

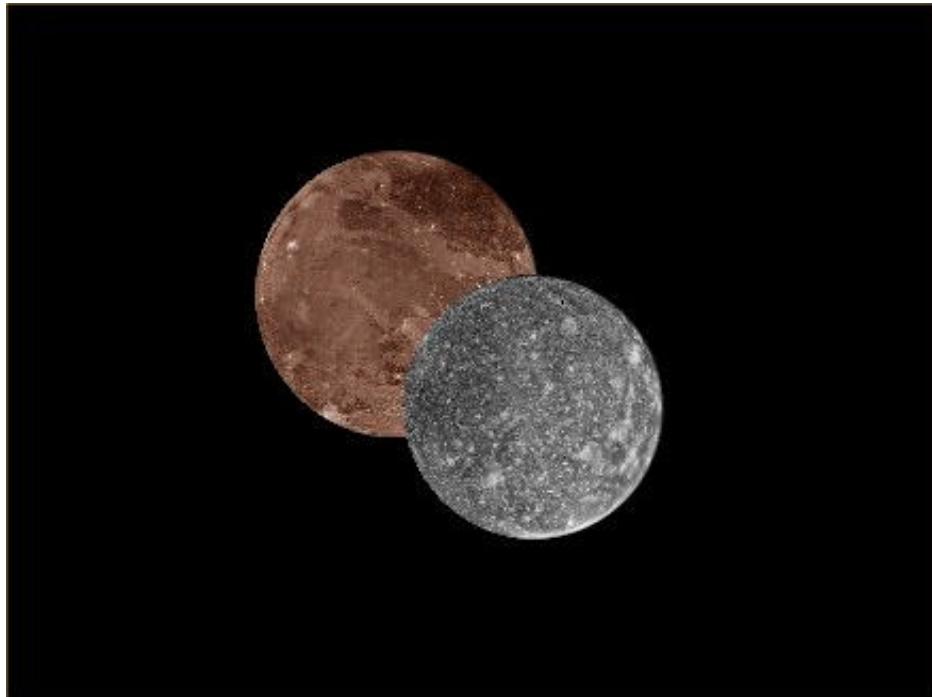
Saskatoon Skies

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

Volume 33

December 2002

Number 12



Mutual eclipses and occultations of Jupiter's moon have already begun because Jupiter's moons' orbital plane and the earth's have lined up for the next many months. Murray Paulson's "Planets this Month" describes these events – easy to see with small telescopes. Here, Callisto occults Ganymede as shown on December 15 at 10:35 UT. (Dec. 15, 4:35 am CST). Simulation by Murray Paulson using Guide 7 software.

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Saskatoon Centre

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Membership?

Regular - \$52.00 per year
 Youth - \$27.50 per year

It's never too late to join!

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. If you do not want to join at this time, ask to get onto our FREE 3-month Temporary Membership list. You will receive regular mailings of our Saskatoon Skies newsletter and will be invited to participate in Centre activities. Members are encouraged to renew early to avoid disruption in publications. Renew through the membership coordinator, Bob Christie, or renew through the National Office and let Bob know that you did!

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 2003
- The Journal of the RASC (bimonthly)
- SkyNews Magazine (bimonthly)
- use of the Centre library
- discounts to Sky & Telescope Magazine
- discounts of Sky Publishing merchandise
- discounts to Firefly Books
- free, no cost, no obligation, 3-month temporary membership if you don't want to join right now!

U of S Observatory Hours

The U of S Observatory is open to the general public every Saturday in Dec. – Jan. from 7:30 p.m. to 9:30 p.m. Admission is free. The observatory is located on campus, one block north of the Wiggins Avenue and College Drive entrance. On clear evenings visitors may look through the 6-inch refractor to the moon, star clusters, Jupiter, Saturn, and other exciting astronomical objects. For further information, phone the recorded Astronomy Information Line at 966-6429.

About this Newsletter

Newsletter Editor - Richard Huziak

Copy - Brian Friesen & WBM

Collate – Brian Friesen, Bob Christie, Les & Ellen Dickson, Sandy Ferguson, Walter Essar

PDF & Web Posting – Gord Sarty

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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 articles. Articles can be sent by mail in any format to the Centre's mailbox. Submitted materials can be returned upon request. Submissions may also be sent by e-mail - preferred as **plain unformatted ASCII text files without line breaks**. Images sent by e-mail should be attached .GIFs, .TIFs .JPGs or similar. Send e-mail submissions to the editor at <huziak@SEDSSystems.ca>. Please send articles in "generic" formats, with standard grammatical formatting appreciated - 5 spaces at the beginning of paragraphs, two spaces after periods, one space after commas. 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 stated), but source credit is requested. **DEADLINE for submissions is the 26th of each month.** *Saskatoon Skies* accepts commercial advertising. Please call the editor for rates. Members can advertise non-commercial items free of charge.

Bottle Drive & Canadian Tire \$ By Darrell Chatfield

Please remember our on-going bottle and now Canadian Tire money drive to fundraise for the Centre. Bring them to the December meeting. I will collect them after the meeting concludes. If you cannot make it to the meeting, but would like to contribute, please call me at 374-9278.

RASC Calendar Happenings

Date (2002)	Event	Contact	Telephone
Dec. 13	Youth Group Meeting, U of S Observatory, 7 p.m.	Tyrone Klassen	652-4599
Dec. 13 - 14	Geminid Meteor Shower Peak	Rick Huziak	665-3392
Dec. 16	General Meeting – Room 8313 City Hospital, 7:30 p.m.	Les Dickson	249-1091
Date (2003)			
Jan. 2 - 3	Quadrantid Meteor Shower Peak	Rick Huziak	665-3392
Jan. 10	Youth Group Meeting, Nutana Collegiate, 7 p.m.	Tyrone Klassen	652-4599
Jan. 11	Astronomy Gastronomy – Tony Tomas (Centre at Circle & 8th Mall) 7:00 p.m. RSVP Les Dickson for a head count	Les Dickson	249-1091
Jan. 20	General Meeting – Room 8313 City Hospital, 7:30 p.m.	Les Dickson	249-1091
Feb. 7	Youth Group Meeting, Nutana Collegiate, 7 p.m.	Tyrone Klassen	652-4599
Mar. 14	Rick Huziak speaking at Winnipeg Centre Meeting	Rick Huziak	665-3392
2003	Youth Group Meetings – Mar. 14, Apr. 11	Tyrone Klassen	652-4599

Notice of the General Meeting of the Saskatoon Centre

Monday, December 16th, 2002 at 7:30 p.m.

Room 8313 City Hospital

Presenting:

Les Dickson – The Interplanetary Superhighway

How NASA uses Lagrange points for low energy parking and transfer orbits.

Other Speakers – TBD

Executive Members – there is NO Executive Meeting in December.

Sky Buys and Mirror Cells The Saskatoon Centre's Swap and Sale Page!

For Sale: 12" Meade LX200 Schmidt-Cassegrain telescope. Non GPS. Comes with Giant Field Tripod, Equatorial Wedge, counterweights, dew shield, Kendrick Quik-Focus and Huziak-approved superb optics. Original box, was \$9100.00 new. Will sell for \$4200.00; **Millenium Star Atlas**, 3 volumes, excellent condition. Was over \$400.00. Will sell for \$200.00; **RealSky CD set for Northern and Southern Hemisphere**, 18 CDs, the complete Digital Sky Survey on your desktop. Was over \$400.00, will sell for \$200.00; **1-1/4 " Lumicon OIII filter**. Was \$160.00, will sell for \$100.00; **Large Astronomical and Cosmology library** - come and take a peek; **The above equipment is clean and all works wonderfully**. As proof, they got me through the Herschel 400 and halfway through the H-400 II. Call: Dale Jeffrey at Laird, (306) 223-4447 <dale.jeffrey@sk.sympatico.ca>

For sale. One 15mm TelVue Panoptic eyepiece. Excellent condition with end caps and box. \$250.00. Call Bill Hydomako, Phone number 384-4781.

Wanted: Pre-1985 2"Visual Back or Diagonal for C-8. Years after this have different threads. Call Les Dickson at 249-1091.

For Sale: *Sky Catalog 2000 -Vol 2*, by Sinnott - \$30.00. *Astronomy*, 2002, 320pp, by Robert Burnham - Color sky charts, planet information, etc., \$15.00. **35mm Bausch and Lomb Plossl eyepiece**, fully coated. Excellent shape; in original box with dust caps. - \$80.00. Call Darrell at 374-9278.

Wanted: Piggyback camera mount to fit C8. Call Darrell at 374-9278.

Wanted: Older opaque projector or the lens & lamp from one – Call Don Friesen at 343-4962.

Planets Morning and Eve – the Planets this Month

by Murray D. Paulson, Edmonton Centre, RASC

Last month I mentioned that **Venus** would shoot up into the morning sky and boy did it ever! I am forever amazed at how quickly Venus ascends into view - a fine trick of the ecliptic! The clouds managed to hide it for the first week or so of November and then, voila! There it was. I also mentioned that Venus would join **Mars** in the early part of December for a conjunction closer than I have seen in decades, less than 1.5 degrees. By the beginning of the second week, they are still close, only 1.5 degrees apart. Over the next week the slowly spread their distance to 2.5 degrees but they will be close companions for the remainder of the month. Venus starts out December as a 45" diameter crescent at magnitude -4.7. By month's end Venus waxes to a 28" half phase, but loses none of its brilliance. Mars on the other hand remains a fairly constant magnitude 1.6, 4.0" gibbous disk in the eyepiece. The moon joins the pair again at the end of the month in a less tight conjunction with 5 degrees separating it from the pair on December 29th and 30th.

Mercury on the other hand has slowly made its way back from the November conjunction with the sun and will spend most of December rising to its Christmas greatest eastern elongation. If you are not otherwise distracted, you could look for Mercury near the SW horizon before it sets at 5:45 p.m. The actual date is December 28, but it would provide a good excuse to get some early evening air. It will show up at -0.5 magnitude and will show a 6.5" slightly gibbous disk. A perfect first light target for that new scope Santa gave you! Ha! Ha! Ha!, err, I mean Ho! Ho! Ho! Mercury should be visible for a week around the 28th, and then it dives back into the evening glare only to find its next inferior conjunction with the sun on January 11th at which time it will pass nearly 3 degrees above the sun.

Saturn is the next to rise into the evening sky. It is placed near the tip of one of the Bull's horns and even passes right over M1 on January 4th. It will repeat this performance on April 4th, but do not expect to see much of M1 with Saturn's magnitude -0.4 brilliance. Saturn passes opposition on the evening of December 17th and shows a 20.69" disk. The rings are tilted to 26.6 degrees, almost to their maximum. Maximum will occur in about 4 months time but I doubt that you will notice the fine increment to 26.99 degrees. Saturn is at its brightest due to the tilt of the rings. In 1995 when the rings were edge on, it shone at magnitude +0.6 at opposition, more than a magnitude fainter. Saturn's moons lie in the same plane as the rings, so you will see them sit well above or below the planet. If you have been trying to see the elusive inner moons, they are well spaced from the planet.

Jupiter makes it up last in our nightly procession of the solar system, residing halfway between Cancer the Crab and Leo the Lion. In early December it rises at 9:00 p.m. and shines at magnitude -2.4. In the eyepiece it shows its oblate 41.6" disk. A feast for the eyes! Later on, in early January, the rise time has moved up to 7:00 p.m. the disk is now 44.6". This year in addition to the regular satellite events we will see mutual events between the satellites. This results from the inclination of the Jovian moons' orbits coinciding with Jupiter's (and earth's) orbital plane. I have tabulated a list of observable mutual satellite events from Saskatoon and area. These are rare and interesting. The two types of events are satellite occultations of another satellite and eclipses of another satellite. In the occultation, you will see the satellites merge into one as one passes in front of the other. In the eclipses, one satellite casts its shadow over another, causing it to dim for a period of time. With lots of aperture and magnification you may make out the disks of the two satellites or the shadow as it turns a disk into a quasi-crescent. The duration of the events can be from minutes to an hour and a half, so the light drop off is not a dramatic event. I don't imagine that the casual observer will notice much less than 1/4 magnitude change but there are a few events that exceed this. Note that the times given are in UT. Subtract 6 hours to get Sask. time or note that 6:00 p.m. local time is midnight UT starting on the following day. In other words the event on the night of Dec. 13 at 4:23 UT actually occurs on the night of the 12th at 10:23 p.m. (local time). The accompanying figure shows Europa eclipsing Io as it will be on Dec 13 at 2:24 UT.

I wish you good hunting, a Merry Christmas and a Happy New Year! 'Til 03, clear skies and keep looking up!



Date	of	event (UT)								
		Universal Time				Event		Mag..	Durat	.
Mo.	D	D	h	m	s				Drop	sec
12	11	6	26	47	3	OCC	1		0	0
12	13	4	23	46	2	OCC	1	P	0.011	221
12	15	8	7	52	1	OCC	3		0	0
12	15	9	8	16	1	OCC	2	P	0.377	213
12	15	10	35	0	4	OCC	3	P	0.171	448
12	15	11	40	18	4	OCC	2	T	0.295	365
12	18	9	14	40	3	OCC	1	P	0.02	235
12	20	4	52	31	2	ECL	1	A	0.711	471
12	20	6	48	1	2	OCC	1	P	0.001	105
12	22	10	35	32	1	OCC	3	P	0.002	63
12	22	11	10	6	1	OCC	2	T	0.425	216
12	24	8	34	59	2	OCC	1	P	0.398	2360
12	24	13	27	53	2	OCC	1	P	0.101	1351
12	25	12	8	43	3	OCC	1	P	0.044	362
12	26	9	34	49	3	OCC	1	P	0.05	819
12	27	7	26	2	2	ECL	1	A	0.651	544
12	28	3	4	27	2	OCC	1	P	0.083	909
12	29	13	0	40	1	OCC	3	P	0.01	115
12	29	13	10	27	1	OCC	2	T	0.425	216

12	30	6	10	18	2	OCC	3	P	0.237	1704
12	31	8	3	25	2	OCC	1	P	0.37	1763
12	31	10	46	55	2	ECL	1	P	0.238	2602
12	31	13	34	38	2	ECL	1		0.002	0
1	1	6	4	24	4	OCC	1	P	0.234	305
1	1	6	4	24	4	OCC	1	P	0.234	305
1	2	13	12	50	3	OCC	1	P	0.049	473
1	3	10	7	32	2	ECL	1	P	0.513	643
1	3	11	55	10	2	OCC	1		0	0
1	4	5	49	43	2	OCC	1	P	0.068	598
1	6	6	46	10	2	ECL	3	P	0.155	1144
1	6	10	15	32	2	OCC	3	P	0.212	1228
1	7	1	22	44	2	OCC	1		0	0
1	7	7	42	56	2	OCC	1	P	0.203	1755
1	7	9	30	8	2	ECL	1	A	0.713	1688
1	9	4	8	35	1	OCC	2	P	0.419	215
1	9	4	57	47	3	OCC	2	P	0.041	196
1	9	7	25	56	1	OCC	4	P	0.182	313
1	9	9	28	31	3	OCC	4	P	0.315	508
1	10	6	25	0	2	ECL	4		0.005	0
1	10	13	4	33	2	ECL	1	P	0.385	841
1	11	8	17	46	2	OCC	1	P	0.06	466

Data used in my column courtesy of COPYRIGHT on the server of the Institut de mecanique celeste et de calcul des ephemeredes (Bureau des longitudes - Observatoire de Paris - CNRS). Web site:

http://www.bdl.fr/ephem/ephesat/en/phenomena_eng.html

Proposal for Associate Membership within the Saskatoon Centre by Les Dickson, President, Saskatoon Centre

At the November Executive Meeting, I made a proposal to have the Centre consider an *Associate* category of membership within the Centre. This proposal was made so that spouses of Full Members and their families could take a more active part in Centre activities without having to pay for additional full RASC memberships.

An Associate Member would be part of the household of a Full Member who, as part of their membership on the Centre and in the National RASC organization, would already be receiving a monthly newsletter from the Centre and the monthly and yearly publications from the National Office. An Associate Member in our Centre would be able to use the Centre's facilities and equipment at the Sleaford Observatory, use the University's equipment at Sleaford (after training), have access to the Center's Library in the University's Campus Observatory, vote on Centre-related issues, and hold a position on the Centre's Executive. However, since the Associate Member would not be a member of the national RASC organization, they would not receive RASC publications, could not serve as President, Vice-president, Secretary, Treasurer, or National Representative on the Executive, nor would they show up on the membership list held in the National Office of the RASC. They would be members of our Centre only. We would also not send out a duplicate Centre Newsletter, if the Full member is receiving the printed version of the Newsletter.

An Associate Member would pay a lesser amount than a Full Membership in the RASC. Currently, a \$52 fee is charged for a Full Membership, which includes a membership in the Centre as well as the national organization. Of that \$52, \$44 is the membership fee for National, and \$8 is a surcharge charged by our Centre. When a Full Member pays \$52 to the RASC, we receive back the \$8 surcharge plus \$17.60, which is 40% of the \$44. We therefore receive \$25.60 from National when someone joins or renews their Full Membership in the RASC Saskatoon Centre. I propose that we charge \$26 for an Associate Membership in the Centre, an amount roughly equal to what we receive from National for a Full Membership.

I would like to have a discussion about this proposal at our December meeting and would very much like to hear your opinions.

Leoninds – the Morning After

By Rick Huziak (letter to Jen Horsey, writer, Canadian Press – not reprinted), November 19, 2002
 Graph courtesy of Gord Sarty

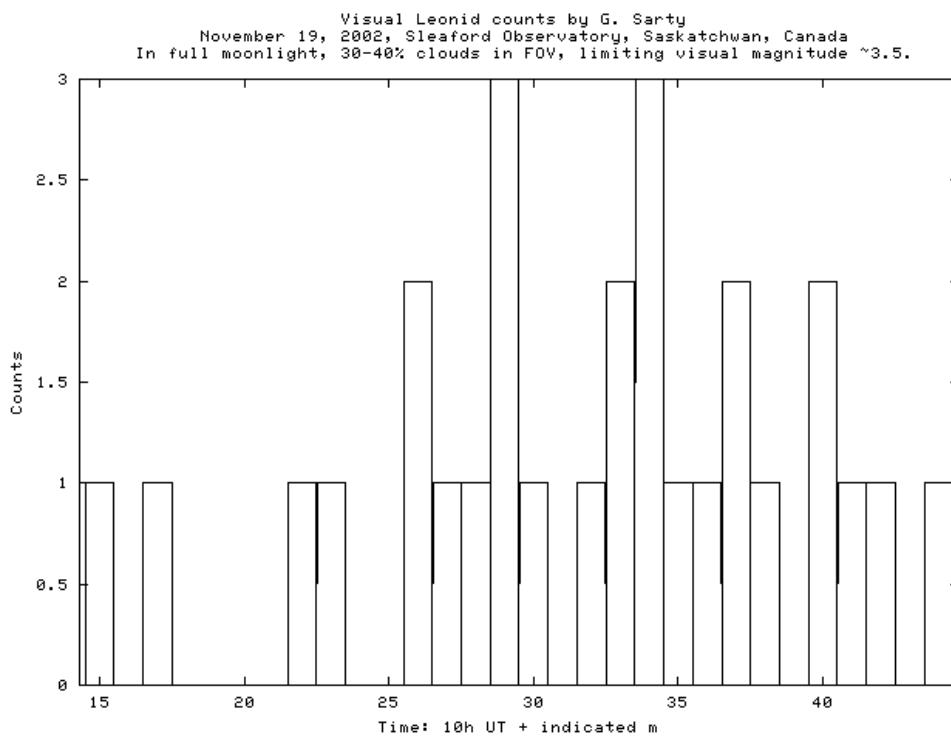
"Well....The first cup of coffee sure tastes good this morning - I ended up with just an hour of sleep before heading off to work this morning. I am thinking about the result of the meteor shower, and I have mixed feelings. The moon sure was bright last night, and this cut down how many we would see. I knew that. We also had some problems with clouds - bands of cloud would come in and suspend our viewing, but then the sky would clear for a while and our spirits would lift. The only problem was that we didn't see very many meteors at all for the first 4 hours. From midnight until 3:45 a.m. CST (Nov 19) only a handful of faint meteors were seen. The brightness of the moon assured that only one in ten that fell *would* be visible – maybe fewer, but I thought we'd see more. I wasn't really concerned though, since the predicted meteor storm was not predicted to occur over North America until later this morning. At 3:45 am, even though some cloud had rolled in, we noticed a marked increase in bright meteors, visible in the clear spaces. In a period of 7 minutes, 5 bright fireballs were seen, whereas a few minutes ago it was still quiet. It seemed the storm would indeed occur on time! Still fighting haze and cloud, another 20 minutes of observing yielded 10 further bright meteors. Things were picking up with a meteor every minutes.

This is a far cry from last year's meteor every *second*, but with the full moon, that's to be expected! At least something was happening now, and a meteor every 2 minutes means 30 per hour. When this is "corrected" for the poor seeing conditions (which the meteor researchers will do with our data), this will equate to an expected hourly rate, if seen in ideal conditions from a dark and clear sky, of somewhere around 300 per hour! So that's

not really that bad, considering the weather! No other meteor shower would perform this well this year.

Somehow though, this was a bit disappointing. To a meteor purist, the storm is beginning. But from a pure enjoyment angle, this "storm" seems a little disappointing. Further observing resulted in preliminary counts reaching 2 meteors per minute at 4:30 am, the predicted peak. This corresponds to 120 per hour, uncorrected, and maybe 1200 per hour corrected for weather. That's decent, but only matches the most pessimistic of the 3 predictions for the rates that the professional astronomers had predicted - and a far cry from the optimistic estimate of 10,000 per hour. Our group of amateur astronomers, who had tricked in all night long to our Sleaford Observatory, 60 kilometers east of Saskatoon, discussed the result, and we concluded that the predicted peak must have been quite low, since none of us saw any great numbers of fainter meteors, the best indication of the real count. However, the 25 of us that had made the effort were not really disappointed as such, since we had a fine evening at least trying to learn more about this shower under exceedingly difficult observing conditions. I did, however, feel a little sad that it couldn't have been better - that the weather could not have cooperated more and let us see more uninterrupted sky. After all, Doug and Joan Hube had driven over 600 kilometers from Edmonton to our observatory in Saskatoon in search of clear skies to observe this "last-in-a-lifetime" Leonid burst. Others from Edmonton also drove into Saskatchewan to catch whatever glimpse they could, but didn't join our group, ending up somewhere around Lloydminster. I haven't heard of their result yet, but I am impressed with their dedication!

The night was a little strange, too. Imagine a group of 25 observers up all night while the rest of you sleep. We are laying back in lounging chairs and wrapped in sleeping bags, trying to keep warm, eyes fixed on a marginal sky hoping to learn about and measure this rare shower. Dedicated souls losing precious sleep, but still enjoying the view! The few meteors we did see were awesome, bursting into brightness and some leaving smoke in the sky after their passage. Wonderful! When



clouds rolled in now and then, we took turns checking out rock-steady views of Jupiter and Saturn though my telescope, but through the thin cloud. Then we turned our eyes back to the holes in the cloud hoping for more meteors. We packed up at 5:00 am when clouds rolled in for good and viewing became hopeless. This was a blessing in disguise, since most of us had to be at work in 3 hours. On the way home, though, a dozen cars were seen parked along the roadside. Others from Saskatoon had made the effort too!

Our focus now changes to the next meteor shower of the year – the "Geminids" that will fire on December 13 to 14. The moon phase is a little more favourable. We'll have at least a few hours of darkness after the moon sets closer to the morning. And the shower occurs on a Friday evening and Saturday morning – no worries about work. If the weather cooperates, this shower often produces 120 meteors per hour, mostly yellow fireballs trailing blue smoke. It should be a good show!"

The graph shows observations by Gord Sarty, plotted in 1-minute long bins, that indicate at best the shower produced 3 observable meteors per minute. Although this data seems 'slow', much science will come out of Gordon's plot, when mated to hundreds of other observers around the world by the International Meteor Organization (IMO). Gordon's graph shows that the shower clearly peaks near its predicted time of about 10:30 UT (4:30 a.m. CST).

Stocking Stuffers?? Saskatoon Centre Books 4 Sale

The Saskatoon Centre has purchased a number of Sky Publishing & Firefly Books for SSSP sales, and these are available to general members to purchase at discount rates! Contact Rick Huziak at huziak@SEDSsystems.ca or 665-3392 to see what is remaining from the SSSP and to see if any pricing discounts apply. Prices include GST, shipping and handling. Note - if you would like to be the new Book Sales Coordinator, call Les Dickson at 249-1091.

- Touring the Universe thru Binocs (1) - \$54.00
- Build Your Own Telescope (1) - \$42.00
- Cambridge Star Atlas (1) - \$40.00
- Astrophotography (G.N.Patterson) (lots) - \$8.00**
- 2003 Skywatcher Calendar (5) - \$16.00



- RASC Stickers - \$0.50**
- Other Worlds (1) - \$7.00**
- Extraterrestrials (1) - \$6.50**

All prices include GST, by NOT shipping.
Prices at COST marked ** are reduced to clear.

REMEMBER - YOU CAN SIGN UP TO GET THIS NEWSLETTER ON THE INTERNET INSTEAD OF BY SNAIL-MAIL. CURRENT ELECTRONIC SUBSCRIBERS SAVE US OVER \$320 / YEAR IN MAILING COSTS.

A Quick Trip To Edmonton

I was the guest speaker for Edmonton's November 11th General Meeting at the Odyssium, formerly the Edmonton Space and Science Centre. There I introduced the "Great Canadian Observing Challenge" which was written up in last month's Sask. Skies. To date, the response has been great, with now 41 new variable star observers from most RASC Centres, with 2 newer members promising to observe and report from Saskatoon. I can always use a few more promises to make and report as little as one varstar observation! I'm still about 35 observers short of having 100 Canadians report to the AAVSO this year.



Light Pollution News

Although you may not be hearing a whole lot from the Light Pollution Committee, we are alive and well, and making some progress, though not as fast as we had

hoped. Due to the Casino issue, City Council has other things on their mind, and our mentor, Councilor Kate Waygood has not had an opportunity to introduce the subject. In the meantime, we have attended the public meetings for the Saskatoon Skateparks Association and have a promise from the architect to use LP-friendly

lights on the design. We also attended the Casino meeting and will be writing letters to the SFIN and their architect. The U of S has also published a "Core Area Development Plan" – a recommendation for future building on campus. The architect that prepared the report has very strong recommendations at eliminating light pollution from the campus. We have written a letter to the Development Committee urging adoption of the plan. Furthermore, we have now had 2 long interviews on Shaw Cable News by Morag Macpherson, who is an interested supporter of our cause.

The Messier, H-400, FNGC and Binocular & EtU <that's right, 'EtU'> Club

Join the Club! Observe all 110 Messier, 110 Finest NGC, 400 Herschel, Explore the Universe, or 40 Binocular objects and earn great OBSERVING CERTIFICATES!

MESSIER CLUB

Certified at 110 Objects:

R. Huziak, G. Sarty, S. Alexander, S. Ferguson, D. Jeffrey, D. Chatfield, B. Christie, K. Noesgaard, M. Stephens

Tenho Tuomi	Appy	110
Bill Hydomako	Appy	110
Mike Oosterlaken		93
Wade Selvig		71
Lorne Jensen		54
Brent Gratias		39
Teresa Mulvenna		38
George Charpentier		30
Stan Noble		28
Tyrone Klassen		26
Brent Burlingham		24
Les Dickson		20
Mike Clancy	NEW	18
Debbie Anderson		17
Brian Friesen		15
Kathleen Houston		13
Ellen Dickson		6

FINEST NGC CLUB

Certified at 110 Objects:

R. Huziak, D. Jeffrey, G. Sarty, D. Chatfield

Scott Alexander	97
Ken Noesgaard	24
Sandy Ferguson	23
Mike Oosterlaken	20
Bill Hydomako	10

HERSCHEL 400 CLUB

Certified at 400 Objects:

D. Jeffrey, R. Huziak, D. Chatfield

Gord Sarty	251
Scott Alexander	102
Mike Oosterlaken	68
Ken Noesgaard	44
Sandy Ferguson	18

The first 2 lists can be found in the *Observer's Handbook*. The Binocular List & Herschel 400 list will be available at each general meeting for 50 cents (covers photocopying) or can be mailed out on request to distant members. Each month I'll be posting updates.

Chatfield BINOCULAR CERTIFICATE

Certified at 40 Objects:
M. Stephens

Mike Oosterlaken	32
Tenho Tuomi	NEW 16

EXPLORE the UNIVERSE

Certified for Certificate:
M. Clancy

Nowen Inthewings	0
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Mike Clancy was awarded his Explore the Universe certificate at the November General Meeting. Darrell Chatfield was also awarded his Herschel 400 certificate and lapel pin at the November Meeting. Way to go Mike & Darrell!

If you promise to look at M45 (Pleiades) sometime in the next few months with eyeballs, I'll enter you onto the Messier Club as '1' object, and you can go from there! << This offer still stands!



We are planning a Saskatoon Centre get together – an *Astronomy Gastronomy!* This is an informal dinner just to get to meet the members of the Saskatoon Centre. Everyone is welcome. Bring your families!

Where: Tony Tomas Family Restaurant, Centre @ Circle & 8th (Wildwood) Mall
When: January 11, 2003, 7:00 p.m.

Please RSVP to Les Dickson (249-1091) by January 8.
 (Ummm... everyone pays their own way. We can plan, but we're not rich!)

MINUTES OF THE EXECUTIVE MEETING
Held in Room 8313, City Hospital, Monday, October 21, 2002, 6:30 p.m.
Recorded by Al Hartridge, Secretary

1. Approval of additions to agenda, moved by Darryl Chatfield, seconded by Jim Young and carried.
2. Approval of minutes of previous meeting, moved by Jim Young , seconded by Ellen Dickson and carried.
3. Open House at Sleaford Observatory: Stan will be sending out students to help with the U of S telescopes. We also need our own members to come out and help.
4. Extension course: will be given at the U of S by Stan and Rick. This will include help on the reading of star maps.
5. Elections: will be held at the upcoming general meeting. There was talk of appointing a general meeting coordinator.
6. Treasurer's Report: the present balance in our account is \$14,625.00.
7. Membership Report: there are 80 members including 6 youths. There are also several temporary members.
8. Fundraising: Darrell will make a presentation at the General Meeting.
9. Sleaford: no major projects to carry out, but over the winter a number of smaller jobs hopefully will be completed.
10. Insurance: the premium is up to \$390.00. Barb will check to see if there are any cheaper rates available.
11. Membership Certificates: Bob Christie will check to see if there are any members eligible.
12. Old Business: it was decided to advertise the telescope rental program again. There was also discussion regarding putting a site map on the web page.
13. Meeting adjourned at 7:30 p.m.

MINUTES OF THE GENERAL MEETING
Held in Room 8313, City Hospital, Monday, October 21, 2002, 7:30 p.m.
Recorded by Al Hartridge, Secretary

1. Presentations:
 - Presentation of a Herschel 400 Certificate to Darrell Chatfield by Les Dickson.
 - *The Alberta Star-BQ* and *The Alberta Star Party* by Rick Huziak
 - *What's up with Light Pollution?* by Rick Huziak
 - *The "Explore the Universe Certificate"* by Darrell Chatfield
2. Additions to the agenda, moved by Rick Huziak, seconded by Jim Young and carried.
3. Approval of the minutes of the previous General Meeting, moved by Scott Alexander, seconded by Sandy Ferguson and carried.
4. Fundraising: Darrell has collected bottles from Tim Horton's at a strip mall he services. This has come to \$115.00. A member Ken Lake has donated \$16.00 to the club as well.
5. Open House at Sleaford: on Saturday at 8:00 p.m. This will be run with help of university students and our own members. We will provide coffee and tea.
6. Treasure's Report: balance at this time is \$14,625.10.
7. Membership: as of the General Meeting there are 82 members.
8. Youth Program: Tyrone has the program running.
9. Sleaford: no change from last meeting.
10. Library: no change.
11. Insurance: Premium is now \$390.00. Jim Young moved and Darrell Chatfield seconded that we pay the new premium. This motion was carried.
12. *Introduction to Astronomy* course will be given by Stan Shadick and Rick Huziak through the extension division at the U of S.
13. Election of Officers
14. Meeting adjourned at 9:50pm.

MINUTES OF THE EXECUTIVE MEETING
Held in Room 8313, City Hospital, Monday, November 18, 2002, 6:30 p.m.
Recorded by Al Hartridge, Secretary

1. Approval of previous minutes: Moved by Barb Young and seconded by Darrell Chatfield and carried.
2. Executive positions: There are still a few open positions on the Executive. Sandy has volunteered to fill the Activities Coordinator position for now.
3. Membership recognition certificates: Jim Young will look into a recognition program for our own club.
4. Insurance: The insurance premium has been paid.
5. Treasurer's Report: the present balance stands at \$14,867.31. Barb Young suggests that it is time to have our finances audited. Mike Williams will be approached to do this.
6. Membership Report: Bob Christie reports that at the present time there are 69 members and 3 temporary members.
7. Newsletter: As of December the look of the newsletter will change. Yannis's wife is a professional document layout artist and she is willing to redesign the layout of our Centre's newsletter.
8. Fundraising: Darrell has deposited more bottles and will write a cheque for the club.
9. Sleaford: no report.

10. General Assembly 2005: Regina Centre has shown an interest in organizing this. We will lend them some support if needed.
11. Small projects of Councilors: Les has some ideas for small projects which may help to keep the councilors more involved.
12. SSSP Meeting: There will be a meeting on Monday at Sandy's place at 7:30 p.m. Those interested please come. New blood is needed to keep the Star Party running.
13. TV World: Gary Brett would like to have someone write a monthly column for his newsletter. Those interested please consider.
14. Gastronomy: A gastronomy night has been set for Saturday Jan. 11th, 2003. The restaurant is to be announced.
15. Associate Memberships for the Saskatoon Centre: Jim Young moved and seconded by Rick Huziak that our club develop an Associate Membership at the cost of our Centre's portion of National fees. The membership would include all the benefits of our Centre but would not include a National vote. This motion was carried.
16. Meeting adjourned at 7:30 p.m.

MINUTES OF THE GENERAL MEETING
Held in Room 8313, City Hospital, Monday, November 18, 2002, 7:30 p.m.
Recorded by Al Hartridge, Secretary

1. Presentations:
 - Darrell Chatfield: *Astronomical Filters*.
 - Gord Sarty: *Reading Star Maps*
 - Rick Huziak: *Tomorrow Morning's Leonid Storm*
2. Approval of the agenda and of the revised agenda: Moved by Tyrone and seconded by Les and carried.
3. Approval of the Minutes of the last meeting: Moved by Darrell and seconded by Gord and carried.
4. Open Executive positions: Sandy Ferguson has volunteered to take on the Activities Coordinator position. Moved that we nominate Sandy for this position by Les and seconded by Gord and carried.
5. Councilors: Gord Sarty and Brian Friesen have been nominated for this position and have been appointed.
6. Treasure's Report: Present balance is \$14,867.31. The insurance premium has also been paid for the upcoming year.
7. Membership Report: As of this moment there are 70 members.
8. Newsletter: members will see a change possibly as soon as December in the layout of the newsletter. Yannis's wife is a professional layout artist and is willing to take on this task.
9. SSSP 2003: The first meeting for the planning of the 2003 SSSP will be on Dec. 2nd at Sandy's place. New blood, please come out to insure continuation of this event in the future. We need to find a main speaker for the upcoming Star Party.
10. General Assembly 2005: will be in Saskatchewan. The Regina Centre has expressed an interest in holding it and we will encourage them to do so and could act as junior partner if requested.
11. Site Committee: need to set a date with Stan and Yannis to meet.
12. Projects for Councilors:
 - -building a donation box
 - -Sleaford model to be put in a proper display box.
 - -TV guide: putting a periodic column in his paper.
13. Gastronomy Night: will be held on Jan. 11th, 2003. Restaurant to be announced.
14. Library: an interactive CD has been received by the Centre from Gary Stone and will be placed in the library.
15. Brightwater: Rick Huziak is retiring as the primary lecturer and star party organizer for this facility. Sandy Ferguson has agreed to take over but will need drivers.
16. Meeting adjourned at 9:30 p.m.

Earth Satellite Passes
By Les Dickson (from www.heavens-above.com)

(These exact events can only be seen from Saskatoon – for other locations, see Heavens-Above)

Iridium Evening Passes Magnitude –3 or brighter—December 20 to January 20

Date	Local Time	Intensity (Mag)	Alt.	Azimuth	Distance to flare centre	Satellite
20 Dec	17:46:31	-4	67°	70° (ENE)	9.5 km (E)	Iridium 29
24 Dec	17:27:07	-9	71°	86° (E)	1.7 km (W)	Iridium 94
26 Dec	19:14:40	-4	48°	36° (NE)	12.0 km (W)	Iridium 19
27 Dec	19:08:34	-5	49°	38° (NE)	9.4 km (E)	Iridium 36
04 Jan	18:28:50	-4	62°	50° (NE)	10.5 km (W)	Iridium 7
05 Jan	18:22:24	-4	63°	54° (NE)	9.9 km (E)	Iridium 37
12 Jan	19:44:53	-8	42°	30° (NNE)	2.0 km (W)	Iridium 50
13 Jan	19:39:08	-4	43°	32° (NNE)	14.5 km (E)	Iridium 53
19 Jan	19:11:00	-4	55°	36° (NE)	12.7 km (W)	Iridium 50
20 Jan	19:05:23	-8	56°	37° (NE)	1.9 km (W)	Iridium 53