SASKATOON SKIES

Volume 26, Issue 07, July 1995

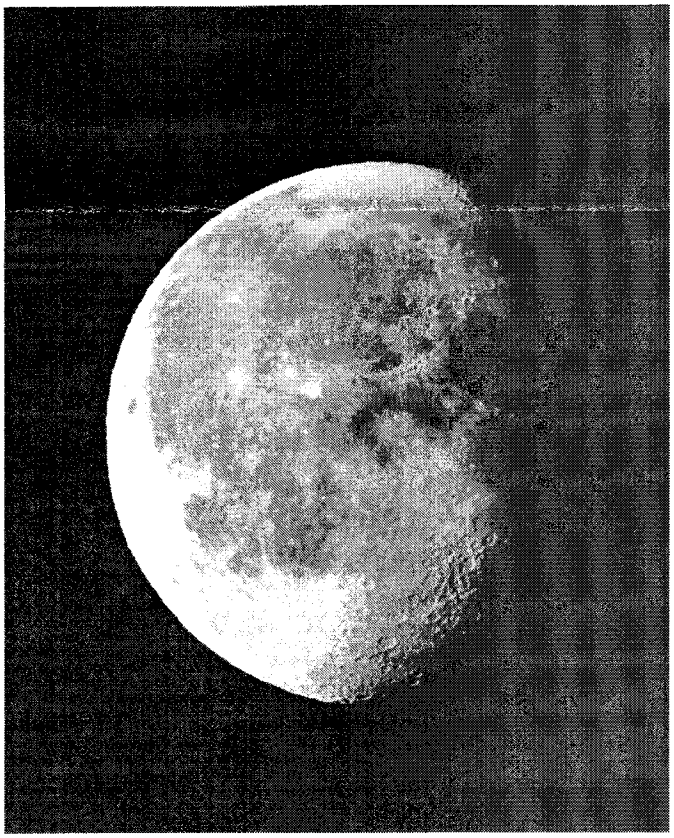
Saskatoon Skies is published monthly by the Saskatoon Centre
of The Royal Astronomical Society of Canada

In this Issue

ASTROPHOTO CORNER

JULY 1995 RASC SASKATOON CENTER

PHOTO OF THE MONTH



THE WANING GIBBOUS MOON

The moon is a very easy target and a great subject to practice astrophotography on. Most exposures require less than one second unless one is interested in capturing the earthshine on the unlit portion of a thin crescent moon. The moon being a bright object is realitively easy to focus through the view finder of a 35 mm. camera mounted to a telescope.

The moon is the earth's only natural satellite.The moon at it's farthest distance from the earth(apogee is only 406,700 km. away, thus with only a small telescope or even binoculars one can see quite a lot of detail.So grab your copy of Hamlyn's "Atlas of the Moon" or equivalent and get out there on a clear night and try to identify some of the interesting features.

TECHNIQUE:The above photograph of the moom was taken with my 6" Astrophysics f7 refractor. The exposure time was 1/125 sec. on unhypered Kodak Tech. Pan 2415.

ASTROPHOTO TIP: Since the moon is a contrasty subject rather than developing the negatives in D19. I use a low contrast developer such as HC - 110 or Kodak Technidol to help reduce the contrast between different areas of the lunar surface.

Clear skies and good guiding ---------- Al Hartridge

What Happened in History in July

4 The Crab Nebula supernova was seen for the first time in 1054

7 USSR launched Phobos 1 and Phobos 2 probes toward Mars July 7 and 12, 1988. Phobos 1 failed August 29, 1988, when a ground controller mistakenly switched off the spacecraft. Phobos 2 arrived in Mars orbit January 29, 1989, sent back photos and data, found water vapor in Martian atmosphere, then mysteriously stopped transmitting March 27, 1989, before dropping landers on moon Phobos.

9 The American spacecraft Voyager 2 flew past Jupiter in 1979.

11 America's first-generation space station, Skylab, was allowed to fall into the atmosphere and bum up in 1979. It was visited only three times, all shortly after the station was launched in 1973. 1965.

14 The U.S. spacecraft Mariner 4 flew past Mars in 1965.

14 In 1967, U.S. Surveyor 4 flew to the Moon but contact was lost 2.5 minutes before landing.

15 Alexei Leonov and Valeri Kubasov in Soyuz 19, in space six days in 1975. Vance Brand, Thomas P. Stafford and Donald K. Slayton in Apollo 18, in space nine days. The two ship formed a joint U.S.-USSR flight. Crews linked their craft July 18, shared meals, did experiments together, held joint news conference from space.

16 Neil A. Armstrong, Edwin E. Aldrin Jr. d Michael Collins, in 1969, left in Apollo 11 on a Saturn V rocket for the Moon. The first lunar touchdown by a manned ship, the lunar module, was made July 20. Armstrong became the first man to walk on the Moon; Aldrin the second. Stayed 21 hours, collected 48 lbs. rock and soil. Collins stayed in lunar orbit in the command module.

17 The first photograph of a star was an exposure of Vega in 1850.

18 USSR Zond 3 flew to the Moon in 1965, sent back close-ups of three million sq. mi. of surfacc. Now in orbit around the Sun.

18 John W. Young and Michacl Collins, Gemini-Titan 10, 1966.

18 U.S. Apollo 18 spacecraft and USSR Soyuz 19 craft met and connected in orbit in 1975.

19 In 1967, U.S. Explorer 35 left for impacting near Crater Guericke 68.5 hours after launch.

28 First photograph of a total eclipse of the Sun was made in 1851.

28 Alan L. Bean, Jack R. Lousma and Owen W. Garriott made the second visit to America's first-generation space station, Skylab, in 1973. A spider, Arabella, was able to spin her web in Skylab in space. Spacewalks totaled 13 hours. Garriott was the first amateur radio operator to go to space.

29 NASA was founded in 1958.

30 U.S. Apollo 15 makes Man's fourth landing on the Moon, 1971.

31 First vehicle driven on the Moon by men.

Facts about the Sun...downloaded from the Internet by Al Hartridge

: The Sun is an ordinary G2 star, one of 100 billion or more stars in our galaxy.
Diameter: 1,390,000 km.
Mass: 1.989e3Okg
Core temperature: 15,000,000 K.
Surface temperature: 5800 K

: The Sun is by far the largest object in the solar system. It contains more than 99.8% of the total mass of the Solar System (Jupiter contains most of the rest).

: The Sun is, at present, about 75% hydrogen and 25% helium by mass (92.1 % hydrogen and 7.8% helium by number of atoms); everything else("metals") amounts to only 0.1%. This changes slowly over time as the Sun converts hydrogen to helium in its core.

: The outer layers of the Sun exhibit differential rotation : at the equator the surface rotates once every 25.4 days; near the poles it's as much as 36 days. This odd behavior is due to the fact that the Sun is not a solid body like the Earth. Similar effects are seen in the gas planets. The core of the Sun rotates as a solid body.

: Conditions at the Sun's core are extreme. The temperature is 15 million degrees Kelvin and the pressure is 250 billion atmospheres. The core's gases are compressed to a density 150 times that of water.

: The Sun's energy output (3.86e33 ergs/second or 386 billion billion megawatts) is produced by nuclear fusion reactions. Each second about 700,000,000 tons of hydrogen are converted to about 695,000,000 tons of helium and 5,000,000 tons (=3.86e33 ergs) of energy in the form of gamma rays. As it travels out toward the surface, the energy is continuously absorbed and re-emitted at lower and low temperatures so that by the time it reaches the surface, it is primarily visible light. For the last 20% of the way to the surface the energy is carried more by convection than by radiation. It takes 50 million years for a photon to reach the surface.

: The surface of the Sun, called the photosphere , is at a temperature of about 5800 K. Sunspots are "cool" regions, only 3800 K (they took dark only by comparison with the surrounding regions). Sunspots can be very large, as much as 50,000 km in diameter. Sunspots are caused by complicated and not very well understood interactions with the Sun's magnetic field.

: A small region known as the chromosphere lies above the photosphere.

: The highly rarified region above the chromosphere, called the corona , extends millions of kilometers into space but is visible only during eclipses. Temperatures in the corona are over 1,000,000 K.

: The Sun's magnetic field is very strong (by terrestrial standards) and very complicated. Its magnetosphere (al known as the heliosphere extends we beyond Pluto.

: In addition to heat and light, the Sun also emits a low density stream of charged particles (mostly electrons and protons) known as the solar wind which propagates throughout the solar system at about 450 km/sec. The solar wind and the much higher energy particles ejected by solar flares can have dramatic effects on the Earth ranging from power line surges to radio interference to the beautiful aurora borealis.

: Recent data from the spacecraft Ulysses show that the solar wind emanating from the southern pole flows at nearly double the rate, 750 kilometers per second, that it does at lower latitudes. The composition of the solar wind also appears to differ in the polar regions. And the Sun's magnetic field seems to be surprisingly uniform.

: Further study of the solar wind will be done by the recently launched Wind spacecraft from the dynamically stable vantage point directly between the Earth and the Sun about 1.6 million km fr Earth.

: The solar wind is responsible for the ion

millions of kilometers into space but is visible only during eclipses. Temperatures in the corona are over 1,000,000 K.

The Sun's magnetic field is very strong (by terrestrial standards) and very complicated. Its magnetosphere (also known as the heliosphere extends well beyond Pluto.

: In addition to heat and light, the Sun also emits a low density stream of charged particles (mostly electrons and protons) known as the solar wind which propagates throughout the solar system at about 450 km/sec. The solar wind and the much higher energy particles ejected by solar flares can have dramatic effects on the Earth ranging from power line surges to radio interference to the beautiful aurora borealis.

: Recent data from the spacecraft Ulysses show that the solar wind emanating from the southern pole flows at nearly double the rate, 750 kilometers per second, that it does at lower latitudes. The composition of the solar wind also appears to differ in the polar regions. And the Sun's magnetic field seems to be surprisingly uniform.

Further study of the solar wind will be done by the recently launched Wind spacecraft from the dynamically stable vantage point directly between the Earth and the Sun about 1.6 million km from Earth.

: The solar wind is responsible for the ion tails of comets and has measurable effects on the trajectories of spacecraft.

: The Sun's output is not entirely constant. Nor is the amount of sunspot activity. There was a period of very low sunspot activity in the latter half of the 17th century called the Maunder Minimum . It coincides with an abnormally cold period in northern Europe sometimes known as the Little Ice Age. Since the formation of the solar system the Sun's output has increased by about 40%.

: The Sun is about 4.5 billion years old. Since its birth it has used up about half of the hydrogen in its core. It will continue to radiate "peacefully" for another 5 billion years or so (although its luminosity will approximately double in that time). But eventually it will run out of hydrogen fuel. It will then be forced into radical changes which, though commonplace by stellar standards, will result in the total destruction of the Earth (and probably the creation of a planetary nebula).

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.*

Astronomy Software Review....by Garry Brett

A couple of months ago I came across a shareware version of Skymap and bought it. The program cost me all of $2.00 at the Dollar Store! Once I got the program up and running I found it to be a useful tool for those custom star charts. Below is a brief overview as provided by the designer of the program.

Skymap is a planetarium program for Microsoft Windows. Displays a map of the sky as seen from any point on Earth for any date between 4000BC and 8000AD. Two different types of map can be drawn - a "Horizon" map showing the observer's local horizon, and a "Sky Area" map showing a detailed view of a small area of the sky.

You can get information about any object displayed on the map by simply pointing at the object with the mouse and clicking the button. The display of additional information, such as constellation figures or star labels can be switched on and off with a click of the mouse button, making it easy to see exactly what you want without being overwhelmed by unwanted information.

Once you have tried out this program you are encouraged to send a fee to the designer. For your money you will get the latest version plus any updates and a registration number. The program is definitely worth the investment. Should you want a copy send me a HD 3.50 disk and I will copy it for you. Make sure you include a self stamped return envelope and I will get it out to you right away. I had sent a copy to Stephen Light and I would like to hear how he likes it. Drop me a line Stephen and let me know.

Letter from the Editor

As you can see I changed the newsletter layout again. I promise that this is the last time. With the new layout and the smaller copy and lack of graphics we can put alot more interesting things into the newsletter. Some of features in this issue will now be standard in every newsletter. As always any and all contributions of information and articles would be appreciated. I am looking for someone who observes the moon on a regular basis who would like to volunteer to do a monthly feature. **Any volunteers?** This newsletter we are starting a series on the Solar System that will run in every issue. Each issue will deal with a member of the solar system starting with the Sun. If a planet has a moon(s) they will also get a writeup.

Also you will notice a separate questionnaire has been included with this newsletter. **I am asking that "ALL MEMBERS & TEMPORARY MEMBERS" fill out this form and mail it back**. The results of this questionnaire will be used to make the Centre a place where there will be something for everyone. So please take a moment and fill out the form and mail it back. All you have to do is stick it in an envelopeand drop it in the mail. This is your centre and you input is valuable and needed. Thanks for your cooperation....**Ed**

The Don of a New Observatory...by Rick Huziak

On June 25th Sandy Ferguson and I conducted a survey of a potential new observatory site. Several years ago, I chanced on an abandoned brick schoolhouse in the hamlet of Swanson, 22 kilometers south of Deslisle. We drove to the site and were disappointed to see that the old schoolhouse seemed to be in the process of renovation. A minute later, a young man walked out of the schoolhouse and confirmed of our fears. As we told him why we potentially wanted the property, he asked us "Do you know Don Friesen". A bit astonished, we said yes.

Even more to our surprise, he said that Don was over a few houses weeding a garden! Small world!

So off we trotted and sure enough, there was Don, up to his knees in weeds! So we all chatted about potential sites around the area and why Don had a hobby garden 62 kilometers away from Saskatoon. As it turns out, the guy who bought the schoolhouse is from Saskatoon and has known Don for several years. We just chanced on this coincidence.

Teaming up with a small hamlet for a new observatory may not be such a bad idea. The hamlet already has services such as power, water, sewer (maybe), snow removal, abandoned houses or acreages and some assemblance of security. And there are several hamlets around that may provide us with some inexpensive property opportunities.

Several Recent Public Service Starnights...by Rick Huziak

We've had several starnights or attempts at starnights in the last few months. Martensville started this off in April, and since then we have been quite busy, especially at **Brightwater Camp** where the school boards have their spring camps.. I would like to thank those who helped me out this year and invite other members to participate in these starnights in future years. There's really now much to them. Typically we go in with a slide presentation on beginning astronomy, then set up a scope or three depending on the number of kids. The kids are always awed at what they see. As a matter of fact, so are the teachers, and quite often the teachers stay up for hours with us looking at the stars. (The kids often crash by 11:00pm as they've usually been up since 6:00am birdwatching or something else). New member, **Gilbert Smith** lives out at Brightwater, so he also helps out whenever he can. Also, **Don Friesen, Sandy Ferguson** and **Bill Hydomako** have given other starnights or tours elsewhere that are not listed below.

Some of the starnights were:

Martensville, April 25. Thanks to Don Friesen, Brian Friesen, David Cornish, Sandy Ferguson and school principal Linda Mallard, who opened up the school for everyone to use during the starnight.

Brightwater, May 3. Thanks to Sandy Ferguson and Michael Slater of Brownell School

Astronomy Day Starnight, May 6. Clouded out, but thanks for thinking about it!

Brightwater, June 7&8. Thanks to Erik Keser, Bill Brooks of ISAS and Sue Nickel of Caswell School.

Brightwater, June 12. Thanks to Sandy Ferguson and Fairhaven School.

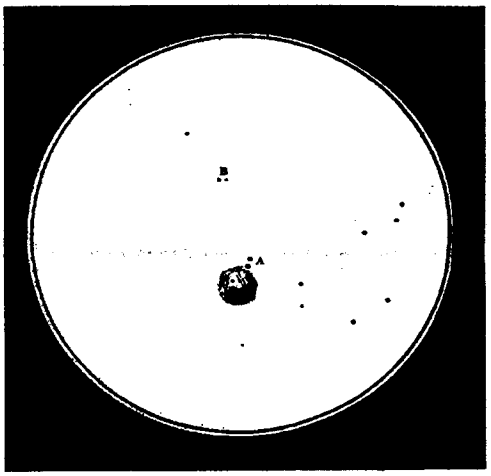
Rystrom Observatory, June 20. Thanks to Mark Moore who helped me entertain some SED customers, who just happened to be amateur astronomers from Phoenix, Arizona.

Construction of an Internet Directory...by Rick Huziak

Many of our members are now on Internet either through the place they work, on a public network or on a freenet somewhere. I'd like to accumulate all the Internet addresses in our Centre, so if you're on the 'Net, send me a message at **"huziak@sedsystems.ca"**. Let me know who you are and also let me know if you do NOT want your email address published in this newsletter. So far, I know that Jim Huziak, Jim Wood, Gord Sarty, Al Hardridge, Tim Harrison, Bill Hydomako, Mark Moore, Mike Peters, Stan Shadick, Shawn Switenky, and Mike Wesolowski are all accessible on the Internet. There may be others, but this is not a bad start!

NGC 7008 - An Excellent Planetary in Cygnus...by Rick Huziak

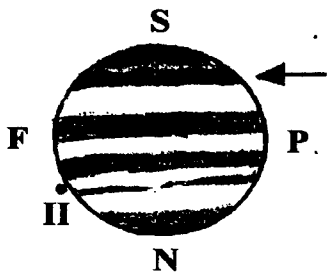
Cold and tired, but HAVING to observe in December 1994 at -24 degrees C, I was scanning around Cygnus in search of interesting faint, fuzzy objects that I might have overlooked. Using Eetook, I chanced on a planetary nebula, which is really quite spectacular, but now well known at all! NGC 7008 is really a superb planetary, about 5 arc minutes across, and ring-like. Within thus nebula are at least a few stars, one of which may be the central star. I rated the nebula at 10th magnitude, so it should be fairly easy for most instruments . I'd be interested in knowing how small of a telescope will see this jewel. The nebula is round, and seems to have a central void. Beside the nebula are two 10 arc-second double stars of the 10th and 11th magnitude that add to the beauty o the field. This object if definitely worth the look, and maybe a photo by the astrophotographers in the Centre is warranted. The drawing shows was made through a 12.5" scope at 220X. South is up with east to the right.



Jupiter's Scars...by Rick Huziak

Although a year has elapsed sinc Jupiter's encounter with Comet Shoemaker-Levy 9, the result of the impacts can still be seen. As shown in the drawing, a dusky, gray band is still visible just at the edge of the south polar cap. This band is the cometary dust which is

now spread across the entire zone, and which may take years to dissipate. The drawing was made at 22:55 CST on Jun. 12, 1994 and shows Jupiter II (Europa) just coming off the disk after a transit. South is up, west to the right.



An Ephemeris for Comet d'Arrest...by Rick Huziak

Courtesy of Ray Badgerow, Hamilton 'Orbit', June 1995)

This year's brightest comet is now gracing the skies and should be visible in modest scopes for most of the rest of the year. I first saw Comet d'Arrest in 1976 with my freshly built 4-1/4" reflector. Then it was a beautiful, blue, 5th magnitude fuzzball, sporting a very thin gas tail. It was quite a site. The return this year is not quite as favorable, but this comet should still be of interest, and may become a binocular object this summer. I have not had a chance to check this ephemeris visually, but it seems to be OK. Note that this comet curiously moves only about 1.5 hours in Right Ascension throughout the year - practically straight north and south! This is similar to the circumstance in 1976 as well.

Date	RA (hh:mm) Decl(d:mm)		Mag
Jul 17	2258.0	+0343	7.4
Jul 27	2327.4	-0120	7.2
Aug 6	2354.7	-0744	7.1
Aug 16	0018.0	-1445	7.2
Aug 26	0036.0	-2128	7.3
Sep 5	0047.8	-2705	7.6
Sep 15	0054.1	-3108	7.9
Sep 25	0056.2	-3334	8.3

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

Notice of an Extrordinary Executive Meeting

Executive Members are reminded that the will be an executive meeting on Tuesday, July 18, 1995 from 7:00pm to 10:00pm. The meeting will be held at David Cornish's house at 503 Frobisher Cres. For more information, call David at 242-7125 or myself at 665-3392. The adgenda has not been completely set, so suggestions are welcome. A partial adgenda will be:

- OG Meetings/ the Binocular Program - How to get them on track
- How to keep an expanded membership intersted, involved and renewing
- Revival of the 'Astrobuddies' program
- The new observatory site and telescope completion
- Using the newsletter to promote the Centre
- How to support 'distant' memberships
- Programs for members
- loaner scopes/Messier certificate/youth involvement
- Future plans and direction of the Centre

Minutes of the June Executive Meeting 7:00 PM, June 19, 1995 Room B-10, Health Sciences Building, U of S Campus

Present: Ed Kennedy, Richard Huziak, Scott Alexander, Al Hartridge, Garry Brett, David Cornish, Merlyn Melby, Bill Hydomako, Eric Keser, Gord Sarty

1. Meeting called to order 7:06 PM. R. Huziak
2. 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
3. Observer's Group report. May 27 was a good night but only G. Sarty and several binocular group members showed up. No one called ahead. Next meeting Jun. 24. R. Huziak/ G. Sarty
4. New Observatory Committee. Al Hartridge has a potential site that is good except winter access/power run is a concern. Yannis has provided a short-list of 1o sites. 3 are potentially good. Will consider placing the Western Producer ad soon.
5. Temporary members report. To date we have 5 temporary members. The program has work out well for the Centre. David Cornish
6. 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" R. Huziak
7. Light pollution presentation was given to Works and Utilities Committee on Jun. 14 by R. Huziak, G. Sarty and A. Hartridge. Reception was excellent. We expect some future consideration by the city. R. Huziak
8. RASC Banner. Garry Brett report.
9. 16-inch telescope report B. Hydomako
10. Summer Executive Meeting is necessary to plan summer activities/Centre direction. Plans for Binocular program, OG nights, Astrobuddies, New Observatory, etc. We will have another Executive meeting on July 18, at 6:30 P.M. It will be held at Dave Cornish's at 503 Frobisher Cres.
11. RASC Calendars - Color calendar being produced. Vancouver wants us to commit to a certain number. We will buy 20 at the cash price of $7.00 each. Motion by Al Hartridge, secon by David Cornish. Carried by show of hands.
12. General Assembly issues? Disscussion on proxies.

13. New business. Corrections to last months minutes.- Page 2, Minute 10, Change from Richmond B.C. to Richmond Hill, Ontario. - Page 3, Minute 8, Add "Astronomy over 3 Centuries" Discussions on "Future of Astronomy and the adbandonment of equipment."

14. Meeting adjourned 8:00 PM. Motion to adjourn, Garry Brett.

Minutes of the June General Meeting 8:00 PM, June 19, 1995 Room A-226, Health Sciences Building, U of S Campus

1. Meeting called to order 8:10 PM. R. Huziak

2. Observer's Group report. May 27 was a good night but only G. Sarty and several binocular group members showed up. No one called ahead. Next meeting Jun. 24.

3. New Observatory Committee. Al Hartridge has a potential site that is good except winter access/power run is a concern. Yannis has provided a short-list of 10 sites. 3 are potentially good. R. Huziak

4. Light pollution presentation was given to Works and Utilities Committee on Jun. 14 by R. Huziak, G. Sarty and A. Hartridge. Reception was excellent. We expect some future consideration by the city. R. Huziak

5. RASC Calendars - Color calendar being produced. R. Huziak

6. Presentations:

- Some Summer Observing Opportunities, Asteroids, d'Arrest and Mir-Rick Huziak
- The Moon's a Balloon (3D Astronomy) - Mark Moore

7. Motion to add new members to the executive. Brian Freisen and Eric Keser as Councillors. Dave Cornish. Motion Carried by show of Hands.

8. Invitation to come and observe tonight at Rystrom's.

9. Last call for new business

10. Meeting adjourned 9:45 PM.

Special Reminder

Sandy Ferguson wanted me to remind all of you that our Starnight is this month out at Diefenbaker Park. The date is planned for July 28 with a raincheck for July 29, 1995. The evening will start when it gets dark and everyone is welcome! Call Sandy if you have any questions....Ed

Observers Corner...by Garry Brett

I remember growing up and dreaming of the day that I could afford a large telescope of at least 10". Last year I got my wish and picked up an excellent 10" dobsonian and once I got it roughly put together I was outside expecting to see the same glorious sights I saw in the books. Boy, was I in for a surprise. When I looked through my scope all I could see was thousands and thousands of stars and I realized that I did not know anything about how to view the Universe.

I have spent most of my astronomy related hobby in the building end of things and I never bothered to really learn anything about the sky. When ever we went to star parties I would rely on the expertise of others to guide me and although I saw alot of the wonders there are to see it wasn't as exciting as if I had actually found the object myself.

I decided to pick up some items to help me learn the sky and one of the items I picked up was a map teacher called The Universe (Space Atlas) Unfolds. The map was bought through an Astronomy book club for $10.95 U.S. and is published by VanDam Inc.

The map consists of four pop out maps that show all the basic constellations and Messier objects. In the center section there is instructions on how to use the map along with short articles on different aspects of astronomy, such as observing with binoculars, how to observe the planets, and even how to view the sun. The map is designed with the beginner in mind and I have found the map very useful.

The way that I use it is when there is a clear night (?????) I go out into the back yard and pick one or two constellations from the map. Then I lie back and try to learn where everything is in that section of the sky. The next clear night I will go out and see if I can find everything without the help of the map. Once I am confident that I have found what I was looking for I get out a small scope and try to find it again. Slowly I am getting the hang of it but it will be along time before I know my way around the sky.

I would recommend this teaching map to anyone and because it is the size of a regular map it fits nicely in the glove box of your car.

The Amazing Nova Cassiopeia 1993...by Rick Huziak

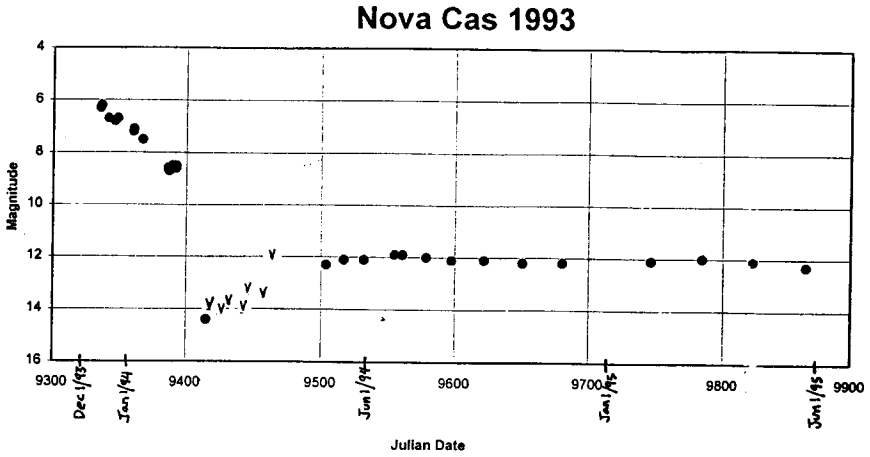
At the beginning of December 1993, a new star of the 3rd magnitude appeared in Cassiopeia, not far from beta Cas. Because of the Internet, news of the discovery spread fast, and soon observers around the world began monitoring this nova, which became one of the brightest in recent years. I began observing it in mid December 1993, by which time it had already dropped to 6th magnitude. For the next two months, the nova slowly faded at a rate of about 0.1 magnitudes per day on the average, but showed strong oscillations of 0.2 to 0.3 magnitudes on any particular day. After about 65 days after maximum, the nova had reached magnitude 8.5, halted and plateaued for a week or so. Then within a few days, the nova dropped down to a very dim 17th magnitude. What a dive! From the light polluted Rystrom Observatory, I was unable to see it at minimum light and last caught it at 14.4 magnitude.

This drop was not unforeseen as this nova belongs to a rare class of stars called "slow novae". Their light curve is almost always the same. About 65 days after maximum, a "dust phase" occurs, where gasses blown off the star condense and form a translucent light barrier. Ninety days thereafter, or so, the dust disperses and the star begins to shine brightly again.

Sure enough, 90 days came and went, and right on schedule, the star was seen climbing back up to a respectable 12th magnitude, at which it has stayed at or around for the last year. Nova Cas seems actually to be brightening very slowly still, but over the next few decades will cool down and fade back to it's original brightness of somewhere in the 18th

magnitude range. The accompanying graph shows my visual estimates from Dec. 1993 to present.

Novae are a result of a double star system where there is a white dwarf collecting gas blown off of a bloated red giant star. As the gas flows onto the surface of the dwarf, it accumulates and compresses, heating the star up until the mass and temperature reach a critical point. Then it ignites with a cosmic sized bang!. At maximum light, these novae typically become more than 50,000 times more luminous than the sun, with the actual light increase of the star system in excess of 400,000 times. Similar slow novae were DQ Herculis (Nova 1934) and T Aurigae (Nova 1891). More on this nova can be found in the excellent article in the July 1995 JRASC.



Questionaire for All Club Members to Answer

Rather than list out a bunch of different questions for everyone to answer I have just put down some different items and all you have to do is tick off the ones that you like. I have also left some blank spaces for you to fill in anything I didn't think of. Once you are done please put it into an envelope and mail it back to me as soon as you can. The ideas that we receive will help the members of the executive to make the club bigger and better than it already is.

So please take a few minutes and fill in the blanks and mail it back. It is important for all members and temporary members, active or non active, to fill out this form. Thanks for your co-operation...it is really appreciated....**Ed**

I would like to see the following in our club.....

_____ *more starnights*

_____ *more meetings*

_____ *less meetings*

_____ *more informal meetings*

_____ *coffee at meetings*

_____ *Easier to get to meeting place*

_____ *more astronomy lectures*

_____ *more astronomy videos*

_____ *telescopes at all meetings*

_____ *annual Sask. star party*

_____ *annual swap meet of both Sask. Centres*

_____ *more observing programs*

_____ *active telescope building school for younger members*

_____ *Our own clubhouse*

_____ *Construction Articles*

_____ *Astronomy Software Library*

_____ *Asteroids Information*

_____ *More Advertising*

Here are a few things I thought of.....

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

In the Newletter I would like to see.....

_____

_____ *Planets information*

_____

_____ *deep sky*

_____

_____ *moon information*

_____

_____ *Observing tips*

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.

Saskatoon Skies 1995