

Saskatoon Skies

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

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Saskatchewan Meteorite Harvest



Kathleen Houston and Rick Huziak happily display the meteorite they found near Buzzard Coulee, Saskatchewan, on November 30. When she showed it to students in her grades 9, 10, and 11 art classes, Kathleen says, "One boy had this look of wonder in his eyes that went right through me. That was the magic of it."

Photo by Rick Huziak



Saskatoon Centre

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To view *Saskatoon Skies* in colour, see our Website:
<http://homepage.usask.ca/~ges125/rasc/newsletters.html>

MEMBERSHIP? IT'S NEVER TOO LATE TO JOIN!

Regular: \$77.00 /year

Youth: \$41.00 /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. 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, Mike Clancy, or renew through the National Office and let Mike 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
- The Journal of the RASC (electronic format)
- SkyNews Magazine (bimonthly)
- use of the Centre library
- rent the Centre's Telescopes
<http://homepage.usask.ca/ges125/rasc/telescopes.html>
- discounts to Sky & Telescope Magazine*
- free, no-cost, no-obligation, 3-month temporary membership if you don't want to join right now!

*New subscription or renewal of Sky & Telescope? Send new info or renewal notice, plus credit card # to Norma Jensen, 128 – 4th Street East, Saskatoon, SK S7H 1H8, or email her at njensen@scs.sk.ca .

U OF S OBSERVATORY

The U of S Observatory is open to the general public every Saturday of the year. Admission is free. The observatory is located on campus, one block north of the Wiggins Avenue and College Drive entrance. On clear nights, visitors may look through the vintage 6-inch and tour several displays. Current events are recorded on the Astronomy Information Line at 966-6429.

Observatory Hours:

January-February	7:30-9:30 pm
March	8:30-10:30 pm
April	9:30-11:30 pm
May-July	10:00-11:30 pm
August	9:30-11:30 pm
September	8:30-10:30 pm
October-December	7:30-9:30 pm

SASKATOON CENTRE'S MAIN OFFICERS:

President – Barb Wright, 249-1990
Secretary – Al Hartridge, 373-0034
Vice-President – Jeff Swick, 373-3902
Treasurer – Norma Jensen, 244-7360

Bottle Drive & Canadian Tire \$

By Darrell Chatfield

If you cannot make it to a meeting but would like to contribute your Canadian Tire money please call me at 374-9278.

Newsletter Editors – Christine Kulyk & Tenho Tuomi

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. **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 to the editor at clkulyk@sasktel.net – preferred as plain unformatted ASCII text files without line breaks. Images sent by e-mail should be attached files.

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 306-858-2453 for rates. Members can advertise non-commercial items free of charge.

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

RASC CALENDAR OF EVENTS

Jan 17	Observers Group – 7:00 pm, Sleaford Observatory	Larry Scott	934-5801
Jan 19	RASC Executive Meeting – 6:30 pm, 175 Physics, U of S	Barb Wright	249-1990
Jan 19	RASC General Meeting – 7:30 pm, 175 Physics, U of S	Barb Wright	249-1990
Feb 9	RASC Executive Meeting – 6:30 pm, 175 Physics, U of S	Barb Wright	249-1990
Feb 9	RASC General Meeting – 7:30 pm, 175 Physics, U of S	Barb Wright	249-1990
Feb 20	Observers Group – 7:00 pm, Sleaford Observatory	Larry Scott	934-5801
Mar 14	Observers Group – 7:00 pm, Sleaford Observatory	Larry Scott	934-5801
Mar 21	Messier Marathon – 7:00 pm, Sleaford Observatory	Larry Scott	934-5801

International Year of Astronomy Takes Off

The official opening ceremonies for the International Year of Astronomy (IYA) are scheduled to take place in Paris, France, this month, on January 15-16. Using the theme “The Universe, Yours to Discover,” IYA 2009 was declared under the aegis of the United Nations Educational, Scientific and Cultural Organization (UNESCO) and is being observed by most of the world’s nations, including Canada. For a list of events happening worldwide, see:

<http://www.astronomy2009.org/highlights>

In the United States, planned programs include hundreds of star parties and other events, with the first weekend of April dedicated to “100 Hours of Astronomy” (see

<http://www.100hoursofastronomy.org>). Dark-sky awareness campaigns will be a prime focus (<http://www.darkskiesawareness.org>), as well as distribution of low-cost Galileoscope kits (<http://www.galileoscope.org>) and monthly Discovery Guides to the night sky (<http://astrosociety.org/iya/guides.html>).

Canada’s programs have kicked off with a series of transit ads plastered across buses, subways, and streetcars in Toronto. Developed by astronomers at the University of Toronto, 3,000 of the colourful astro-themed transit ads will appear in that city this month, to raise awareness of the links between the science of astronomy and everyday life. One, for instance, highlights the fact that our days are getting longer thanks to tides caused by the Moon, while another points out that some of our TV static is actually caused by the afterglow from the Big Bang. The ads are accompanied by info posted on a Website: <http://www.coolcosmos.net>

Here in Saskatoon, planning is underway to host the major Canadian astronomy conference of 2009, the RASC General Assembly to be held at Cypress Hills in August, in conjunction with our annual Saskatchewan Summer Star Party. Our Centre is also organizing an astro-art exhibit, scheduled for September at the Frances Morrison Library. Keep reading *Saskatoon Skies* for updates on these and other upcoming IYA events!

Sounds From Space

Beginning in the New Year, Space Weather Radio (<http://SpaceweatherRadio.com>) has begun broadcasting live sounds from space around the clock. For instance, when a meteor passes over the Air Force Space Surveillance Radar facility in Texas, there is an audible echo. (Activity should

be high during meteor showers.) In the near future, they plan to add broadcasts of solar radio bursts and VLF signals from the ionosphere. The streams are punctuated by Daily Space Weather Updates from Dr. Tony Phillips.



MONDAY, January 19, 7:30 PM
Room 175, Physics Bldg., U of S

There will be an Executive Meeting at 6:30 pm.

Sleaford Observatory Development Project: Visions & Plans for 2009



Editor's Corner

by Christine Kulyk

The Christmas Potluck Dinner that we had planned for December 15 had to be cancelled, unfortunately, because of brutally cold weather conditions. However, we hope everyone had a good holiday, and we look forward to seeing you all in the New Year!

We especially encourage you to attend the January 19 meeting, where we'll be discussing the Sleaford Observatory Development Project and seeking input from all members on our Visions and Plans for 2009. Plans for developing the Sleaford site will, appropriately, be a major focus of our goals during this International Year of Astronomy.

It seems that the muse of astronomy, *Urania* (depicted in her starry glory on the RASC crest and logo), surely smiled on us in late November and early December, giving us the most spectacular fireball in recent memory, followed up with a bountiful harvest of Saskatchewan meteorites. As you'll see elsewhere in this issue, several of our members jumped into action to help reap that harvest, which is sure to become one of the most significant in Canadian meteorite history.

An event like this, which was widely covered by national and international news media, captures the public imagination and gets people thinking about astronomy-related matters in a way that couldn't be more timely, considering that we have just entered into the International Year of

Astronomy. It should give us a great boost in our efforts to publicize our various activities throughout the year.

It's also helped fuel a touch of "meteorite fever" among several of us, who are now eagerly awaiting the Spring snowmelt, when we'll be able to get back out to search for more rocks from space. "To find your own meteorite," notes Rick Huziak, who managed to find one after just a few minutes of searching on November 30, "is just really cool."

Three of our members — Gordon Sarty, Garry Stone, and Tenho Tuomi — seized the opportunity in early December to join the scientific search team that found over 100 meteorites before increasing snowfall brought searching to a halt for the season. The search organizer, Alan Hildebrand from the University of Calgary, has expressed to me his appreciation for the contribution by Saskatoon Centre members: "They were great. They put in the time in difficult, challenging conditions; and they found meteorites."

Hildebrand's team plans to resume searching in the Spring. There will likely also be one or more search efforts organized by the Saskatoon Centre. I encourage anyone who's interested in taking part in a search to let me know by e-mail at clkulyk@sasktel.net or by phone at 306-374-0811. Let's go hunt some meteorites!

Hunting for Meteorites in Buzzard Coulee: A Roundup of Reports

Tenho Tuomi: After the fireball exploded on November 20 near Lloydminster and there were reports coming that meteorites were being found, Garry Stone and I wanted to go look for some ourselves. The opportunity came when we received an invitation to join the University of Calgary team in an organized search that had already been in progress for a few days. We knew we would not be able to keep any meteorites that we found, but just being able to find some would be thrilling.

Garry and I headed out to Lloydminster on the evening of December 2, where we found Dr. Alan Hildebrand, the search-team leader, and introduced ourselves to him. By 7:00 am (Alberta time) the next morning, we were receiving instructions, and after breakfast, we headed out with the team to the search site south of Lone Rock.

The first meteorite had been found on November 27 on a frozen pond in a valley called Buzzard Coulee. We did most of our searching south of that, on top of a level ridge where the grass was short and the searching was easier. Garry was the first to find a meteorite that day. (See his story below.)

We were organized into search teams of five or six. On December 3, about 17 of us began our search in the Battle River valley south of the ridge where the two largest pieces had been found, in hopes of finding more large pieces; but we did not find any, large or small. Then we went back to the ridge to finish the day, and there we found two pieces. There was new snow on the ground, so we knew that we would not find the small meteorites they had been finding before the snow came.

Tenho eagerly begins a day of meteorite hunting
Photo by Gordon Sarty



However, the bigger black meteorites stood out like sore thumbs in the white snow, and usually there was no mistaking them. Still, there were cattle and horses in those pastures, and we found ourselves kicking every black pile to see if it was soft or hard. All of the meteorites had a black crust and contained some iron that made them attract a magnet. They were lighter coloured where the crust was broken.

The next day, December 4, we had 19 people searching and we found 15 meteorites. Garry found two more, and I found my first one. I was so excited about it that I forgot to take a picture.

When we found a meteorite, we did not take it out of the ground ourselves. Our group leader would mark its location with a GPS and then pick it up with rubber gloves and put it in a plastic bag.

On the third day, we were down to 13 searchers, but we still found 13 meteorites. It was my lucky day, for I found three. I missed a fourth one that I walked over twice, and the person behind me picked it up. We had a friendly rivalry going on to see how many meteorites each one of us could find. I estimate that on average, people were finding one meteorite per person per day of searching. Others that I have talked to have come to similar conclusions.

All in all, I think I enjoyed the search more than going to see a solar eclipse. Solar eclipses come around every year someplace, but a chance to find meteorites might be a once-in-a-lifetime experience. Besides, I felt as if I was collecting data for science; whereas solar eclipses are more for personal enjoyment.

Garry Stone: On December 2, I received an e-mail from Christine Kulyk asking if I would be interested in joining Alan Hildebrand's team searching for meteorites from the November 20 fireball near Lone Rock. Tenho Tuomi and I were more than eager to go, so we drove to Lloydminster on Tuesday night (December 2). On Wednesday morning, we were out with the search team at the ridge between Buzzard Coulee and the Battle River by 10:30 am or so.

Alan Hildebrand and Ellen Milley and several others went out to see what the wind conditions were like farther west. The rest of us were standing around waiting for another group to arrive. My feet started to get cold, so I took a short walk about 50 metres west, and then I spotted a black rock about 5 metres away. I nudged it with my foot, and it moved easily, and I saw there was grass under it, so I was quite sure it was a meteorite. We had to wait for Alan and his group to return; and he verified it was one. It



weighed 644 grams. A real cool way to start the day!

We searched the rest of Wednesday and found two more meteorites later in the afternoon, both within a quarter-mile or so of where I found the first one.

It snowed a bit more overnight, but we were out hunting again the next day by 10:00 am or so. Gord Sarty from Saskatoon had joined us, and about an hour later, Gord and I spotted one at virtually the same time. (I think he actually saw it first.) Several more were found that day. I was lucky again, and found another weighing 228 grams in a small triangular field. Our team actually found three there within a span of 10 minutes or so.

Every find was recorded by our team leader, and locations were obtained by GPS. Several more were found on Friday. Tenho had very good success, finding three more, bringing his total to four.

We met some very interesting people from the University of Calgary, Calgary RASC, the University of Western Ontario, and several oilfield geologists — it really was a great experience. I am eager to go back in the spring to help search again.



*Above - Closeup of Garry's 644 gram meteorite.
Left - Garry finds a meteorite.
Photos by Tenho Tuomi*



Gordon Sarty takes a break from meteorite hunting to take in the panoramic view above Buzzard Coulee

Photo by Tenho Tuomi

Gordon Sarty: I drove to Lloydminster in the predawn hours of December 4 to join the meteorite search at Buzzard Coulee headed by Alan Hildebrand from the University of Calgary. That day, the search team consisted of about 20 people. Two of our team leaders were Wayne Edwards and Philip McCausland, postdocs from the University of Western Ontario.

Among the searchers were students from the University of Calgary, as well as some RASC members from Calgary and Saskatoon. (Thanks, Tenho, for the peanut butter sandwich!) The temperature that day was about -15°C .

We organized into two groups of about 10 people each to systematically search every square inch of a couple of fields where small meteorites had

SKY BUYS & MIRROR CELLS

The Saskatoon Centre's Swap and Sale Page

FOR SALE: Orion 12" Intelliscope. Comes with 20mm eyepiece, a regular and Telrad finder; all for \$700. Phone: 241-5818.

been found on previous days during random searches. The procedure was to walk towards a rebar pole flagged with an orange vest tied to it, to make sure the field would be covered systematically. We all wore orange vests to prevent any hunters from shooting us.

We found about 14 meteorites that day. Walking in the field, you have to be almost on top of a meteorite to notice it. From afar, it's hard to tell the difference between a meteorite and cow poo, or a dried-up mushroom (puffball). Mel Stauffer, an emeritus professor of geology from the University of Saskatchewan, joined the search later that day.

Back in Saskatoon, Mel was kind enough to bring some of his extensive meteorite collection to my third year Solar System class and tell us about all the different varieties of meteorites. An excellent supplement to the math-based lectures I give.



Closeup of a Buzzard Coulee meteorite
Photo by Gordon Sarty

Murray Paulson: I went out on the morning of Saturday, November 29, to hunt for meteorites, along with Sharon Tansey, Brian Moore, and his brother-in-law Tom. Leaving Edmonton at 6:45 am, we got to Lloydminster at about 9:30 am. At about 10:30 am, we got onto the Battle River to scout the ice for stones.

The ice was mostly 6 inches thick. It was like a skating rink, and in places, the ice was a clear slab and you could look down to the bottom. An unnerving experience! By the way, we met Warren Finlay (of Edmonton RASC) and his two sons, who travelled up the river on their ice skates. They hadn't seen any meteorites, but they weren't looking for the little scraps that we were



hunting down.

We were heading southwest. That was where we passed the abandoned bridge. Shortly after this, my friend Brian Moore found a little black stone that was picked up by our rare earth magnets! Woo Hoo. Tiny: 7x4x3 mm, but it was a meteorite. It told me immediately that this meteorite is a type H chondrite (meaning that it has relatively high iron content for a stony meteorite). We found a couple more small stones that day. We had planned to go scout the roads and ditches afterwards. (Ha ha ha) We got back to the car in twilight! Jupiter and Venus looked real pretty.

On Tuesday, December 2, we went back and found a number of slightly larger pieces concentrated about the road near the original find at Buzzard Coulee. Later in the day, we were witness to a fellow from Alberta finding an 11.5 kg stone. Wow!!! It is a very exciting moment in our time to be witness to such a great meteorite fall.

Meteorites found by Murray Paulson & friends
Photo by Murray Paulson

Moon and planets



Lunar Halo through a fish-eye lens, Nov 11
Photo by Bob Johnson



Mercury and Jupiter in the twilight, January 3
Photo by Tenho Tuomi



The Planets This Month, January 2009

by Murray D. Paulson, RASC Edmonton Centre



Mercury starts off the New Year near the crest of its swing into the evening sky. On January 4, it reached a maximum elongation of 19.3 degrees from the Sun. Shining at magnitude -0.5, Mercury was a 6.9" 57 percent-illuminated "first quarter" disk on that date. It will expand and fade as it moves back towards the Sun. Over the next two weeks, it rapidly catches up with Earth in its orbit and comes to inferior conjunction with the Sun on January 20. Mercury always moves at an amazing pace from evening apparition back to its next morning elongation, and this is one of the faster transitions. By mid-February, it will sit at its greatest western elongation; but more on that next month.

As December progressed, **Venus** made its way up the ecliptic and actually passed a significant marker. You could see Venus due south in the late-December evening sky. That is quite something for an inner planet! Venus starts off the month of January at 46.6 degrees elongation from the Sun, shining at magnitude -4.3. In the eyepiece, it presents a 21.4" slightly gibbous disk. On January 14, Venus comes to its greatest eastern elongation, 47.12 degrees from the Sun and 24.4 arcseconds in diameter. It will be a 51 percent- illuminated quarter phase. Venus has now passed that point where it starts to grow in size markedly over the passing of weeks. On January 22, it will pass 1.2 degrees above Uranus. They will be high enough in the sky to get a good view in a telescope. By early February, at magnitude -4.5, Venus will expand to 31.5", now appearing as an obvious crescent.

Mars was in conjunction with the Sun back on December 5 and is still lost to the glare of morning twilight for the next few months. It moves so slowly that it will be a while before you can spot it in the morning sky.

Jupiter will be in conjunction with the Sun on January 23, and so will be out of view for the next few months. The next apparition will be much better.

Saturn is sneaking back into the evening sky this month. Early in the month, Saturn rises just before midnight, and transits the meridian 6 hours later. It will show you a 18.6" disk in the eyepiece, with a razor-thin set of rings tilted at only -0.85 degree. By the beginning of February, it rises just after 9:00 pm, and the disk will expand to 19.44". The rings will start to tilt back up, now inclined at -1.46 degrees. Saturn will now brighten to magnitude 0.7. If you are out on a late-night observing session, make sure you get a look at Saturn with the rings tilted at such a slight angle. By opposition, the rings will have tilted back up to a more moderate 2.3 degrees.

Uranus, as mentioned earlier, is in conjunction with Venus on January 22. It starts off the month at magnitude 5.8 and shows a 3.4" blue-green disk in the eyepiece. It sets just before midnight. By early February, Uranus sets just before 10:00 pm. It will lie low in the southwest for the remainder of its observing window in early 2009.

Neptune is lost in the evening twilight glare, and will be in conjunction with the Sun on February 12. It will be next summer before it is well placed for observing again.



Moon/Venus/
Jupiter
Dec 1, 2008
Photo by Tenho
Tuomi

The Messier, H-400 & H-400-II, FNGC, Binoc & EtU Club

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Margo Miller	77
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Garry Stone	57
Ellen Dickson	32
Jeff Swick	24
Barb Wright	23
Bruce Brandell	5
Katelyn Metanczuk	4



The Messier & Finest NGC lists can be found in the *Observer's Handbook*.

The Explore the Universe list is available on the National website.

The Binocular List will be available at each general meeting or can be mailed out on request to distant members.

On-line Messier and Finest NGC lists, charts and logbooks – check out:

<http://www.rasc.ca/observing>

On-line Herschel 400 List – check out the official site at:

<http://www.astroloegue.org/al/obsclubs/herschel/hers400.html>

Observer's Group Notes

by Larry Scott



We're definitely in the teeth of winter now. You would think that with 18 hours of darkness a day, there would be more opportunities for observing. There was a gorgeous conjunction of the

Moon, Venus, and Jupiter at the start of December, but things turned ugly after that. Didn't make it out to Sleaford till December 27, and that was a marginal night, as transparency

was not very good. Observers Group for December 20 was postponed due to weather conditions. Next scheduled date is January 17, with dark skies from the 14th to the 30th.

If you're out at Sleaford and notice any supplies we are short of, please make note of it. There are supply lists pinned to the wall right above the logbook in the warmup shelter.

See you at Sleaford.