

SASKATOON SKIES

Volume 23, Number 7

July, 1993

In This Issue:

Minutes of the June Executive Meeting	2
Minutes of the June General Meeting	3
Editor's Notes	4
Upcoming Events for 1993	5
University Observatory Hours for July	5
Ephemeris for Two Eclipsing Binaries	6
The Moon in July	6
Novice's Corner	7
Two More Mini Star Parties	8
New Mailbox Location	9
The Moon in August	9
Starnite Poster	10

Saskatoon Skies Information

Commercial vendors wishing to advertise in the "Saskatoon Skies" may do so at the following rates: \$50.00 per page, \$25.00 per half page and \$12.50 for business card ads. Individual RASC members and other parties (at our discretion) may advertise items and events for free.

Next months deadline is Saturday, July 31, 1993. Please have any submissions in to me by then in order to be included in the next issue. Submissions may be in typewritten form or on a floppy diskette (3.5 or 5 inch size and formatted for MSDOS) preferably as ASCII files. Electronic submissions are preferred as it saves me some typing. Mail or bring your submissions to:

Gordon Sarty
422 Edmund Park,
Saskatoon, Sask.
S7H 0Z4
phone: 374-8803

OR
Saskatoon Centre RASC
Box 317, RPO, University
Saskatoon, Sask.
S7N 4J8



Saskatoon Skies is a monthly publication of the Saskatoon Centre of the Royal Astronomical Society of Canada.

Minutes of the Executive Meeting
June 21, 1993
University Observatory

Present: Ed Kennedy, Al Hartridge, Sandy Ferguson, Gordon Sarty, Rick Huziak, Bill Hydomako.

1. Apologies for non-attendance: J. Young, Don Friesen.
2. Urge executive members to bring up items of discussion at the meetings - anything of interest to the Centre. Can save for the meeting or call Don F. or myself before the meeting and we'll get it on the agenda. (R. Huziak)
3. Meeting called to order 7:04 p.m. (R. Huziak)
4. U of S Observatory darkroom has been cleaned up and is now a coffee room for the observatory open house. (R. Huziak)
5. We may want to start up coffee for the main meetings next year. (Ed Kennedy)
6. U of S Observatory RASC display is antiquated. The observatory has offered to allow us to re-use the display space, but has requested an updated display. Need coordinator. Coordinate with Stan Shadick and do the work. (R. Huziak)
7. Volunteer needed to do display: Sandy Ferguson to work on updating the display. (R. Huziak)
8. Handtruck to move Eetook. Any movement? Maybe an ad in the newsletter for donations? (R. Huziak)
9. Gordon Sarty donating \$30.00 to the purchase of a hand cart. (G. Sarty)
10. Light Pollution Committee - have you met? (R. Huziak)
11. Gordon Sarty to write letters to lighting suppliers about the availability of lighting materials. This should give us some ideas about what to suggest to the owners of a new property near Rystrom Observatory regarding light pollution from any yard light they may want to install. (G. Sarty)
12. Dome repairs at Rystrom Observatory. Progress? Quotes? (R. Huziak)
13. Approximate cost of repairing the dome: \$315.00 plus tax. (Al Hartridge)
14. Follow on - Electrical problem in the dome: need to checkout. (G. Sarty)
15. New site survey. J. Young, A. Hartridge, R. Huziak, B. Hydomako, G. Sarty have visited the Pike Lake site. Prospects are good but there are problems. Maybe we should investigate alternate sites as well. E. Kennedy has suggested E. of town. Beaver Creek is a possibility with an educational theme in cooperation with the MVA. (R. Huziak)
16. Will look at other sites during the summer. (R. Huziak)
17. Advertising in the newsletter. Report: Have written letters to prospective suppliers. (G. Sarty)
18. Creative distribution of newsletters. Needed to reduce costs. Possibility of tax deduction if drive around? (R. Huziak)
19. July Public Star Night (Jul 23/24). Ideas and needs are: good advertising, signs, t-shirts, jackets, posters, banner, tent, media coverage at the starnight, hats, giveaways. Where are the armbands from last year? (R. Huziak)
20. National Council Minutes Reports:
 - (a) Messier Certificates are available from National. Gord Sarty will investigate how to get them and what the requirements are. (R. Huziak)
 - (b) Fee increase proposed: \$36 for Reg., \$22.50 for youth, \$900 for life.
Impact? Centre for or against? Proxies for Jim Y. Volunteer to phone about and drive around to get proxy forms filled out? (R. Huziak)
 - (c) Reasons: Balanced budget based on a fee increase!! Journal cost reduction not done. Our centre fees currently: \$32 + \$3 newsletter surcharge. Can we stay at \$36 or go to 37, 38, 39 or 40?, Youth 22.50, 23, 24, 25? Maybe the \$5 voluntary surcharge for the Rystrom key should become mandatory instead? (R. Huziak)
 - (d) Review of National financing. (M. Williams)
 - (e) We will have to review our fees in Sept. (Ed Kennedy)
 - (f) We need to determine how to get more budget information from National. (Ed Kennedy)

- (g) Saskatoon Centre position on fee increases to be voted on in the General Meeting. (R. Huziak)
- (h) New motion that late joining members receive only publications printed after they join (plus the Handbook). (Huziak) (Carried)
- (i) Ms. S. Ferguson is to be appointed as National Astronomy Day Coordinator. Congrats! (Clap). (R. Huziak)
- (j) RASC will be eventually asked to join in on the RASC ECHO bulletin board. Information forthcoming. Will make information exchange btw centres easier! Sarty to investigate? (R. Huziak)
- (k) G. Sarty has a campus E-mail address which he is willing to use for receiving RASC E-mail. (G. Sarty)
- (l) Light Pollution Merit Certificates are available from National to promote businesses to be responsible for light pollution solutions. (R. Huziak)
- (m) National Committee for better control over membership. Sign up early. Find out why some quit or lapse. Expedite! Motion to appoint an executive position or responsibility to do this in our centre. Membership Coordinator - does promotions, sales, fundraising (hats, calendars, handbooks, etc.) (R. Huziak) (Carried)
- (n) There will eventually be a procedure manual for Standard Acc'ting methods so all centres report the same. (R. Huziak)
- (o) Publicity Budget. National will provide for: Educational supplements in local newspapers. Listed local RASC phone no. Business cards for Centres/Officers. Someone to pursue? (R. Huziak)
- (p) We will look at the above item after the G.A. (R. Huziak)
- (q) National Calendar - Vancouver will do again. Are calling for other Centres to submit photos. (R. Huziak)

Minutes of the July General Meeting
July 21, 1993
Room B-111, Health Sciences Building

1. General Meeting called to order 8:13 p.m. (R. Huziak)
2. Public Starnite: July 27 & 24. Perseids: Aug. 11/12.
3. Review of the Executive Meeting business items: (R. Huziak)
 - (a) Donation from G. Sarty for the Eetook handtruck. Donations needed for remaining funds, approx. \$20.00.
 - (b) The dome at Rystrom's needs repairs. Will cost approx. \$360.00. The Centre has put in \$250.00 and we would like further donations.
 - (c) Further site surveys are required for the 16 inch telescope.
 - (d) G. Sarty to investigate the requirements for the Messier Certificates.
 - (e) Discussion on the proposed fee increases.
4. Vote on fee increase as a Centre. Vote by show of hands for not increasing fees: Yea: 9, Nea: 0. (R. Huziak)
5. Sandy Ferguson will be appointed as National Astronomy Coordinator. Theme: Astronomy for Children.
6. The Saskatoon Centre needs new envelopes and letterheads. Theresa Scrip will coordinate. (R. Huziak)
7. Motion needed for reprinting of the Saskatoon Centre's Brochures, not to exceed \$30.00 (R. Huziak) (Second: M. Williams)
8. No Observer's Group meetings during the summer months. (R. Huziak)
9. Sandy Ferguson gave a slide presentation on Astronomy Day, Astronomy Day Starnite and the Solar Eclipse. As well, Sandy presented a short lecture on beginning astronomy for the summer constellations.
10. Kim Mysyk gave a short talk on his proposal for meteorite searches.
11. Video presentation: "Buying your First Telescope".
12. Motion to adjourn meeting. (Scott Alexander)
13. Meeting adjourned 9:56 p.m. (R. Huziak)

EDITOR'S NOTES

Perceptive subscribers will notice that this month's newsletter is a week late. This will be a rare exception to the usual timing of the newsletter which is meant to ensure that everyone gets their newsletter before the monthly general meeting. Since there is no monthly meeting in July, I let the schedule slip a week while I waited for the minutes of the June meetings to be delivered. However, as I get busy in the fall and slot a specific time to do the newsletter, I will not be able to accommodate such flexibility. That means that articles (including minutes) not submitted by the deadline given on the front of every newsletter will not get published that month.

Speaking of minutes, I've tried to alter the format a little this month. That is so they can be more easily submitted to me on diskette.

Although we are not having any official Observer's Group meeting this month, please do not be discouraged from visiting our Rystrom Observatory! I visit the site fairly frequently so if you are interested in going out some night and you don't have a key, give me a call and we'll see what can be arranged.

And speaking of the Rystrom Observatory - it really needs work. In addition to the dome work mentioned in the minutes, there is a small electrical problem that causes a big, loud spark when the power to the dome is turned on for the first time at night. The spark does not recur when the power is turned off and on again however.

And that dome! You have to break your back to turn it, especially when the wood is swollen from rain like it has been lately. We have a big electric motor that I want to use to drive the dome but I will need to get some bicycle style chains and gears to hook it up. Lubrication couldn't hurt either. Someone familiar with the construction of the dome should talk to me about this. Also, I believe that we need to use more of our telescope fund to keep the Rystrom Observatory from deteriorating than what we presently are spending.

This brings us to money. Telescope fund aside, your Centre can use any donations you can afford. As mentioned in the minutes we need money for our site to fix the dome and to buy a handtruck to move the 12.5 inch Eetook telescope. Labour is useful too. Sometime soon, we'll need to actually do some work at the Rystrom site.

Looking up into the sky this month we can watch Jupiter early in the evening in the west. It sets earlier and earlier every night as it passes behind the Sun as viewed by us. But not to despair, planet watchers, because the most beautiful telescopic planet, Saturn, is rising earlier and earlier. It is easily visible around 1 a.m. these days, after rising around midnight. Those of you who saw Saturn last year will easily notice that the rings are not tipped towards us as much as they were then.

For those who like to stay up all night, Venus will greet you as a very bright morning star. For a second there one night, Rick thought he had discovered a supernova. Kidding aside, Rick and I saw some noctilucent clouds one late night last week around 2:30 a.m. and this is a fairly rare observation. Rick tells me that these very high clouds may be formed from meteorite dust.

If you're wondering about the Moon, Jim Young has supplied the Moon calendars presented on the following pages. I don't know if I'll have enough space to put a Moon calendar in every month. We'll see what happens.

All you variable star fans will want to know that SS Cygni, a famous dwarf nova has been behaving very strangely the last couple of months. Usually it flares up from 12th to 8th magnitude every month or so. Recently it has been flickering about 10th magnitude almost constantly. We may be watching a star system evolve before our very eyes here! I'll keep you up to date on what's happening.

Also, while exploding stars are interesting to watch, the somewhat more sedate situation of eclipsing binary stars is fun to follow too. Rick Huziak has provided predictions for eclipses of the binary stars β Lyrae and RZ Cassiopeiae. Beta Lyrae can be followed with your eye only while RZ Cas needs a pair of binoculars to follow. The chart on page 197 of the *Observer's Handbook 1993* shows the comparison stars to use for β Lyr and these stars are easily memorized. Then it is easy to get into a habit of simply looking up every time you're out at night and make a brightness estimate. Twice a month you'll catch β Lyr in an eclipse and you will start to get a feeling of just how dynamic the sky is.

If you get interested in variable stars, there are three other star charts on page 197 of the *Observer's Handbook 1993* that are naked eye objects. Of these, I think that Algol (β Persei) is the most interesting. Predictions for Algol's eclipses are given in the month by month section of the *Handbook*.

Oh, and don't forget about the public starnite on July 23 and 24 in Diefenbaker Park. Copy the poster on the last page of this newsletter and advertise it at work or where ever.

Gord Sarty

UPCOMING EVENTS FOR 1993

July 23 & 24 Public Starnight in Diefenbaker Park: Members will have their telescopes set up in the park so that the citizens of Saskatoon can get a look at a crescent Moon, Mars, Jupiter and Saturn and some summer objects. A few early Perseids should also be around. Follow our signs. Time: Around 9:30 p.m. Contact Sandy Ferguson for more information.

August 6 - 16 *Sky and Telescope* is organizing a FIRES FROM HEAVEN AND EARTH trip to Italy to view volcanos and the Perseid meteors at their very peak activity (some predict thousands of meteors per hour at that time!). Contact Gord Sarty at 374-8803 for more information.

August 11 The annual Perseid meteors may peak at 4:30 p.m. local time this afternoon, so it might be a good idea to have an observing session on the night of the 11/12. The Moon will be 2 days past Last Quarter and a bit of a nuisance in the early morning, but still worth observing the shower. More about this next month.

August 11 - 15 Alberta Star Party - Eagle Lake Campground, Strathmore, Alberta. This annual observers' camping event is popular with everyone in the western Centres. Saturn will be the prominent planet all night with Venus in the morning, and the Perseids will be around. So come along and observe under terrific dark skies! For more information call Rick Huziak at 665-3392.

August 18 - 22 Mount Kobau Star Party at Mount Kobau, B.C. The other great Western Canadian astronomical get-together. For information on location, camping, etc. call Rick Huziak at 665-3392.

September 11 Observers' Group observing session at Rystrom Observatory. Time: Anytime after 8:30 p.m. To find the observatory, drive south on hiway #11 to the Grasswood Esso station and drive in, turn left past the KOA campground and head down the road approximately 1.5 miles to the fast mailbox on the right before the railway tracks. The mailbox is the Rystrom's. Go down the driveway past two homes and around the large equipment building to the right. Be sure to dim your lights.

In addition to the Observers' Group meeting, members are welcome to visit the Rystrom site at any time provided you phone ahead. The number to call is 955-2370, ask for Nelson or Gloria. If you do not have a key, find a member who does and talk them into a trip to the dome. After you have been checked out on the equipment there you are entitled to a key of your own.

September 17 - 18 The Vancouver Centre of the RASC sponsors the Manning Park Star Party near Hope, B.C. For more information, contact Rick Huziak at 665-3392.

September 17 & 18 Our second public starnight of the summer. Location to be announced. Saturn will be the best planet for this evening and some of the autumn objects will be available for viewing. Also the crescent Moon. Contact Sandy Ferguson for more information.

September 20 Monthly Centre meeting in Room B-111, Health Sciences Building on campus, 8:00 p.m.

September 23 Happy Equinox!

October 23 The Vancouver Centre of the RASC and The British Columbia Space Sciences Society present: The West Coast Amateur Astronomy Conference, "The Gathering of the Clubs". Contact Gord Sarty at 374-8804 for forms.

UNIVERSITY OBSERVATORY HOURS FOR JULY

The U of S Observatory will be open to the public on Saturday evenings from 10:00 to 11:30 p.m. during July. Visitors will be able to view Jupiter, the Hercules star cluster, Alberio and other celestial objects. 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. and College Drive. For more information, call Stan Shadick at 966-6434.

EPHEMERIS FOR TWO ECLIPSING BINARIES

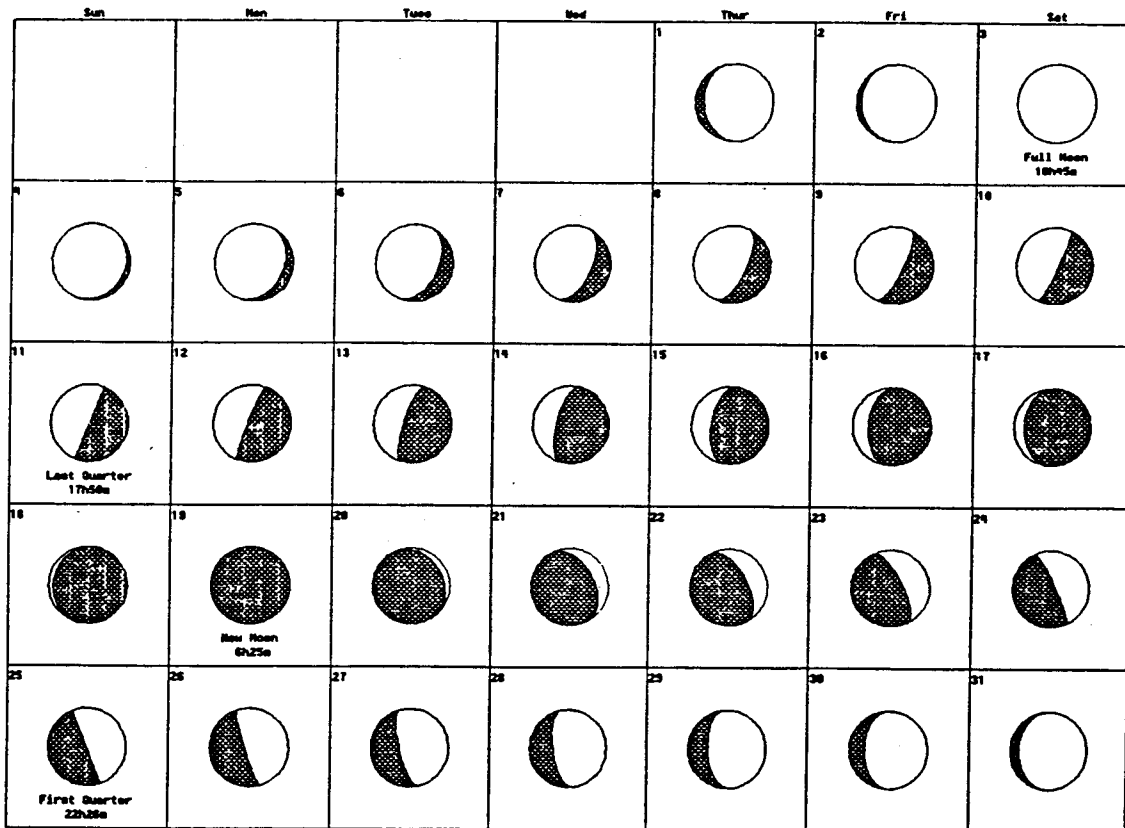
The following are predicted minima for RZ Cassiopeiae and β Lyra for the next few months. RZ Cas is a classical Algol eclipser with a single pronounced primary minimum and a visually undetectable secondary minimum. Beta Lyra has a constantly changing light curve with a small, but visible secondary minimum and a large primary minimum. Observe RZ Cas every 10 to 15 minutes for 2 hours on either side of the minimum. It has a period of 1 day, 4 hours, 41 minutes between eclipses. Beta Lyra has a period of about 13 days, so can be observed once each consecutive night to build up a good light curve. Predictions for β Lyra are a bit uncertain. Times are given to the nearest 1/2 hour to avoid observer bias and are Central Standard Time (CST). Charts are available in Burnham's Celestial Handbook or have been published in this newsletter in previous years. [Phone Rick Huziak at 665-3392 or Gord Sarty at 374-8803 if you need a chart for RZ Cas. -Ed]

RZ Cas - Jul 9, 00:00; 14, 23:30; 20, 23:00; 22, 03:30; 26, 22:30; 28, 3:00; Aug 1, 22:00; 3, 02:30; 7, 21:30; 9, 02:00; 13, 20:30; 15, 01:30; 19, 20:00; 21, 01:00; 27, 00:00; Sep 1, 23:30; 3, 04:30; 7, 23:00; 9, 04:00; 13, 22:30; 15, 03:00; 19, 22:00; 21, 02:30; 25, 21:30; 27, 02:00; Oct 1, 20:30; 3, 01:30; 4, 06:00; 7, 20:30; 9, 01:00; 10, 05:30

β Lyra - Aug 9, 01:30; 21, 23:30; Sep 3, 21:30; Nov 20, 08:00; Dec 3, 06:00; 16, 04:00; 29, 01:30

If you observe an eclipse (or even a part of an eclipse) send your results to Gordon Sarty. He is accumulating long term data on these stars in conjunction with Mike Wesolowski and myself. Note the date, time to the nearest minute, and the visual magnitude.

Rick Huziak



North at top of page

THE MOON IN JULY

NOVICES' CORNER

The past few months we have shown how the Big Dipper can be used for a variety of purposes - for finding north and Polaris, locating other constellations, etc. This month we will again use this ASTERISM (a bright, recognizable pattern of stars, within a constellation) as an example, to demonstrate how you can determine distance between stars and other objects, by way of degrees. You will constantly be coming across references to distance in this fashion in your dealings with astronomy.

Figure 1 shows the Big Dipper's seven prominent stars, with their Greek alphabet designations, and the number of degrees between each star. Also shown is the distance between the Dipper and Polaris. You can use the Dipper any night of the year to help you estimate the distance from any star or object to any other in the sky.

For instance, if you look on page 47 of the *Observer's Handbook*, you will note that on the evening of July 24th Jupiter is 6° north of the Moon. On checking Figure 1, you will note that the distance between α and β Ursa Majoris is 5° . Therefore, in order to find Jupiter the night of July 24th, you need only estimate a slightly greater distance North of the crescent Moon.

If you find you have a problem comparing distances, because the object you are trying to locate is not near enough to the Dipper for your eye to easily estimate the distance, then you can use your hand to achieve the same end. Again, Figure 1, which is self-explanatory, shows just how you can do this, by holding your hand at arm's length in your line of sight.

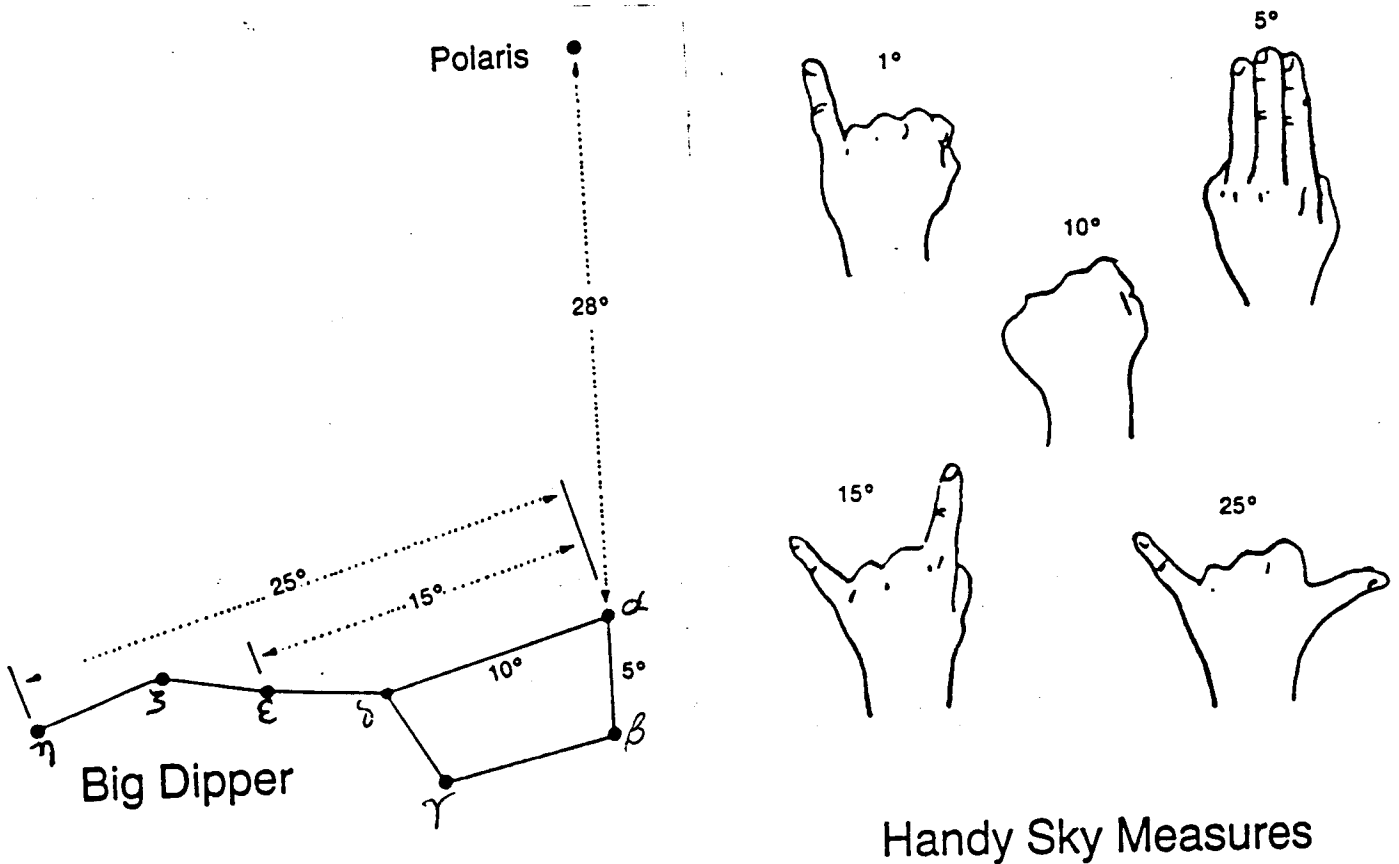


FIGURE 1 - From "Nightwatch" - Terrence Dickinson (Camden House)

THE GREEK ALPHABET

Have you often wondered about those unfamiliar characters you have noticed printed beside some stars when reading a star map? You know a particular star as Vega, for example, but what does the α symbol mean?

Well, you have just been introduced to the first letter of the Greek alphabet, known as "alpha". In astronomy we use the Greek alphabet for a number of purposes and you will continually be coming across Greek letters in your astronomical reading and star-gazing.

The Greek alphabet, like our alphabet, has both upper and lower case letters. [The word alphabet is actually short for alpha beta. So saying "the alphabet" is just a refined or Greek way of saying "the ABCs". - Ed.] In using Greek letters for star designations, we always use lower case letters. Greek upper case letters are used to designate stars in certain catalogues or lists prepared by professional astronomers, Such as the double star catalog by Otto Struve. All double stars in his catalogue are prefaced by the capital letter "sigma", which is written Σ .

Generally, within a constellation, the brightest star is designated "alpha" (α), the second brightest "beta" (β) the third brightest "gamma" (γ), and so on. There are exceptions, however. In the Big Dipper, for example, order of position rather than brightness is used.

The complete Greek alphabet is set out below. Learn to recognize the letters as you will be seeing alot of them in your reading and observing.

A, α	Alpha	I, ι	Iota	P, ρ, ϱ	Rho
B, β	Beta	K, κ	Kappa	$\Sigma, \sigma, \varsigma$	Sigma
Γ, γ	Gamma	Λ, λ	Lambda	T, τ	Tau
Δ, δ	Delta	M, μ	Mu	Υ, υ	Upsilon
E, ϵ	Epsilon	N, ν	Nu	Φ, ϕ, φ	Phi
Z, ζ	Zeta	Ξ, ξ	Xi	X, χ	Chi
H, η	Eta	O, \omicron	Omicron	Ψ, ψ	Psi
$\Theta, \theta, \vartheta$	Theta	Π, π, ϖ	Pi	Ω, ω	Omega

The third character shown for some of the letters is a script version of the lowercase letter similar to the case in our alphabet of L, l and ℓ .

TWO MORE MINI STAR PARTIES

As the school year ends, we often get a lot of calls from schools to give starnights at end-of-the-year nature campouts.

Brightwater Again! Mike Wesolowski and I did yet another mini star night at Brightwater Camp on June 16th. This star night was for a group of grade 6's. The name of the school escapes me; or rather, maybe I just blocked it out of my memory. Although the weather was better than the last Brightwater starnight (described in the May newsletter), the kids were not so. Win some, loose some. These kids were really rambunctous. It was a full time job for the teachers to keep them quiet and seated during Mike's ill-fated slide show. They weren't much better at the telescope later, either. It was unfortunate that those kids who just wanted to stay up later and make a bit of trouble spoiled it for the kids who were really interested. (There may have been a few...if it wasn't for the din!). Anyhow, once we got the kids through, a few of the teachers spent some extra time with us, viewing Jupiter with amazement, and seeing a few double stars and clusters, and generally getting their blood pressure back down to an acceptable level. Better luck next time.

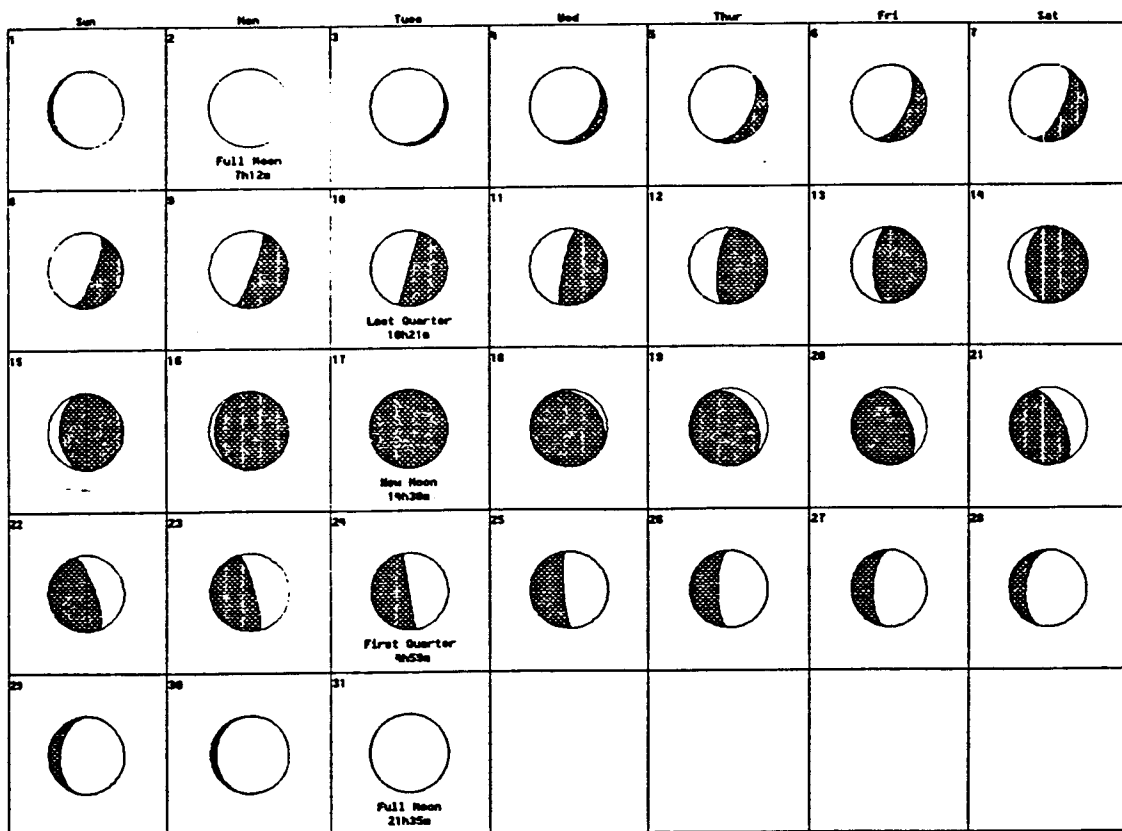
Next time; Bonne Madone Beach, Wakaw Lake. Gordon Sarty and I gave another mini star night at Wakaw Lake on June 17th for the 16 through 19 year olds from Joe Duquette School (formerly the Native Survival School). We only got 2 days notice of this starnight but agreed to do it anyway because of the promise of a black sky and an "all-nighter" after the star party proper was given. Gord and I decided that the 1-hour drive would be worth it for the sky and who really cares if I have to be a work at 8:00AM the next morning, anyhow? The important thing was the dark sky. Mrs. Jensen, our contact, gave us great instructions, and we got there without getting lost even once. I was a bit leery of these older kids, as typically they are harder to keep interested, but my fears were soon allayed when everyone in the camp came out to see our telescopes (Gord's 8", my 4-1/4") and to see what they could see. Everyone was amazed at Jupiter,

which had two moons just leaving a transit. They also saw Alberio, Mizar/Alcor, M13, M39 and a number of different objects, just before the clouds came rolling in. Bummer! We all stood around and talked about Native legends of the sky and the universe, hoping that the sky would clear, and although we spent the next two hours chasing holes in the cloud, we never again got in really good observing. Just enough to show us how good the sky would be if the clouds weren't there! As the first hint of dawn came, Gord and I decided that enough was enough, and that we should pack it in. So we did. This was a great mini star party. Everyone was wonderful. These kids and their chaperons were really in tune with nature. They really appreciated us coming out and showed us a great time. I'd go back to these guys anytime. Rick Huziak

NEW MAILBOX LOCATION

Please note that the location of the post office at the University of Saskatchewan has now changed. It has moved from the Administration Building to Place Riel. New keys must be picked up for anyone that has a mailbox key. The move to Place Riel will provide more access to the mailboxes, including evenings and weekends, something that the Admin location did not provide. The Centre box number and mailing address remains the same. And just because the mailbox changed locations doesn't mean that you are excused from sending in articles for the newsletter!

R. Huziak



North at top of page

THE MOON IN AUGUST

The Saskatoon Centre
of the
Royal Astronomical Society of Canada
presents:

STARNITE IN DIEFENBAKER PARK

on
FRIDAY AND SATURDAY NITES
July 23 and 24

Follow the map below to the observing site. Observing begins at dusk. Members will show you spectacular views of the heavens through a variety of telescopes and large binoculars. Bring the whole family to see the giant planets Jupiter and Saturn. Catch your breath as you stare at hundreds of thousands of stars in the magnificent Hercules Globular Cluster. And wonder about the meaning of it all as you behold the smoke ring of a dying star in Lyra.

