stairs with proper handrails, two small but proper washrooms and a working phone to answer or record messages coming in and to allow phone calls out. The displays were thematic and well thought out. The elements of astronomy downstairs under the circular dome and actual meteorites upstairs in the transit room. New bulletin boards surrounded the classroom area and it was fun properly hanging large wall charts and astronomical

posters. The overall changes and their effects were stunning. Sometime in this period we stopped opening on Sunday afternoons and concentrated only on Wednesday evenings and Friday night school tours.

I left teaching and the observatory for a year to pursue a Planetarium Internship at the Manitoba Museum of Man & Nature in Winnipeg. Upon return I went back to my teaching career in Saskatoon and of course evenings at the Observatory. I used my planetarium audio production skills to produce an audio slide set entitled "A Visit to the U of S Observatory" starring and narrated by a young grade 6 girl from my classroom at Lester B. Pearson School. An on-site Inservice for teachers followed and observatory attendance and in-particular school tour numbers continued to grow.

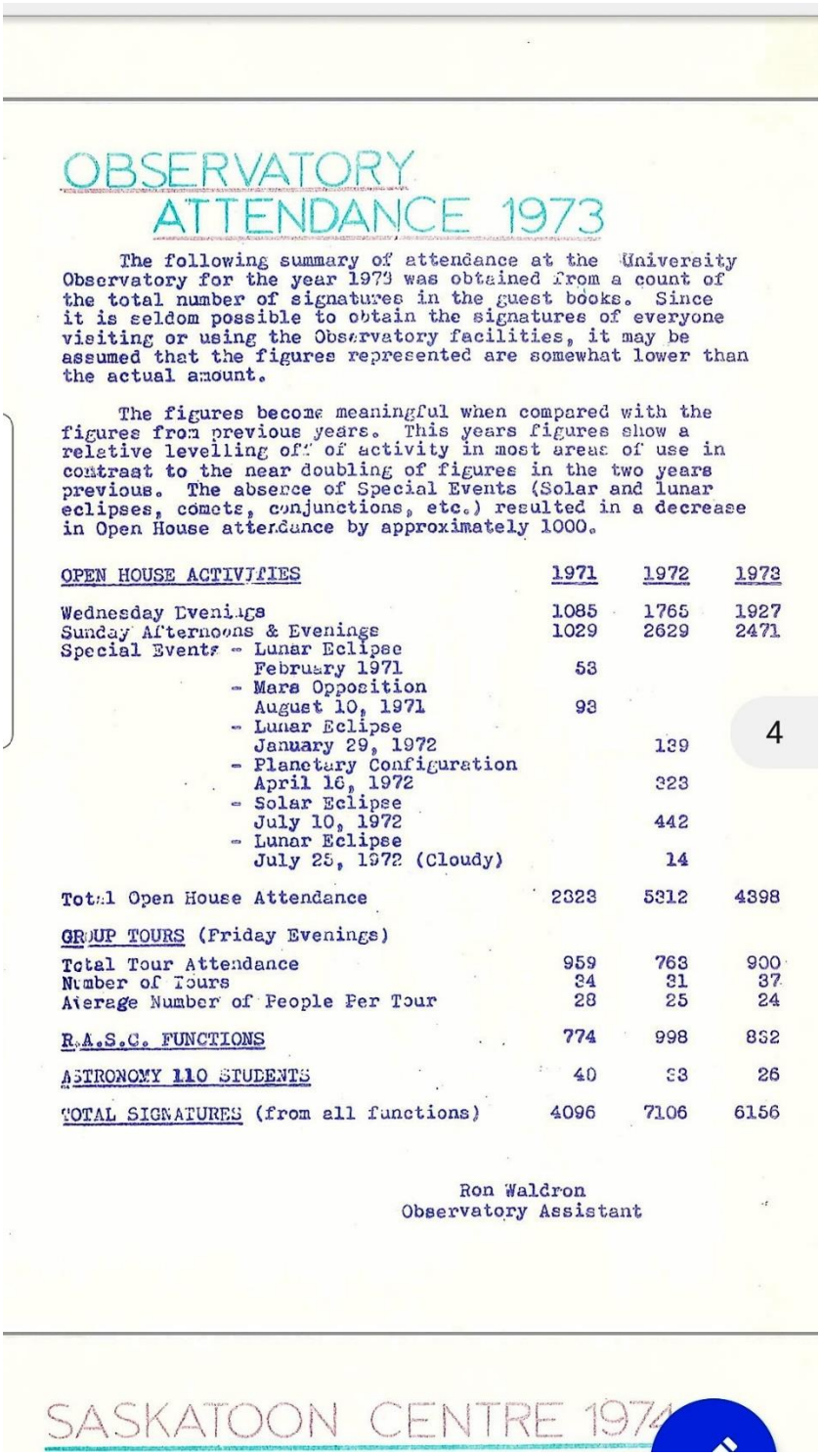
In January of 1984, I was closing the dome after working a Wednesday evening Open House when tragedy struck. During the routine procedure of moving the telescope to an inverted position to keep dust off the front lens, I heard something sliding down the tube followed by a loud bang at the objective end. When I went to inspect before placing the lens cap on the lens, the event and resulting damage was apparent. A metal tube light baffle attached to the working eyepiece had come loose over the years and had picked this moment to slide the length of the tube and collide with the edge of the objective lens causing irreparable damage to the objective. I reported it to the Physics Department. After close inspection it was decided that the lens was showing enough wear over its 55-year history that it was overdue for replacement. A replacement seven-inch lens was cost prohibitive as it would have to be custom made but a standard 6 inch would work and likely be as effective in light gathering power as the old 7-inch. The telescope was once again shut down for a few months while the new lens was ordered and installed. The telescope returned to service in August of that year as a 6-inch refractor and it offered some very effective views due to the newness of the front lens.

In the summer of 1985, I ceased working at the Observatory to keep up with the increasing demands of my teaching career and to allow the position of Observatory Assistant to be filled by a registered student at the U of S. To this day, however, I credit much of my success in life, particularly in the area of astronomy outreach to those wonderful 15 years at the observatory. Even today, when I enter the building, I have that feeling of "coming home".

Ron Waldron
Observatory Assistant
1970 - 1985

Appendix A

Open House Records at the U of S Observatory
from 1971 – 1973



OBSERVATORY ATTENDANCE 1973

The following summary of attendance at the University Observatory for the year 1973 was obtained from a count of the total number of signatures in the guest books. Since it is seldom possible to obtain the signatures of everyone visiting or using the Observatory facilities, it may be assumed that the figures represented are somewhat lower than the actual amount.

The figures become meaningful when compared with the figures from previous years. This years figures show a relative levelling off of activity in most areas of use in contrast to the near doubling of figures in the two years previous. The absence of Special Events (Solar and lunar eclipses, comets, conjunctions, etc.) resulted in a decrease in Open House attendance by approximately 1000.

OPEN HOUSE ACTIVITIES	1971	1972	1973
Wednesday Evenings	1085	1765	1927
Sunday Afternoons & Evenings	1029	2629	2471
Special Events - Lunar Eclipse February 1971	53		
- Mars Opposition August 10, 1971	93		
- Lunar Eclipse January 29, 1972		139	
- Planetary Configuration April 16, 1972		323	
- Solar Eclipse July 10, 1972		442	
- Lunar Eclipse July 25, 1972 (Cloudy)		14	
Total Open House Attendance	2323	5312	4398
GROUP TOURS (Friday Evenings)			
Total Tour Attendance	959	768	900
Number of Tours	34	31	37
Average Number of People Per Tour	28	25	24
R.A.S.C. FUNCTIONS	774	998	832
ASTRONOMY 110 STUDENTS	40	38	26
TOTAL SIGNATURES (from all functions)	4096	7106	6156

Ron Waldron
Observatory Assistant

4

SASKATOON CENTRE 1974

Outreach Opportunities at Saskatchewan Parks
– Rick Huziak

Provincial and National parks through Saskatchewan are always looking for programming opportunities for their park users. Over the last 25 years or so, several past and present members (Mike Clancy, Sandy Ferguson, Tenho Tuomi, Ron Waldron and I, to name just a few) have done outreach programs all over Saskatchewan. So if you like camping, an opportunity exists to get paid for part of your camping experience by providing the park with a presentation on astronomy and a starnight for other park users. Parks often can provide a speaker stipend, free entry and a free camping spot in exchange for the outreach activity. To take advantage of this, you would contact the lead park interpreter a month or so in advance of your trip and see if they would like to book your presentation. This is a great way to spread your love of astronomy to others and get free or cheaper camping to boot. Most parks also have access to a laptop and projector for your talk, but if not, the RASC can loan a projector to you. The Saskatoon Centre does get several requests for speakers from Parks at the beginning of the camping season, and the Centre can pass those opportunities to members who are interested in providing this service. Be aware, though: astronomy is quite popular in parks, since the skies are usually dark and the evening and night time activity doesn't compete with other park interpretive programs. So it is not unusual to have 100 or more people show up! With the exception of Cypress Hills and Grasslands, parks do not have on-going trained astronomer-interpreters, though Sask Parks has purchased and distributed four telescopes for programming at Good Spirit Lake and three other locations. Old Man on his Back also has a telescope. Some parks also have birding binoculars for groups, and we've used these to advantage to turn to the sky in very popular binocular star-walks. The opportunity also exists to help to train and develop park astronomy programs, and to periodically tweak up their telescopes for them.

Report on Awasis Conference, April 17, 2019
– Norma Jensen

The participants in this workshop wanted to know more about astronomy, not only as teachers, but as sky observers wanting more.

Time was short but we managed to cover all areas: General Introduction, Light Pollution Abatement, Red Light Use, Moon Studies, Deep Sky Objects, Binocular Astronomy, and First Nations Astronomy Local and Global. Jim Goodridge gave a great overview of Binocular Astronomy.

The workshop participants received a 30 page booklet for an easy start in all areas.

Showing the use of the red light was fun. All phones off and in pockets. Room darkened. They saw their dark adapted eyes appear. A few came late and Jim escorted them to a chair, guided by a red light, in their momentary "blindness". Seeing in the dark was clearer now. Then a variety of red lights were used to look at a map of April-May's night sky.

I shared two logbooks. One was the Isabel Williamson Lunar Observing Program. Here I freely recorded required information, made notes and added other found features. The other, a regular logbook that I used for all observations. I wanted to show the variety of ways you could record, and what was required information. These moved through the group slowly so I felt the sharing was a good idea.

In the First Nations Astronomy section, I suggested networking to form a western Canada group and to explore contacts globally.

Sharing this love of astronomy with teachers at an annual First Nations Education Conference was wonderful. I have been attending Awasis since its inception. It was a confluence of the best of worlds.

A thank you to Daryl Janzen, our club president, who spent time with 5 of the Youth Astronomy Club members to show and demonstrate the robotic telescopes on the roof of the Physics Building at the U of S on April 29th.

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	Up!	94
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**