Saskatoon Skies

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

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What was the Christmas Star?

Some astronomers have their own unique perspective or explanation for the Christmas Star. Was the star a divine sign – or an astronomical event in its own right? See the article reprint on page 5 of this issue for more information

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In This Issue:

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

MEMBERSHIP? JOIN TODAY!

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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 National Office at <national@RASC.ca>!

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- use of the Sleaford Observatory
- use of the U of S Observatory (after training)
- Saskatoon Skies Newsletter
- Observer's Handbook
- Journal of the RASC (electronic format)
- SkyNews Magazine (bimonthly)
- use of the Centre library
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*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 norj@sasktel.net.

SASKATOON CENTRE'S MAIN OFFICERS:

President – James Gorkoff, 644-1343
Secretary – Ron Waldron, 382-9428
Vice-President – Jim Goodridge, 370-8530
Treasurer – Norma Jensen, 244-7360

Bottle Drive & Canadian Tire $

By Colin Chatfield

If you cannot make it to a meeting but would like to contribute your Canadian Tire money please call me at 934-7046.

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

Newsletter Editor – Tenho Tuomi
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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 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 rmwaldron@shaw.ca as a .doc, no indents, no tabs, one line between paragraphs. Images: .jpg please, no larger than 1 – 1.5 MB, sent by e-mail as attached files. **Deadline for submission of all articles for an upcoming issue is the first Friday of the month!**

A separate by-mail subscription to Saskatoon Skies is available for $15.00 per year. Saskatoon Skies is also posted on our Saskatoon Centre homepage as a .pdf file and can be downloaded free-of-charge. Members may choose to receive the newsletter by regular mail or via the Internet. Articles may be reprinted from Saskatoon Skies without expressed permission (unless otherwise indicated), provided that proper source credit is given. **DEADLINE for submissions** for each month's issue is the 1st of the month. Saskatoon Skies accepts commercial advertising. Please call the editor 306-665-3392 for rates. Members can advertise non-commercial items free of charge.

RASC CALENDAR OF EVENTS

Dec. 13/14	**Geminid Meteor Shower Peak**		
Dec. 17	**December General Meeting / Pot Luck Supper**	Guest Speaker	R. Hydomako
Dec. 22	**Ursids Meteor Shower Peak**		
Jan. 3	**Quadrantid Meteor Shower Peak**		
Jan. 5	**Observer's Group at Sleaford**	Larry Scott	934-5801
Jan. 21	**Executive and General Meeting**		Jim Gorkoff
Feb. 18	**Executive and General meeting**		Jim Gorkoff

For a complete list of club events, please check out: http://www.usask.ca/rasc/activities.html

RASC SASKATOON CENTRE GENERAL MEETING

MONDAY, December 17th, 6:30 PM

Room 175, Physics Bldg., U of S

Program

A festive potluck supper for members and their families beginning at 6:30 PM

and

Guest Speaker Richard Hydomako on the topic:
"Antimatter, antihydrogen and the ALPHA experiment"

NOTE: In the interest of enjoying the festivities, the normal 6:30 PM Executive Meeting is postponed until January!

Meeting Minutes – Monday, November 19th, 2012

Chairman Jim Gorkoff opened the meeting at 6:35 PM by outlining the agenda for the meeting.

Moved by Les Dickson and Norma Jensen that the October 15 minutes be accepted as circulated. Carried.

Treasurer's Report – Norma Jensen and Jim Gorkoff presented the Financial Statements for September 30, 2012. Discussion followed about how much could be allocated for the proposed building plans at Sleaford.

Committee Reports:

Fundraising Report – Jim Goodridge presented a plan for applying for community grants from six or more different companies or organizations in the coming year for our outreach programs, rather than for Sleaford.

Sleaford Site Report – by Les Dickson.

Events Coordinator Report – by Barb Wright.

- November 28, Galileo project at 3rd Avenue United Church. Three volunteers needed to man the display table, and four volunteers with telescopes for public observing before the show, set up by 7 PM.
- December 17 RASC Saskatoon Centre Potluck Supper with speaker Richard Hydomako.

Observing Coordinator Report – given by Norma Jensen on behalf of Larry Scott.

Snow removed and cleaning done at Sleaford.

SSSP Report – Barb Wright reported on the first meeting of the committee
More committee members would be appreciated.

Jim Goodridge reported that three volunteers are working at the U of S observatory on Saturday nights. Attendance has been from 10 to 40 people. Contact Stan Shadick if you want to help with the volunteering.

Meeting adjourned at about 7:25 PM.

Members Gather at Galileo Project Performance, November 28th, 2012

It was a cold and cloudy Wednesday night on the 28th of November. Several members gathered at the historic 3rd Avenue United Church to promote astronomy and the Galileo Project Concert. They had already excluded any possibility of showing the audience Jupiter and the full moon which happened to be in conjunction that evening. So, they settled down to manning a display of the eight planets prepared by Events Coordinator Barb Wright. On hand to help were Les and Ellen Dickson, Barb Wright, myself (Ron Waldron) and Leslie Welsh. Also at the concert were seen Kathleen Houston and her daughter Marielle.

The house lights dimmed (fashionably late) at 8:15 PM and we were treated to an 18 piece string, oboe, harpsichord, guitar and lute medley of music from the time of Galileo, Kepler, Tycho and Newton stunningly (and correctly) narrated by actor Shaun Smyth. All this live music against a stunning backdrop of video and still footage of the stars made this a night to remember. These were world-class performers performing in the perfect venue reflecting the age and the architecture in their music

Thanks to all who attended, helped and were prepared to do sidewalk astronomy after the show had weather conditions permitted.

What was the *CHRISTMAS STAR?*

Editor's Note: The Christmas Star has always been a fascination of mine. Back in the late 70's and early 80's, I prepared talks on its astronomical possibilities on two separate occasions. It seemed suitable that I share this one more time with you by way of an online article on the topic.

Source:
http://www.msnbc.msn.com/id/3077385/ns/technology_and_science-science/t/astronomers-still-wondering-about-star-wonder/

The Star of Bethlehem has left its mark on the gospels as well as a constellation of holiday songs. Was it purely a divine sign, created miraculously to mark Jesus' birth? Or was it an astronomical event in its own right? John Mosley, program supervisor for the Griffith Observatory in Los Angeles, says there are several scientific scenarios for the "Star of Wonder":

Through the years, astronomers and others have proposed a variety of objects for the Christmas star — comets, an exploding star or a grouping of planets.

Some suggest that the star was a miracle created especially by God. Such a suggestion cannot be proved or disproved, and it is entirely outside the realm of science. But there's no need to resort to miracles, given the actual astronomical events of the time.

Step 1: The time frame for Jesus' birth

The first thing is to determine the approximate date of Jesus' birth. *Then* astronomers can look at the sky phenomena of that period and try to identify the star. It doesn't work the other way around: Since virtually any year can boast at least one reasonably interesting sky event, the astronomy must follow the history.

Let's assume, as many historians have, that the most likely time frame for the birth of Jesus was in the years before A.D. 1. Let's also assume that the Star of Bethlehem could be observed by skywatchers elsewhere in the world, and not just by the Magi who followed the star to Jesus' birthplace. The Magi, who are known as "wise men" or "kings" in the Christmas story, were actually priests who relied on astrology.

These assumptions would rule out some of the prime suspects in the mystery: comets, brightening stars known as novae, and exploding stars known as supernovae. The

Chinese, who did a particularly good job of cataloging astronomical phenomena, recorded no such phenomena during the years in question.

Step 2: Was it really a star?

Beyond the timing issue, there's another consideration: A comet or supernova big enough to attract the wise men's attention would have been widely noticed by royalty and commoners as well. But King Herod and his advisers seemed not to know or care about the star until the astrologers from the east came to visit.

However, if we suppose that the "star" actually referred to the planets, the situation is less problematic. The movements and groupings of planets in the night sky were of exceeding interest to astrologers and were closely tracked around the world.

Historical records and modern-day computer simulations indicate that there was a rare series of planetary groupings, also known as conjunctions, during the years 3 B.C. and 2 B.C.

Step 3: Retracing the conjunctions

The show started on the morning of June 12 in 3 B.C., when Venus could be sighted very close to Saturn in the eastern sky. Then there was a spectacular pairing of Venus and Jupiter on Aug. 12 in the constellation Leo, which ancient astrologers associated with the destiny of the Jews.

Between September of 3 B.C. and June of 2 B.C., Jupiter passed by the star Regulus in Leo, reversed itself and passed it again, then turned back and passed the star a *third* time. This was another remarkable event, since astrologers considered Jupiter the kingly planet and regarded Regulus as the "king star."

The crowning touch came on June 17, when Jupiter seemed to approach so close to Venus that, without binoculars, they would have looked like a single star.

The whole sequence of events could have been enough for at least three astrologers to go to Jerusalem and ask Herod: “Where is he that is born King of the Jews, for we have seen his star in the east and are come to worship him.”

Step 4: Does it make sense?

Now, this doesn’t mean that astrology works. We haven’t ruled out other possibilities for the Star of Bethlehem. And the mere existence of interesting celestial events does nothing to prove that the birth of Jesus was accompanied by a star, that the Magi existed, or even that the Nativity took place as described in the Bible.

Matching up the June 17 date with biblical accounts produces a mixed verdict. Biblical scholars can't rule out the possibility that the Nativity occurred during the middle of the year. In fact, there's no reference to December, let alone Dec. 25, in the gospels' stories of the Nativity.

Luke's scriptural account about shepherds being out in their fields would make more sense if the birth occurred during the Middle East's milder months — say, the April-through-October time frame.

However, the 2 B.C. date is problematic for scholars who argue that Jesus' birth had to take place before 4 B.C. That date marks the death of Herod the Great, the ruler who sent the Magi on their way to Bethlehem, according to Matthew's gospel. The timing for Herod's death is known with some certainty because it meshes with Josephus' historical account as well as the dates for the reigns of contemporaneous Roman leaders.

Such debates are the province of historians and scriptural scholars rather than astronomers. In any case, knowing that a truly interesting astronomical event occurred around the time of the Nativity can add to our sense of wonder during the traditional Christmas season.

This article draws upon on John Mosley’s 1987 book, “The Christmas Star,” which is available from the Griffith Observatory. “The Christmas Star” addresses many other questions about the season, such as: When was Christ born? Who were the Magi? Why is Christmas observed on Dec. 25?

U of S Observatory Notes - *Jeff Swick*

I had to stop by the campus observatory to pick up a power pack on the Saturday evening of the first snow storm of the winter. To my surprise centre member and observatory volunteer Tim Ceaser was on duty and reported that even with the dome closed and they still had about 15 people through.

Fundraising Plans *by Jim Goodridge*

- What are we trying to raise funds for?
- How do we expect to raise funds?
- What commitment from members can be expected?
- How much money can we expect to get?

For the purpose of getting started I assumed the following answers to the above questions:

- We need to raise money for Sleaford.
- Given that our major function is the SSSP and it is not a fundraising activity and given that our human resources are spread very thin, a time commitment from members cannot be assumed and the only way to raise funds is through grant applications.
- We have no track record that I know of with regards to receiving grants from the community so I propose that for this year we gauge success by the number of grant applications we submit.

The current emphasis for community grants from businesses is children. I assume that no one will give us dollars for Sleaford directly as organizations expect some sort of community recognition and Sleaford is a very hard sell as it benefits very few people and is not in a high traffic area where a lot of people would see it.

I propose that we not try to generate funds for Sleaford but write grant proposals to fund our outreach programs such as Astronomy Day, Earth Hour and other outreach that we take part in. We could factor in our open house at Sleaford. All of our outreach programs involve public education and education of children so we fit a into community support criteria. The idea behind this is that if we could cover costs of our other events through grants, it would leave membership funds free to pay for the upkeep of Sleaford.

The following companies/organizations were checked out to see if they accept community grants – those with an asterisk do and we would qualify for their programs:

Conexus*, Potash Corp*, City of Saskatoon*, Mosaic*, Cameco*, Sasktel*, SaskPower*, Canadian Tire, Scotia Bank, Peavey Mart, Sobeys.

I believe that by submitting at least six grant proposals this year (2012-2013) that we will start to develop a track record with the granting bodies and that we will begin to get some traction and skill in fundraising on this level.

NOTICE OF IMPORTANT UPCOMING EXPENDITURE

Editor's Note: At the October Executive Meeting, it was requested that the following announcement be included in each upcoming Centre newsletter

It is the intent of the executive to have built on the Sleaford Site, a 24' X 30' garage package complete with shingles and siding. The amount spent (delivery and construction) would be approximately $22,740. (actual amount may be different). A vote on this building project will be taken by the membership at the March, 2013 General Meeting.

RASC Saskatoon Centre Financial Report

October 1, 2011, to September 30, 2012

Submitted by Norma Jensen, Treasurer

		Current Year 20011-12	Previous Year 2010-11
Revenue			
Membership fees		$ 2,068.97	$ 2,371.30
Public Education		1,810.00	-
Retail Sales		998.00	1,138.25
Donations		572.55	457.00
Fundraising			
Star Party		16,658.18	12,004.50
Dinners, Raffles, etc.		432.53	299.95
Telescope Rentals		50.00	115.00
Advertising		25.00	323.00
Interest		478.74	524.86
Total Revenue for the Year		$ 23,093.97	$ 17,233.86
Expenses			
Public Education		$ 1860.48	$ 2,243.24
Taxes & Licences		-	-
Star Party		13,731.87	11,273.19
Utilities		1,224.09	1,225.00
Insurance		1,613.00	1,116.00
Repairs & Maintenance		196.05	616.93
Office Supplies & Postage; Newsletter		866.29	829.37
Retail Sales		982.89	1,217.72
Depreciation		740.42	807.40
Miscellaneous		-	-
Fundraising		-	-
Total Expenses for the Year		$ 21,215.09	$ 19,327.85
Net Surplus (Deficit) for the Year		$ 1878.88	$ (2,093.99)
Assets			
Cash		$ 4,072.56	$ 3,532.77
Term Deposits		35,535.23	35,056.97
Raffle Fund		430.14	430.14
Fixed Assets			
Equipment		14,667.89	15,340.60
Other Assets - Retail Inventory		886.00	1,205.00
Total Assets		$ 55,591.82	$ 55,565.48
Liabilities			
Accounts Payable		-	$ 1,852.54
Surplus (Deficit)			
Balance Forward	$ 53,712.94		
Current Year Surplus (Deficit)	1,878.88		
Balance end of Year	55,591.82		
Total Liabilities and Surplus		$ 55,591.82	$ 53,712.9

Observer's Group – *Larry Scott*

Due to procrastination I was unable to make the deadline for the November issue of Saskatoon Skies. I promise this may or may not happen again. Here's a double helping of Observers Group Notes to make up for it.

Observers Group for October 13th was postponed due to weather conditions. Three members did made it out to Sleaford on October 15th for a nice evening with average transparency and good seeing. Three more members attended the November 17th meeting but were not rewarded with good conditions. The sky was clear but neither transparency nor seeing were good. We did get to hear what sounded like a loon trying to imitate a coyote. Very odd indeed.

I have not scheduled an Observers Group for December as I am unable to commit to any weekend dates. For those so inclined there will be moonless evenings from about December 3rd to 16th. New Moon is on Thursday, December 13th and coincides with the peak of the Geminid Meteor Shower. If it's clear, I'll be there. The peak, I believe, is about 17:30 local time. If you have to work Friday you can get hours of meteor watching in and still be home in bed before midnight. Hoping to have as may people out as we did for the Perseids in August :) Check here for further info: http://www.imo.net/calendar/2012#gem

Moving into 2013 I've scheduled an Observers Group for January 5th. We'll have moonless evenings from about January 1st to 14th.

Seasons Greetings to you all !

Editor's Note:

Larry is one of those members quietly working in the background to keep us actively observing the wonders of the night sky. Although you will not often see him at monthly meetings, be assured that he is working hard planning our monthly observing sessions at Sleaford. In addition he keeps the observing and parking areas mowed in summer and cleared of snow in the winter. He does this mostly on his own although he does receive help from members from time to time. Here are two photos of Larry at work clearing the site of snow on the evening of Dec.3rd, the day after Saskatoon and area received over 15 cm of snow.

Observing Clubs and Certificates

Join the Club! Observe all 110 Messier, 110 Finest NGC, 400 Herschel I or II, 140 Lunar, 154 Sky Gems or 35 Binocular objects, or Explore the Universe and earn great OBSERVING CERTIFICATES!

MESSIER CLUB

Certified at 110 Objects:

R. Huziak, G. Sarty, S. Alexander, S. Ferguson, D. Jeffrey, D. Chatfield, B. Christie, K. Noesgaard, M. Stephens, B. Hydomako, T. Tuomi, L. Scott, G. Charpentier, B. Johnson, M. Clancy, L. Dickson, B. Burlingham, K. Houston

Norma Jensen	109
Ron Waldron	105
Wade Selvig	75
Garry Stone	57
Bernice Friesen	45
Wayne Schlapkohl	43
Barb Wright	40
Ellen Dickson	34
Jeff Swick	24
Graham Hartridge	9

Chatfield BINOCULAR CERTIFICATE

Certified at 35 to 40 Objects:

M. Stephens, T. Tuomi, M. Clancy, R. Huziak, K. Maher

Jim Goodridge	Up!	12

FINEST NGC CLUB

Certified at 110 Objects:

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

Larry Scott	Done!	110
Scott Alexander		97
Norma Jensen		58
Sandy Ferguson		23
Kathleen Houston		23
George Charpentier		13
Mike Clancy		7

EXPLORE the UNIVERSE

Certified at 55 to 110 Objects:

M. Clancy, T. Tuomi, K. Maher, B. Gratias

Wayne Schlapkohl	Done	55
Sharon Dice		31
Jim Goodridge	Up!	35

Isabel Williamson Lunar Observing Certificate

Certified at 140 Objects:

T. Tuomi

Norma Jensen	133
Jeff Swick	29

HERSCHEL 400 CLUB

Certified at 400 Objects:

D. Jeffrey, R. Huziak, D. Chatfield, T. Tuomi

Gordon Sarty	251
Scott Alexander	117
Sandy Ferguson	18
Larry Scott	20

HERSCHEL 400-II CLUB

Darrell Chatfield	Done!	400
Rick Huziak		246

LEVY DEEP-SKY GEMS

Certified at 154 Objects:

Tenho Tuomi	149
Darrell Chatfield	70

The Messier, Finest NGC and David Levy's Deep-Sky Gems lists can be found in the *Observer's Handbook*.
The Explore the Universe list is available on the National website.
On-line Messier and Finest NGC lists, charts and logbooks: **http://www.rasc.ca/observing**
On-line Herschel 400 List: **http://www.astroloeague.org/al/obsclubs/herschel/hers400.html**
Binocular List is at: **http://homepage.usask.ca/%7Eges125/rasc/Chatfield_Binocular_List.pdf**
Copies of the Isabel Williamson Lunar Observing Program Guide can be purchased at meetings.
Program details can be found at: **http://www.rasc.ca/williamson/index.shtm**