

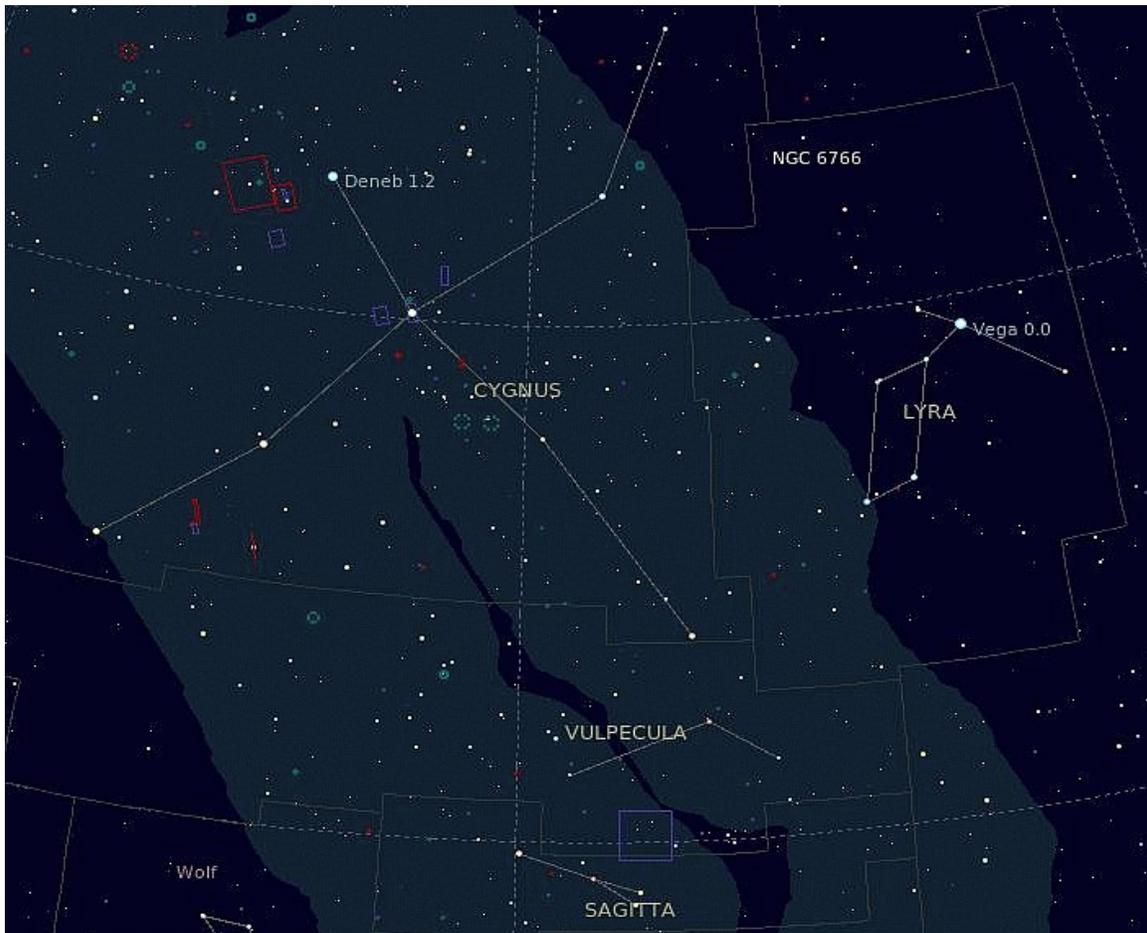
STARDUST

Newsletter of the Royal Astronomical Society of Canada
Edmonton Centre



June 2008

Volume 53 Issue 10



*Some familiar summer constellations.
Courtesy of KStars Desktop Planetarium.*

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RASC Edmonton Centre Contact Information

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Stardust Articles for Stardust may be submitted by email to mward@interbaun.com. Submission deadline is the last day of the previous month (e.g. for the May issue submit by 30 Apr). Submit as **M\$Office 2003 or earlier** (NOT MS xml/docx please) or **OpenOffice OR AbiWord OR plain text**. Please avoid use of fancy formatting, odd spacing, and strange fonts. Graphics (photographs, illustrations) should be submitted as separate files, and clearly identified.

Edmonton Area Astronomy Discussions: astro@mailman.srv.ualberta.ca
To subscribe send a blank email to: astro-request@mailman.srv.ualberta.ca
with the subject line: subscribe

The above mailing list is completely independent and is not associated with RASC Edmonton Centre in any way.

Upcoming Events, Meetings, Deadlines, Announcements

Regular Meetings 2008

Telus World of Science, 11211 - 142 St, 7:30pm

Jun 9 Sep 8 Nov 10
 Oct 20 Dec 8

Council Meetings 2008

ATA Building, 142 St & 111 Ave, 7:15pm

Sep 22 Oct 27
 May 26 Nov 24

VOLUNTEER OPPORTUNITIES

Event	Date(s)	More Information
Canada Day	July 1	http://www.festivalcity.ca/festivalcalendar/item.aspx?festival=8080
Sunday in the City	July 20	http://www.eventsedmonton.ca/ekd/public/HTML/tasteofedmonton.htm *
BHDSP Anniversary	September	http://www.edmontonrasc.com/bhdspsig.html

... and of course contact Orla Aaquist, Public Education Director, for info on any event

* Sunday in the City is part of A Taste of Edmonton

Calgary RASC Star-B-Q July 4-6, 2008 Eccles Ranch Observatory, near Caroline Contact: Starbq2008@shaw.ca Information and registration: http://calgary.rasc.ca/starbq2008.htm	Alberta Star Party September 25-28, 2008 Starland Recreation Area Campground Contact: David Brown (403)-246 4498 ASP2008@shaw.ca http://www.calgary.rasc.ca/asp2008.htm
Mount Kobau Star Party Aug 2 - 10 http://www.mksp.ca/	Saskatchewan Summer Star Party Aug 28 - 31 http://homepage.usask.ca/~ges125/rasc/starparty.html
Northern Prairie Starfest Sep 2 - 7 http://www.edmontonrasc.com/nps.html	Other Star Parties and events of interest across Canada courtesy of <i>SkyNews</i> : http://www.skynews.ca/pages/events_calendar.html
BEAVER HILLS DARK SKY PRESERVE FAMILY STAR PARTY Sunday August 31, 2008, 3:00 pm - midnight, Astotin Lake, Elk Island National Park See article, page 8	

GUEST SPEAKER, SEPTEMBER 2008

Robert Smith, Department of History and Classics, University of Alberta, presents **Remaking the Heavens: The Invention and Early Use of the Telescope**. In September 1608, Hans Lippershey, a spectacle maker in the city of Middleburg in the Dutch Republic, made the very first application for a patent for "a certain device by means of which all things at a very great

distance can be seen as if nearby." In this talk, Robert Smith will discuss the telescope's invention and the early history of its application to astronomy on the (approximately!) four hundredth anniversary of its invention. In so doing he will pay particular attention to Galileo's early telescopic researches.

Observers Report by Paul Campbell

I have mixed feelings for this time of year. Sure, I enjoy the warm sunny days with all the leaves growing, flowers being planted and birds everywhere, but try doing any observing. I was out doing some variable star observations the other night and I noticed it was almost midnight before I'd gotten my first one. It just takes that long for it to get dark. There are definitely fewer observing hours to enjoy the hobby.

So, while there is less observing in the doldrums of perpetual twilight, that doesn't mean there isn't any. I've already mentioned doing variable stars. The trick here is to be willing to stay up later and include the brighter stars in your observing routine.

The major planets are always bright enough to be seen in these twilight skies. I won't go into much detail about them as I'm sure Murray Paulson's report is much better than anything I can

write. I will note that the bright beacon of Venus won't be available for a large part of the Summer as it's in superior conjunction on June 9. The observatory uses this object quite a bit to locate objects in the daytime sky as it makes a very bright starting reference point. With superior conjunction happening in June, that means Venus will be too close to the Sun for much of the summer. Oh well, there's always Jupiter, in opposition on July 9, so it will be a good night time object. Consult your *Observers Handbook* for shadow transits and occultations.

This is also the time of year to be on the lookout for noctilucent clouds. These are bluish white, wispy clouds that are located very high in Earth's atmosphere. Be sure to check for them as some of the displays can be quite beautiful. Also, be sure to report any sightings to Mark Zalchik so that he can continue his

work on them.

Finally, as August comes around the perpetual twilight eases off. That's when all the star parties happen. If a blue moon occurs, when there are two full moons in a month, then the anti blue moon must occur when there are two new moons in a month. August is just such a month. As a result **Mount Kobau** starts on August 2nd and runs to August 10th. This is a very dark site but be prepared to endure a gruelling drive up the mountain, and few facilities.

At the other end of the month is the **Saskatchewan Summer Star Party**, which occurs from August 28th to August 31st. This is one of my favourite star parties as it offers dark skies, good comradeship and actually has some amenities, like showers. Then

there is our own star party held at **Black Nugget Lake**. Warren Finlay hosts this one and Warren does a great job as he always has great speakers. Last year he even provided incredible skies. The **Northern Prairie Star-Fest** runs from September 2nd to September 7th. Finally there is the **Alberta Star Party** which runs from September 25th to the 28th. This time, however, don't go to Caroline, Alberta. This year it is being held at the Starland recreational campground. Go to <http://calgary.rasc.ca/asp2008.htm> for more details.

My last item is an astronomical event I would like to talk about. This is the occultation of a star by the asteroid (111) Ate which occurs on August 23rd, 2008 at about 22:50 MDT.



As you can see from the screen capture I did with Google Maps, above, the centre line runs very close to Edmonton. In fact the observable region for this occultation covers a large part of the province. If you can get hold of any timing equipment, even just a stopwatch, I would encourage you to try this one. The observatory has some timing equipment and can act as a base point. They even have some equipment that can be checked out. It would be great to

have lots of observers spaced out all over the city and even points wider so we can give some good timings to IOTA (International Occultation Timing Association). Let's all try this one.

The last thing I would like to do is to wish everyone an enjoyable and safe summer.

The Planets by Murray Paulson

This month starts off with the two inner planets in Conjunction with the sun. June 7th at 7 am MDT, **Mercury** passes in front of the sun, Superior conjunction, and 2.8 degrees below it. At this time, Mercury will subtend 12.23" and shines dimly at magnitude 5.3. No, you are not going to see it in your scope! At the time, **Venus** will be only .25 degrees west of the sun, but it will take another day for it to go behind the sun. The 8th of June marks the exact mid point between the two Venus transits, June 8th 2004 and June 8, 2012. Venus passes dead center behind the sun. Very cool! Neither event is visible, but they are very notable, and fairly rare to have both planets in conjunction in the same 24 hr period. Over the next month, Mercury swings out to its western elongation on July 1st, where it will sit 21.78 degrees from the sun, shine at magnitude 0.4, and be 36% illuminated, i.e. a fat 8" crescent. Over the rest of the month of July, it will fall back to its July 29 Superior Conjunction, but it will increase in brightness all the way down. It will be a good daytime object until it gets too close to the sun for comfort. It is on the west side of the sun, so be cautious not to let the sun drift into the view of the scope! At the date of conjunction, Mercury will pass 1.7 degrees above the sun. Two days later, any of you that have the good luck to see the total

solar eclipse on August 1st will see Mercury 3 degrees east, (north?) of the eclipse. It will shine at magnitude -1.7. If you have a clear horizon at the eclipse, you will also see Venus 14.5 degrees east of the sun. For the remainder of August, Mercury will swing out into the evening sky, headed for its September Greatest eastern elongation. It will be bright, ~magnitude -0.5 – 0.0, so it will be a good catch at the SSSP. On August 21st, Mercury passes 1 degree below Venus. At a 20 degree elongation from the sun, this will be an easy catch in twilight.

Back to early June and the planet Venus. After the conjunction with the sun, Venus makes a very slow return to the eastern - Evening side of the sun. It is coming from the far side of the sun, and the daily motion is only a small fraction of a degree. By July 1st, Venus will sit only 6.2 degrees from the sun. Give it a hunt while looking for NLC's in late June and Early July. Venus will remain at magnitude -3.9 for most of the summer, and will be situated for observing in the early evening twilight during the summer star parties.

Mars at magnitude 1.4, has now shrunk to 4.9" and only shows a disk under protest of great magnification. It has recently passed through the Beehive on its way to Leo. On July 1st, Mars

will pass 40' above Regulus and a few days later it will join Saturn in a close conjunction. More of that later. For the rest of the summer, Mars moves on its way to Virgo.

At the beginning of June, **Jupiter** rises just after midnight and shines at magnitude -2.5. It will show a 45.3" disk in the eyepiece. It crosses the meridian just after 4 am, and it is still a hard sell coming into summer twilight. Things get better in July, and on the 9th of July, Jupiter comes to opposition. It will rise at 9:40 pm (DST Alberta) and crosses the meridian at 1:30 am. Jupiter shines at magnitude -2.7 and will show a 47" disk in the eyepiece. At Edmonton's latitude, it sits 13.5 degrees above the southern Horizon. I can hardly wait for Kobau/SSSP where it will sit 18 degrees above the horizon! Jupiter will be well placed for the summer star parties, but very low in the south.

Saturn is still well situated for observing in our long twilight evenings. At the beginning of June, Saturn shines at magnitude +0.7 and will show you a 17.5" disk in the eyepiece. It sets just after 2: am, so is pretty low in the western sky by the time you can see it in the sky. The rings are now tilted up at a 9.4 degrees. Next go round, they will be much shallower, so take a good look now! Saturn is presently at an elongation of 75 degrees, but that will decrease over the summer till its eventual conjunction with the sun on September 3rd. It will not make it to the summer star parties. On July 6, a 4 day old moon passes below Mars and Saturn. It would make a nice photo opportunity. The pairing of Mars and Saturn will be at its closest on July 9th when the two will pass 38' apart. We don't get to see closest approach, but they set just before midnight with a separation of 42'. You will be able to see both disks in a medium high powered view.

Although the **Uranus** opposition is on September 12th, it is worth hunting it down at the summer star parties. It shines at

magnitude 5.7 and in the eyepiece you can see it's 3.7" blue disk. In an evening of good seeing, the disk is crisp and quite the sight. You need lots of power to make much of it, but it is fun to see it. The real challenge is to hunt for it naked eye. It is quite observable on a night of transparent skies. It is located just 5 degrees below the circlet of Pisces. Use binoculars to get oriented, then see if you can spot it naked eye. Uranus's moon Titania shines at magnitude 13.9, so is worth hunting for. Make up a finder chart for the time and dates you are going to search for it. The moons Ariel and Umbriel are much dimmer, magnitudes 14.4 and 15.0, and much more challenging. Good luck!

Neptune comes to opposition on Aug 15. In the eyepiece you can see it's 2" blue-green disk shining at magnitude 7.8. It sits just above the eastern tip of Capricorn and you can find it with the detail chart in the hand book, and your favourite star atlas. Last summer I successfully searched for the large moon Triton, which shines at magnitude 13.4 in my 250 mm scope. You need to make up a detailed finder chart with your favourite planetarium software. I am interested in reports from observers of Uranus and Neptune's satellites.

I first saw **Pluto** in April 1988, and its opposition was on April 30th. It was located just a few degrees west of M5, at an RA of 14:56 and shone at magnitude 13.8. In 2008, Pluto comes to opposition on June 20th and sits at an RA of 17:59. It now is on the opposite side of Ophiuchus, and shines at magnitude 14.0. The summer star parties will be the time to hunt Pluto down. It has moved into the Milky Way, and sits 2 degrees above M23. The chart in the 2008 Handbook has seen some improvement over prior years, lots of stars, but it may be too small a scale. I would be interested in your thoughts on this. You may need a magnifying glass to use it. I will for sure! Good luck in your hunt.

Crescents and Full Moon Photo-Ops by Alister Ling

Thanks to the full Moon riding low across the south, we have some interesting chances to catch it over downtown from Kingsway Avenue, immediately south of the City Centre Airport

(formerly called the Municipal). Instead of making a composite for one event in particular, I'll just show you my reference image.

yyyy/mm/dd/hh:mn:s	Sol	Az	Alt	Lunar	Az	Alt	Illum	%	Elong
2008 07 14 21 49 29	308.2°	-0.1°	163.0°	6.6°	91+	144.7°			
2008 07 15 21 48 26	307.9°	-0.1°	152.1°	3.9°	95+	155.6°			
2008 07 16 21 47 20	307.6°	-0.1°	141.0°	1.1°	99+	166.5°			

The old Moon upcoming is less than 24 hours from new, but not by much, so it is well within reach of a patient binocular observer

without the need for excellent conditions. Place on your calendar as a reminder!

yyyy/mm/dd/hh:mn:s	Sol	Az	Alt	Lunar	Az	Alt	Age
2008 07 31 04 55 53	46.2°	-7.0°	54.5°	2.6°	-23h17m		



The view from Kingsway Ave, with the buildings and their azimuths identified.

Blotting out starlight: Upcoming Edmonton occultations: prime events by Alister Ling

Paul Maley, expert asteroid occultationist from Texas, will be flying to Edmonton in late August to personally take in the very high probability event on the evening of August 23-24. Even if you do not have timing equipment of any kind whatsoever, please take the opportunity to witness one of these cool events directly at the eyepiece. More information below.

Before then, we have three practice runs in July. This will give us some time to perform "moist runs" with the deck equipment. The main reason to go after these is even if the path is

not right over us, it is important to run through setting up the equipment and locating the star with everything humming nicely.

Finally, because orbits get updated, events formerly too far can get shifted over us with only a couple weeks notice, so pay attention to the astro email.

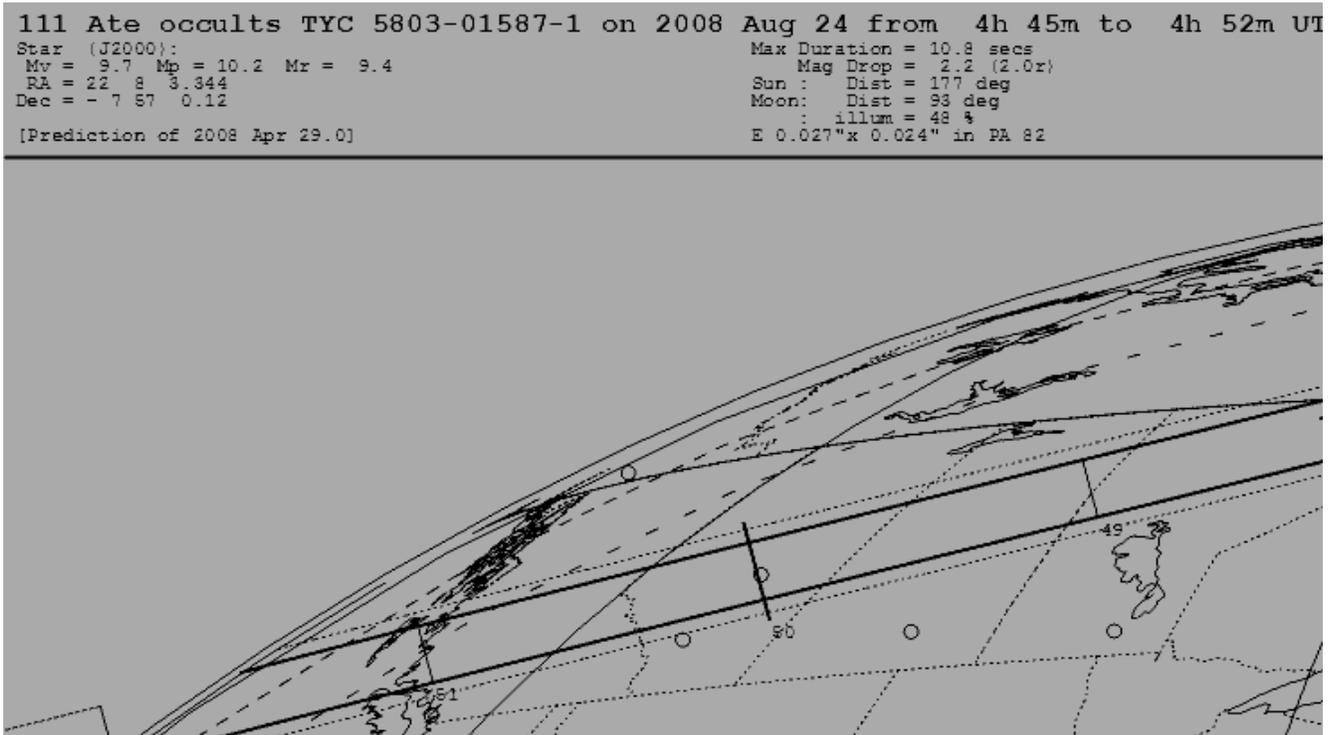
In any month, there are several dozen lunar occultations, with a handful are of interest if you are at the deck. An abridged list (bright and easy and before 2 am) for events through August can be found at:

http://www3.telus.net/public/aling/total_occultations/Edmonton%20Total%20Occultations.html

Here are the brightest events of summer (UT). For MDT subtract 6 hours and it is on the PREVIOUS day:

y	m	d	h	m	s	Star	Mag	CA
08	Jun	11	6	17	19	d 1703 K0	7.7	62S
08	Jun	20	7	5	57	r 2804dK2	5.8	61N 2804 is double: 5.8 4.0"
08	Jul	23	7	25	50	R 3515cA1	6.3	79N 25 Psc is double: 7.0 7.0 0.050"
08	Aug	10	3	58	47	d 2276 A3	5.6	9N 4 Scorpii
08	Aug	14	7	21	38	D 2861cA1	5.6	68N 51 Sag is double: 5.9 7.9 sep?
08	Aug	14	7	39	39	D 2864dB8	4.6	62S 52 Sag is double: 4.7 9.2 2.6"

Date	time	star	mag	asteroid
2008-07-09	08:08:00	HIP 72008	8.6	3317 Paris
2008-07-14	07:41:00	2UCAC 33326426	11.6	1149 Volga
2008-07-27	07:54:00	TYC 0534-00634-1	11.5	640 Brambilla
2008-08-24	04:48:00	TYC 5803-01587-1	9.7	111 Ate



For the big August 23-24 Saturday evening event, please check for up to date maps and finder charts at:
http://www.asteroidoccultation.com/2008_08/0824_111_13039_MapNA.gif
 It's a mag 9.7 star dropping 2.2 magnitudes for up to 10 seconds, and Edmonton is smack on the central line.

Good observing!

President's Report by Krista Stefan

Ah, summer's finally almost here, and along with it the warm weather, barbeques, noctilucent clouds, and star parties, and for some the prospect of the August 1 total solar eclipse. Hopefully the September edition of Stardust will be filled with reports of the summer activities of our members.

Also coming up quickly is the National General Assembly in Toronto. One of our two National Council Representatives, Alister Ling, will be attending the GA. If you are unable to attend the meeting and would like Alister to hold your proxy, please let him know as soon as possible. I encourage all members to review the information for the GA and to either attend the meeting or send a proxy so that your voice is heard.

Summer Public Outreach Opportunities by Orla Aaquist

Over the summer, the Edmonton Centre will be participating in two public solar observing activities (weather permitting), and I am looking for volunteers to assist in each event. The two events are Strathcona County's **Canada Day Festival** in Sherwood Park on Tuesday, July 1, and **Sunday in the City** on June 20th at Churchill Square. The Canada Day event starts at 9 AM and continues till 5 PM, so I will need 6 volunteers to run the activity in three shifts. Sunday in the City runs from 1 to 6 PM and requires 4 volunteers for two shifts. The solar viewing session includes viewing the Sun through #14 welder's glass, eyepiece projection, white light filters, and hydrogen-alpha filters

In September we will welcome Dr. Robert Smith from the Department of History and Classics from the University of Alberta with his talk "Remaking the Heavens; The Invention and Early Use of the Telescope" as a prelude to the International Year of Astronomy.

The September meeting will also have us considering the expenditure proposals listed in this issue of Stardust. There will be a brief presentation for each proposal that the membership will be voting on, but if you would like to obtain a copy of the actual proposal submitted to council, please contact myself or Sherry Campbell.

I hope everyone has a wonderful and relaxing summer!

OBSERVATORY FOR SALE

I have a one-of-a-kind observatory which was hand-made in 1968 and has been a local landmark in Edmonton since that time. It was originally built by Stan "Henry" Pazder with assistance from a local tinsmith. It was featured in a 1980 Edmonton Journal article; I have a copy of the article.

The observatory measures 8' by 8' (64 sq. ft.) and stands approximately 14' tall. The 6' dome rotates fully with a slit opening allowing observation near the zenith. The scope I am using now is a 10" and the dome opening allows ample time to observe or image before having to rotate the dome itself. It comes with a "mighty mouse" re-reflecting GPS antenna that allows GPS

(Coronado telescope). If you have no experience with solar observing, I will be happy to provide training, but members who have previous experience with solar viewing (such as Deck experience) are also needed. We will also be providing public information about the RASC, dark sky preserve, and light pollution. I know that summer is a difficult time to recruit volunteers, but without volunteers we cannot run these events.

If you are able to help, contact Orla Aaquist, the Centre's Public Education director. My phone number is 486-8661 and my email is aaquist@macewan.ca.

equipped scopes to receive signals while inside. The building walls are fully insulated and painted, with white siding on the exterior. There is also a window on the front side near the door. The floor around the pier hatch has like-new grey carpeting, the dome interior is flat black with a ring of night vision friendly red LED lights around the interior base circumference. I constructed a raised platform around the pier for easy access to the scope. I will also include the custom metal pier and concrete base. Serious inquiries only please. I am asking \$15,000 as is. Contact **Dale** at **490-2495** (9a-4:30p) or **444-0860** evenings.

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BEAVER HILLS DARK SKY PRESERVE FAMILY STAR PARTY

Sunday August 31, 2008 3:00 pm - midnight, Astotin Lake, Elk Island National Park

We need telescope and binocular viewing volunteers: astronomy enthusiasts who love to talk (about astronomy/nature); hosts to direct people toward events on time; and a couple of people to give our volunteers-at-scopes a break.

Volunteer refreshments will be provided, but this year the adjacent golf course will be selling light dinner fare, beer, etc. and it is a nice place to relax. Chicki's Kitchen have very hospitable staff.

The theme this year will be 'The Disappearing Martian Wilderness' - just kidding - we still don't have the title, but Canada on Mars and the wilderness of stars and critters at the National Park are two worthy themes for talks and costumes at this year's celebration.

Costumes are always welcome at Elk Island. The animals have been spotted regularly changing into seasonably fashionable outerwear. Here are the facts: Beaver Hills Dark Sky Preserve Family Star Party **Sunday, August 31, 2008 3:00 p.m.-5:00 p.m. Astotin Lake, Elk Island National Park. Contact: Sherrilyn Jahrig (780) 455 9912 sj_starskip@hotmail.com** Dark Sky Preserve Coordinator, Royal Astronomical Society of Canada, Edmonton Centre

What happens:

- Ceremony welcoming Strathcona Wilderness Centre into the partnership with RASC, Parks Canada, and Alberta Parks.
- Astronomy: noon - midnight and beyond
- Children's activities
- Presentations: Warren Finlay, Orla Aaquist, Massimo Torri, Joan Galat, Matt Davis, David Roles are on the short-list; more TBA. All of last year's speakers are welcome, just contact me. Oh, and we need someone on Mars!

Why you should go:

It is absolutely awesome in any weather. Volunteers from RASC get in the gate free. Camping is available but you should book NOW to get a nice spot in the trees on the hill. It is a nice stop-over on the way back from Cypress Hills, or a good practice run for the Real Astronomer's Starfest at Black Nugget Lake!

There will be no moonlight merging with the hideous light domes on the horizon, so we will have better viewing of both natural starlight and the unnatural enemy.

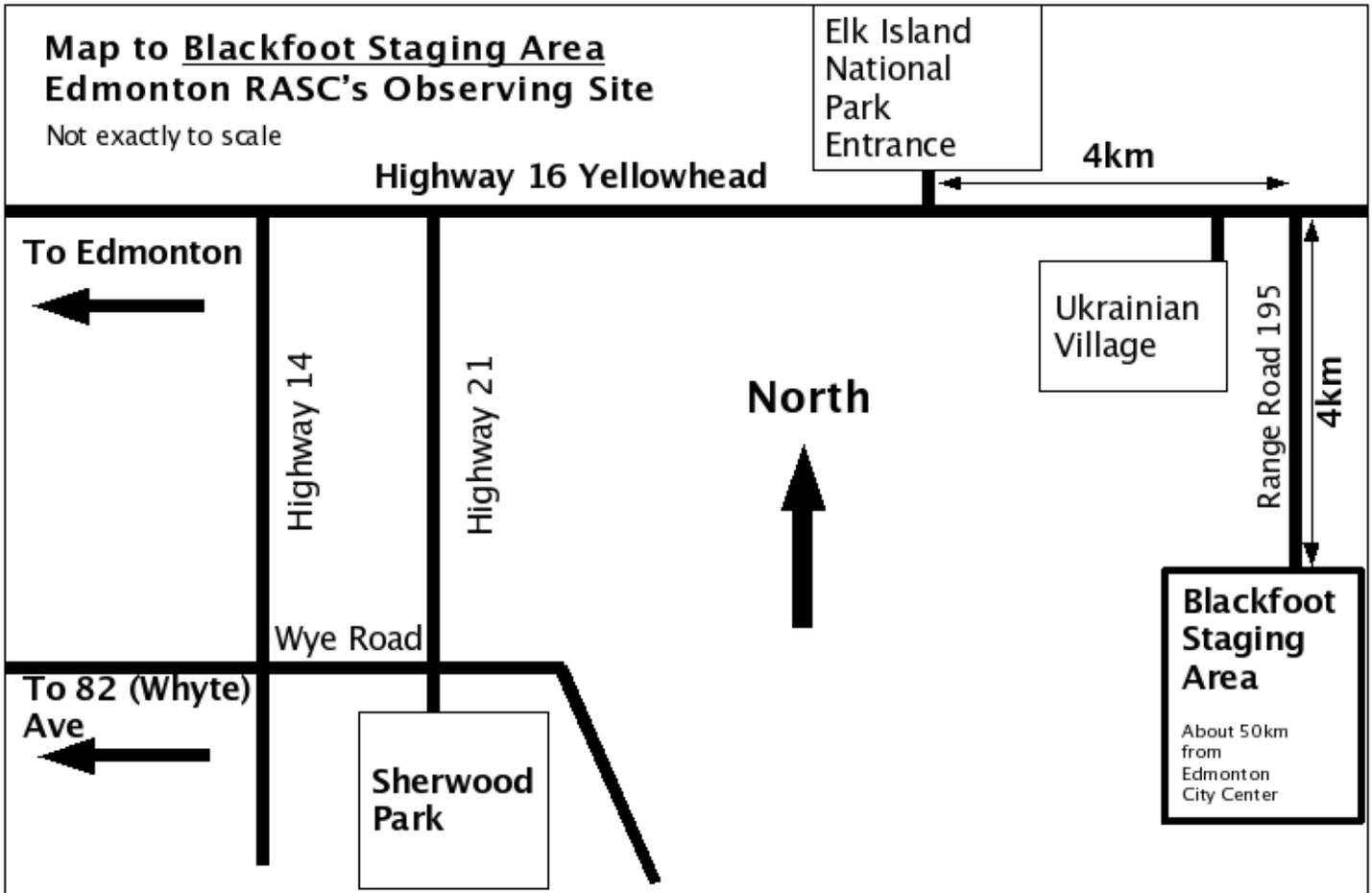
MONEY MOTIONS

To be voted on by the membership

- Sherry Campbell moved and Richard Vanderberg seconded that up to \$5,000 from the Casino Account be used to provide funding for the 2009 George Moore's Astronomy Workshop (to offset the cost of holding the workshop), subject to Gaming Commission approval. CARRIED.
- Dave Robinson moved and Mark MacDonald seconded that \$15,000 from the Casino Account be used to establish a feasibility and execution fund for a dark skies and light pollution exhibit, subject to finding suitable partners, subject to Gaming Commission approval. CARRIED.

For your information only

- Paul Campbell moved and Richard Vanderberg seconded that \$500 be used to provide sponsorship of Clear Sky Charts in Alberta to promote the Edmonton Centre and its activities. In the ensuing discussion, Mark MacDonald proposed a friendly amendment to add the phrase "from the General Fund" after the word "\$500". Paul Campbell and Richard Vanderberg were friendly to the amendment. The amended motion that \$500 from the General Fund be used to provide sponsorship of Clear Sky Charts in Alberta to promote the Edmonton Centre and its activities, was CARRIED.
- Paul Campbell moved and Mark MacDonald seconded that up to \$1,500 from the Casino Account be used to purchase educational supplies and books for Riverdale School in support of their sky science education, subject to Gaming Commission approval. In the ensuing discussion, Mark MacDonald proposed a friendly amendment to change "Casino Account" to "General Fund" and to strike the phrase "subject to Gaming Commission approval". Paul Campbell was friendly to the amendment. The amended motion that up to \$1,500 from the General Fund be used to purchase educational supplies and books for Riverdale School in support of their sky science education, was CARRIED.



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