

SASKATOON SKIES

Newsletter of the **Saskatoon Centre** of the
Royal Astronomical Society of Canada
December 1996. Vol. 27, No. 12



Noctilucent Clouds over Saskatoon
Physics Bldg., U. of Saskatchewan, July 1977

*****President's Message*****

Cold and cloudy - what a month! Throw in a bout of pneumonia, and this doesn't make for much observing in November. But, what the hey! I'm sure December will be better. I'd really like to encourage the members to get out and use the Rystrom Observatory. With the warm-up shelter, winter observing is bearable at almost any temperature. In fact, last year even Erich was out observing with me at a mere -39 degrees C and he even survived without loss of significant digits! But seriously, colder temperatures generally translate to a clearer, crisper sky. Monoceros, Canis Major, Gemini, Orion and other constellations have wonderful objects in them that shouldn't be missed! In cold weather, you do have to be cautious. Overdress. Observers spend most of their time 'standing around' as they gaze at the universe. With little physical exertion, it's easy to get chilled. Make sure your feet are particularly warm, and if you can, stand on a piece of plywood or other insulator near the telescope to keep off the cold ground. Also, try to resist constant cycling of your getting cold then warming up then getting cold again. It's best to dress properly and be a comfortable average coolness.

Keeping the frost from your breath and tears off the eyepieces is often a chore in cold weather. I use a cheap set of eyepieces in cold weather, and I often melt the frost off with my bare finger. If the coatings wear off, I can always buy another set of cheap oculars. If you have better ones, warming them gently before using them will keep the frost off for a while, then periodically rewarming may get you through the night. Be careful not to shock eyepieces when warming them. Be patient. Too much direct heat may crack a lens or unglue some elements.

After being out of commission for about the last 5 weeks, I'm really eager to get out observing again, so if you're not doing much, give me a call! I'll probably be coaxed into going out. During my last observing session in early Nov. I stumbled on a really cool cluster (around NGC 70) of 15th magnitude galaxies that I'm itching to see in a better sky...
Richard Huziak

Dues are Overdue: Those who have not yet renewed their membership are now in danger of being removed from the membership and newsletter mailing list. Please rejoin as soon as possible to avoid long delays in receiving your Observer's Handbook, new Journal and SkyNews. Handbooks have been ordered for Members in good standing and should arrive before Christmas. If you have decided NOT to rejoin the Centre, please contact me, or membership coordinator, Kim Mysyk to discuss why you have left us. We do our best and really like to know.

	DUES	DUE	DUES	DUE	DUES
Regular	\$ 40.00		Youth (21 and under)	\$ 22.50	
Lifetime	\$900.00		Newsletter only	\$ 12.50	

Make cheques payable to RASC Saskatoon and send to RASC Saskatoon Centre, PO Box 317, RPO University, Saskatoon, SK, S7N 4J8, or pay at the December general meeting. The membership year runs from October 1st. through September 30th.

Saskatoon Centre

Royal Astronomical Society of Canada

P.O. BOX 371, RPO University

Saskatoon, SK, S7N 4J8

Web: <http://maya.usask.ca/~sarty/rasc/rasc.html>

Email: huziak@sedsystems.ca Phone: (306) 665-3392

Honorary President: Dr. J. E. Kennedy

President: Richard Huziak

Vice-President: Erich Keser

Secretary: Dr. A. Hartridge

Treasurer: M. Williams

National Rep. Dr. Gord Sarty

Editors: Sandy Ferguson

Erich Keser

Photo Ed.: Dr. A. Hartridge

Contents

President's Message - Rick Huziak.....	Page 2
Spaceport Saskatoon -Paul Ferguson.....	Page 4
>>>>Map to Dec. 16th Meeting Location.....	Page 5
Feature: The Prairie Sky - John Leppert.....	Page 7
Hale-Bopp Ephemeris - John Leppert.....	Page 8
Hale-Bopp Finder Chart- Gord Sarty.....	Page 9
Announcements: Geminid Meteor Shower, Obselrving.....	Page 11
Jr. Astronomers, Smuts, another dark site, two Calendars	
Notes from the Editor.....	Page 12
Minutes, 18 Nov. Exec. & Gen. Meetings-Al Hartridge....	Page 14
Photo Page - Al Hartridge.....	Page 16

Saskatoon Skies welcomes letters and submissions. These may be E-mailed to keser@usask.ca as unformatted ASCII text with line returns only for paragraph breaks or sent by other means. Monthly deadline is the last day of each month.

Spaceport Saskatoon

Paul Ferguson

Good morning Space Cadets! Welcome to the Acac'emy. So began one of the most enjoyable outings members of the Saskatoon Centre have ever had. On November 2nd, Don MacKinnon and this humble scribe spent one exciting morning with 120 enthusiastic members of the Space Club, which meets once a month at Alvin Buckwold School. The RASC had been asked to provide a presentation on comets to both the junior group, about 100 kids, and the senior group, about 20. We had fun!

Now, you all know more about comets than I do, so I'm not going to embarrass myself by reciting exactly what I said. What I would like to share with you is a proven formula for success in putting on such a presentation for people in the grade 6 to 9 age range.

First, be prepared to have some fun. Wear something goofy, or do something goofy, or tell some good jokes. This helps to get people relaxed and into a receptive mood. Don't overlook this. For some reason, people get right intimidated when they hear us introduced as someone from the Royal so and so. (You can sense them curling up their toes. This was not always the case.)

Next, think 'show and tell'. This is their favourite format. (Mine too, come to think of it.) Of course you're going to have a well organized talk, you are an astronomer. Bring along

a set of slides organized to accompany the flow of your brilliant exposition. (This actually works better as 'tell and show'.)

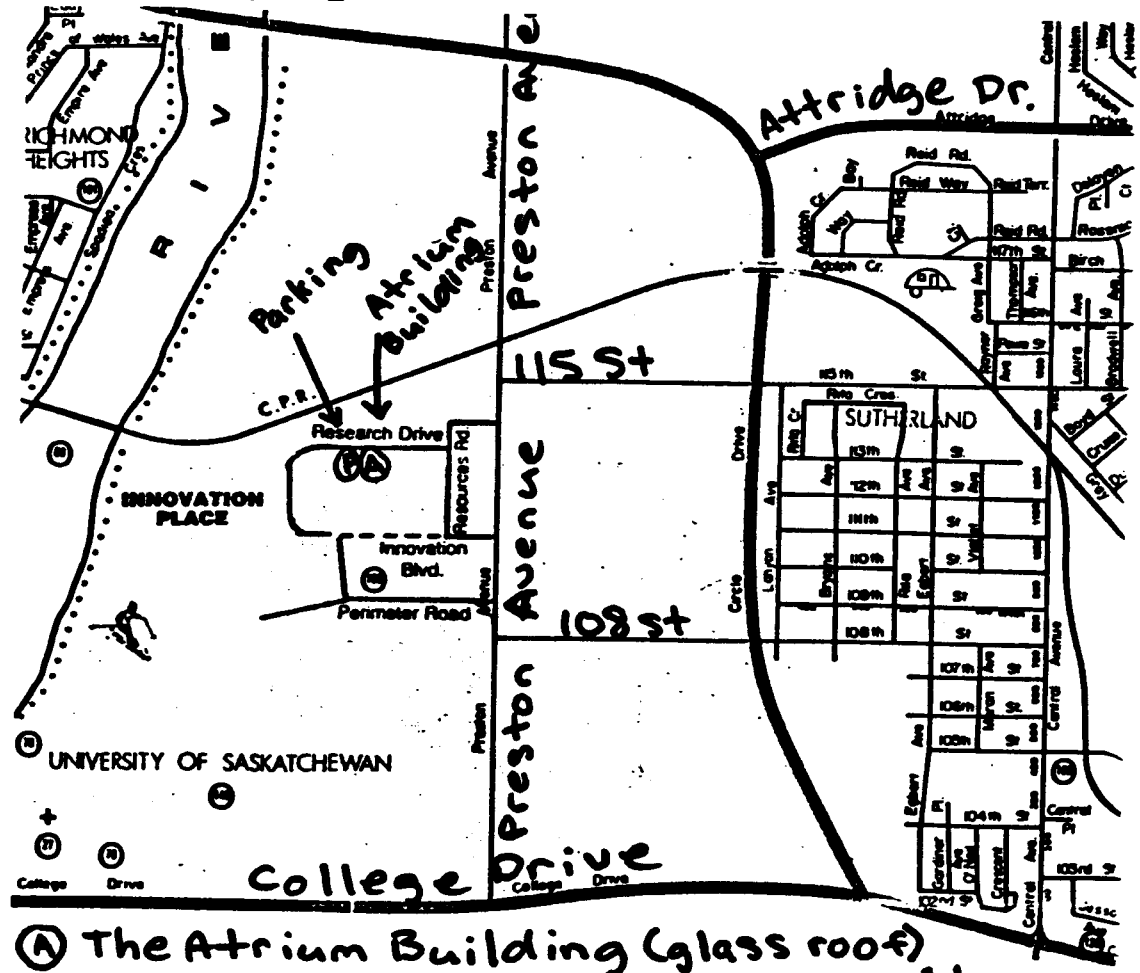
Bring some toys. Kids love to play. (I'm not being age-specific here.) For example, the size relationships amongst a beach ball, a grapefruit, and a dried lentil, are all you need to demonstrate the relative sizes of solar system bodies.

Involve some of the kids in a demonstration, if you can. They'll relate to this with rapt attention long after you've dried up and blown away. For example, to demonstrate how comets may have been flung out of the inner solar system, we used 3 volunteers and a piece of rope. The two smallest ones acted as massive solar system bodies at the ends of the rope. (They loved this part.) The big kid was a piece of comet stuff in the middle of the rope and somewhat off-centre. When the large masses exerted their gravitational tug, it threw the 'comet thing' deep into the outer reaches of the solar system, and splatted him right up against the blackboard. (The crowd roared for blood.)

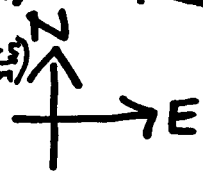
Mention a Website or other internet address that relates to your topic early in your presentation. Even if you've never seen one, you can always find bundles of them listed in the magazines. This will disabuse them of their fundamental belief that you are just another old fart brought

(continued on P. 6)

Location of Dec 16th Meeting:
 (If you get lost, blame the Weatherman)



- Ⓐ The Atrium Building (glass roof)
 111 Research Drive (doors open 7:45 am)
- Ⓟ Parking lot to West of
 Atrium building. Use W. Entrance.



Map and directions courtesy of Dan Kulak

Spaceport Saskatoon...

(continued from P. 4)

in to glorify an age they don't believe even existed. To test this hypotheses, search your feelings about the Depression; note that you don't have any. Appearing 'netwise' will earn you their admiration and more importantly, their attention. Without this, you might as well have gone bowling.

Perhaps most importantly of all, plan 25-30% of your allotted time for questions. This lets everyone get involved. Personal involvement is one of the keys to effective learning. Repeat the questions aloud so that everyone can hear them and answer as straightforwardly as you can. If you don't know, say so. Kids this age can spot a phony from 10.6 kiloparsecs and they'll roast you, and you'll deserve it.

In the presentation to the more experienced group, (our) Don MacKinnon wowed them with his spectacular comet photos. They became downright worshipful when they realized that these photos were taken just a few kilometers from where we were viewing them. This could possibly replace the 'internet rule' above, but few of us are that good at astrophotography. (Few, not all) As might be expected, the questions from this group were considerably more challenging. I actually got to apply the 'I dunno rule' several times. Don did fine.

All in all, everybody had fun, learned some neat stuff, and nobody got sued. When Don and I came back to say goodbye to the junior group, they were plotting the retrograde motion of Mars against the background stars. This club is a serious group that has a great time learning about 'space stuff'. Don and I were deeply impressed with both the kids and the volunteer teachers and parents who organize the club's activities. Oh, and we got to do one of the best things any astronomer ever gets to do. We got to share our love of the night sky with an enthusiastic audience of young people. Paul Ferguson

Saskatoon Centre School Presentations

The effects of Light Pollution on Migrating Birds. Saskatoon Centre President Rick Huziak gave a noon hour talk to the student Nature Club at Victoria School on this topic. For further details on this promising new approach, call Rick at 665-3392.

Brightwater Presentations: Help is needed with two observing sessions we have been requested to run for Grade 6's at the Brightwater Centre, Jan13-17. Call Sandy 931-3184

Slide Projector Bulbs

Two new ELH bulbs for Carousel projectors left from bulk order for Centre presentations. \$22 each. (MPS price: \$30plus taxes)
• please call Erich 374-4262

THE PRAIRIE SKY

John Leppert -
Deneb Observatory

Although the evenings are decidedly on the cool side, the lack of cloud affords us some of the best viewing of the year. The next three weeks will offer sky watchers a last chance to see Comet Hale-Bopp before it becomes a pre-dawn object.

Like this past spring's magnificent Comet Hyakutake (C/1996 B2), Comet Hale-Bopp was named for its discoverers, U.S. amateurs Alan Hale at Cloudcroft, NM, and Thomas Bopp near Stanfield, AZ, who independently found it within minutes of each other on July 23, 1995.

Comet Hale-Bopp (C/1995 O1) is beginning a fine show low in the southwestern sky 25 degrees (about 2 extended hand widths) to the upper right of Jupiter. In the last weeks, jets have appeared emanating from the comet's nuclear region. These are visible when viewed at moderate power and with 8-inch diameter or larger telescopes. Both CCD and photo images have revealed three prominent spikes pointing north eastwards, and a shorter one to the west. The comet had not been brightening according to ephemeris predictions, and was instead holding in the 5.9 to 5.7 magnitude range. However, during the last three weeks its nucleus has taken on a stellar appearance, its broad fan-shaped tail has lengthened, and it is currently in the range of 4.8 to 4.5 magnitude.

Father Luc's Daylight Hale-Bopp Challenge

Last April, eminent Saskatchewan observer, Lucien Kemble, decided to try observing Comet Hyakutake in bright twilight, after years of viewing Venus and several stars, including the "double-double" Epsilon Lyrae, in full daylight. Nearly two months ago Father Lucien laid out a challenge to all those interested in following Comet Hale-Bopp through its conjunction with old Sol under like circumstances, near the end of this month.

"If the Comet is as bright as presently forecast, writes Lucien, "and with such a good elongation..27 degrees above the Sun..it should be possible,

...(continued on P. 10)

**How to find
Hale-Bopp before Dark**
Lucien Kemble suggests three prerequisites for a successful search:

1. a telescope that is well polar aligned and has accurate, well-aligned setting circles,
2. a low to medium. power eyepiece with as wide a field as possible that has previously been focussed on sunspots Venus, or a bright star,
3. a good ephemeris for the Sun, Venus, and comet for the date of observation.

>>>PLEASE TURN PAGE >>>

Parameters for COMET HALE-BOPP (C/1995 O1)

Courtesy: John Leppert

Comet orbital elements from IAU circulars MPC 27287, Solar&planetary positions derived using Deep Space v.5.21 software, v. 2.1 to derive data for Saskatoon area.

Time: 1997 APR 1.13978000 Perihelion: 130.58420000 | elongation: 0.99513920
 Node: 282.47177000 | (J2000.0) q: 0.91420150 |

Date, 1996	Right Asc.	Declination	MAG	Constellation	Twilight ends	COMET Sets
Calculated for 16:00 CST						
NOV 30	18 04.0	-00 38	3.7	Oph	19:02	20:35
DEC 05	18 09.3	+00 01	3.5	Oph	19:01	20:23
DEC 10	18 14.9	+00 44	3.4	Oph	19:00	20:13
DEC 15	18 20.8	+01 32	3.2	SerCd	19:01	20:03
DEC 20	18 27.1	+02 25	3.0	SerCd	19:02	19:54
DEC 25	18 33.8	+03 24	2.8	SerCd	19:05	19:46

JUPITER			SUN		VENUS	
1996	Right Asc.	Declination	R.A.	DEC	R.A.	DEC
Calculated for 16:00 CST						
NOV 30	19 19	-22 29	16 29	-21 48	14 31	-13 05
DEC 05	19 24	-22 20	16 51	-22 29	14 56	-15 03
DEC 10	19 29	-22 11	17 13	-23 00	15 21	-16 51
DEC 15	19 33	-22 02	17 35	-23 19	15 46	-18 28
DEC 20	19 38	-21 51	17 57	-23 26	16 12	-19 53
DEC 25	19 43	-21 40	18 19	-23 22	16 38	-21 04

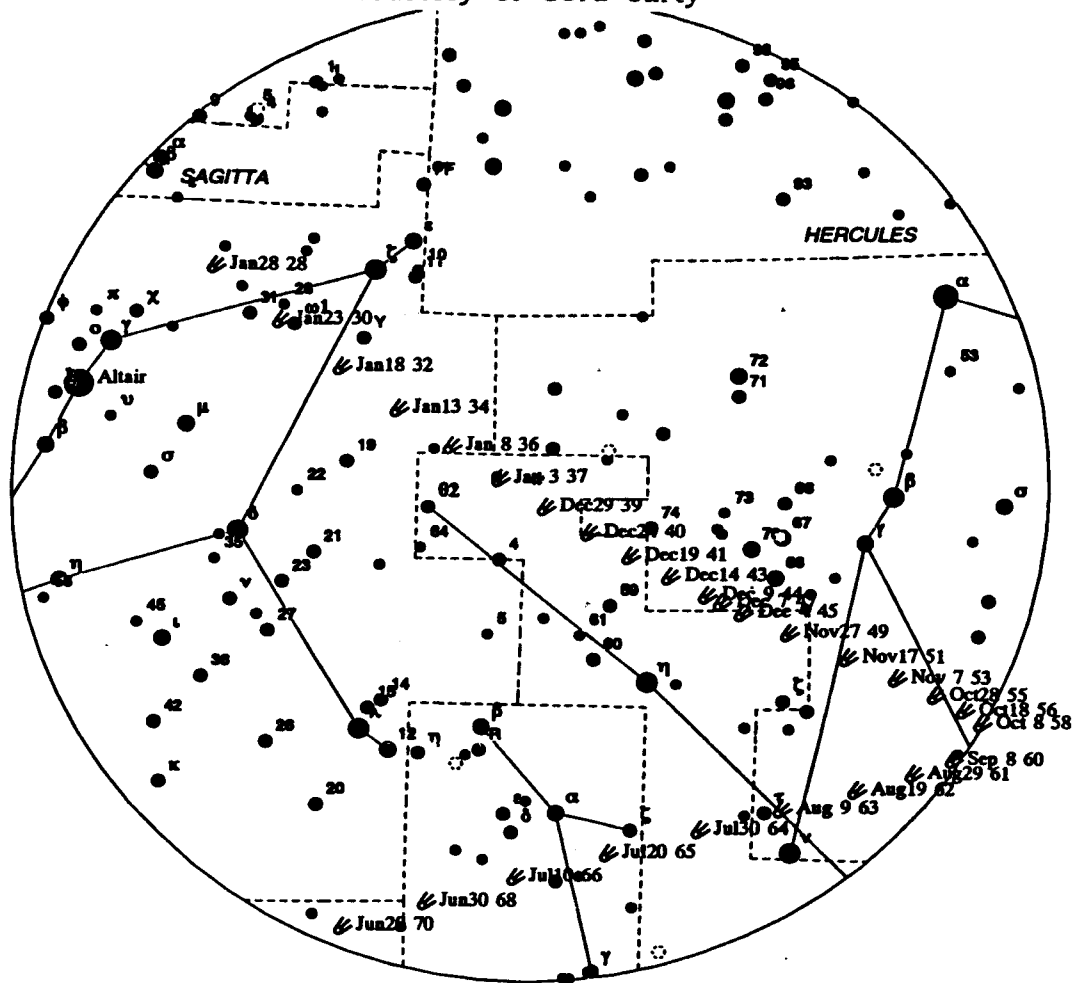
COMET HALE-BOPP (C/1995 O1)

1996/1997	Right Asc.	Declination	MAG.	Constellation	Twilight begins	COMET RISES
Positions for 06:00 CST						
DEC 30	18 40.3	+04 25	2.6	SerCd	06:44	07:10
JAN 04	18 47.8	+05 38	2.4	SerCd	06:26	07:10
JAN 09	18 55.8	+07 01	2.1	Aqu	06:07	07:08

JUPITER			SUN		VENUS	
1996/1997	Right Asc.	Declination	R.A.	DEC	R.A.	DEC
Calculated for 06:00 CST						
DEC 30	11 59	+02 55	17 02	-21 56	18 40	-23 08
JAN 04	12 06	+02 21	17 29	-22 37	19 02	-22 41
JAN 09	12 11	+01 52	17 56	-23 01	19 23	-22 03

Finder Map for Hale-Bopp

courtesy of Gord Sarty



Comet Hale Bopp

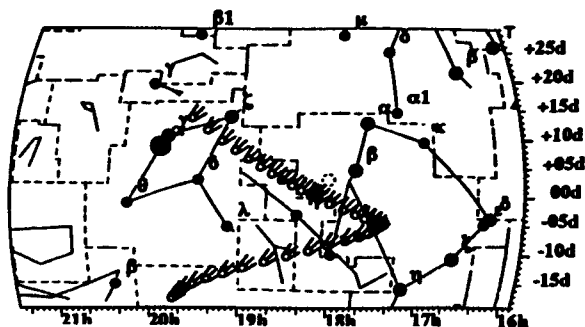
(18h39m, +05d lim: 6.0)



- ⊕ Planet
- ⊛ Cluster
- ⊖ Nebula
- ⊙ Galaxy
- ⊙ Unknown

- double
- ⊗ Asteroid
- ⊙ Globular
- ⊙ Planetary
- ⊙ Elliptical
- ⊙ Other

- variable
- ⊙ Comet
- ⊙ Open
- ⊙ Diffuse
- ⊙ Spiral
- ⊙ Quasar



(continued from P. 7)

with accurate polar alignment and setting circles, to spot the bright nucleus in full daylight, right through from late evening, when the comet disappears into post-sun-set glare, to early morning, pre-dawn apparitions. In any case, if for nothing else than a good observing exercise, I am planning the project."

Father Kemble reports great success using this method on no less than eight occasions shortly after sunset since early October, even though Hale-Bopp has been nearly a magnitude less bright than predicted. Recently, he reported his earliest sighting as of this writing (Nov. 25): "Sunset was at 17:04 local time [Nov. 20]. Less than half [an] hour later I picked up the 6.6 magnitude star, SAO41952, which was only 8.4' from the MegaStar plot for H/B.

Ten minutes later, at 17:41, only 37 minutes after sunset, I detected the shimmering point of light of the comet nucleus. [This was] the earliest I have detected it to date, with the Sun only 5.5 degrees below the SW horizon. Slow motion in Dec. and averted vision really helped. My, what a thrill! It becomes evident from these observations that although estimates place it brighter than 5th..[that's] an integrated magnitude of the nucleus and coma. The nucleus itself, while small and sharp, [was] much fainter than a nearby 8.5 magnitude star."

The trees South of our Rystrom make the twilight part of this challenge difficult with our dome C-8, but this could be a great observing project for those of us with setting-circle equipped 'scopes. And there is always the chance to try from your own backyard at dawn. ed.

eanuts



ANNOUNCEMENTS:

JANUARY OBSERVING SESSION: This will be held Fri., Jan. 10th, 1997, with a cloud/snow/blizzard date of Sat., Jan. 11th at the Rystrom Observatory, where we have a Warmup room. To find out more call Darrell Chatfield at 374-9278.

Geminid Meteors About to Fly

by Rick Huziak

The yearly Geminids are about to put on a good show. The Geminid shower is often the display-of-the-year, sometimes outperforming the Perseids, both in numbers and brightness. The Geminids are detectable from December 9 through the 17th, with the peak occurring on Dec. 13 at 16UT. The best time to observe them this year will be Thursday to Friday night, though they will also be quite active for the day before and the day after. The moon will not interfere. The shower has a published zenith hourly rate (ZHR) of 110, though a single observer may see about 70 per hour at the best of times. Still, that's not too bad! The Geminids often produce bright yellow-colored meteors, often with blue smoke. Occasionally, bright fireballs fly as well. Strangely enough, this shower seems to be associated with the earth-crossing asteroid 3200 Phaethon. This implies that Phaethon is not a true asteroid at all, but a burned out comet nucleus! Many amateurs have never seen this shower because, they whine, "It's too cold!". Well, persevere, because this shower is worth it! If you are going to count the meteors, the information becomes useful if you include the following information: time of start and end of observation, number seen by YOU ALONE (in case you are in a group), magnitude of the faintest naked eye star you can see (important - sets your "skylimit" so you can be compared to all other world observers!). Try to observe for at least an hour if counting, and break up your observations into 1 hour intervals if observing longer. You do NOT have to begin a count on the hour. For more information or to report your count results, contact me at 665-3392 evenings.

JUNIOR ASTRONOMERS' GROUP REPORT AND MEETING

The Junior Astronomers met again Friday, Nov. 22nd. Three of the original six members attended, along with two new space travelers. The current members of the group are Heather Mysyk, Graeme Hartridge, Ariel Solose-Keser, Martine Drew, Tomas Borsa, Brenna Wright, Bridget Martin and Erin Degenstein. The main topic for discussion that evening was the moon, Erich Keser and Kim Mysyk set up a small 'scope in the schoolyard to view the moon, which was in bright, gibbous phase. The group is considering creating a small newsletter. Brenna, our resident artist, will be designing a masthead, assisted by Erin.

*****NOTE***:** THERE WILL BE NO DECEMBER MEETING for the Junior Astronomers due to the general craziness of the holidays.

continued overleaf

ANNOUNCEMENTS (continued)

JUNIOR ASTRONOMERS' GROUP (continued)

Future (tentative) meetings are planned for the following Friday nights in early 1997: January 10, February 14, March 14 and April 11. Meetings are held between 7:30 and 8:30 p.m. at the Space Club facility at A. Buckwold School, 715 East Drive. We want to attract more members between the ages of 7 and 12, so please contact Sandy Ferguson at 931-3184 for further information.

1997 RASC CALENDARS now Available!

The 1997 RASC Calendars are now available for Christmas giving. These contain some beautiful COLOUR astrophotographs by RASC members across the country. At the reasonable price of \$11. each there aren't many left, so GET YOURS TODAY!! Call Rick Huziak at 665-3392 to reserve a copy.

Astrophotos Needed:

Stan Shadick, creator of The Canadian Skywatchers' Trivia Calendar, is currently working on the 1998 edition. He is looking for good astronomical photos from members for future editions of the calendar. Contact Stan at (Home) 652-5975 or Email shadick@sask.usask.ca for further information. If you wish to purchase a 1997 calendar, cost of \$16.00. Please contact Stan at the above number in advance, so that he can bring your copy to the meeting.

THE SMUTS SITE: WE CAN'T DO THIS WITHOUT YOU!!

To date, only a few members have driven out to Smuts to check out the prospective site for our new observatory. YOU could greatly help our exhausted Centre site-searchers by taking the time to visit this site, particularly after dark, to form their own opinions and letting us know what YOU think. A great deal of time has been spent over the last two years looking for an appropriate location. As Smuts is a good candidate, the executive needs YOUR opinion to decide if it is suitable. PLEASE MAKE TIME TO CHECK OUT SMUTS. We hope to use whatever site we choose well into the next century, so we need YOUR input to make the right decision.

Another Possibility...and a possible dream site

Help is needed checking the legal and development possibilities of a (final?), slightly more distant, but very dark site in the Colonsay region. It is also a school-house, but winterized and with electricity, on a great site: flat, accessible, severed, and wind protected. It has Heritage status, was formerly used as a Community Hall, and is now minimally used by the Colonsay Wildlife Federation, with the understanding that they maintain it. A single look on a dark clear night will demonstrate what a find this may be, but help is needed with the necessary research. Please call Erich at 374-4262

NOTES FROM THE EDITOR

Now that our first two new-format issues of Saskatoon Skies are history, it would not be out of place to state that we have new respect and greater appreciation for the trials experienced by Gord and Garry, our previous editors.

We have received a good deal of comment from the membership regarding the new look--both positive and negative, which is just what we are after. Rick gave us an A- on our first issue. We think he was too lenient. We acknowledge the preponderance of typos, irregular columns and different type faces, resulting from the use of three different printers and too many editorial sessions into the wee hours, and think a "C+" might be more appropriate!

John Leppert, our member from North Dakota, gave us a fine critique, but appears to have been startled by our lead line on how to find "Smut(s)" on page 10 of our November issue. His comment: "The term "SMUTS" (how can I put this...used on...p.10) is rather strange, since I quickly searched thinking of course that Saskatoon Centre had decided to branch into a fund raising project a few steps lower than bingo. One can only imagine what the general occupation must have been in the prairie town. Hopefully, Saskatoon Centre will NOT use it for the observatory site name as, "RASC-SASKATOON CENTRE SMUT OBSERVATORY...!"

Most commented that they liked the new 8-1/2 x 14 format, but felt we needed TWO staples instead of one! Good enough.

In the first two issues we were fortunate in receiving articles from a number of sources. This is what the newsletter is all about--contributions from everyone. Please don't feel shy about providing your comments or articles. We welcome submissions from anyone, anytime and by any number of methods, including the Centre's postal and Email addresses, as set out in the front of the Newsletter; Erich's Email address at keser@duke.usask.ca; snail mail to Erich at 405 Albert St., S'toon, S7N 1G2 or Sandy at 11-238 Main St., S'toon, S7N 0B5; or by hand at any meeting. You can save us time by submitting text electronically or on floppy as UNFORMATTED ASCII WITH LINE RETURNS ONLY FOR PARA BREAKS. PLEASE NOTE THAT THE DEADLINE FOR ANY SUBMISSIONS IS THE END OF EACH MONTH.

MINUTES OF THE EXECUTIVE MEETING
November 18th., 1996.

1. Meeting called to order at 7:00 p.m.
2. Minute #4 from October general meeting was corrected.
3. Status of new meeting room off-campus: Garry Brett is working on a new site for the January meeting at the Park Town. Rick would like a letter of intent from Park Town to confirm the security of this arrangement.
4. New Telescope Report - Bill Hydomako is looking for an assistant to help him. This person would be asked to perform gopher duties on occasion.
5. Mike Williams to designate an Observatory Fund for donations (separate from telescope fund). A classification system could be set up to recognize donors.
6. New Observatory land search update: the University would go along with the Smuts site. The Allan Hills has also been mentioned as well as the Colonsay area. We will try to organize a joint effort to see the Smuts site.
 - preliminary long term budget for the observatory presented. Yannis stated that in some areas the budget is 50% too high as University will share costs.Fund raising ideas:
 - selling Observers' Handbooks to book stores
 - corporate donations - need to write up a brochure to hand out
 - National Centre contribution
 - Bingos
7. 1995-1996 financial statement presented by Mike Williams: our cash reserve is depleted. Motion to accept: Jim Young, seconded Gord Sarty, carried.
8. Power payment to Rystroms has not been made this year. \$75 was paid for last year.
9. Magazine holders: Sandy Ferguson needs \$50 to purchase these for the library. Motion to authorize outlay by Erich Keser, seconded by Brian Friesen, carried.
10. Meeting adjourned at 8:00 p.m.

Minutes submitted by Al Hartridge

MINUTES OF THE GENERAL MEETING

November 18, 1996.

1. Meeting called to order at 8:00 p.m..
2. Membership dues are due: still \$40.(Reg.), \$22.50(Youth under 21).
3. Calendars are here! Cost is \$11.00 each.
4. Minute #4 from October. General Meeting is incorrect and should indicate: "The vote to increase membership fees is a hypothetical case, and NOT a vote to increase the fees".
List of Officers should have included Vice-President Erich Keser.
5. New observatory search update: Rick mentioned that it is necessary to have as many members of the club as possible go out and look at the Smuts site in particular, as well as other sites mentioned, in order to have an intelligent say in the final decision. We will try to set a date when we can go out en masse. Also some discussion re: a preliminary long-term budget for the observatory. Further discussion regarding fundraising was also held.
6. Observing session report: Darrell Chatfield indicated that the next session will be on the 6th or 7th of December, at Rystrom Observatory.
7. Public Lecture: Kim Mysyk stated that a public lecture called "Target Earth" will be held at the Delta Bessborough at 7:30 pm. A traveling "Crystal Gems", exhibit will also be running from Nov. 19th- 22nd at the Bessborough.
8. Stan Shadick is asking for photographs for his 1998 Sky Trivia calendar. Anyone with interesting astrophotos please submit.
9. Dale Jeffery has volunteered to pull down astronomical information from the Internet for interested members.
10. Sandy Ferguson and Erich Keser, our esteemed co-editors, are asking for articles, images, cartoons, announcements and ideas for the newsletter.
11. Presentations:
A 19th Century Surveyor's Compass - Ed Kennedy
Using the Observers' Handbook- G. Sarty (deferred for lack of handbooks
Magnitudes and the Recent Outburst of Markarian 421 -Rick Huziak
Printing High Contrast Objects like The Orion Nebula in the Dark Room - Al Hartridge

Meeting Adjourned: 10:00 PM.

THE ORION NEBULA

Al Hartridge.



This photograph of the Orion Nebula was taken with my 6" AstroPhysics refractor working at f7. The exposure time was 45 minutes on hypered Kodak 2415 film.

The challenge came in trying to make a good print in the dark room from this extremely contrasty negative. I ended up exposing the print paper for 1 minute and 15 seconds on the enlarger initially followed by a second 5 minute and 30 second exposure using a homemade dodger. This helped to protect the

delicate nebulosity from being burnt out while at the same time attempting to burn through the denser nebulosity at the center of the nebula. I'm pleased with the results. Some day I will learn how to make an unsharp mask which should produce even more acceptable results.

December General Meeting:

Will be held Monday Dec.16th, at 8 P.M. at Environment Canada, at the ATRIUM BLDG, 111 Research Dr. (off Preston-see Map P. 5). After a brief business meeting, Meteorologist and RASC member Dan Kulak will conduct a tour, explain daily routines and describe some of the specialty computer work they do. Dan will also provide coffee. There will be NO EXEC MEETING. Dan will meet us in the lobby on the West side of the Bldg. at 8. Call Rick or Erich if you need help.