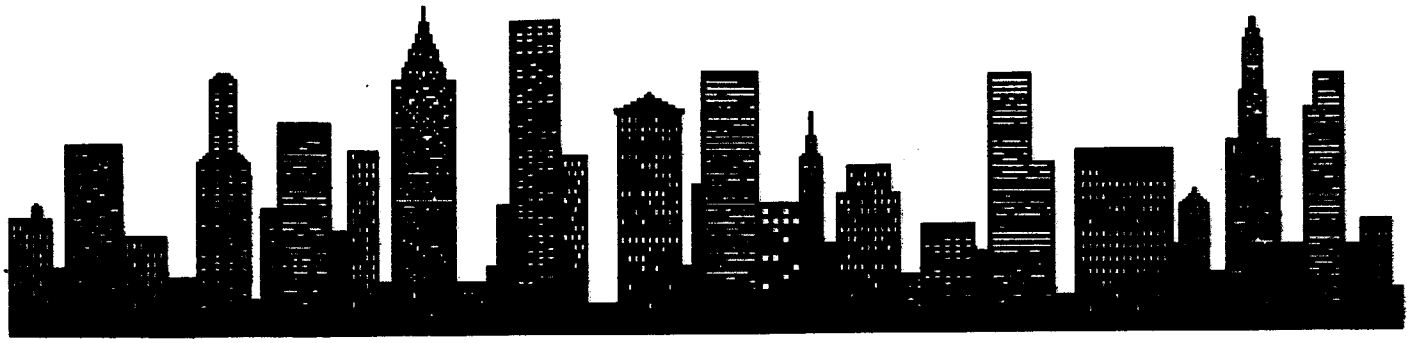


SASKATOON SKIES

Volume 26, Issue 10, October 1995

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

In this Issue

What Happened in History

1 NASA was founded this date in 1958.

3 Walter M. Schirra, in 1962 in Mercury-Atlas 8, splashed down within 4.5 miles of target, best up to that date.

4 USSR Sputnik 1 was launched in 1957, beginning Man's explorations in space.

5 A Cepheid variable star in galaxy M-31 was identified by Edwin Hubble in 1923.

5 Marc Garneau became the first Canadian in space, aboard shuttle Challenger in 1984.

7 USSR Luna 3 photographed the far side of the Moon in 1959.

8 Astronomer Ejnar Hertzsprung was born in 1873.

10 The Neptune moon Triton discovered in 1846 by William Lassell.

11 The U.S. launched Pioneer 1, in 1958.

11 First manned flight of Apollo command module in 1968, by Walter M. Schirra Jr., Donn F. Eisele and R. Walter Cunningham, Apollo-Saturn 7.

11 Georgi S. Shonin and Valery N. Kubasov, in 1969, in Soyuz 6. Anatoly V. Filipchenko, Vladislav N. Volkov and Viktor V. Gorbatko in Soyuz 7. Alexei Yeliseyev and Vladimir Shatalov in Soyuz 8. First time three spacecraft and seven crew members orbited Earth at the same time. Shonin and Kubasov did first welding of metal in zero-gravity space.

12 Vladimir M. Komarov, Konstantin P. Feoktistov and Boris B. Yegorov, in 1964 in Voskhod 1, made the first three-man orbital flight and the first without space suits.

22 The first eclipse of the Sun was recorded in China in 2136 BC.

22 In 1966, USSR Luna 12 left for the Moon, going into orbit there October 25, 1966.

24 William Lassell discovered Uranus moons Umbriel, Ariel, 1851.

25 The Saturn moon Iapetus discovered in 1671 by Giovanni Cassini.

25 Astronomer Henry Russell was born in 1877.

26 Georgi T. Beregovoi, in 1968, flew his Soyuz 3 to a rendezvous with an unmanned Soyuz 2.

30 In 1981, USSR Venera 13 was launched to Venus, landing there March 1, 1982, sending back data for 127 minutes, including first X-ray fluorescence analysis of soil.

University Observatory Hours for Public Viewing

The **University of Saskatchewan** observatory will be open to the public on Saturday evenings from **9:30-10:30 p.m.**

Observatory assistants will be present to answer questions about astronomy and to assist the public in viewing through the telescope. The observatory is located on campus, one block north of the corner of Wiggins Ave & College Drive in Saskatoon.

For more information, call Stan Shaddick, Astronomy Instructor, at 966-6434.

Autumn Observing...Pegasus and Andromeda...by Sandy Ferguson

Now that fall is here and we can go out earlier in the evening to do our observing, it is a good time to get to know **Pegasus** and **ANDROMEDA**, two fairly bright fall constellations easily seen from the city. The two constellations are easily found, as they are almost on the meridian around 9:00 p.m. during October, and earlier as fall progresses. This means they have reached their highest point in the sky, the best place for observation. Both constellations are around into the new year for viewing.

FIGURE #1(see page 3) shows how you can locate these constellations using that all-purpose asterism, the **Big Dipper**. Use the 'pointers' of the Dipper to locate **Polaris,** then extend this pointer line in a straight line almost double the distance to locate **Scheat**, the upper right corner star of the **Square of Pegasus**. This will enable you to recognize the Square, which represents the body of **Pegasus**, the winged horse of Greek mythology. (Actually **Pegasus** 'flies' upside-down, with the star **Enif** representing its head, but don't let that throw you!) Once you have found the Square, you will have no trouble locating **ANDROMEDA.** The upper left- hand star in the Square is **Alpheratz**, which is just over the border of **Pegasus** in **ANDROMEDA**. These constellations are a little unique in that they are attached. **ANDROMEDA** spreads out from **Alpheratz** eastward, toward **Perseus,** in a trumpet shape.

NAKED EYE: As always, observe the orientation of the two constellations as they rise and set. At this time of year they are high in the sky by the time you get put to view them. But late on a summer evening you will see the star **Scheat** and the 'front legs' of **Pegasus** clear the north eastern horizon first, followed by the head, **Great Square** and **ANDROMEDA**, the trumpet shape rising horizontally. As the evening progresses and they become higher in the sky, they attain their traditional appearance, with **Pegasus** flying upside-down. Then even later as they set in the northwest, **Pegasus** is the first to disappear, with the trumpet shape of **ANDROMEDA** the last to go, setting vertically.

The Great Square is easily identified without optical equipment, the four bright stars being **Alpheratz** in the northeast, **Scheat** in the northwest, **Markab** in the southwest and Algenib in the southeast. Stretching eastward from the Square you will recognize the trumpet shape of **ANDROMEDA**. This consists of two rows of four fairly bright stars, meeting at **Alpheratz.**

FIGURE 2 (see page 3) shows some interesting objects to be seen. The treat in this part of the sky is one of the most, if not THE MOST spectacular, deep sky object in the northern hemisphere--the **ANDROMEDA** Galaxy, also known as **M31** and **NGC 224.** Granted, you need to be well away from lights and have your eyes dark adapted, but you can see this wonderful object without optical aid, without too much searching. You might try and see how many stars you can count within the Square. If you can count more than twenty-five, you are considered to have very good vision.

BINOCULARS: Turn your binoculars on **M31** again. Now you will see a huge, elongated fuzzy patch that will take up a good bit of your field of view. If your binoculars are high power and you have a stable mount on which to set them, you might be able to pick up **M32** and **M110,** the two companion galaxies of **M31**. They are 8th magnitude and, although they are considerably smaller than **M31** (it's 4 deg. across!), you should be able to see them. It is mind-boggling to consider that the ligl you see from **M31** on any night left that

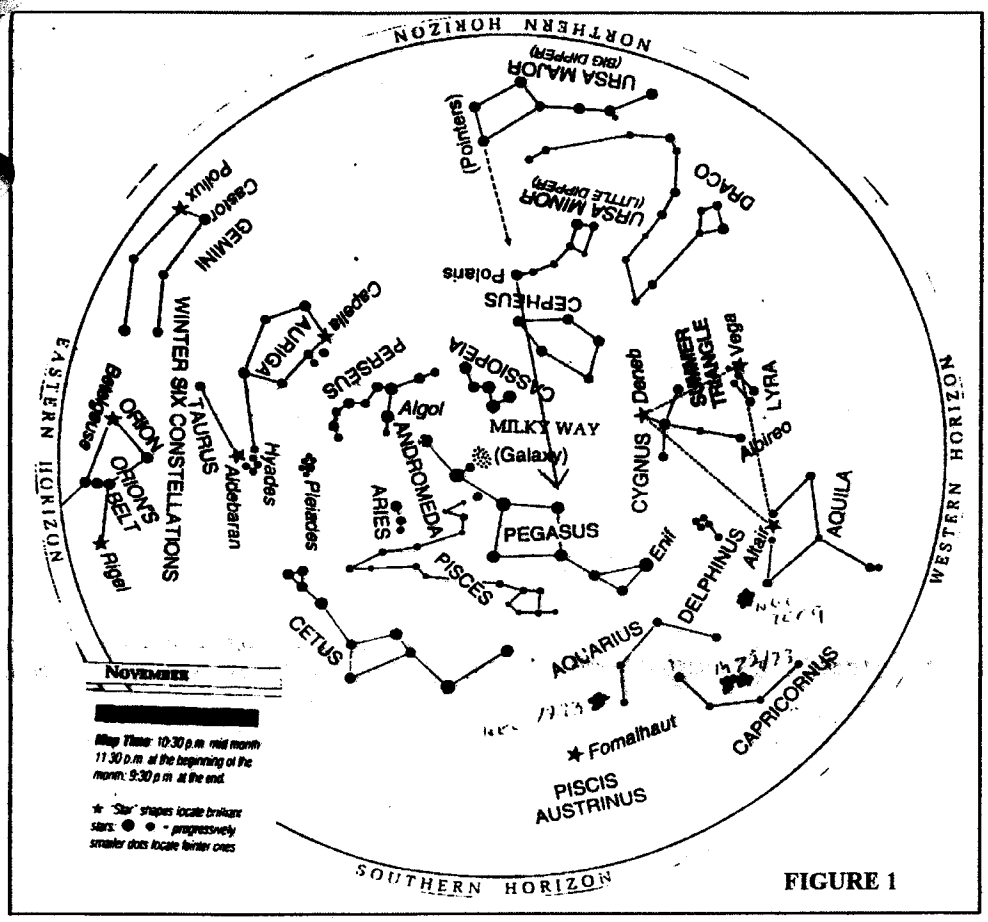


FIGURE 1

galaxy 2.2 million years ago!

Heading back to **Pegasus**, try and locate M15, a beautiful globular cluster not far from the star **Enif.** It shows up as a small fuzzy spot in binoculars. You need a telescope to resolve any of the stars, but it is an achievement to have located it.

SMALL TELESCOPE: Check out **M31** again. Make sure you use an eyepiece with a wide field of view, in order to get as much of this galaxy into the picture. You will easily see the bright nucleus of the galaxy, together with its dust lanes. Its companion galaxies mentioned above will be very easy to see, **M32 being considerably closer to M31 than M110.** Now, go back to **M15.** In a high power eyepiece it loses a lot of its fuzzy appearance. It now becomes a compact little ball of stars, easily resolved. It is not as large as **M13** in **Hercules,** the best globular cluster we can see from **Saskatoon,** but it has its own charm!

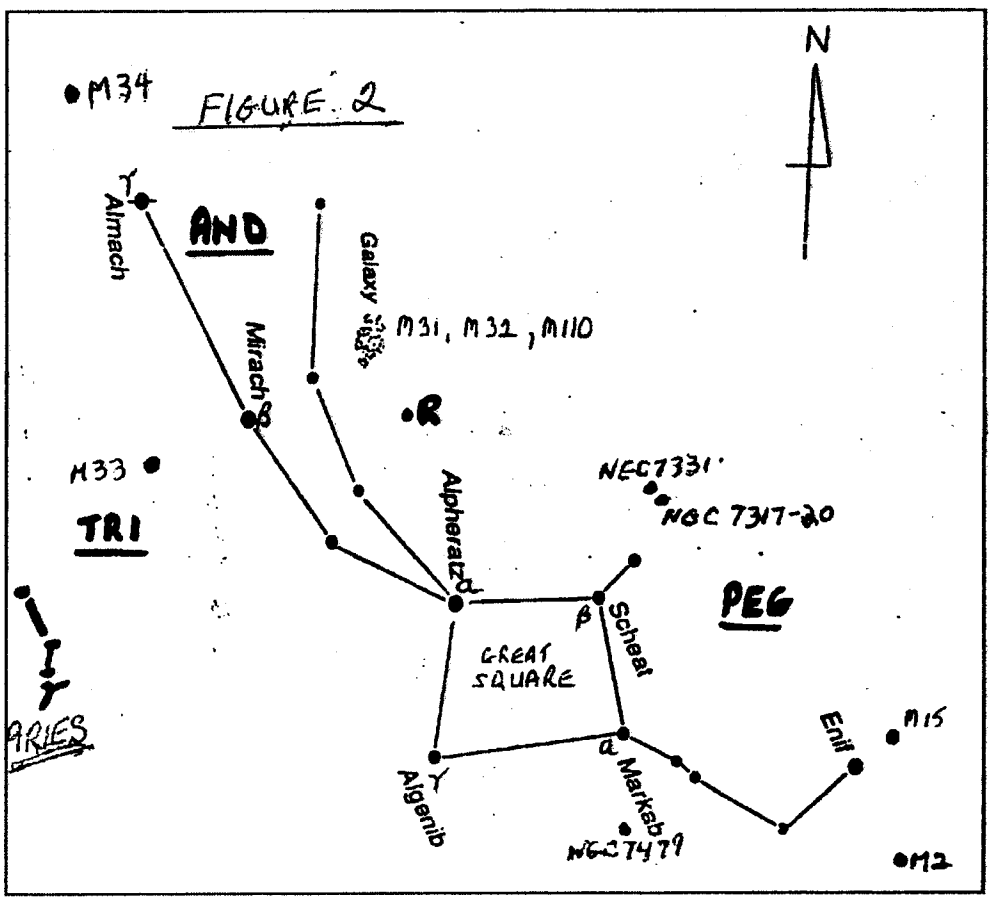
I have featured only a couple of objects available in the two constellations. There are many other objects in **Pegasus** and **ANDROMEDA** that may interest a more experienced observer. I hope, however, that the objects mentioned will interest newcomers to the sky, who will not find the search for them overwhelming.

Note* On August 7, 95 the picture on page 4 was taken by the Goes West satellite showing a Hurricane(??) developing over Saskatchewan. The poem that follows is about this picture. The credits for the poem and picture appear after the poem.

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.*



My 38th Birthday

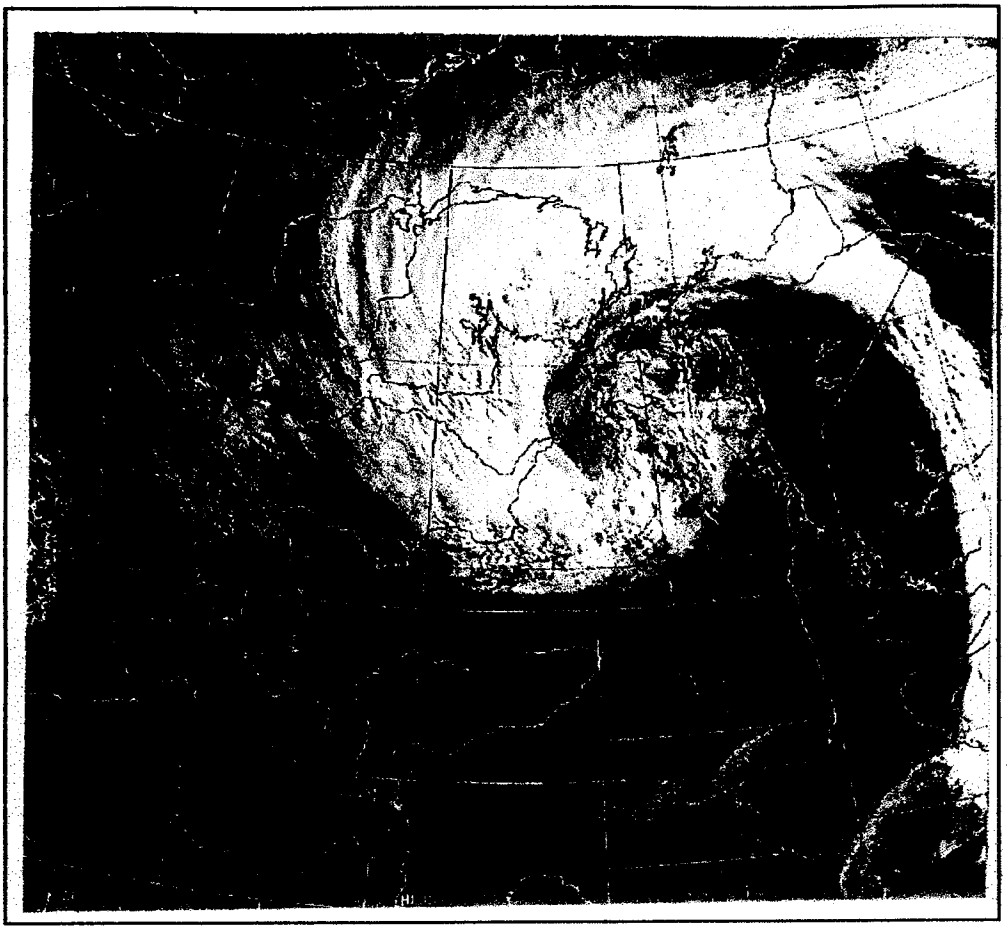
Many a moon has passed me own eyes
Years of orbits around a star that outshines
But on this day, the earth flashed and rumbled

A storm had finally erupted and grumbled

The lights on the street that come on at night
turned off when the lightning, the earth did ignite
Crashing the silence of traffic, it seemed
Were explosions of thunder, lightning, and screams

Submitted by,
Don Friesen, R.A.S.C.

Special thanks to Dan Kulak
Environment Canada, R.A.S.C. member



Hurricane Over Saskatchewan

It just so happened that on this very day
Long, long ago and not far away
I was born on this planet of life
That has the knowledge, the technics, and the strife
I submit this photo from far up above
From a friend geo-sync that we are all fond of
This is the storm that happened that day
To me, it looks like a hurricane, you could say

The rain was a whirlpool, the winds were in blizzards
Part of our planet was camera!d by wizards
On August 7. 1995 Goes west and Environment Canada, brings this photo alive

Letter from the Editor

First of all I would like to apologize to **Eric Keser** for not putting his name after the two fine articles he wrote for the September issue. They were titles **"A Tale of Two Star Parties"** and **"Observing at Al's Inlaws Farm"**. Sorry **Eric,** it will not happen again. Keep those great articles coming as they are greatly appreciated.

With a start to another year of the newsletter I just wanted to encourage all old and new members to submit as many articles as they want. There are a few rules for the submitting of an article for the newsletter. If you have a computer or access to one please submit your article(s) **in a text format on a 3.50" floppy**. If you do not have access to a computer please type out your article and I will use my scanner to input it into the proper format. If you must submit a handwritten article please submit it a minimum of **two weeks before the end of the month.** This will allow me ample time to retype it.

With just about every newsletter I am always rushed trying to get it out and as a result mistakes are being made (the eyes get tired at two in the morning) and that can take away from the quality of the newsletter. **To give me more time for editing etc all submissions must be received one week before the end of each month. The deadline for submissions for the November newsletter will be October 25/95 at midnight.**

From now on I will always publish the next issues deadline for submission . **Anything received after that date will be held and used in the following months newsletter**. This will give me the time I need to get everything organized so please do not ask me to make exceptions to this rule.

I want to extend a large thankyou to all of the people who submit articles on a regular basis. Putting out a newsletter is very time consuming, but having a bunch of excellent writers submitting articles sure makes the job alot easier. So thanks alot for the help.....and keep em coming!

Advertising Info

*Commercial advertisers are encouraged to advertise in the **Saskatoon Skies**. Your ad will give you access to all Canadian members of the Royal Astronomical Society.*

*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
One half page.....$39.00
One full page.....$50.00

For further information please contact me or mail your questions to the address below.

The Editor
522 Devonshire Crescent
Saskatoon, Sask.
S7L 5W1
(306) 384-1807

Rick's Ramblings

Missing Articles Found! In case anyone is worried, those articles that were missing have been 'found'. There weren't truly missing, just borrowed. The Ladder, C5 and T-adapter will soon be back at the observatory.

A Quick-News Email Service... **Saskatoon Centre** members can take advantage of a 'quick-news' service now available on the Internet. The service will automatically inform you of new discoveries, and program changes or additions a bit faster than the newsletter can do it. The intent is to get the information out quick when it needs to be, such as when a new nova is discovered, or a new starnight is planned that will occur before the next **Saskatoon Skies** issue. Members who are not already on the service should contact me by email at huziak@SEDSystems.ca" and indicate your intent by placing as the first line in the message "subscribe quick-news".

Dues are Due..... Dues are due for the 1995 - 1996 season. Membership runs from Oct 1, 1995 through Sept. 30, 1996. Regular - $40.00.....Youth - $22.50 (21 or younger) Please try to renew as soon as possible as not to miss any of your publications. Life memberships are available. Please contact Mike Williams for details. Send renewals to the Centre mailbox or pay up at the General Meeting!

RASC Saskatoon Centre
PO Box 317, RPO University
Saskatoon, SK
S7K 4J8

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

Sky and Telescopes Discounts Remember to renew your Sky and Telescope through the Centre to get a 10% discount plus discounts on other Sky Publishing products. Call either **Mike Williams** or **Rick Huziak** for details, or pick up a brochure at the General Meeting.

Elections are Here..... An Now...The Annual Elections. The annual elections for the **RASC Saskatoon Executive** positions will be held at the October General Meeting. An Executive position is open to any member of the Centre in good standing. Positions are chosen by democratic vote by the membership. Anyone can nominate anyone else OR themselves for a position. Voting is done by a show of hands by those present at the General Meeting. In the event that you cannot attend the meeting, nomination by proxy will be gladly accepted. Please send these proxies to the Centre mailbox, or contact a member of the current Executive.

The following Executive positions are available, as all terms have now expired (except for appointed or assumed positions):

Honorary President J. E. Kennedy (appointed position)
Past President currently Don Friesen (assumed position)
President currently Richard Huziak (2-year term)
Vice-president currently Scott Alexander (2-year term)
Secretary currently Bill Hydomako
Treasurer currently Mike Williams
Activities Coordinator Sandy Ferguson
Centre Rep. currently Jim Young (appointed position by the executive)
Newsletter Editor currently Garry Brett
Membership/Promotions David Cornish
Librarian currently Jim Young
Councilors currently Merlyn Melby, Al Hartridge, Brian Friesen, Erich Keser

If you know you have something to contribute to your Centre, please participate by voting or becoming a member of the Executive. A basic list of job definitions of the positions is shown below:

Honorary President This provides a tie to external organization, such as Physics dept. May have membership paid by RASC Non-voting member of executive

Past President Advisor to new president Duties somewhat undefined. Provides continuity during presidency changeover.

President Chairman of Executive Council Chairman of General Meetings General Representative of RASC to the public

Vice-president Stand-in for president in the event of president's absence Aid to President.

Secretary Recorder of meeting minutes Provides Annual Report to National bulletin Provides minutes for publication in Newsletter

Treasurer Handles finances of Centre Prepares annual financial statements Accepts new memberships Reports financial matters to National Office as required Maintains membership list and subscription

Activities Coordinator - Arranges for activities for RASC members to participate in Coordinates these activities Coordinates Annual Public Starnight Coordinates Astronomy Day Display Coordinates Special events except for General

Centre Representative Represents Saskatoon Centre at National Council meetings and at the General Assembly

Newsletter Editor Edits Saskatoon Skies Newsletter. Solicits input of articles. Arranges for copying services of newsletter. Collate newsletter and stuffs envelopes. Arranges to get newsletter mailed

Membership/Promotions Lobbies members to renew their memberships Polls expires members to determine why they have not rejoined. Maintains the temporary membership list. Promotes the RASC to the media in whatever form is.

Librarian Maintains library book, journal and newsletter inventory. Maintains inventory list of books. Files incoming correspondence and other Centre newsletters.

Councilor May be entry level position in

executive. Aids others as required. Position somewhat undefined.

October Telescopic Meteor Showers by Rick Huziak

Last year, while observing on November 28, I was amazed to notice several telescopic meteors in the short observing period. I saw 3 meteors in 53 minutes of looking through the scope. I thought that was a pretty high rate for a scope with a field of about 1/2 degree. To make the meteors all the more interesting was that each meteor was about 9th magnitude, blue medium swift and traveling approximately north to south. The similarity was so striking, that I emailed **Peter Brown** of the **International Meteor Organization (University of Western Ontario)** to inquire if there was a telescopic shower that night.

Peter forwarded my request to **Malcolm Currie** of the telescopic branch of the IMO (near **Reading, England**). **Malcolm** mailed me right back and stated that he knew of no shower on that particular night, but also said that telescopic showers are poorly observed and that there are dozens waiting to be discovered. It was kind of cool that my inquiry went to **Ontario**, then to the UK, then back to **Saskatoon** within 1/2 hour, complete with answers! The power of Internet!! (By the way, as you are reading this I am most likely observing with **Malcolm** as I am planning to visit him during my current UK trip).

I've been waiting until this year to see if I can do some work toward discovering if the 'shower' I believed I was seeing last year was indeed real. To do this, I will have to diligently observe the sky with binoculars or a wide field telescope for many hours around and on last year's date.

This is where YOU come in. I could use some help if you are interested. I would like to make this a Centre project and get several people out observing to try to see if we can confirm this shower. What I'd like you to do is to commit to observe a preselected area of the sky either with binoculars, a rich-field telescope, or other scope at very low power for a few hours on and around the date of November 28th. If you see a meteor, then it would be plotted on the predescribed charts. From this information, I might be able to trace the radiant of the possible shower, and if so, we might just discover a telescopic shower!

I'll contact interested observers closer to the event to do some better planning. If you are interested, please let me know either by email (huziak@SEDSystems.ca) or by leaving a message on my answering machine (665-3392). This is an excellent project for 'extended' members who live in distant towns and for even other Centres, (if you guys read our newsletter)! We just might end up famous.

Terry Hicks Visit to Saskatoon by Rick Huziak

Ed Kennedy called me up one morning and told me that the rumor grapevine had told him that Kingston member **Terry Hicks** was coming to **Saskatoon** in mid September. Within a half-day, we had an email off to **Rosemary** at the National office inviting Terry to our September meeting. **Rosemary** faxed **Terry** and **Terry** called me that evening confirming that he would come. This was delightful! **Terry** had originally come to **Saskatoon** to visit his brother, but we managed to drag him away from that for an evening.

Terry agreed to give a presentation at our September 17th general meeting, and gave an excellent talk on **'The Gregorian Calendar"**, where he explained the problem of the procession of the equinoxes causing this troublesome .2422 day error every year, and what efforts were being carried out by the IAU to introduce leap years to compensate for that.

Terry is a wonderful speaker, and it was a pleasure to have him visit our Centre. Our only regret is that he could only visit for a few hours; not quite time enough to renew the old acquaintances with **Ed Kennedy** and **Jim Young,** and make more for the future. **Terry's** wife, **Ruth,** (a life-member of the RASC) and his sister-in-law, **Margaret-Ann**, also attended the meeting to cheer him on.

As **Terry** is a graduate of the U of S, (class of '47), it was a pleasure to escort him around the campus and hear his stories of which buildings were there and which weren't, and where all the paths used to be during his time here. **I hope that we will meet again soon, maybe at the Edmonton or Kingston GAs.**

Binocular Astronomy Meeting

The next Binocular Observing Group is scheduled for October 20 or 21, Whichever happens to be clear. If you have any questions please contact Sandy Ferguson at 931-3184.

Notice of General Meeting

The General Meeting of the Saskatoon Centre will be held:

Monday, October 16, 1995
8:00 p.m.
Room A-226
Health Sciences Building, U of S

October 16 features the annual elections of the executive council, as well as presentation by **Bob Christie** (the 1995 Alberta Star Party), **Sandy Ferguson** (Constellation of the Month) and **Winston Quan**. **Winston** will talk about his recent trip the **Mauna Kea, Hawaii**, to visit the **Canada-France-Hawaii** telescope and to do some observing above 10,000 feet!

Asteroids, Meteoroids and Planetoids by Rick Huziak

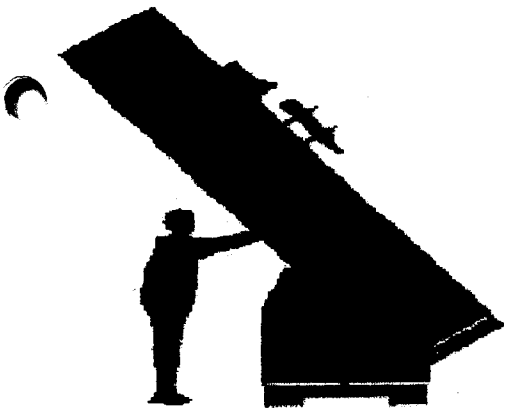
These 3 terms have always bothered me a bit. Asteroids are rocky bodies, mostly in orbit between **Jupiter** and **Mars**, with a scattering elsewhere. Meteoroids are very, very, very small asteroids or cometary particles (generally only a few grams in mass) which orbit the sun until they hit the earth. Planetoids were the little rocky conglomerations of star-stuff tha eventually gathered together and grew

bigger and bigger, eventually to form the planets in the solar system. When a Meteoroid enters the atmosphere, it drops the "oid"(most likely due to thermal shock) and becomes a meteor.

Does it then follow that if an asteroid enters the atmosphere, it becomes an "aster"? If so, I wouldn't worry about getting hit by asters! The dinosaurs must have been killed by flower pollen! If a planetoid enters the atmosphere, it becomes a planet. This makes sense. After all, the earth is a planet and is inside the atmosphere. Then there are the 'ites'. If a meteor reaches the ground, it becomes a meteorite. If an aster hits the ground, is it an asterite? Has anyone ever heard of a planetite?

Sometimes I wonder why I ever got interested in a hobby that has so many inconsistencies!

You Know your scope is Too Big



If you have ever had to say.....

-You have ever said to a fellow observer 1...2...3 lift.

-Your eyepiece kit contains an eight foot step ladder.

-You have to yell "duck" when you swing your scope in right ascension.

- Looking at Messier objects ruins your dark adaptation.

- You have considered using a C8 as a counter weight.

- You have asked someone to give you a boost up to your Telrad.

- You can see seven galaxies in Stephen's Quintet.

- You can see seven galaxies in Stephen's Quintet.

- Your sleeping bag just fits nicely into your telescope tube .... with you in it! '

- The detail on Jupiter looks completely wrong, then you discover that you are looking at Io.

- You have been observing for three hours and you realize that you still have your sunglasses on.

- You've said to another observer, "Can I check this field in your scope, my finder is dewed up."

- You can see two faint stars in the centre of the Ring Nebula ... not counting the three bright ones.

(The above reprinted from April 1994 Edmonton Stardust Newsletter)

The Swap Shop

To have your ad run here call me at (306) 384-1807 before the end of the month and I will run you ad in this section for three issues. Should your item not sell you can reword it and try again for another three issues. This section is for anything for sale, swap,give-a-way or anything else you can think of.

Minutes of the Sept Executive Meeting 7:00 PM, Sept 18, 1995 Room B-10, Health Sciences Building, U of S Campus

Present: Ed Kennedy, Richard Huziak, Sandy Ferguson, Al Hartridge, Garry Brett, David Cornish, Jim Young, Merlyn Melby, Bill Hydomako, Eric Keser, Brian Friesen, Craig Williams, Mike Williams

1) Meeting called to order 7:01 PM.

2) Rooms A-226 and B-10 have been rebooked for 1996.

3) The Rystrom Observatory: Jobs to do: install a red-light on the warm-up shelter complete hook-up of 220V electrical box in the machine shed
update agreement with Nelson Rystrom, the agreement was presented to the executive for review.
payment for power to Nelson Rystrom, motion by J. Young to pay Rystroms $75.00 for power at the site. Second by Brian Friesen. Carried by show of hands.
site needs maintenance (paint) before winter

4) Observer's Group report for the summer. Next session planning.

5) Binocular Beginners class. Report. Six people came out for the first session on Sept. 15.

6) New Observatory Committee site selection update. The SRC site looks good.

7) U of S Astronomy Club's 17" order should go ahead with out the RASC being involved in the purchase.

8) General Assembly and the Publications controversy. Report by J. Young.

9) The Sept 22/23 Starnight. A request for a starnight dedicated to John Dobson and another to National Science Week.

10)What on Earth? display at the WDM, Oct 15, 1995. Report by Sandy Ferguson.

11) Starnight in Martensville Thurs. Oct 26 (raindate Oct 27)

12) Newsletter Assistant Editor. A new position that can be appointed. Will be named with the new executive.

13) The 1995-6 new executive get elected next month.

14) New business.
-Temporary members report
-Telescope donation to RASC by Doug Miller. Scope should be valued and Doug to get tax receipt for scope and 'spin-table' base for 16". A tax receipt will be issued to Doug for $
-Jim Young's Astronomy Class report.
-16-inch telescope report.
-The new RASC calendars to be shipped next week.

15) Meeting adjourned 7:55 PM.

Saskatoon Skies 1995

Minutes of the September General Meeting
8:00 PM, Sept 18, 1995 Room A-226, Health Sciences Building, U of S Campus

1) Meeting called to order 8:10 PM. Members and new members welcomed from summer. Terry and Ruth Hicks of the Kingston Centre and Terry's sister-in-law from Saskatoon welcomed.

2) Our proud new banner. Thanks to Garry Brett for getting us the banner.

3) Observer's Group report.

4) Binocular Beginners class report.

5) RASC Calendars - Color calendar being produced.

6) Upcoming Events
- Sept 22&23 Public Starnight
- Oct 15 What on Earth? at WDM
- Oct 16 General Meeting
- Oct 20-21 OG session
- Oct 26 (or 27) - Martensville Starparty

7) Next month is the election of executive council.

8) Presentations:
- Mt. Kobau...
- David Cornish
- North Dakota Starfest
- Eric Keser
- Northern Starparty (?)
- Eric Keser
- New Observatory Committee Report - Rick Huziak
- Recent RZ Cas Results
- Rick Huziak
- The Gregorian Calendar - Terry Hicks

9) Last call for new business

10) Meeting adjourned 10:05 PM.

Life can be Funny: A father and son were at a star party watching an astronomer polar align his scope. Just as he was glancing through his finder a falling star shot by. The father walked over to the astronomer and said.."Heck of a good shot buddy!"

The Search for Life Out There Reprinted from the Space Almanac

Frank Drake, dean of natural sciences at the University of California Santa Cruz campus and president of the Search for Extraterrestrial Intelligence Institute, said tourists from Out There may look at **Earth** as a zoo and could be hovering quietly overhead now in their own version of a Grayline tourist bus. He said planets may exist around a dozen nearby stars. The chemical evolution that produced life on **Earth** exists across the universe, he said. The probability for intelligent life elsewhere is **100** percent.

Humans came from what **Drake** called normal processes so life should be abundant. Mathematics suggested to **Drake** a new species of intelligent creatures emerges once a year in our galaxy. The **Search for Extraterrestrial Intelligence Institute** is a **NASA-** funded effort to tune in radio signals from alien civilizations. It is starting a 10-year $65-million systematic sky search for alien civilization radio signals. Other scientists who say the odds do indicate extraterrestrials exist, also would like to uncover intelligent life in outer space.

Alien colonies? One skeptic, however, found it doubtful. Otherwise aliens would have visited **Earth** by now, he said. **University of Virginia** astronomer **Robert Rood** argued if advanced civilizations existed elsewhere in our **Milky Way** galaxy, at least one would have colonized the galaxy and reached **Earth** by now. If it took 500 years travel time to get to the nearest star, allowing a few thousand years there until it got crowded, and then going on to the next star, it would take only 20 to 30 million years to colonize the galaxy, in **Rood's** opinion. He found 30 million years a mere instant in the galaxy's history of billions of years. **Rood** thought the formation of **Earth's** moon, which created ocean tides on **Earth**, might be unique. That could make evolution of the first life forms in tidal pools a fluke that occurred only on **Earth**, he said.

Conceited humans. He allowed, however, that aliens simply might choose not to explore the galaxy. He noted the conceit of humans thinking they have the only civilization among the stars. **Cornell University** astronomer **Carl Sagan** echoed that sentiment, pointing to 100 billion galaxies in the Universe, each with a few hundred billion stars. He found the idea that our **Sun** is the only star with an inhabited planet laughable. He asked where humans got the idea they are the only kind of life in the Universe?

Al Hibbs, a retired space scientist from **NASA's Jet Propulsion Laboratory,** said he would bet $100 that evidence of extraterrestrial life would be found in his lifetime. Other scientists agreed. Despite a lack of confirmed UFO's from another planet, they believed intelligent life must exist beyond Earth.

Venus Facts download from Internet by Al Hartridge

Venus is the second planet from the **Sun** and the sixth largest: Distance from **Sun**: 108,200,000 km (0.72 AU),diameter 12,103.6 km, mass: 4.869e24 kg. **Venus's** orbit is the most nearly circular of that of any planet, with an eccentricity of less than 1 %.

Venus (Greek: Aphrodite; Babylonian: Ishtar) is the goddess of love and beauty. The planet is so named probably because it is the brightest of the planets known to the ancients. (With a few exceptions, the surface features on Venus are named for female figures.)

Venus has been known since prehistoric times. It is the brightest object in the sky except for the **Sun** and the **Moon**. Like **Mercury**, it was popularly thought to be two separate bodies: **Eosphorus** as the morning star and **Hesperus** as the evening star , but the Greek astronomers knew better.

Since **Venus** is an inferior planet, it shows phases when viewed with a telescope from the perspective of the **Earth**. **Galileo's** observation of this phenomenon was important evidence in favor of **Copernicus's** heliocentric theory of the solar system.

The first spacecraft to visit **Venus** was **Mariner 2** in 1962. It was subsequently visited by many others (more than 20 in all so far), including **Pioneer Venus** and the **Soviet Venera 7** the first spacecraft to land on another planet, and **Venera 9** which returned the first photographs of the surface. Most recently, the orbiting US spacecraft **Magellan** produced detailed maps of **Venus's** surface using radar.

Venus's rotation is somewhat unusual in that it is both very slow (243 Earth days per **Venus** day, slightly longer than **Venus's year**) and retrograde. In addition, the periods of **Venus's** rotation and of its orbit are synchronized such that it always presents the same face toward **Earth** when the two planets are at their closest approach.

Venus is sometimes regarded as **Earth's** sister planet. In some ways they are very similar: **Venus** is only slightly smaller than **Earth** (95% of **Earth's** diameter, 80% of **Earth's** mass). Both have few craters indicating relatively young surfaces.

Their densities and chemical compositions are similar. Because of these similarities, it was thought that below its dense clouds **Venus** might be very Earthlike and might even have life. But, unfortunately, more detailed study of **Venus** reveals that in many important ways it is radically different from Earth.

The pressure of **Venus's** atmosphere at the surface is 90 atmospheres (about the same as the pressure at a depth of I km in **Earth's** oceans). It is composed mostly of carbon dioxide. There are several layers of clouds many kilometers thick composed of sulfuric acid. These clouds completely obscure our view surface. This dense atmosphere produces a run-away greenhouse effect that raises **Venus's** surface temperature by about 400 degrees to over 740 K (hot enough to melt lead). **Venus's** surface is actually hotter than **Mercury's** despite being nearly twice as far from the Sun.

There are strong (350 kph) winds at the cloud tops but winds at the surface are very slow, no more than a few kilometers per hour.

Venus probably once had large amounts of water like **Earth** but it all boiled away. **Venus** is now quite dry. **Earth** would have suffered the same fate had it been just a little closer to the **Sun**. We may learn a lot about **Earth** by learning why the basically similar **Venus** turned out so differently.

Most of Venus's surface consists of gently rolling plains with little relief. There are also several broad depressions: Atalanta Planitia , Guinevere Planitia , Lavinia Planitia . There two large highland areas: Ishtar Terra in the north hemisphere (about the size of Australia) and Aphrodite Terra along the equator (about the size of South America). The interior of Ishtar consists mainly of a high plateau, Lakshmi Planum, which is surrounded by the highest mountains on **Venus** including the enormous **Maxwell Montes .**

Data from **Magellan's imaging radar** shows that much of the surface of **Venus is** covered by lava flows. There are several large shield volcanoes (similar to **Hawaii** or **Olympus Mons**) such as **Sif Mons.** Recently announced findings indicate that **Venus** is still volcanically active, but only in a few hot spots; for the most part it has been geologically rather quiet for the past few hundred million years.

There are no s=ll craters on **Venus.** It seems that small meteors burn up in **Venus's** dense atmosphere before reaching the surface. Craters on **Venus** seem to come in bunches indicating that large meteors that do reach the surface usually break up in the atmosphere.

The oldest terrains on **Venus** seem to be about 800 million years old. Extensive volcanism at that time wiped out the earlier surface including any large craters from early in **Venus's** history.

Magellan's images show a wide variety of interesting and unique features including pancake volcanoes which seem to be eruptions of very thick lava and corona which seem to be collapsed domes over large magma chambers.

The interior of **Venus** is probably very similar to that of **Earth:** an iron core about 3000 km in radius, a molten rocky mantle comprising the majority of the planet. Recent results from the **Magellan** gravity data indicate *that* **Venus's** crust is stronger and thicker than had previously been assumed. Like **Earth, convection** in the mantle produces stress on the surface which is relieved in many relatively small regions instead of being concentrated at plate boundaries as is the case on **Earth. Venus** has no magnetic field, perhaps because of its slow rotation. **Venus** has no satellites, and thereby hangs a tale.

Venus is usually visible with the naked eye. Sometimes (inaccurately) referred to as the "morning star" or the "evening star", it is by far the brightest "star" in the sky. Look for it every chance that you get.

Special For Sale Items Handled by Don Friesen

All of the following items are for sale to anyone who is interested at some very good prices. This equipment used to belong a **Mr. Emerson Dombroskay** who was a **University of Saskatchewan** graduate and a member of the **Royal Astronomical Society Saskatoon Centre.**

Mr. Dombroskay went missing in **Vancouver** several years ago and has not been located. His mother requested that I sell all of her son's astronomy equipment and use the money received to put into the Trust Fund set up to find her missing son.

So take a look at the things below and help her out. The prices are all very good. Call me at **343-1136** for information and prices on everything. Thanks...**Don**

> Meade German equitorial mount with Byers worm gear, mounting rings for an 8" Newtonian. Plus corrector with a joystick. This is a great bargain for a used mount which includes some extras for **$250.00** firm.
> Two .965 Star Diagonals
> Two .965- 9mm eyepieces
> One .965 to 1.25" eyepiece adapter
> One 1.25 to .965" eyepiece adapter
> Two 1.25" Barlow lenses
> Two **Meade refractors**...60mm + 50mm guide scopes with mounting rings
> Variable projection 1.25" camera adapter
> M.A. 6mm-1.25" eyepiece
> Two 12mm-1.25" illuminated reticle eyepieces with battery pack.
> Astro-photo cold camera and focusing tool.

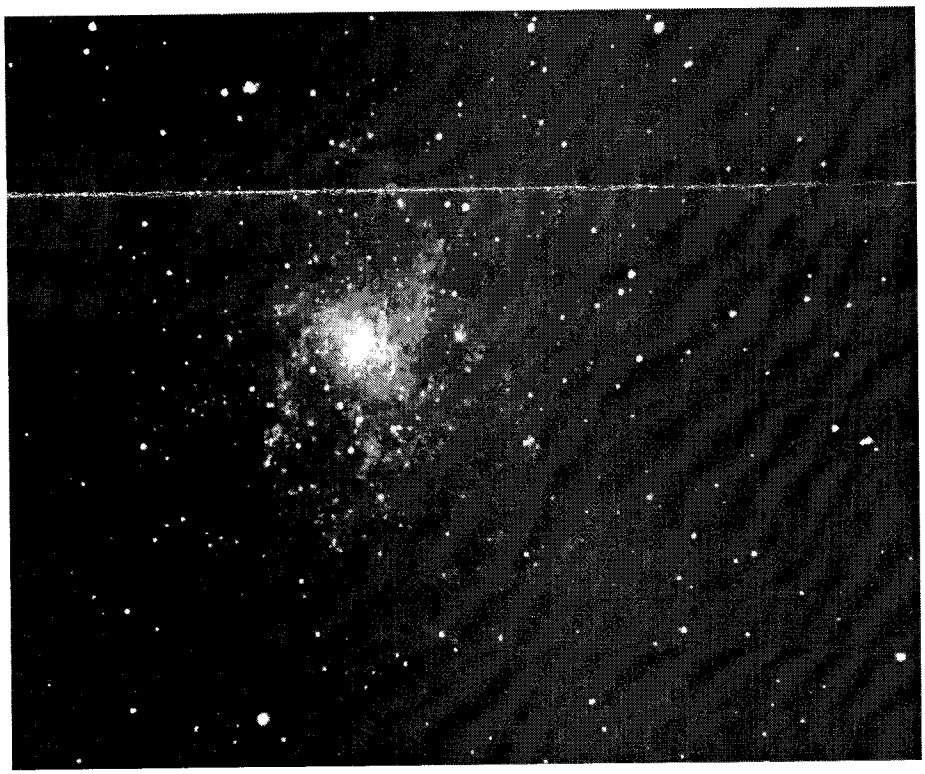
Editors Note: If anyone is interested I have all of the Nasa Magellan Radar images on cd-rom. If you want copies give me a call, supply me with a bunch of 3.50 H.D. disks and a week of time and I'll give you a copy.

ASTROPHOTO CORNER

SEPT.1995 RASC SASKATOON CENTER

PHOTO OF THE MONTH

M33 - THE PINWHEEL GALAXY



This galaxy is thought to be the nearest of the Sc spirals.It is found in the western part of the constellation Triangulum about 7 degrees SE of the star Beta Andromeda.It is approximately 2.4 million light years away from us and is about 60,000 light years in diameter. Its mass is approximately 8 billion suns.
Some people claim that they can see this object in a very dark sky with the naked eye. It subtends a very dim glow about a half degree on the sky. The central nucleus can be seen in binoculars and more of the galaxy can be resolved with a telescope. In the C14 it fills the entire field of view.

TECHNIQUE: The above photograph was my first attempt to photograph a galaxy. It was done using the C14. Exposure time was 60 mins. on hypered Kodak Tec Pan 2415. I really did not bring out the detail of the distal portions of the spiral arms of this galaxy on this photograph. It was taken looking east into a rather light polluted sky and I should have waited until it rotated around into a darker part of the sky. In the future I plan to redo this using the 6" refractor.

ASTROPHOTO TIP: If any one out there is planning to get into long exposure astrophotography make sure that you obtain as good a drive as you can for your telescope this is as important in my estimation as proper polar alignment and will make the task of guiding much much easier. With a good drive one can get away with rather sloppy guiding at times and still pull off a satisfactory photo although I certainly don't recommend sloppy guiding.At times when guiding on a very faint star the eye can become fatigued and confused and the star can easily be lost track of.In a situation like this a good drive can sometimes keep you in there until one recovers sight of the guide star.

Clear skies and Good Guiding ---------- Al Hartridge