SASKATOON SKIES

Volume 27, Issue 01, January 1996

Saskatoon Skies is published monthly by the Saskatoon Centre
of The Royal Astronomical Society of Canada

In this Issue

What happened in History

1 The asteroid Ceres was discovered by Giuscppe Piazzi in 1801.

· USSR Luna I became the first spacecraft to leave Earth's gravity, in 1959. It missed the Moon by nearly 4,000 miles.

· In 1969, the USSR launched Venera 5 to Venus where it landed May 16, 1969, sending back information about the atmosphere.

6 In 1968, U.S. Surveyor 7 launched to the Moon, landing near Crater Tycho January 10, 1968, soil analysis. Sent 3,343 photos.

7 Galileo discovered Jupiter's moons Io, Europa and Callisto, 1610.

8 In 1973, the USSR sent Luna 21 to a soft landing on the Moon January 16, 1973. The Lunokhod 2 self-propelled roving Moon car scooped up soil samples, returned to Earth January 27.

10 U.S. Army Signal Corps bounced radar beam off the Moon, 1946.

10 In 1969, USSR sent Venera 6 to Venus; it landed May 17, 1969, sending back information about that planet's atmosphere.

10 USSR Soyuz 27 was launched in 1978 on an A-2 rocket with cosmonauts Vladimir Dzhanibekov, Oleg Makarov. The cosmonauts spent six days in space. The Soyuz 27 capsule spent 65 days. They were the first short-time visitor-crew to Salyut 6 space station. They switched their individually-contoured seats from Soyuz 27 to Soyuz 26 for flight home, left Soyuz 27 behind.

11 Titania and Oberon, moons of Uranus, were discovered in 1787 by William Herschel.

11 USSR Soyuz 17 was launched in 1975 on an A-2 rocket for a 30 day stay at space station Salyut 4. Cosmonauts Georgi Grechko, Alexei Gubarev. It was the first cosmonaut ferry to Salyut 4. Returned in a snow stonn.

12 U.S. shuttle Columbia launched in 1986 on flight STS-61C with astronauts Robert L. "Hoot" Gibson, Charles F. Bolden Jr., Steven A. Hawley, U.S. Rep. Bill Nelson, George D. "Pinky" Nelson, Franklin R. Chang-Diaz, commercial passenger Robert J. Cenker. Carried a communications sat, 12 Get Away Special cannisters (GAScans) with experiments and Material Science Lab. Nelson was first member of U.S. House of Representatives in space, just 16 days before the Challenger disaster.

13 Galileo, in 1610, discovered Ganymede, a moon of Jupiter.

14 USSR Soyuz 4 was launched in 1969 on an A-2 rocket from Baikonur Cosmodrome for a rendezvous in space with Soyuz 5. Vladimir A. Shatalov was launched in Soyuz 4. Boris V. Volynov, Alexei S. Yeliseyev, Yevgeny V. Khrunov were launched in Soyuz 5 on an A-2 rocket January 15. Soyuz 4 was the first USSR manned launch in winter. The first crew transfer between spacecraft was completed in orbit. Yeliseyev & Khrunov left Soyuz 5 in spacesuits, pulled themselves along handrails and into the Soyuz 4 airlock. The spacewalk took about an hour. The two capsules remained docked about 4.5 hours. Soyuz 4 completed 45 orbits. Soyuz 5 completed 46. Shatalov, Yeliseyev & Khrunov flew home

A Good Laugh

Q: How many astronomers does it take to change a streetlight bulb?

A: None. Why replace a perfectly good burned out bulb.

Minutes of the December Executive Meeting

Present: Ed Kennedy,Richard Huziak, Sandy Ferguson, Al Hartridge Jim Young, Merlyn Melby,Brian Friesen,Mike Williams.

1. Meeting called to order at 7:00 p.m.

2. Balance sheet for the Saskatoon Center was presented by Mike Williams.This was approved by the executive.

3.Executive Positions;
Honorary President- Ed Kennedy nominated for appointment - unanimous
Past President - suggested this position be dropped for this term - unanimous
Brian Friesen - Nominated for Activities Coordinator - will be elected at gener. meeting
Centre Rep. - Rick Huziak suggested, with Jim Young as backup - Rick will accept for this year- unanimous.
Membership Promotions - vacant
Will delete Brian Friesen an councillor

4. Astronomy Canada - there was much discussion re this new publication with many varied opinions
some feel that professionals will not publish in this new journal.

5.Temporary membership:All temporary members on the list except one have been signed up.

6.Calendars are almost sold out - we will make another order if enough people show an interest in
purchase of one.

7. Programming ideas needed for the meetings to come in the new year:
Stan Shadick, Father Lucien Kemball i Feb.,Sandy - Women in astronomy, Ed Kennedy,

8. New Business - Ed Kennedy would like to build up a reference file on Canada's meteorite collection.
We don't know enough about the history of Canadian Meteorites.

9.. Meeting adjourned at 7:50 p.m.

Minutes of the December General Meeting

1. Meeting called to order at 8:00 p.m.

2.Executive Positions changes or additions:
Honorary President - Ed Kennedy , Past President - dropped for this year, Activitie Coordinator- Brian
Friesen, Centre Rep - Rick Huziak,

Membership Promotions - not filled.

3. Astronomy Canada - Rick will write a letter and bring it to the club at the ext meeting which he feels expresses the consensus of opinion of the club regarding this new publication.

4. Telescope Project progress report : The telescope project is now progressing at full steam ahead since the U of S physics dept. machine shop has agreed to do the project at no labour cost when time is available in the shop.

5.Temporary Membership list - down to one member.

6.Programming ideas needed for the meetings in the new year. Rick presently looking for new sources.

7.Geminid Meteor Shower Peak is Wed,Dec.13. Real peak is Noon on the 14th. Both nights will suffice.

8. RASC is ON- LINE and has a WWW home page courtesy of Gord Sarty.

9. New Business:
New Site - ground rules re lease to be worked out.

10.Presentation: Terry Rohrke with Canada's Radarsat - a program run by the Canadian Space Agency - gave a very interesting talk re the launch of the radarsat satellite and its future use and also gave a hand out of the commemorative issue re radarsat along with other pamphlets.

11. Meeting adjourned at 9:30 p.m.

Important Info

The Rystrom Observatory

Members are welcome to use the observatory at any time but ***please phone ahead.*** *Call Nelson or Gloria Rystrom at 955-2370* ***before 9:00 p.m.*** *if you intend on going out. This lets them know that someone will be roaming around their yard. If they do not answer go anyway. Drive through the yard slowly, and dim your lights as a courtesy to others who may be observing.*

Rating the Rystrom by Rick Huziak

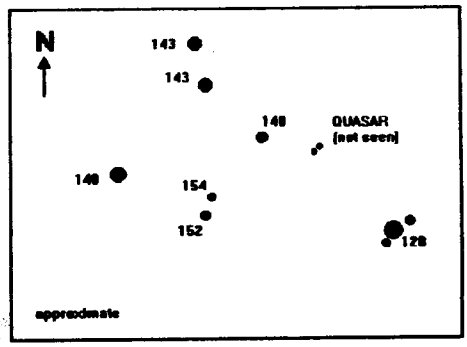
Have you ever wondered just how light polluted the Rystrom Observatory is? I attempted to use the quasar Q0957 +561 A/B to determine the limiting magnitude of the site on December 27. Searching for this object was a lot of fun because there are only a handful of quasars that can be seen with (larger) telescopes, and this is one of them. It is also the famous double gravitationally lensed quasar, which has two almost equally bright components only about 4 arc-seconds apart. For details about this quasar, and a better map, see Sky and Telescope, October 1991, p. 435. The object is located in Ursa Major, near the 12th magnitude galaxy NGC 3079. It is also marked in Uranometria 2000.

This quasar should be within the reach of a 10-inch telescope under excellent, dark skies, as it is somewhere between 16.0 and 16.5 magnitude at present. (It is somewhat variable). On this night, I used the 12.5-inch Eetook under a sky rated at 7 out of 10, an average, not great, sky at the observatory. The quasar was high in the sky when the attempt was made to avoid extinction of the atmosphere. The general field was easily located first by locating NGC 3079 and it's companion NGC 3073. Then a slight pan to the north-proceeding of this galaxy brought me to the right field. A 12.8 magnitude star provides a guidepost to the quasar. To get the maximum penetration of the sky, I used a black hood to remove all extraneous light, as the glare from the snow and telescope tube easily would add a magnitude of loss if not eliminated. Over the next 45 minutes, I slowly 'brought out' fainter and fainter stars. Quickly, the 14.0 and 14.3 stars appeared; they're fairly easy. But the 14.8 star took several minutes to be able to see steadily. It took the better part of a half-hour to detect and hold the 15.2 and 15.4 stars.

But then the killer! The quasar pair, at less than 16th magnitude could not be seen, though I suspect that it was glimpsed occasionally every several minutes for a fraction of a second or so as good seeing came and went. But despite a struggle for the next 15 or 20 minutes, I could not say that I actually saw the quasar. The sky limit turned out to be about 15.7 - not bad! I wonder what could have been seen under a truly DARK sky!

Despite the failure of certain detection, this object really shouldn't be that hard. If the sky was rated at 8 out of 10, of if a 14-inch telescope was used, I'm sure the quasar would have been detected. The secret of these challenges is to totally eliminate stray light and to be patient as your eyes continue to dark adapt and the probability of seeing increases. Many observers give up on the object if they don't see it in the first 15 seconds. Faint objects such as galaxies, bright nebulae and faint star clusters at the limit of your scope simply need more time to deliver enough faint photons for your eye to form that image. Don't give up!

I'd like to hear from other observers who have detected this object and would be especially interested in the smallest aperture that has managed to see it! It's a wonderful test of an observer's ability. The map below shows the general field. North is up. Magnitudes have the decimal places removed (152 = 15.2 magnitude).



General Meeting

You are invited to attend the General Meeting of the Saskatoon Centre of the Royal Astronomical Society of Canada.

Monday, January 15, 1996, 8:00 p.m. Room A-226, Health Sciences, U of S Campus

The program is to be determined. Impromptu mini-lectures are always welcome! Plan to come to the February meeting - Speaker - Lumsden, SK astronomer Father Lucian Kemble - discoverer of Kemble's Cascade!

Dues are Beyond Past Due

Dues are way beyond past due. But don't let THAT worry you! New and renewed members are always welcome! Please join us again for the year to come. 1996 Observer's Handbooks are in for those who have paid their memberships.

Regular $ 40.00
Youth (21 and younger) $ 22.50
Life $900.00

Send your cheque to this address or join at the next general meeting, but please join us again!

RASC Saskatoon
PO Box 317, RPO University
Saskatoon, SK
S7N 4J8

1996 Calendars are In and Gone

Yes, the 1996 calendars were so beautiful that they all sold out before Xmas! This is great. We don't plan to get any more in unless there is an actual demand for them. If you'd still like one of these calendars, order one directly from me. We can get them in in a matter of a few days. Cost is still just $10.00 each (plus $1.60 shipping for out of town). These are a must for the office or observatory - just ask our 25 happy customers! Call Rick Huziak (665-3392) or write to the Centre mailbox.

Tips for the Comet Hunt

Comets are named with two designations. **One** is the year of discovery followed by an uppercase letter for the half-month, then a numeral for the order that the comet was found during the halfmonth. The other designation is the name of the discoverers), with no more than three names to be listed.

Between 1975 and 1995, amateurs visually discovered 67 comets, or 38% of all comets found. This averages to 3.4 comets per year. The average comet hunter takes about 420 hours to find a comet, but this 'high' average is due to a few comets taking a long time to be found. The median number of hours for a visual find is 220. Also between 1975 and 1995, 40 of the 67 comets found visually were found in the morning sky, with 27 found in the evening sky. The morning sky comets averaged magnitude 8.8 and were 23 degrees above the horizon at discovery. The evening finds averaged magnitude 9.3 and 27 degrees high. The average elongation (distance in degrees from the sun to the comet) for morning comets was 59 degrees with a median of 49 degrees. The average evening sky elongation was 62 degrees with a median of 63 degrees.

There are three main reasons why comets miss being discovered. Magnitude: The comet must be bright enough to be seen in your telescope. If it is too faint, the weakness may be in one of these these areas: your eyes, your skies, and/or your telescope. Position: The comet must be in the part of the sky that you are searching. Time: The comet must be seen by you before it is seen by others.

Here's what to check for if you think you have found a new comet. Firstly, is it a known object such as a galaxy, nebula or small cluster? Check all star maps and catalogues. Check to see if it moves against the background stars within one hour. Secondly, is it a small group of a few stars, not recognized as a cluster? Use high power and try to resolve it. The third thing to watch out for are ghost images masquerading as a comet. Wiggle tube of telescope. Rotate tube. Change eyepieces. And finally, is your 'unique' find maybe a has-been? Check tables of known comets. An extra note for photographic finds, is it a photographic defect? Re-photograph it, visually observe it, check for motion.

If you think that you have found a new comet, check for motion and record all these things: Position in RA **and** Dec (2000 coords), magnitude, shape, direction and speed of motion, coma size. Try to get someone to confirm it, or send this information, along with your name and address, to: Central Bureau for Astronomical Telegrams Smithsonian Astrophysical

Advertising Info

*Commercial advertisers are encouraged to advertise in the **Saskatoon Skies**. Your ad will give you access to all Canadian members of the **Royal Astronomical Society**.*

*Commercial advertising is accepted in the **Saskatoon Skies** with three sizes of ads available. Artwork must be camera ready and supplied by the advertiser.*

***One quarter page**.....$25.00*
***One half page**.....$39.00*
***One full page**.....$50.00*

For further information please contact me or mail your questions to the address below.

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or
Phone: (617) 495-7244/7440/7444.

General Assembly 1996 in Edmonton

G.A. 1996 will be held in Edmonton, the City of Festivals, from June 27 through July 1. The hub of activity for the G.A. will be at the historic University of Alberta Campus situated on the south bank of the North Saskatchewan River.

Accommodations will be available in student residences in Lister Hall. A list of hotels will be avai'lable for those who prefer. Limited billeting i s avai 'lable for youth members or those of reduced means.

Transportation by bus, auto, and Light Rail Transit will be available for related activities, such as the banquet and tours.

The Edmonton Centre, RASC, was founded in 1932. After 64 years of operation, the Edmonton Centre is one of the most vibrant and active chapters of our Society. Membership has risen to over 150, with close to 100 people typically attending the monthly meetings.

Edmonton Centre is renowned for its talented telescope makers who have copped a bevy of awards in recent years. There is an extremely active observers group whose members are involved in a wide variet7y of observing programs.

The RASC Edmonton Centre offers an ongoing public education program, primarily through our platform at the Public Observatory of the Edmonton Space & Science Centre.

Edmonton Centre members were instrumental in the opening of the Queen Elizabeth Planetarium in 1960, the first planetarium in Canada. They were also heavily involved in the planning stages and eventual opening of the Edmonton Space & Science Centre in 1984.

National President Doug Hube and Edmonton Centre President ShirLee Adamson invite you to join with the Edmonton astronomical communit7y for a week of sun, stars and science in 1996.

For registration information, write to:

RASC Edmonton Centre
c/o Edmonton Space & Science Centre
11211 - 142 Street
Edmonton, AB T5M 4AI

or e-mail: linda.forbes@ualberta.ca

Membership Info

Membership in the Royal Astronomical Society of Canada and the Saskatoon Centre is open to anyone and has many benefits.

Below are the prices for memberships. Should you require additional information please contact Rick Huziak at 665-3392.

Regular membership (21 & up).....$40.00
Youth Membership (21 & under)....$22.50
Club Newsletter (12 issues).....$10.00
Observer's Handbook.....$18.95

Note: Lifetime memberships are available on request for $900.00

Letter from the Editor

I would like to apologise for the newsletter being so late. Because of the holidays I expected to recieve things a little late but what I did not expect was to be so busy.

I work full time during the day and at night I basically work full time on my company which is taking up more and more of my time the last few weeks. As a result of commitments I hade made I got behind and the newsletter kept getting pushed back.

I assure you that next month the letter will be out on time. The deadline for submitting anything will be January 27/95. If you have anything you would like to see in the newsletter send it in.

Pat Lafournaise called in a change of address. It is 525 East Place, Saskatoon. S7J 2Y9 Phone 343-9007.

See you next month.

The Royal Astronomical Society of Canada
Saskatoon Centre Incorporated
Income Statement
Years Ended, September 30,1995 and 1994

		1995	1994
Income :			
Membership Fees	$	1,854	1,572
Life Member Grants		72	72
Donations		279	665
Member Surcharge (newsletter sub)		251	172
Member Special Surcharge (Key)		30	35
Observers Handbook		-	-
Observing Guide (net)		22	14
National Calendars (net)		31	16
Advertising		35	-
Interest		13	60
Miscellaneous -		79	61
	$	2,666	2,657
Expenses :			
Educational Activities	$	269	56
Fees to National Office		1,134	967
Library		-	-
Office Administration		123	120
Newsletter & Postage		933	677
Donation (GN Patterson)		125	-
Insurance		274	274
Miscellaneous		75	-
		2,933	2,094
Surplus before amortization		(267)	563
Amortization - Buildings 20 years		(633)	(633)
Net Income (loss) for year	$	(900)	(70)
Equity beginning of year		15,238	15,308
Equity end of year	$	14,338	15,238

See accompanying notes to financial statements.

The Royal Astronomical Society of Canada
Saskatoon Centre Incorporated
Balance Sheets
September 30,1995 and 1994

		1995	1994
Assets :			
Current Assets;			
Cash	$	482	1,077
Savings (Telescope Fund)(note 1)		4,017	4,337
Accounts Receivable		35	-
Prepaid Expenses (BOG)		34	-
Total Current Assets		4,568	5,414
Fixed Assets @ cost;			
Rystrom Observatory		5,859	5,474
Warmup Shelter		4,773	4,773
Underground Wiring		3,015	3,015
Storage Shed		653	653
		14,300	13,915
less accumulated amortization		9,652	9,019
		4,648	4,896
Library		1	1
Equipment		5,351	5,351
Total Fixed Assets & Equipment		10,000	10,248
	$	14,568	15,662
Liabilities and Equity :			
Current Liabilities;			
Prepaid Membership	$	230	305
Promotional Items Payable		-	119
Total Current Liabilities		230	424
Equity;			
(per accompanying statement)		14,338	15,238
	$	14,568	15,662

On behalf of the Executive :

---------- President

---------- Treasurer

---------- Auditor

See accompanying notes to financial statements.

ASTROPHOTO CORNER

JAN.1996

RASC SASKATOON CENTER

PHOTO OF THE MONTH

THE CALIFORNIA NEBULA
NGC 1499

This is a large cloud of hydrogen gas which lies at the north edge of the Zeta Persei Association.
A difficult object visually,the nebula extends over a 21/2 degree field of view. It shows considerable filamentary detail on red sensitive long exposure photographs.

Note the apparent star trail in the left upper corner of this photograph. Is this an artifact or is this the trail of an earth orbit crossing asteroid? Your guess is as good as mine.I should have rephotographed this area of the sky a day or two later to see if this "trail" had moved and /or was still present.Chalk this mistake up to inexperience.In actuality I did not develop the negative of this photograph until about ten days after taking it.

TECHNIQUE:

The above photograph was taken with an 8" Schmidt camera f1.5 using a Wratten #92 red filter on hypered Kodak Tec. Pan.2415. Exposure was 30 minutes. The photograph turned out remarkably well considering my camera ,guidescope and finderscope were out of alignment and there appeared to be an inch of ice on the corrector plate at the end of the exposure.

Clear skies and good guiding----------Al Hartridge