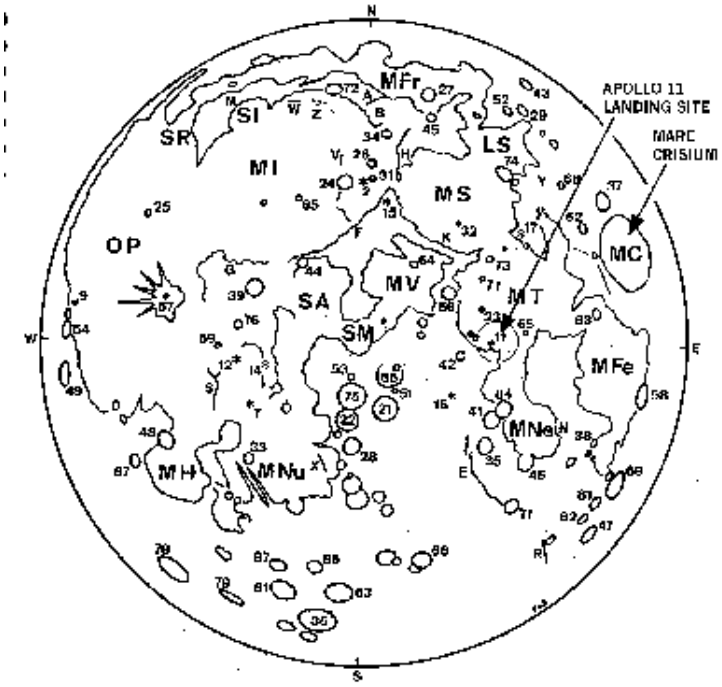
Saskatoon Skies

The Newsletter of the Saskatoon Centre

of the Royal Astronomical Society of Canada

Volume 32 March 2001 Number 03



Daphne Lowden continues her comments on the race to the moon in an article on page 8. The location of Mare Crisium is shown here, as well as the answer to the question Daphne posed in her January article regarding the location of the landing site of Apollo 11. This illustration is from the Beginning Observer's Guide, copyright RASC.

RASC Calendar Happenings

Date (2001)	**Event**	**Contact**	**Telephone**
Mar. 19	**Supper with Paul & Sherry at Earl's Restaurant (Executive Meeting cancelled) - 6:00 pm**	Les Dickson	249-1091
Mar. 19	**General Meeting - Room 8313 - 7:30 pm - Paul Campbell, Edmonton Centre**	Les Dickson	249-1091
Mar. 19 - 31	**Messier Marathon Opportunity**	Rick Huziak	665-3392
Mar. 30	**Youth Group Meeting - Nutana - 7:30 pm**	Andrew Krochko	955-1543
Apr. 9	**NOTE EARLY DATE of Executive Meeting - Room 8313 - 6:30 pm**	Les Dickson	249-1091
Apr. 9	**NOTE EARLY DATE of General Meeting - Room 8313 - 7:30 pm -**	Les Dickson	249-1091
Apr. 27	**Youth Group Meeting - Nutana - 7:30 pm**	Andrew Krochko	955-1543
Apr. 28	**Astronomy Day at Confederation Mall**	Mike Stephens	682-5989
May 14	**NOTE EARLY DATE of Executive Meeting - Room 8313 - 6:30 pm**	Les Dickson	249-1091
May 14	**NOTE EARLY DATE of General Meeting - Room 8313 - 7:30 pm -**	Les Dickson	249-1091

Sky Buys and Mirror Sells

The Saskatoon Centre's Swap and Sale Page!

For Sale: Brass lined trunk for SC-8 or SC-10: 9 mm Kellner eyepiece, 0.965 "6x30" eyepiece with crosshair for a spotter; and some very good astro books: National Audubon Society *Field Guide to the Night Sky*; *the Pocket Guide to Astronomy* by I. Ridpath. All books are in excellent shape. Call Darrell Chatfield for prices at 374-9278.

Wanted: Spider and 2" - 2-1/4" diagonal for 10" scope. Will buy or trade for as separate items. Call Rick Huziak at 665-3392.

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Saskatoon Centre

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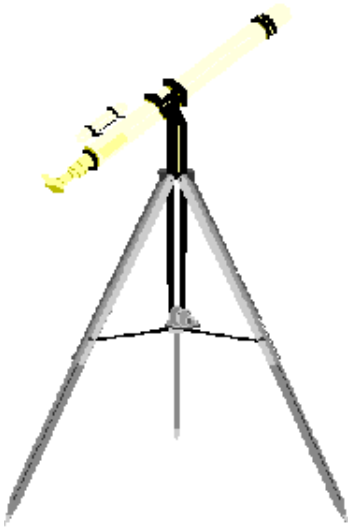
IN THIS ISSUE

Some Rambling but Practical Advice on Buying Your First Telescope

By Rick Huziak



I am often asked for advice about buying a telescope. I may receive a phone call or e-mail with this request and have no idea of the enthusiasm or true interest that this person may have. Usually, it turns out that the person on the other end of the line has never used a telescope and has only a passing interest in the stars. And usually, these people saw a small telescope on sale somewhere, or are buying a used small scope from a friend. Often, the end user will be a smaller child, whose interest is just beginning. What advice can I give? Even the basic terminology of "spotting scope", "eyepieces" and "magnification" are foreign concepts. Those Hubble Space Telescope images that decorate the boxes don't help, either! They are good advertising, but even the 10-meter Keck Telescope does not show visual images like these long photographic exposure do!

The last thing I want to do is to nip someone's genuine interest, but I also cannot advise that they should buy a small telescope that, nowadays, is so often of very poor quality. In the February issue of Saskatoon skies, I gave a fairly negative review of the Meade EQ60 refractor - one of these telescopes of exceedingly poor qulaity. Not all small scopes are bad, but here are some "facts" that can't be denied.

Depending on your interest, you may want to observe planets, the moon, and hopefully other brighter objects. A 3- or 4-inch telescope is OK for planets, though with telescopes

of short focal length, such as small reflectors, you will not be able to get to a very high power - your views will most likely be a bit disappointing. To squeeze detail out of planets, you need to get up around 300x magnification, and these scopes are not really capable of this. Magnification is calculated by dividing the focal length of a telescope by the focal length of an eyepiece. So if a 4" or 100mm aperture telescope has a 600mm focal length (a standard "f/6" system) and you are using a 25mm eyepiece, the power is 600/25 = 24x. To get to 200x, you'd need a 3mm eyepiece (600mm/3mm = 200x). It is impractical to use a 3mm eyepiece on such as small scope because, a) short focus eyepieces are difficult to make and good ones are expensive, b) the quality of most small optics is not really that good, and c) generally a very high power eyepiece is not even supplied. Small, short focus scopes may be good for lower powers and wider fields, but you cannot push up the magnification no matter what you do! (Note: f/ratio is figured out by dividing the focal length of the telescope by the diameter of the lens or mirror - a 60mm refractor with a 600mm focal length is an f/10 system).

Quite frankly, I'd stay away from "department store" small scopes. They may appear to be a bargain, but ***you get what you pay for!*** A "cheap" scope generally gives you a "cheap" view. I haven't seen many good 3- to 4-inch scopes. However, the 4.5" Bushnell reflector and a new Chinese 4.5" scope, both sometimes available from Cosco, MPS Photographic, Phase II and similar stores are "not bad" scopes - at least they are useable. Some of our members have picked these up and have had good experiences with them, especially if you are willing to 'accessorize' or upgrade your small scope.

The most common problems with these cheap scopes are:

- a VERY inadequate finder scope. Generally, low budget scopes have spotters on very poor mounts that will never hold their alignment to the main scope. They often also have plastic lenses and stopped down apertures, so they have extremely poor image quality, strange colours and small fields of view. If you cannot find anything, you're scope will sit in the closet. Luckily, you can turf the cheap finder and upgrade to a decent finder of at least 8x50 size (8 power magnification by 50mm aperture). Unfortunately, a quality finder of this size may set you back as much as you paid for your small scope!

- poor quality eyepieces. Often the eyepieces offered are the Japanese size 0.965" (24.5mm) barrel size. Although quality 0.965" eyepieces do exist, these will not be found with a cheap scope! Don't buy a scope that doesn't offer 1.25" Erfle or Orthoscopic eyepieces. Also, make sure that the eyepiece focuser on the telescope can handle 1.25" eyepieces! You can always buy better eyepieces, but you will not able to trade in your old 0.965" ones for cash!

- poor mounts. Usually, the mounts for small telescopes are so unsteady that the telescope cannot be pointed at an object, nor will it stay where it is pointed. This is an essential point - especially if you are going to use higher powers to be able to see details on planets. The mount has to be reasonably sturdy. People often want to buy a telescope with the hope of taking occasional photographs. I have not seen a cheap mount capable of tracking anywhere good enough to photograph, so scrap that idea totally! Many scopes offer a flimsy equatorial mount that often does not have a synchronous motor. Usually the motor is a non-provided option.

- Poor quality optics. You have to be concerned. Many small mirrors are left with a spherical figure, whereas they must be parabolic to perform properly. You can't tell how good a mirror is unless you have some simple but specialized test equipment. But if the view has a smeared edge or strange colours, the mirror is the wrong shape. Many lens systems are now plastic or "plasti-glass". Many lenses are not properly anti-reflection coated. All of these problems contribute to poor image quality and assure higher powers cannot be used.

- No or poor instructions. Often the user manuals, if they exist at all, are very poor and generally do not give adequate instructions to set up an equatorial mount nor to do a periodic optical alignment necessary on reflectors (called "collimation"), nor do they emphasis the importance of spotter alignment. A poorly collimated main mirror coupled with a spotter that points off in all directions coupled with an equatorial that is set at the wrong latitude, coupled with .....you get the drift.

Generally, in the small scope market, there are two types of telescopes, Newtonian refractors and classical refractors. Refractors are better than reflectors for planets, but only good quality refractors are of any use! Good quality = ***BIG*** bucks! Stay away from refractors until you've been observing for a dozen years and you win a lottery. Small department store refractors suffer from the same spotter/mount problems as reflecting scopes. The resale value of a small department store scope is also usually non-existent. They are very difficult to sell to other beginners! But if you don't buy a small department store scope as a beginning scope, what should you do? Here are some other options:

- Buy a really good pair of binoculars (including a tripod mount) - there are dozens of excellent astronomical objects for binoculars! If you loose interest in astronomy - you still have binoculars.

- Buy a small scope KIT from "Stargazer Steve" - the 6-inch one and build it yourself - it's very easy with this kit. However, you would also have to invest in additionally useful eyepieces and a decent spotter, but these are easier to buy second hand.

- The general "rule" for buying new scopes that I usually recommend a 6-inch or 8-inch scope, if you want to see more than the basics (though as I said, there are occasionally "OK" 4.5" scopes). A larger scope is also more resaleable, just in case. The general rule of thumb is to pay $100 per inch of aperture for a new scope (thus the 8-inch should cost around $800 and up). I also recommend that you buy a "Dobsonian" mounted scope for your first scope. This mount is a very basic, but very sturdy mount, and inexpensive. It does NOT track, so you can't photograph.

- **Join our club for a year.** This gives you access to several types of scopes and you can look through a great number of these and decide which one you'd like to eventually own. It is worth the investment to talk to others.

- **March & April's Planets**

by Murray D. Paulson, Edmonton Centre, RASC <mpaulson@ecn.ab.ca>

Mercury hides amid the morning twilight even though it would seem well placed at 27 degrees from the sun. The ecliptic in the morning skies of spring is tilted to the south, almost parallel to the horizon. Therefore Mercury is only a few degrees above the horizon when the sun rises. It sits at -13 degrees of declination, so is not even favorably placed for daytime observations. Early in the month, it shows a magnitude +0.2, 7.4" half phase. Things will improve in later in March, before it heads to its April 22 superior conjunction where it will pass less than 1/4 degree from the sun.

The beginning of the month finds Venus still reasonably high in the evening twilight. By the 12th, Venus will sit at 0.323AU distance and shine at magnitude -4.5. Its 51.6" crescent will make it the largest planet you will ever see in the eyepiece of a telescope. At this point, Venus lies 7.5 degrees above the ecliptic and 26.5 degrees from the sun. Over the next several weeks you can watch the dramatic changes in the waning crescent and with a little effort you can watch it as it zips over top of the sun at a rate of 1.62 degrees per day. The sun is moving east at a rate of 1 degree per day and Venus is moving in the opposite direction at a rate of 0.62 degrees per day! I have included a table of Venus's elongation from the sun with its diameter and phase over this period.

Date Elongation Diameter Phase

deg arc sec

Mar. 12 26.0 51.6 .106

Mar. 15 22.0 54 .076

Mar. 18 18.6 55.9 .053

Mar. 21 15.54 57.4 .034

Date Elongation Diameter Phase

deg arc sec

Mar. 23 12.24 58.1 .024

Mar. 24 11.35 58.5 .020

Mar. 29 8.00 59.2 .009

On the 29th of March, Venus will be exactly 8 degrees above the sun and Mercury will be 21 degrees in right ascension west of the sun. This is a very favorable conjunction and with a little effort you can search for Venus on the days around conjunction to see its elusive razor thin crescent. It is very convenient that the sun will be due south of the planet at local noon. Note: local noon is at 1:06 - SK local time. You can arrange to be in the shadow of a building and just below the shadow line. If you hold a stick in front of the telescope, you can find the direction of the sun, align the scope parallel to that line and then swing it up 8 degrees. It helps to have a solar filter so you can focus the telescope on the sun. If the scope is not focused properly, you aren't going to find Venus. If you do not have a filter, then focus on something distant on the horizon. To make the scope parallel to the line pointing at the sun, hold a ruler on the tube of the telescope, and measure the place of the shadow on the front and back end of the telescope. Adjust the telescope to make the two measurements equal, then you are parallel to the direction to the sun. I usually eyeball it, and spend 5 minutes madly fishing about in the sky where I figure Venus is. So much for good intentions! You should then see the brilliant thin crescent of Venus in a low power eyepiece field. Increase the magnification and examine the thin crescent to see if you can follow the cusps of the atmosphere beyond the 180 degree crescent. An orange or red filter will help to increase the contrast with the sky glow. Another interesting observation is to try and see Venus rise before the sun and set after the sun. On March 28, Venus rises at 5:27 local time and the sun rises at 6:16. Later on in the day, the sun sets at 7:02 p.m. and Venus sets at 7:40. The dates about this date are suited, but the 28th has a good balance between rise and set times. I would be interested in hearing from people who try these observations.

Mars has now migrated to Scorpio and Antares, "*Rival of Ma*rs" is getting into the act. It is quite the sight, two fiery red orbs in the southern sky. Mars is a bit more than half a

magnitude brighter than Antares that according to Burnham's is the 15th brightest star in the sky. You can see them joined together in the morning sky with Mars only 14 degrees above the horizon and about 6 degrees from Antares in the early month. On the morning of March 15, the waning gibbous moon joins the pair. Mars is now 1.116 AU distant and shines at magnitude 0.3. Telescopically it shows an 8.38" slightly gibbous disk. It crosses the Meridian at 5:52 am local time in the early month and 5:15 am at the beginning of the next month. The moon joins Mars on Friday, April 13th and sits only 3.5 degrees away. Get it while it's hot, cause it is dropping fast! By the middle of next month, it will cross the meridian at 4:40 am and will be only 13 degrees above the horizon. ALPO, the association, *not the dog food*, claims that Mars is worth watching when it is bigger than 6 arc seconds. I would like to hear about your observations.

Jupiter has now slid off to a distance of 5.23 AU and shines at magnitude -2.3. It shows a 37.7" disk in the eyepiece but you must get out early in order to get a good look at it. It crosses the meridian at 5:12 p.m. local time and it's all down hill from there. On the evening of March 29th, the 5-day waxing crescent moon will sit just over 3 degrees east of Jupiter.

Saturn is now 9.443 AU distant and shines at magnitude 2.3. It shows a 17.5" disk in the eyepiece and precedes Jupiter down the sky. On the evening of March 28th, the 4-day waxing crescent moon will sit just over 2.5 degrees south of Saturn. Till next month, clear skies!

A Note About the Next Two Meetings

April's General Meeting - April 9th May's General Meeting - May 14th

Note the early dates for the meetings for the next two months in order to avoid Easter and Victoria Day. Note also that newsletter deadlines will also be moved up by one week - to the 21st of the month proceeding for these two months.

by Daphne Lowden

Science fiction and science fiction writers can be a wonderfully optimistic lot. I am currently reading the novel *Contact*, by Carl Sagan. Written in 1985, and taking place in the United States at the turn of the Millennium, it features not only benign extraterrestrial contact, but also a "Ms. President". Wonderfully optimistic, like I said. Same thing for Arthur C. Clarke. I am not thinking of the *movie 2001: A Space Odyssey*, the screenplay for which he co-wrote with Stanley Kubrick. Everyone else is talking about the movie; it's even being re-released sometime this summer. It's kind of like Prince and the song 1999 a couple of years ago? Not that I'm making an editorial comment and comparing the one work with the other, although I am sure there are some

people out there who think both pieces have about the same artistic merit? And face it, this is a column that is ostensibly, at least, devoted to determining lunar landing sites and I'm not going to feature a location in Tycho, which is where the monolith was in the movie. What kind of a challenge is Tycho? Even you NGC and variable star types can find Tycho without too much help. (Sorry, that *is* an editorial comment, which will no doubt get some sort of reply from the editor?)

Rather, I am thinking of *The Sentinel,* the short story on which the movie was based. Published in 1951, it features humans doing geological surveys on the moon in the late 1990s. (And I'm sure that if we hadn't wasted all that time and energy on that damn space station that we'd actually be doing that right now? sorry, I guess that's another editorial comment, which will no doubt get some other sort of reply from someone?) The monolith from the movie is actually a two metre high pyramid encased in a force field at the top of a mountain. This mountain is in *Mare Crisium* - somewhere near the south shore, with the western mountains forming the horizon. I guess at a scant seven pages, Mr. Clarke didn't feel the need to get too detailed about locations.

So, bearing in mind that this is my interpretation of where The Sentinel is situated in the story, go outside when the moon is four days old. *Mare Crisium* is the first lunar feature that can be easily identified after a new moon. It measures about 450 km north to south and 570 km east to west. It is located at about 2 o'clock, and kind of, sort of, looks like a fat goldfish. I had to say that to plant the image in your mind - now that it's there, the *mare* will look like a fat goldfish the next time you look at it. This is important, because I have to use the goldfish analogy to describe where to go. Imagine that white blotch at the western-most edge of the *mare* is the goldfish's mouth. Head along the silhouette of the goldfish to where there is an irregularity in the outline of the body -- kind of looks like part of a belly fin, the back half of which has been bitten off by some irate lunar observer exiled there for making inappropriate comments about the sorry state of the Space Programme and it's misplaced priorities? Oh gee, there I go again! Since Clarke describes short distances in the story, then it is likely that The Sentinel is actually located on a mountain somewhere in that chewed-up belly fin. Personally, I'm waiting for the day when we actually get back up there and are in a position where we can check it out for ourselves, for real. Wouldn't it have made a neat Apollo site? Can you imagine where we'd be right now it we'd actually found this thing? Oh well, I guess that it's not just the science fiction writers who can be wonderfully optimistic?

Messier, FNGC, H-400 & Binoc Club

MESSIER CLUB

Certified at 110 Objects: R. Huziak, G. Sarty, S. Alexander, S. Ferguson, D. Jeffrey, D. Chatfield, R. Christie, K. Noesgaard

Mike Stephens 75

Wade Selvig 71

Andrew Krochko 42

Brent Gratias 39

Stan Noble 28

Mike Oosterlaken 28

Lorne Jensen 25

Les & Ellen Dickson 20

Debbie Anderson 17

Brian Friesen 15

FINEST NGC CLUB

Certified at 110 Objects: R. Huziak, D. Jeffrey , G. Sarty, D. Chatfield

Scott Alexander 89

Ken Noesgaard 24

Sandy Ferguson 23

Mike Stephens 7

Mike Oosterlaken 1

HERSCHEL 400 CLUB

Certified at 400 Objects: Dale Jeffrey

Rick Huziak 378

Darrell Chatfield 305

Gord Sarty 147

Scott Alexander 98

Ken Noesgaard 44

Sandy Ferguson 18

Mike Oosterlaken 7

Chatfield BINOCULAR CERTIFICATE

Mike Stephens 45

Join the Messier, Finest NGC, H-400 & Binocular Club!

Observe all 110 Messier, 100 FNGC or 400 H-400, or 40 Binocular objects and earn your

CERTIFICATES!

The first 2 lists can be found in ***the Observer's Handbook***. The Binocular List & Herschel 400 list will be available at each general meeting for 50 cents (covers photocopying) or **can be mailed out on request to distant members.** Each month I'll be posting updates.

Observers Observe!

I haven't received very many observing number updates this last month, but after a 2-month absence, I though I should put the list back to promote a bit of observing, now that warm weather is back.

Congratulation to Dale Jeffrey. He has now been officially awarded the certificate and pin for his amazing achievement of observing all 400 Herschel objects. He is only the 7th Canadian and 221st observer worldwide to have achieved this goal! He is now well into the Herschel 400 II list!

Send observing numbers to <huziak@SEDSystems.ca>

Astronomical Events Calendar

by Les Dickson

Date (2001) Event

Mar 20 Spring Equinox 13:31 UT

Neptune 2◦ N of Moon

2 moon shadows on Jupiter

Mar 21 Uranus 3◦ N of Moon

Mar 22 Mercury 2◦ N of Moon

Mar 24 New Moon

Mar 27 2 moon shadows on Jupiter

Mar 29 Saturn 2◦ N of Moon

Jupiter 2◦ N of Moon

Date (2001) Event

Mar 30 Venus in Inferior Conjunction (8◦ N of Sun)

Apr 1 First Quarter Moon

Apr 4 Venus at greatest brilliancy

h -Aquarid meteors at peak

Apr 7 Full Moon

Mercury 4◦ N of Saturn

Apr 15 Last Quarter Moon

International Space Station Evening Passes - March 19 to April 9, 2001

by Les Dickson

Date Mag Starts Max End

Time Alt Dir Time Alt Dir Time Alt Dir

Apr 05 1.5 20:50 10 SSE 20:51 12 SSE 20:51 12 SSE

Apr 06 0.4 21:19 10 SSW 21:22 26 SSE 21:22 26 SSE

Apr 07 -0.2 21:50 10 WSW 21:52 44 SSW 21:52 44 SSW

Apr 08 0.1 20:46 10 SW 20:48 31 SSE 20:51 12 E

Apr 08 0.6 22:21 10 W 22:23 34 WSW 22:23 34 WSW

Apr 09 -0.7 21:16 10 WSW 21:19 59 SSE 21:21 23 E

Apr 09 1.8 22:52 10 W 22:53 18 W 22:53 18 W

Mir

Mir is scheduled for de-orbit March 20. Do not go out without an umbrella? Mir's last visible pass from Saskatoon was on March 8th. We will not see it again!

[Data taken from "Heavens-Above" website (http://heavens-above.com) for location Saskatoon (52.133N, 106.667W)]

Notice of the General Meeting of the Saskatoon Centre

Monday, Mar. 19, 2001 at 7:30 p.m.

Room 8313 City Hospital

Presenting

Paul Campbell Edmonton Centre - Astronomical Computing & Solar Observing

Rick Huziak - Using a B&W CCD Surveillance Camera on Your Scope -*the longest 5 minutes of your life!*

U of S Observatory Hours

The U of S Observatory is open to the general public every Saturday in March & April from 8:30 p.m. to 10:30 pm.. Admission if free. The observatory is located on campus, one block north of the Wiggins Avenue and College Drive entrance. On clear evenings visitors may look through the 6-inch refractor to the moon, star clusters, Jupiter, Saturn, Venus and other exciting astronomical objects. For further information, phone the recorded Astronomy Information Line at 966-6429.

Interested in

Saskatoon RASC

Membership?

Regular - $48.00 per year

Youth - $26.00 per year

It's never too late to join!

The Saskatoon Centre operates on a one-year revolving membership. You will now be a member for the next 12 months no matter when in the year you join.

Benefits of Membership in the Saskatoon Centre

- knowledgeable & friendly amateur astronomers
- use of the Sleaford Observatory
- use of the UofS Observatory (after training)
- Saskatoon Skies Newsletter
- Observer's Handbook 2001
- The Journal of the RASC (bi-monthly)
- SkyNews Magazine (bi-monthly)
- use of the Centre library
- discounts to Sky & Telescope Magazine
- discounts of Sky Publishing merchandise
- discounts to Firefly Books
- free, no cost, no obligation, 3-month temporary membership if you don't want to join right now!

Saskatoon Centre Books for Sale

Books For Sale: The Saskatoon Centre has a number of Firefly Books left over form SSSP sales, and these are now available to general members to purchase at discount rates! There are only one or two copies remaining of the following titles. Contact Debbie Anderson at 242-8854.

The Universe and Beyond (hardcover) **- $21.00**

Binocular Astronomy (hardcover) **- $37.00**

Astrophotography (G. N. Patterson) **- $13.00**

Exploring the Sky by Day **- $8.00**

Other Worlds **- $8.00**

Extraterrestrials **- $8.00**

***Messier Cards* - $8.00**

Membership Update

by Rick Huziak - Acting Membership Coordinator (until Bob's return)

The following are changes to the Membership List published in the January issue of Saskatoon Skies.

New Members

Daniel Neves, 247 - 1st Avenue North, Saskatoon, SK, S7K 1X2

Corrections

Ruben Eckerman - 2522 Ross Cres., North Battleford, SK, S9A 3R3, joruman@hotmail.com , 446-0925

Added back to membership - Ruben was deleted my mistake - *sorry Ruben!* (By the way, Joan Head says "*Hi*"!)

Come & Have Supper with Paul Campbell & Sherry McLeod of the Edmonton Centre

Earl's Restaurant

Monday, March 19, 2001

6:00 p.m.

RSVP preferred - call Les Dickson

at 249-1091. Reservation under "RASC"

(Executive Meeting cancelled)

Minutes of the February Executive Meeting

February 19, 2001, Room 8313, City Hospital, 6:30 p.m.

recorded by Al Hartridge, Secretary <ahartrid@sk.sympatico.ca>

1. **It was moved by Darrell Chatfield and seconded by Jim Young that the minutes of the previous meeting be accepted as read. This motion was carried.**
2. **Open positions on the Executive: Rick and Darrell are filling in for the open position of the Observers Group Coordinator.**
3. **Treasurer's Report: present balance is $10,864.44. The raffle account is inactive at the moment. We need some project to keep the account active. Could use the money as seed money to start a new raffle?**
4. **Membership: 67 paid up members to date.**
5. **Observers Group: nothing to report at present.**
6. **Youth Group: same attendees as last meeting. Discussed the Cassini Probe and looked at Jupiter and Saturn through the telescope at the last meeting.**
7. **Fundraising committee to meet soon. Darrell handed in a cheque for $60.00 from the collection of pop bottles. The coffee fund has raised $92.00 to date.**
8. **Library Committee is to meet soon.**
9. **SSSP2001: Alan Dyer has agreed to be the keynote speaker. The next SSSP meeting will be held on Sunday Feb. 25 at Sandy's apartment at 2:00 p.m.**
10. **Future Meetings (April and May advanced to avoid holidays):**

- **March 19th**
- **April 9th**
- **May 14th**
- **June 18th**

1. **Sky Camping Worldwide Email list an astronomy resource organized by Margret McRae.**
2. **Meeting adjourned at 7:17 p.m.**

Minutes of the February General Meeting

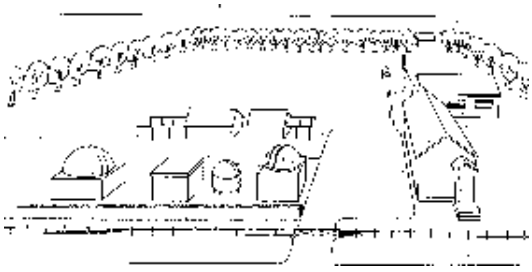
February 19, 2001, Room 8313, City Hospital, 7:30 p.m.

recorded by Al Hartridge, Secretary <ahartrid@sk.sympatico.ca>

1. **Presentations:**

- **Sandy Ferguson - The Winter Constellations**
- **Dale Jeffery - Why People Observe**
- **Tyronne Klassen - Spectrometry Laboratory**

1. **Approval of the minutes of January 15,2001 meeting. Moved by Tyronne Klassen and seconded by (Bob) Scott Alexander and carried.**
2. **Treasurer's Report: the balance is unchanged since last meeting. The Raffle account is inactive. Should we keep it open or not?**
3. **Membership: there 67 members paid up to date. Some question was raised whether or not members realized on voting for the revolving membership that this included opting in.**
4. **Observing Group: Rick and Darrell are filling in at present as coordinators for the observing group. No one has come forward as yet to take up this position.**
5. **Youth Group: at their last meeting the Cassini Mission was discussed and the group also looked at Jupiter and Saturn through a telescope.**
6. **The fund raising committee has yet to meet. Some money has been raised by selling pop cans and through the coffee fund.**
7. **Library: the committee is getting ready set a date for a work party.**
8. **SSSP 2001: The planning meetings are underway and any member is invited to take part in these meetings. New blood is definitely required. Dale would like to substitute a fleecy pullover for the t-shirt for 2001.**
9. **Radio telescope: Tyronne Klassen is interested in setting a unit up at Sleaford if permissible. Al Hartridge has a Prodelin 10 ft dish etc. which he would donate to the site if anyone is willing to pick it up and install it at the Sleaford site.**



The Sleaford Observatory

Longitude: ***105 deg 55' 13" +/- 13" W Latitude: 52 deg 05' 04" +/- 08" N, tel.: (306) 255-2045***

by Rick Huziak

Toilet - Bill and I did a little more construction at the site in the toilet room - we installed a cupboard made by new member Garry Stone. Bill also rewired the heater controller and replaced the entry door's magnetic proximity switch in order to fix a "reset" function when the door opens. Now, as desired, the heaters will reset every time the door is opened and will automagically begin a 7-day composting cycle, assuming that the toilet will be used if the door is opened. If the toilet door is opened during a site tour, and it is not used, the heater can be turned off by throwing the appropriate breaker in the toilet breaker box, thus avoiding running the heaters unnecessarily for 7 days. We have seen, however, that over winter, that the toilet is not composing very well due to so little use and almost no liquid being added. We are thus encouraging use of the toilet. If you gotta go, go in the toilet and don't worry about over-use! When you enter the Warm-up room, you will see some dim orange lights. These indicate that the heater is on in the toilet room. This light stays on even after the site main power switch is thrown. If the lights are off when you get there, there is no heat in the toilet room. You can turn on the heaters from inside the Warm-up shelter in advance of toilet use by hitting the RED button, or by opening the toilet door. Please do not play with the red button if you do not intend to go, since you will cost us 7 days of electric heating.

General Site Use - Site use is way down now that there are no students using the site for labs. RASC member visits since Christmas number fewer than 10. The weather is getting warmer, and the site has never had better facilities. That's your cue!

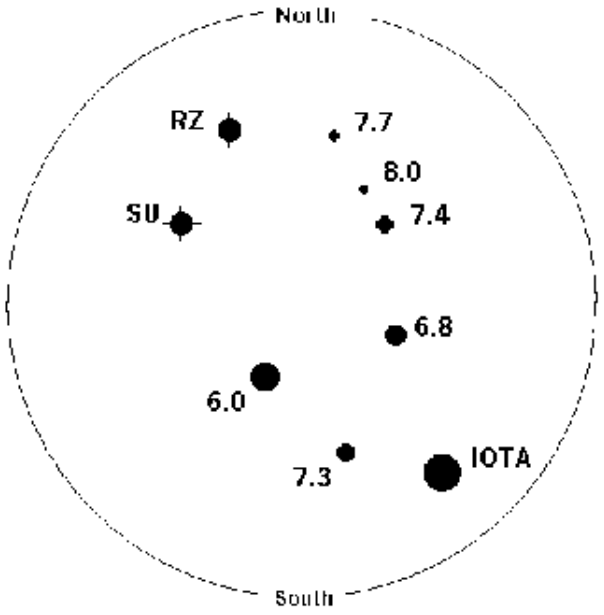
Watching RZ Cassiopeiae Eclipses

by Rick Huziak

One of the easiest eclipsing stars to watch is RZ Cassiopeiae. RZ Cas has been observed more than any other eclipsing variable star because it is ideal to view using binoculars or the finder of your telescope. In Canada and the United States, it is also circumpolar - it never sets! RZ Cas eclipses every 1.195252 or so days. To those of us not so good at decimals, this means every 1 day 4 hours 41 minutes and 10.2 seconds, give or take a few tenths.

Since the eclipses occur so close of exactly 1-1/5 days apart, eclipses will occur at about the same time of evening every 6^{th} day (1-1/5 x 5 = 6 days). And since the visible eclipse lasts about 4 hours, if you look at this star every day for 6 clear days, you will catch it in

eclipse on one of those days. To make this task easier, I have provided a table for the next several eclipses below.



RZ Cas is located just off of the left-most star of the "W" of Cassiopeia. Any star chart will show ***iota Cas***, and once you've found that star, you will find the small asterism pictured below. I call it my "mini-Bootes" since it resembles Bootis with *iota* being "Arcturus". The view shows a field about 4 degrees wide, so about the size of a binocular or spotter field.

RZ Cas is normally at about 6.4 or 6.5 magnitude, but every 28.7 hours it begins a fade down to 7.8 magnitude. There is a wonderfully easy sequence of stars to make estimates by. Begin observing RZ about 2 hours before the predicted time of minimum, and make observations every 15 minutes. Once the star has faded to about 7.4 magnitude, make observations every 5 minutes, since the light curve dips then rises very quickly from then on. Keep observing as long as possible after the minimum to produce a good ascending light curve. If you have an accurately set watch (to the CBD time signal or WWV) and can time your estimates to 1 minute accuracy, your observations become valuable, since astronomers want to see all of the eclipses in order to find out why the star's period is not stable. Like many close double stars, RZ Cas exchanges mass between the companions, and therefore shifts it's period by a few tenths of a second now and then. Also, one component of the binary is also an "intrinsic" irregular variable itself. If it is varying while the eclipses are happening, the light dip and rise in the light curve may not be symmetrical! Many more eclipse observations are needed to study this strange phenomenon. Note that the star marked "SU" is a Cepheid variable with a period of about 1.2 days and a variation of about 5.8 - 6.5 magnitude. You can estimate this star too. One estimate per day is sufficient.

Whether you will observe RZ Cas for your own pleasure or for the sake of science, it is a wonderful and interesting star to begin on!

Eclipses for RZ Cas - all times are CST and are given to the nearest ½ hour as not to influence the observed time of minimum.

March 17 20:30

March 19 01:30

March 23 08:00

March 25 00:30

April 5 23:30

April 11 23:00

April 17 22:30

April 23 22:00

April 29 09:30

May 1 02:00

May 7 01:30

May 12 01:00

May 19 00:00

May 24 23:50

May 30 23:00

MIR Re-enters the Atmosphere ~ March 20

by Don Peterson CSA Project Manager, Space Science Program, Canadian Space Agency

<Don.Peterson@space.gc.ca> (taken from the MIAC Discussion List)

For those of you interested in the fall of MIR (now estimated ~March 20), here's one web site to follow. It has a good FlashVideo of the evolution of the station - it is an impressive piece of engineering and science!

http://www.space.com/news/spacestation/mir_deorbit_plan_001208.html

Another interesting site showing a simulated fiery breakup is:

http://stk.com/special/mir/index.cfm?cfid=1836420&cftoken=28849877

The impact zone for leftovers from the 130 tons of MIR is some 1,850 miles (3,000 kilometers) east of New Zealand's southern tip. Would anyone care to predict the scatter ellipse for the debris at sea level?

*Hint: * If the COSMOS satellite that crashed in northern Canada in 1978 had fallen a few orbits later, the search area would have extended from the Gulf of Mexico to Toronto . . . .*

Also, check out:

http://www.space.com/missionlaunches/missions/mir_fiery_finale_page.html

Keep your eyes peeled and your hard hat on! Good Seeing!