



# SASKATOON SKIES

Volume 27, Issue 02, February 1996

Saskatoon Skies is published monthly by the Saskatoon Centre  
of The Royal Astronomical Society of Canada

## In this Issue



What Happened in History in February  
Letter from the Ed.  
Ramblings of the Prez  
Some Great Articles

## What happened in History

- 3 USSR Luna 9 made the first soft landing on the Moon in 1966.
- 4 Astronomer Clyde Tombaugh was born in 1906. He discovered Pluto 24 years later to the month.
- 4 In 1967, U.S. Lunar Orbiter 3 left for the Moon, going into orbit around that natural satellite February 8. It worked until October 9, 1967, sending back photos.
- USA Apollo 14 landed on the Moon in 1971.
- 7 U.S. astronaut Bruce McCandless, first untethered spacewalk 1984.
- 8 Leonid Kizim, Vladimir Solovyev and Oleg Atkov, in 1984 in the USSR second-generation space station, Salyut 7, set an endurance record of 237 days in space which stood through September 1987.
- 15 Galileo was born in 1564.
- 16 Miranda, a moon of Uranus, discovered in 1948 by Gerard Kuiper.
- 17 In 1965, the deep space probe Ranger 8 blasted off from the U.S. for the Moon, sending back a total of 7,137 photos of Earth's natural satellite before crash landing at Mare Tranquilitatis.
- 18 'Me planet Pluto was discovered in 1930 by Clyde Tombaugh.
- 19 Nicolas Copernicus was born in 1473.
- 20 John H. Glenn Jr., in 1962 in Mercury-Atlas 6, was first from the USA to orbit Earth.
- 20 USSR launched third-generation space station Mir in 1986.
- 23 Supemova 1987a explodes in the Large Magellanic Cloud galaxy in 1987. Neutrinos blasted out by the

### 1 Good Laugh

**Q:** How many astronomers does it take to change a streetlight bulb?

**A:** None. Why replace a perfectly good burned out bulb.

supemova are recorded on Earth. On February 24, astronomers working in the Southern Hemisphere discover Supemova 1987a, closest supemova since 1604 and since invention of the telescope.

- 24 In 1969, the U.S. sent Mariner 6 to Mars. The probe came within 2,000 miles of surface July 31, 1969, sent back TV pix and data.
- 24 'Me first pulsar was reported in 1968.
- 25 In 1969, the interplanetary probe Mariner 6 left the U.S. for Mars. It came within 2,000 miles of the Red Planet July 31, 1969, sending back photos and information.

in a mailbox NOW! The decisions as to whether, or not, to replace **The Journal and The Bulletin** with '**Astronomy Canada**' will be made by National Council, but it is desirable that National Council act in accord with the clearly expressed wishes of a substantial majority of all Members.

I remind you that 1996 is an election year for The Society. As of July 1, 1996, you will have a new President, 1st Vice-President and 2nd Vice-President. They will be leading The Society into a new era: without the valuable support which I have enjoyed from **Rosemary**; and, perhaps, with a new publication which will present a new and very different 'face' to the astronomical community.

Given all of the above, I strongly encourage you to send your National Council Representative to the next meeting on March 23, 1996, and to the meetings which will be held at GA'96. (I expect that the decision on publications will be made at the March 23rd meeting of Council.)

Again, I especially encourage all Members to attend GA'96 in Edmonton for astronomy, fun, tough decisions... and for that 'Thank You' to **Rosemary**.

**Doug Hube**  
National President

### Correction:

The article "**Tips for the Comet Hunt**", printed in the January 1996 issue of **Saskatoon Skies** was written by **Don Machholz** and was reprinted from "**Winnicentrics**, July-August 1995", the newsletter of the Winnipeg Centre. Sorry for the omission of the credits.

### An Astro-fair in Bozeman, Montana

The Bozeman Astronomy Club is having an astro-fair at the **Museum of the Rockies** on **February 24, 1996**. The astro-fair will

feature speakers, demonstrations, observing and some really cool displays. Anyone in the area may want to drop in. More information is available from Mike Murray of the Museum at "ammmOgemini.oscs.montana.edu".

## General Meeting

**Fr. Kemble to Talk at the Next General Meeting.** Father Lucian Kemble, better known as "Lamplighter Luc" will be giving a presentation at the February general meeting of the Saskatoon Centre.

Fr. Kemble is a well-known Lumsden, Saskatchewan amateur astronomer with a diverse interest in observational astronomy. He has watched the inferior planets in daylight to find them both at inferior and superior conjunction, watches aurora and occultations, and is working on the "Herchel 500" deep sky challenge list. Don't miss this talk!(an article written by Fr. Kemble appears later in the newsletter)

### General Meeting - February 19, 1996

Room A-226  
Health Sciences Building

U. of Sask. Campus  
8:00 P.M.

Tentative programs for future General Meetings are:

March 18 - Eric Keser - The Florida Winter Star Party  
- Bill Hydomako - Visual Progress on the

## Important Info

### The Rystrom Observatory

Members are welcome to use the observatory at any time but please phone ahead. Call Nelson or Gloria Rystrom at 955-2370 before 9:00 p.m. if you intend on going out. This lets them know that someone will be roaming around their yard. If they do not answer go anyway. Drive through the yard slowly, and dim your lights as a courtesy to others who may be observing.

### 16" Telescope

April 15 - Jamie Thompson - Canada's Part of the Japan Mars Mission

May 20 - Sandy Ferguson - Women in Astronomy  
June 17 -- vacant

Suggestions for general meeting speakers are always welcome. (Call Rick Huziak). Also, every member is welcomed and encouraged to give a presentation, big or small at a general meeting. For 5- to 15-minute presentations, NO NOTICE is required. You can just show up and talk. We'll gladly fit you in! If you have interesting slides, you've seen something you'd like to share, or you've been somewhere, we'd all like to know. A slide and overhead projector is always available. Other AV equipment is can easily be booked with 2 or 3 days notice.

## Variable Sky Charts Available

As part of my January presentation at the general meeting, I handed out a set of 7 variable star charts for either naked eye or binocular observers. This is a great set for beginners. I'd love to have some members become interested in variables, as this is one area that amateurs can easily contribute to real scientific knowledge. I am considering joining AAVSO as a centre, as we can send all of our observations in as a group. I'd be glad to collate each month's observation for mailing. Also, Gord Sarty and I are doing some long term research on the 7 variable stars and others with the intent of eventually writing another RASC Journal article. Observations of these stars are always welcome to build up our database. Anyone interested in the charts or a centre AAVSO membership, please call me at 665-3392 for more details, or send in a letter to the centre mailbox.

## Nasa on the Internet Suggested by Dan Kulyk

Dan Kulyk points out that you can subscribe to NASA press releases on the Internet if you want the latest and greatest of what's happening with launches, planetary probes and the Hubble Space Telescope. Included below are instructions on how to subscribe to the service. Some of the stuff that comes out is really good science while some is pure administrative. Dan also suggests that since they are press releases, maybe we could reprint the more interesting ones in Saskatoon Skies. The Internet service is free, and you get one or two releases a day, on the average.

NASA press releases and other information are available automatically by sending an Internet electronic mail message to domo@hq.NASA.gov. In the body of the message (not the subject line) users should type the words "subscribe pressrelease" (no quotes). The system will reply with a confirmation via E-mail of each subscription. A second automatic message will include additional information on the service. NASA releases also are available via CompuServe using the command GO NASA.

## A New Astronomy Store

I just want to let you know that something new has come to Montana. Night Skies has opened featuring telescopes and optical accessories in Belgrade, MT., just north of Yellowstone Park. Come and see the largest display of Telescopes in Montana. If you have any questions just call owner Scott Sandness at;

Night Skies  
1550 Amsterdam Rd.  
Belgrade, MT. 59714  
(406)388-1205

hours; 9:00 to 5:30 Tues-Sat (mountain time) 103154.421@compuserve.com

scientists to rethink their theories of mile (600 km) journey. This was as Jupiter's formation and the nature of expected for a gas-giant planet such as planetary evolution processes, according to Jupiter.

probe project scientist Dr. Richard Young

of NASA's Ames Research Center, What are the implications of these findings? Most scientists believe that Jupiter has a bulk composition similar to

"The quality of the Galileo probe data that of the gas and dust cloud of the exceeds all of our most optimistic primitive solar nebula from which the predictions," said Dr. Wesley Huntress, planets and our Sun were formed, with NASA Associate Administrator for Space added heavy elements from comets and Science. "it will allow the scientific meteorites. The probe's measurements may community to develop valuable new necessitate a re-evaluation of existing insights into the formation and evolution of views of how Jupiter evolved from the our solar system, and the origins of life solar nebula. For example, the lower-than-expected helium and neon levels on Jupiter relative to the Sun influence within it."

The probe made the most difficult scientific understanding of the process of planetary atmospheric entry ever attempted, fractionation, the "raining out" of helium according to probe manager Marcie Smith and neon during planetary evolution.

of NASA Ames. Entering Jupiter's atmosphere on Dec. 7, 1995, it survived During the probe's high-speed, entry speeds of over 106,000 mph, atmospheric-entry phase, deceleration temperatures twice those on the surface of measurements high in the atmosphere the Sun and deceleration forces up to 230 showed atmospheric density to be much times the strength of gravity on Earth. It greater than expected. Corresponding relayed data obtained during its 57-minute descent mission back to the Galileo orbiter predicted. The high temperatures appear to more than 130,000 miles overhead for require an unidentified heating mechanism storage and transmission to Earth. The for this region of the atmosphere. orbiter is now embarking on a two-year mission to study Jupiter and its moons.

Following probe parachute deployment, six science instruments on the probe

"The probe detected extremely strong winds and very intense turbulence during its descent through Jupiter's thick atmosphere. This provides evidence that the energy source driving much of Jupiter's distinctive circulation phenomena is probably heat escaping from the deep interior of the planet," Young said. "The probe also discovered an intense new radiation belt approximately 31,000 miles above Jupiter's cloud tops, and a veritable absence of lightning,' he noted.

The composition of Jupiter's atmosphere offered some surprises, according to project scientists. It contains significantly lower than expected levels of helium, neon, and certain heavy elements, such as carbon, oxygen and sulfur.

The issue of the colors of Jupiter's atmosphere has been much-debated, but no consensus has developed from probe data to date. The probe encountered no solid objects or surfaces during its entire 373-

## Hot off the Internet

**From:** GEORGE::Kris 'Kris Finnstad"  
24-JAN-1996 12:52  
**To:** GEORGE::'press-release-other3@mercury.hq.NASA.gov"  
**CC:**

**Subj:** Galileo Probe Suggests Planetary Reappraisal

Douglas Isbell  
Headquarters, Washington, DC January  
22, 1996  
(Phone: 202/358-1547)

mbargoed until 1 p.m. EST

E

David Morse  
Ames Research Center, Mountain

Vi

ew, CA

(Phone: 415/604-4724)

RELEASE: 96-10

### GALILEO PROBE SUGGESTS SCIENCE REAPPRAISAL

Preliminary analysis of early data returned by NASA's historic Galileo probe mission into Jupiter's atmosphere has provided a series of startling discoveries for project scientists.

Information on the extent of water and clouds and on the chemical composition of the Jovian atmosphere is particularly revealing. Probe instruments found the entry region of Jupiter to be drier than anticipated, and they did not detect the three-tiered cloud structure that most researchers had postulated. The amount of helium measured was about one-half of what was expected.

These initial findings are encouraging

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Commercial advertising is accepted in the Saskatoon Skies with three sizes of ads available. Artwork must be camera ready and supplied by the advertiser.

One quarter page.....	\$25.00
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For further information please contact me or mail your questions to the address below.

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pressures of the Jovian environment oxygen?," "where is the water?," and to eventually caused the probe reconsider their interpretation of the S-L 9 communications subsystem to terminate impacts. data transmission operations.

Scientists had expected to find severe Earth-based telescopic observations winds on Jupiter ranging up to 220 mph. suggest that the probe entry site may well have been one of the least cloudy areas on detected winds far greater, perhaps up to Jupiter. At this location, the probe did not 330 mph. The winds remained fairly detect the three distinct layers of clouds (a constant as the probe descended deep into topmost layer of ammonia crystals, a middle the Jovian atmosphere. This suggests that layer of ammonium hydrosulfide, and a Jupiter's winds are not caused by final, thick layer of water and ice crystals) differential sunlight at the equator versus the poles or by heat released by water condensation as on Earth, according to that researchers had anticipated.

Some indication of a high-level ammonia

ice cloud was detected by the net flux radiometer. Evidence for a thin cloud which might be the postulated ammonium hydrosulfide cloud was provided by the nephelometer experiment. There was no planet's deep interior,' Young said. "This data to suggest the presence of water clouds impacts Jupiter's climate and circulation of any significance. The vertical patterns, and suggests a jet stream-like temperature gradient obtained by the atmospheric structure instrument was characteristic of a dry atmosphere, free of condensation. Only the one, distinctive cloud structure was identified, and that was of modest proportion.

The latest analyses of data from the Voyager spacecraft that flew by Jupiter in 1979 have suggested a water abundance for the planet of twice the solar level (based on the Sun's oxygen content). Observations of composition.

the propagation of atmospheric waves across Jupiter's cloud tops from the Comet Shoemaker-Levy 9 impacts implied that Jupiter might have a water content of ten times the solar level. Actual probe analysis and measurements, while subject to scientific debate, suggest a level near that of the Sun. Scientists are left to wonder, where is the

'The origin of Jupiter's winds appears to be the internal heat source which radiates energy up into the atmosphere from the hydroxyl cloud. This is puzzling, but consistent with the absence of water clouds. A virtual

The probe found that lightning occurs on Jupiter only about one-tenth as often as on Earth. This is puzzling, but consistent with the absence of water clouds. A virtual

Scientists caution that results obtained to date, while dramatic and exciting, are only preliminary and subject to much further refinement. Data transmission measurements, while subject to scientific problems associated with solar conjunction between the Earth and Jupiter, the need to refine estimates based on probe and orbiter trajectories, the presence of higher than anticipated instrument temperatures, and the need for improved calibration all require a cautious approach to these early findings.

Additional information will be forthcoming over the next few months as scientists continue to evaluate the wealth of data obtained by the probe and to cross- compare results of individual scientific instruments. Further information and images about the Galileo mission to Jupiter can be accessed on the Internet through the following three URLs:

<http://ccf.arc.NASA.gov/dx>  
[http://ccf.arc.NASA.gov/galileo\\_probe/](http://ccf.arc.NASA.gov/galileo_probe/)  
<http://www.jpl.NASA.gov/galileo>

The Galileo probe project is managed by NASA's Ames Research Center, Mountain View, CA. Hughes Aircraft Co., El Segundo, CA, designed and built the probe; General Electric, Philadelphia, PA, built the probe's heat shield. NASA's Jet Propulsion Laboratory, Pasadena, CA, built the Galileo orbiter spacecraft and manages the overall mission.

### About Fr. Lucian Kemble (In his own Words)

About Fr. Lucian Kemble (In His Own Words)

Talk Subject:

I propose giving the basic one I gave at the Edmonton gathering in November, which went well. "My 25 years as an active, dedicated Observer". The talk contains lots of information on the errors and successes, the riches and joys, my own resolution of the science/faith debate; tips and hints of things I have learned to enhance observing.

Background:

Born, Pincher Creek, southern Alberta, 22 Nov., 1922 Schooling through high school, Pincher Creek. 1941-1945: service as radio operator in the airforce, World War II Entered Franciscan Order, 1946 [50 years this coming August] Studies in Philosophy and Theology in Quebec and Montreal. 7 years, = 1946-1953 Ordained to Catholic priesthood, 7 June, 1953 Ministry: 15 years' teaching experience on college level, Regina,

## Membership Info

Membership in the Royal Astronomical Society of Canada and the Saskatoon Centre is open to anyone and has many benefits.

Below are the prices for memberships. Should you require additional information please contact Rick Huziak at 665-3392.

Regular membership (21 & up).....\$40.00
Youth Membership (21 & under)....\$22.50
Club Newsletter (12 issues).....\$10.00
Observer's Handbook.....\$18.95

Note: Lifetime memberships are available on request for \$900.00

Maine, Wilcox 4 years' parish work on Vancouver Island balance of time in retreat work at Mt. St. Francis,

Cochrane, Alberta and presently, for the fourth time around, at St. Michaels', Lumsden

Interests:

Astronomy (Of Course!!); music, writing [a number of short articles for Edmonton and Calgary RASC newsletters, Astronomy, Sky & Tel, Webb Society; nature and astrophotography; avid student of all aspects of natural history, by-product of my upbringing and my astronomy.

Equipment:

For past 15 years, a Celestron 11-inch on Byers Mount, permanently mounted in a 10'x10', roll-off roof, shelter Primary astronomy interests: Deep sky observing and drawings; over 500 on file, including the whole Herschel Catalogue of some 2,478 objects, completed May, 1995

Special interest in Planetary Nebulae  
Resume of these 25 years - privileged beyond measure!

Looking forward to the Saskatoon trip and meeting you all.

IAMPLIGHTER LUC

P.O. Box 220

LUMSDEN SK S0G 3C0

(Ed. Note: Sometimes my publishing program does not recognise a program and as a result it sometimes does goofy things with line spacing and margins and no matter what I do I can not eliminate it. If

you are going to submit an article please save it as an ms-dos text file.)

viewing experience. I ask **Why keep it to yourself?** The newsletter is supposed to be a collections of articles from all aspects of the club.

We have a lot of members and if I took a moment to add up all of the years of viewing experience it would amaze us all. The newsletter is a link to a lot of members who cannot get to our meetings on a regular basis. The newsletters of a lot of the other centres are well written and have a lot of contributors and it makes for some good reading. Some of the centres have a large newsletter due to the fact that they only produce it bi-monthly, which is something we might consider for the future.

With the funds that are now available from not having to pay for printing I hope to make the newsletter larger and add more areas. This will hopefully give me the chance to have a little something for everyone in the club. It would be appreciated if you would sit down and jot down some of your thoughts and experiences and send them in. If they are not written well let me know and I will edit them. You will find that once you actually start writing the words will flow and before you know it you will have an article.

Anyway the company that I own uses the services of a local printing company called **Sam Rose Graphics** for my printing needs and those of my clients. When I told them what happened they said that they would print all of our newsletters for free and not only that, they will run them through the folding machine and save me an hour of folding each issue. Not only will this save me a lot of time it will save the club a lot of money on printing.

Lot of people take the newsletter for granted and look forward to reading it each month. It is the one way a lot of members find out what is going on in the club. The last couple of newsletters have been thrown together in a big rush, mostly due to the fact that I was too busy to give it the time that it deserves. Coming up with new articles each month is not that easy and some help is always needed. There are a lot of members out there who have years of experience and I am sure that a few funny things have happened to you over the years. If so, why keep it to yourself? There are a lot of other members who would love to read about it.

Perhaps some of you have a favorite object that would be of interest to the other members or perhaps you have had a unique