

Saskatoon Skies

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

Vol. 44, No. 1

January 2013

Comet C/2012 K5 (LINEAR)



Photos taken by Tenho Tuomi taken in December of 2012 through an 300 mm F5 Newtonian 13 X 60 sec ISO 1600. Photo was cropped to half size.



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

In This Issue:

Membership Information / Bottle Drive / Officers of the Centre	2
U of S Observatory Hours / Light Pollution Abatement Website	2
Calendar of Events / Notice of Meeting	3
Sleaford Stories by Norma Jensen	4
Observer's Group Notes by Larry Scott	
A Visit to the Summit of Mauna Kea by Kristen Smith	5-7
The Five Visible Planets This Month	8
Observing Clubs and Certificates	9

MEMBERSHIP? JOIN TODAY!

Regular: \$80.00 /year

Youth: \$41.00 /year

Associate: \$33 /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 National Office at <national@RASC.ca>!

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
- 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 norj@sasktel.net.

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 – 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.

Newsletter Editor – Ron Waldron

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 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.

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

RASC CALENDAR OF EVENTS

Jan. 21	Executive and General Meetings	Jim Gorkoff
Jan 21	Gibbous Moon and Jupiter conjunction	
Feb. 4	Observer's Group - Sleaford	Larry Scott
Feb. 8	Mercury and Mars conjunction at dusk	
Feb. 18	Executive and General meetings	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, January 21st at 7:30 PM
Room 175, Physics Bldg., U of S

1. "So You Think You've Discovered Something! Digital Cameras, False Reports and IR Leaks"

Rick Huziak will discuss the growing issue of photographically-found false "new star" discoveries being reported on the Internet that all too often end up wasting everyone's time. He will tell you how to verify if your discovery is new, and thus deserves "announcement".

2. SSSP 2012 Powerpoint
presented by George Charpentier

NOTE: There will be an Executive Meeting beginning at 6:30 PM

Notice of 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.

Sleaford Stories by Norma Jensen

Here is a story of two evenings. One brought unexpected clear skies and a glorious meteor shower; the other held great dark sky promise. So the question is, why pack up your gear on a winter's night and travel

45 minutes on uncertain roads to Sleaford? I guess it's because you never know what might happen : an amazing aurora, sound of coyote's song or owl rising out of the stillness of the night or a snoozing moose sleeping in the south-east corner in the trees.. If you don't go, you'll never know.

On the night of the Geminids, the sky was overcast but Larry and I went out anyway. There was surely, at the least, snow to be moved around.

Sure enough, the yard needed clearing. Around 22:30, Jupiter and Aldebaran appeared. As we watched, the sky began to open up. By 23:15, ensconced in layers, with electric heating pads on comfortable chairs, we gazed. The display was amazing. Short blips, white flashes and the predominant fast, long-tailed meteors of many colours - sapphire - golden - diamond-white - pale yellow. I saw one pass through Orion, a diamond cylinder which broke up into a spill of jewels.

Three hours and a100-plus meteors later, we reluctantly packed up. The bright meteor fall continued towards the city.

Two evenings later Ron and I decided to go out to Sleaford.

All sites checked indicated that this would be a very opportune night. We set up and were ready to go by 18:00. The sky was beautiful; Jupiter was rising in the east and once the moon began to set, we could see the milkyway as it ran northeast-northwest, Cygnus diving into the western horizon.

Putting the moon to our backs we began to delight in favourites such as M81-82, M15 and M35 with companion 2158, returning to Jupiter from time to time as it steadied as it rose.

I have settled into Camelopardalis to move from Kemble's Cascade through to Stock 2 and the double cluster in Perseus. I have spent some time here and know a little bit of the road and the rest stops on the way.

The evening plan was to then roam around while waiting for Orion and all its offerings and Jupiter.

Around 20:00 my views in Camelopardalis began to dim. I look away from the scope to see huge fog clouds rolling across the fields to the north of the road. Skies close, mirror, eyepiece, telrad have developed heavy frost. Cap and move inside to figure out what to do. A half hour later, the fog has become dense. That's it. Pack up and convoy back to the city. Another adventure seen and shared.

Try to get out under the night sky . There are always things to see and hear and stories to tell.

Observer's Group Notes – Larry Scott

December's cold, dismal skies afforded few opportunities for organized star-gazing. My one trip to Sleaford was on December 13th which coincided with a new moon and the annual Geminid meteor shower. This trip turned out well despite being clouded out till about 22:30. The skies kept improving till we left about 02:15. From my lawn chair, including some warm-up trips into the shelter, I counted 100 meteors from 23:17 until 01:35 the next morning. This included lots of nice ones and 4 or 5 of the ooh! aah! Variety. If you like meteor showers this is a good one to try and observe.

Next Observers Group will hopefully be held on February 2nd with moonless evenings from about January 30th till February 12th.

A Visit to the Summit of Mauna Kea by Kristen Smith

Editor's Note:

Kristen Smith is a teacher-librarian with the Saskatoon Public School Division and a former colleague of mine. She recently made a visit to the giant observatories on the top of Mauna Kea on the big island of Hawaii. Upon return she was kind enough and excited enough to share the highlights with me. I have asked her to share them with you.



This summer we visited the Big Island of Mauna Kea. The island is the largest and southernmost of the Hawaiian chain. It truly is a remarkable place in terms of physical geography. On this small diverse island that takes approximately 3.5 hours to drive around, 11 of the 13 global climate zones can be found.

The island houses many tourist attractions such as Volcanoes National Park, 29 miles of live coral reef, a plethora of white, black, and green sand beaches, and the massive dormant shield volcano Mauna Kea - home to the world's largest observatory for optical, infrared, and sub millimeter astronomy.

Our trip to the summit of Mauna Kea was the highlight of our vacation. We had read in travel

books that watching the sunset from the world's tallest mountain (Everest is the highest), was a once in a lifetime experience. We started planning our trip to the summit of Mauna Kea long before our arrival on the Big Island. We turned to the Onizuka Center for International Astronomy, Mauna Kea Visitor Information Station for all of our planning needs Link: <http://www.ifa.hawaii.edu/info/vis/> With the information from the website we were able to align our August visit with both a guided tour to an observatory and a meteor shower stargazing program. The only way a tourist can gain access to an observatory and view a telescope is by taking a free-guided tour from the staff at the Visitor Information Station. The services and educational programs offered at the station are operated entirely on public donations and the dedication of volunteers. They have nightly stargazing programs every single night of the year!



The drive up to Mauna Kea is one of the very few places in the world where you can drive from sea level to 14000 feet in approximately 2 hrs. Given its remoteness we had read that it was important to have a full tank of gas and a well operating 4X4 vehicle. We arrived at the Visitor Information Station to a welcoming



group of students from the nearby University of Hawaii campus that were eager to answer our questions, discuss their research, and let us take a look through their telescopes. In addition, the students provided us with a number of helpful hints to cope with the side effects of the altitude changes. At this point (9,000 feet) we were both already feeling a bit tired and dizzy. As well, the temperature had dramatically decreased so a quick change into warmer clothes was required.

Our guide Joel met us at the center and explained some of the logistics of our caravan trip to the summit. Although it appeared a bit cloudy at this point, he assured us that we were in for a spectacular sunset at the summit. In fact, the high altitude of the summit, its dry conditions, and the stable air patterns create near ideal conditions for the researchers and observers almost every night of the year. The Station tour includes a 45-minute video



presentation that provides background information on Mauna Kea, its significant role in Hawaiian culture, the history of the observatories, and the challenging balance between science and nature. As well, the video gave us just a little extra time to acclimate to the higher altitude before heading up to the summit.

Our caravan to the top consisted of about 12 cars. The windy gravel road takes about 25 minutes to travel from the station to the summit. Along the way there were some amazing and frightening views as we slowly rose above the clouds. As the observatories came into our view we began to truly understand what a unique place we were visiting. At the summit Joel gave us a few moments to gather our bearings and our thoughts. He mentioned that he never grew tired of seeing the faces on visitors as they took in their first impressions of the summit. We truly felt as though we were standing on top of the world with just a sea of clouds below us.



Joel was clearly passionate and knowledgeable about Mauna Kea. Our group was composed of a number of avid astronomers who through a ton of questions at him regarding, current research at the summit, trends in astronomy funding and education, the transportation and construction of the 13 observatories, and the future of the observatory station. He was a wealth of knowledge on just about every topic. He had arranged to take our tour inside of the W. M. Keck observatory to learn about it and some of

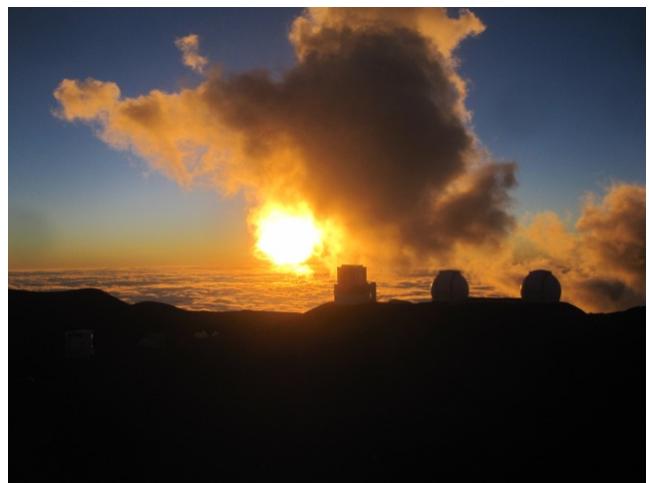
the research that was ongoing. A technician met us at the observatory and took us inside for a viewing of the telescope. He swung the enormous telescope around for us to take a close look and snap a few photographs. Afterwards we spent time discussing some of the research that has been ongoing at the Keck observatory with a fair bit of detail on the work of Dr. Andrea Ghez and her research team from UCLA Link:

http://keckobservatory.org/cosmicmatters/article/zeroing_in_onblack_holes. Unfortunately, our time in the observatory was limited as the Keck was booked for the evening and the technician needed to return to his work. However, the tour and discussion were very thorough and educational.

For most members of our group the altitude had become a real challenge. Most of the group decided to head down to the Station as their symptoms were increasing. Joel made a few recommendations for those of us who wanted to stay for the sunset. To pass the time he suggested a couple of short trail walks which lead to points of interest. To be honest, I wasn't sure that I was up for too much walking at that point. Almost everything we did seemed pretty challenging. However, Joel's passion about Mauna Kea was infectious and we took him up on his suggestions. The first was a short walk to a tropical alpine lake called Waiau. This sacred lake is still an important ceremonial site for Hawaiians. The second was a short walk to the highest point on the summit where Hawaiians place traditional offerings. Both trips took a great deal of effort but I am really glad that we did them.

As the observatories opened for the evening we both watched as the sky changed colors and the sun began to lower. The process happened slowly so we had a lot of time to enjoy the view until the sun dropped below the clouds. I can't explain the beauty of the experience but it is a moment that will stay with me forever.

Joel had promised us that the stargazing below at the Visitor Station would be spectacular. As a meteor shower was occurring he warned us that the center would be full of people arriving to take a look through one of the many telescopes that were set up. The drive down was frightening. It was pitch black and incredibly steep. I was thankful when we arrived safely at the Station. There was a lot of energy at the station as people prepared for a very special night. There was a lot to see and do as the evening unfolded. We were able to view the rings of Saturn through a telescope, listen to stories of constellations, and share in the excitement of the volunteer astronomers who share their passion for the stars with tourists nightly. As the night sky came to life the Milky Way intensified and I felt that I could just reach up and pull it down. The clarity and perceived closeness of our galaxy will resonate with me forever. We left Mauna Kea that night incredibly thankful for the experience and the memories.



The Five Visible Planets This Month

adapted from Earthsky.org

*Only two of the five visible planets – **Jupiter** and **Saturn** – will be easy to spot in the January 2013 night sky. But if you’re diligent, you might spot **Mars** before it follows the sun beneath the southwest horizon at late dusk/nightfall, or get an eyeful of **Venus** in the haze of dawn shortly before sunrise.*

***Mars** and **Venus** will be easier to catch in the earlier part of January, because Mars sinks closer to the sunset and Venus falls closer to the sunrise as we head toward February. **Mercury**, the solar system’s innermost planet, transitions from the morning to the evening sky in January 2013, so this world hides in the sun’s glare all month long.*

Mars - This world feebly glimmers over the southwest horizon at dusk and follows the sun beneath the horizon at or slightly before nightfall. If all else fails, use the waxing crescent moon to guide you to Mars as darkness falls on January 12th and 13th.

You’ll have absolutely no trouble spotting the king planet **Jupiter** this month, which pops out first thing at evening dusk. At mid-northern latitudes, Jupiter shines almost until dawn in early January and sets at roughly 3 a.m. by the month’s end. In December 2012, Jupiter was shining at its brightest best in the night sky until the year 2021. But you’ll continue to see Jupiter blazing away in the evening sky for many more months to come! The king planet ranks as the fourth-brightest celestial body to light up the heavens, after sun, moon and the planet Venus. However, **Venus** only shows itself briefly – if at all – just before sunrise in January 2013. Look for the moon to pass close to Jupiter on January 20th, 21st, and 22nd.

Jupiter beams as both an evening and morning planet this month, because it stays out well past midnight. This giant world is the first star-like

object to grace the sky at evening dusk. But the other two morning glories – **Saturn**, **Venus** – are strictly morning planets, rising in the eastern part of the sky in the predawn and/or dawn hours. When **Jupiter** sits low in the western predawn sky, look for **Saturn** to be hovering over the horizon in the east.

Saturn and **Venus** continue to part ways in the morning sky throughout January 2013. At mid-northern latitudes, **Saturn** rises around 2 to 3 a.m. around New Year’s 2013 and around 1 a.m. by the month’s end. In contrast, Venus rises about one and one-hours hours before sunrise in early January 2013 and about 40 minutes before sunrise by late January. Throughout January 2013, **Saturn** reaches its high point in the sky at dawn.

Circle January 6th and 7th on your calendar, as the moon will be close to the ringed planet during the predawn and dawn hours on January 6th and 7th. Saturn will shine relatively close to Spica, the brightest star in the constellation Virgo. However, you can distinguish Saturn from Spica by color. Saturn shines with a golden hue whereas Spica sparkles blue-white. Binoculars help to accentuate color if you have difficulty discerning color with the unaided eye. Better yet, view Saturn with the telescope. The rings look spectacular even through a modest backyard telescope!

Normally, you can’t miss **Venus**, because it’s the second-brightest celestial body to light up the nighttime after the moon. But the planet named for the goddess of love and beauty won’t be easy to spot this month. Venus sits low in the glare of morning twilight and sinks closer to the sunrise with every passing day. Venus rises about one and one-half hours before the sun in early January and only about 40 minutes before sunrise by the month’s end. Look for this blazing beauty low in the east-southeast sky, starting around hour before sunrise during the first few weeks of January. Be sure to see the beautiful pairing of the **moon and Venus** on the morning of January 10th.

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
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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.astroleague.org/al/obsclubs/herschel/herschel400.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.shtml>