

STARDUST

Newsletter of the Royal Astronomical Society of Canada
Edmonton Centre



May 2007

Volume 52 Issue 9



RASC Edmonton's Public Education Director Orla Aaquist (center) stands behind one of the four telescopes he brought to Earth Day at Hawrelak Park on April 22. The telescopes were supplied courtesy of Grant MacEwan College.

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RASC Edmonton Centre Contact Information

Council Positions	
President	Krista Stefan
Past-president	Orla Aaquist
Vice-president	Sherry Campbell
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Treasurer	Mark MacDonald
Co-National Council Rep	Roy Ramdeen
Co-National Council Rep	VACANT
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Fund Raising Coordinator	Franklin Loehde
Councillor	Bruce McCurdy
Councillor	Andrew Soon
Councillor	Sheldon Helbert
Councillor	Harris Christian
Councillor	Ross Sinclair
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Observers' Group Director	Paul Campbell
Membership Secretary	Massimo Torri
New Member Advisor	Pat Abbott
Appointed Officers	
Editor	Michael Ward
Web Site Coordinator	Howard Gibbins
Library Coordinator	Roxy Welter
Equipment Coordinator	Bob Jahrig
Other Positions	
George Moores Workshop Coordinator	Sherry Campbell
Light Pollution Abatement Chair	Bruce McCurdy
Scope Rentals	Roy Ramdeen
Scope Rentals - backup	VACANT
Speaker Coordinator	to be confirmed
Librarian (backup)	Vicki Huntsman
Observatory Planning Committee Chair (OPC)	Paul Campbell
Outreach Coordinator (OrC)	Dave Robinson
Deck Activities Coordinator (DAC)	Cornelia Blunck
Astronomy Days Coordinator (ADC)	VACANT
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Social Director	Dave Cleary
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Archive Liaison	VACANT
Dark Sky Preserve Coordinator	Sherrilyn Jahrig

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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 MSOffice 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.

Upcoming Events, Meetings, Deadlines, Announcements

Regular Meetings and Events

May 14	7:30	Regular Meeting
May 25		Relay for Life
Jun 11	7:30	Regular Meeting
Jun 28 - Jul 1		General Assembly (Calgary), AAVSO, ALPO
Jul 1		Canada Day
Jul 22		Sunday in the City
Sep 10	7:30	Regular Meeting
Oct 15	7:30	expenditure proposal deadline
Nov 12	7:30	Regular Meeting
Dec 10	7:30	Regular Meeting

Council Meetings

May 28	7:15	
Sep 24	7:30	
Oct 29	7:30	1 st pass at proposals
Nov 26	7:30	2 nd pass at proposals

Observing Schedule

Jun 9-10	Sep 14-15	Oct 12-13	Nov 9-10	Dec 7-8
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Guest Speaker for June 11 regular meeting:

Speaker: **Randall Shelaga**, C.E.T., Manager, Airworthiness Quality & Airworthiness L-3 Communications, SPAR Aerospace Limited
Title: Mars Desert Research Station

Randall Shelaga is a member of the Edmonton Centre and a member of the Mars Society Canada. He recently participated as the Field Engineer on the Mars Society Canada (MSC)/Mars Expedition Research Council (MERC) Expedition Three (ExThree). ExThree was a fifteen-day simulated Mars Research Mission at the Mars Desert Research Station (MDRS) in Utah. Previously (late 2004), he participated in an MSC/MERC Training Expedition (ExAlpha) at the same facility. In his talk to our Centre on June 11, Randy will describe the work being done by third party organizations (Mars Society, Universities and Corporations) at this facility in preparation for our inevitable voyage to Mars.

Telus World of Science lecture, May 26 at 2:00 pm

Speaker: **Dr. Alan Hildebrand**, Associate Professor in the Department of Geology and Geophysics of the University of Calgary where he holds a Canada Research Chair in Planetary Science.
Title: Extinction From Asteroid Impacts: Past and Future

How did an asteroid's impact cause the mass extinction of dinosaurs 65 million years ago?

CALL FOR VOLUNTEERS - Volunteers are needed to help out at the following events:

- **Relay for Life:** **Friday 25 May**
- **Canada Day:** **Sunday 1 July**
- **Sunday in the City:** **Sunday 22 July**

Contact Orla Aaquist (see p. 2, above)

Money Motions and Expenditure Proposals from the council meeting of 23 April 2007

As per article 11.08(3) "Written notification of such proposed Centre expenditures and of the vote required shall be sent to each Centre member not less than twenty-eight (28) days prior to the Regular Meeting at which the announced vote will be taken." Consider the
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following to be said notice.

At the Mar 26, 2007 Council Meeting, the following motions were passed:

Luca Vanzella moved and Franklin Loehde seconded that Council adopt the following procedure to change the Centre's spending limits. The expenditure limits defined in Article 11.05 of the by-laws may be changed only by ordinary resolution of the Council, followed by not less than 21 days' notice specifying the intention to propose the resolution to the membership, and by ordinary resolution of the Centre. CARRIED.

Bruce McCurdy moved and Howard Gibbins seconded that the limit for Minor Expenditures as defined in Article 11.05(1)(a) of the by-laws be changed from \$35 to \$150. CARRIED.

At the Jun 11, 2007 Regular Meeting, the following motion will be put to the membership for approval:

That the limit for Minor Expenditures as defined in Article 11.05(1)(a) of the by-laws be changed from \$35 to \$150.

At the April 23rd Council Meeting, the following money motions for proposals were carried.

Motions within council spending limits (for information only):

1. Moved that up to \$750 from the Casino Fund be used to purchase a portable equatorial mount and a mounting bracket for the Coronado Solar Telescope, subject to Gaming Commission approval.

2. Moved that up to \$500 from the Casino Fund be used to purchase prepaid remote telescope access for a pilot trial with Alberta K12 schools, subject to Gaming Commission approval.

Motions greater than council spending limits (to be voted on by the membership at the June 11th regular meeting):

1. Moved that \$5000 from the Casino Fund be used to defray the cost of students attending or the cost of speakers presenting at the University of Alberta Space Exploration Symposium to be held in 2007, subject to Gaming Commission approval.

2. Moved that \$12,000 from the Casino Fund be used to establish an endowment at the University of Alberta for an Undergraduate or Graduate Scholarship in Astrophysics, subject to Gaming Commission approval.

3. Moved that up to \$10,000 from the Casino Fund be used to purchase a self-guiding spectrograph and CCD camera with accessories for the Observing Deck, subject to Gaming Commission approval.

Copies of the expenditure proposals for the above motions may be found on the Centre web site at:

http://www.edmontonrasc.com/download/Proposals2007_summary.pdf

President's Report by *Krista Stefan*

Now that the mutiny at the April meeting was successful, the pirates have more or less returned to their ship and the business of the Edmonton Centre may now return something slightly more normal. It has been suggested, though, that we continue with the tradition of having votes conducted with a verbal aye/nay rather than a show of hands - at least that might wake up some of those that like to snooze in the comfy chairs during meetings.

April was a busy month for some of our members. Despite the even cloudier than usual skies, the Astronomy Day and Earth Day activities went well. I'd like to thank all the people who helped out with the events, including those who used their own initiative to organize something in their own community. Our Public Education Director, Orla Aaquist, has a complete report published in this issue of Stardust.

Council was also busy in April with considering the next round of expenditure proposals. There were five proposals approved by council, two of which fall within the council spending limit and three that will be voted on by the general

membership at the June 11th meeting. Brief descriptions of the proposals approved and the money motions to be considered at the June meeting are also published in this newsletter.

Looking to the near future, we will be having guest speakers at both the May and June meetings. This month we welcome Gil Self, President of the Prince George Centre of the RASC, with his talk "The Little RASC Centre that Could". At the June 11th meeting we will be pleased to hear a talk by Randall Shelaga from SPAR Aerospace Ltd. titled "Mars Desert Research Station". The next Member's Night will be at the September 10th meeting.

The Deck Volunteer Appreciation Party is coming up, with that reminder and with the recent efforts put in by all our volunteers I would like to take this opportunity to express my thanks and appreciation for all who contribute their time, effort, resources, and money to the Centre. I don't think I can express this often or strongly enough. Without you, the Edmonton Centre could not continue to exist. THANKS!

New Members Report by Pat Abbott

James Jensen does not yet have a telescope but has two 8" mirror blanks and all the necessary grits etc to make a newtonian telescope. He plans on making a truss tube to keep the weight down for portability.

Eric Solomonson has got a 10" Skywatcher equatorial and plans on getting a guidescope for it as he is interested in

photography. His chief interest is in deep sky objects.

John Turlione has a Skywatcher 120 refractor. He would like to attend the meetings but his work schedule is a problem.

To all our new members: Cead mile failte (a hundred thousand welcomes)

Crescents and Full Moon Photo Ops by Alister Ling

Staying connected to the sky makes one's life all the more relaxing and interesting. It's surprisingly easy to do this: plan to step outside to see a beautiful twilight with a crescent Moon filled with earth shine, or watch a nearly full Moon rise (or set) over a city skyline.

What a pity it was cloudy April 17th. A few of us were really looking forward to see a 16 hour young Moon. We have to wait until next February before we get a chance at a 21.5 hour crescent. The upcoming old crescent is a bit early on the 13th:

yyyy/mm/dd/hh:mn:s	Sol Az	Alt	Lunar Az	Alt	Illum %	Elong
2007 05 13 04 31 10		-7.5°	88.8°	2.8°	20-	48.0°:

Don't miss the lovely evening conjunction with Mercury a few days after:

2007 05 17 22 30 00		-7.5°	306°	7.5°	20-	48.0°:
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Mercury is a bright -0.7 mag floating 3 degrees directly beneath the 33 hour old crescent.. Two evenings later the Moon pairs up with Venus on May 19th Saturday evening 22:20 MDT, only 1.5 degrees above the dazzling goddess.

Near-full Moon rise/sets:

yyyy/mm/dd/hh:mn:s	Sol Az	Alt	Lunar Az	Alt	Illum %	Elong
2007 05 30 21 35			138	1.0	100	

Blotting Out Starlight: Upcoming Edmonton Lunar Occultations by Alister Ling

Saturn Succumbs to Selene!

The event of the month is without doubt a grazing occultation of Saturn by the first quarter Moon at 11:52am Tuesday May 22 (just before noon!). You'll need an unobstructed horizon to the north east because it begins when Saturn is only 2-3 degrees above the horizon!

Other Lunar Events

Staring through the eyepiece, you watch the Moon slowly approach a star. In the blink of an eye the diamond chip disappears with a surprising suddenness. You've just witnessed an occultation, when one body passes in front of another.

There are two grazes, requiring 10-inch scopes and a bit of travel, on the evenings of the 18th and 20th. For details, see <http://www3.telus.net/public/aling/grazes/edmontongrazes.html>

CA or cusp angle, tells you how much of an angle relative to the cusp the event will take place. See the diagram. A cusp angle of 90 degrees is smack in the middle of the dark limb. A negative cusp angle means an event on the bright limb.

D Disappearance (easy); d disappearance (tough)

R Reappearance (easy); r reappearance (tough)

Converted to MDT. The first event is a double star! Mag 5.8 and 7.9, 2.1" separation:

day	Time	Mag	CA
07 05 24	0h:37:57	D 5.6	65N
07 05 26	22h:32:19	D 4.7	17S

In any month, there are several dozen occultations, but most are not of interest for the casual observer. An abridged list (bright and easy and before 1 am) for events through May can be found at the above link.

Good observing!

Mostly Fortuna Lately by TOE (Team Occultation Edmonton)

By timing how long a star disappears when an asteroid moves in front of it, astronomers get an idea of the space rock's size. When a group of observers spreads out across the path of the shadow, we collectively reveal its shape.

On the evening of April 12, locals Alister Ling, Mike Noble, Mike Hoskinson, and Paul Campbell teamed up with amateurs

from Virginia, Wisconsin, and Minnesota to measure the profile of asteroid 19 Fortuna. It's a continental team sport!

Because Paul's lower precision visual timing fell across the middle of the asteroid and was surrounded by high precision video timings, his observation was discarded for the purpose of creating the shape. But had the path shifted another 30km south, the

northern pair would have recorded misses and Paul would have still got a hit, making it a key point. In March, I was the only station that got a result, and it was a miss – had a visual observer seen a positive, we would at the very minimum have known which way the path shifted – instead we know nothing. In short: visual observations are much better than zero high precision ones!

Mike Noble, who was positioned half way between Mike H. and Alister earns a “valiant attempt” award as he was equipment Murphied:

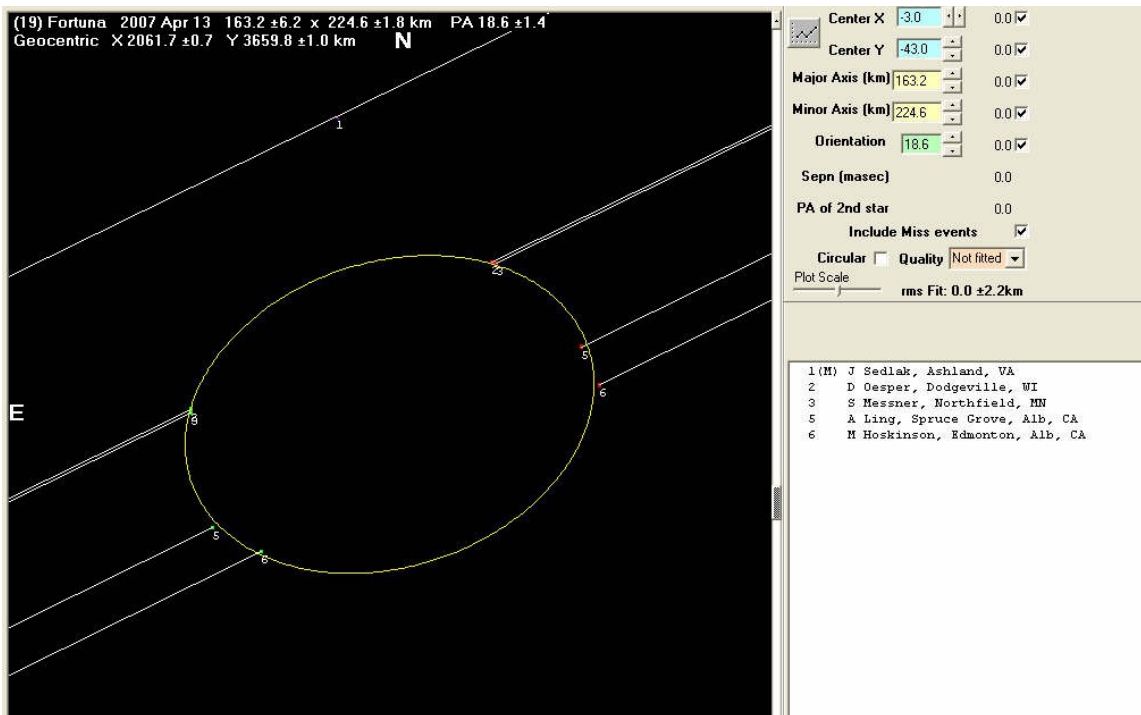
“I proceeded to lose about 20 minutes trying to get the CGE mount to start the initial alignment procedure correctly. Performed a Goto to the RA & Dec of the star and found the field within a 30 seconds. Great. Set up the electronics but I couldn't see the asteroid or star. Checked the field in my 4" refractor and it was bang on. Finally realized I still had the diagonal in the C14's image train. Removed the diagonal and played with the focus some more but couldn't find the focus. I moved to Spica.

Focus was way-out. I perform the goto back to the field and still no stars in the video monitor. What the bleep?! I go to Arcturus this time and focus is out again. It's now 11:18. I've missed the event, aaarrrrrrggggggggghhhhhhhhhhhhh!”

Next time, Mike.

Summer is a tough time for shadow chasing. As we all know, the night is shorter, which by itself reduces the number of possibilities, but the worst of it means that events typically happen between 11:30pm and 2:30am. Adding to the challenge is that most events occur low in the sky. Asteroids cluster around the ecliptic, and in summer this means Sagittarius/Ophiuchus.

Next up (for brighter events) is on August 21st at 5:40am when asteroid 84 Klio blocks out an 11.2 magnitude star in a path over 80km wide.



The Planets by Murray Paulson

Spring is unfolding on us in fits and starts, but the twilight advances like the tides. Fortunately the Moon and planets do not suffer too much from this light pollution. As May comes in, Venus dominates the early evening sky and royal Saturn is near center stage.

Mercury starts off the month directly behind the sun, and swings out to an evening apparition over the course of the month. This will be a good opportunity to see Mercury as it will rise high above the ecliptic and sets near local midnight on the eve of its greatest eastern elongation on June 2nd. It will sit 23.37 degrees from the sun at this time, just above the horns of Taurus the bull. Mercury will shine at Magnitude 0.1 and show you a 8.3” fat crescent in the eyepiece. Dichotomy occurs 5 days earlier on May 28th. At that time you can see Mercury’s 7.25” half disk. Well worth the effort so get out and see it!

Early in the month, Venus shines at magnitude -4.1 and

exhibits a 17.5” very gibbous disk. I like tracking the spring apparitions of Venus and seeing just how far they can stretch out in to the late evening sky. On May 19, Venus sets at 1:28 am, well after local midnight. Stay up and celebrate an inner planet’s late night presence. Earlier that evening a thin crescent moon passes Venus in the twilight. By early June Venus has brightened to an incredible -4.3 and the disk will swell to 23.3”. Venus sits 2 degrees above the ecliptic, and sets after 1:00 am On June 9th, Venus is at greatest eastern elongation, 45.39 degrees from the sun. For those of you who ventured out to watch the transit of Venus 3 years ago, this June date marks an extreme distance from the sun. Raise a glass in fond memory.

Mars starts out the month near the eastern border of the constellation of Aquarius and shines at magnitude 0.9. The eyepiece will reward you with a view of its 5.4” gibbous disk. Not big enough to see much, but the disk is growing in size, and by

early June it will have grown to 5.8". 6" is where ALPO considers it worth observing for reports and I will bet you that people are imaging it already. Mars moves into Pisces early in May on its march up the ecliptic, but remains a morning object for the meantime.

Another morning object is Jupiter, a brilliant counterpoise on the other side of the sun from Venus. At the beginning of the month, it shines at magnitude -2.5 and in the eyepiece will show you a 44" disk. By early June it will brighten slightly to magnitude -2.6 and the disk will grow to 45.6". Jupiter crosses the meridian at just after 2 am DST at the end of May and will culminate 14 1/2

degrees above the horizon. I will have to go out to find a good horizon for viewing it in early June.

Saturn transits the meridian before the sun sets, so we are in the last act of the ring world's presence in our evening sky. As May comes in, Saturn shines at Magnitude 0.4 and its disk subtends 18.3". The plane of the rings has lifted slightly to 15.3 degrees since back in January when it was 13.0 degrees. By the end of this month, Saturn will shine at magnitude 0.5 and the disk will shrink slightly to 17.37". It will set just before 2 am, 4 hours after sunset and 2 hours after it gets dark enough to see it.

Astronomy Day 2007 by Orla Aaquist

This is my first time organizing astronomy day events, and I clearly took a few things for granted, one being the lack of cooperation from the weather. Both Friday and Saturday were a total write-off as far as observing was concerned, so there were no sidewalk observing sessions. The Astronomy Day venues inside the Telus World of Science included our light pollution display from MEC, an RASC information display, the Edmonton Rocketry Club display table, a kid's activity table, and four public presentations on the Syncrude stage. During the afternoon, TWOSE had hundreds of visitors, and Bruce estimated that a couple of hundred stopped by our displays to chat with us. There were so many visitors that we had to close the kids activity table at 3:30 PM because we ran out of cut-out planispheres and Canadian Space Agency solar system jig-saw puzzles. TWOSE volunteers manned the kids table, and Bruce, Orla, and Dave (Robinson) manned our information booths. During the afternoon David Roles presented a tour through the solar system, Massimo talked about buying telescopes, and Wayne presented a more advanced presentation on astrophotography. In the evening, Bob and Orla entertained an audience of about 15 sleep-over kids with astronomy songs and slides.

As part of astronomy day advertising, the following noticed appeared in the Edmonton Journal under the weekend column 8 1/2 **THINGS TO DO today:**

Hey everyone, it's International Astronomy Day, and what better way to celebrate than at Astronomy Days 2007 at the Telus World of Science! There are displays and interactive exhibits, a musical collaboration between a singer/songwriter and an astrophysicist (brilliant!) at 1 PM, informative sessions on photography and buying a telescope, and, of course, telescopes so you can have an astronomical look-see at what's going on with the cosmos (weather permitting) in and around the Observatory.

Unfortunately, the 1 PM time had to be changed at the last minute, so the huge crowd drawn to David's talk probably expected David to play a guitar as part of his presentation.

New to Astronomy Day this year was a presentation by Massimo Torri and Pat Earl (new member) to 140 elementary school kids and parents at the Velma Baker School in south east Edmonton. Because of the clouds, they presented an in-door show on Saturday, and held the star party a week later. Here is Massimo's Astronomy Day report:

My two kids go to Velma E. Baker School, and I always wanted to get involved in some form of astronomy-based public education, so I thought that Astronomy Day would be the perfect occasion to do something like that. I prepared a 2-page document explaining what Astronomy Day is, its significance, and how K-6 students could benefit from it. The response was

very enthusiastic and, although I originally meant to give a 30 minute talk to my son's grade 4 class, the school suggested that I should expand my audience to four grade 6 and two grade 4 classes, for a total of about 150 students and teachers. At that point Pat [Earl] joined the effort, and he had some great ideas to offer.

Eventually we decided to come up with the following format: a PowerPoint presentation entitled "Extraordinary Universe" would take the audience on a journey starting from our nearest neighbour, the Moon, hopping across a couple of interesting places in the Solar System, diving into the Orion nebula to understand how stars are born, and coming back to our Sun to show how stars, like the Sun, die. In order to make the presentation more interactive, we brought in our two telescopes and allow students to play with Starry Night in order to locate celestial objects.

Before the presentation, we asked the students to draw a number from a basket, and when it was time to talk about a new object we extracted a number at random and call up the lucky student to the laptop. There we assisted the student to locate the object in the sky using Starry Nigh, and once located, we asked the student to pick up the hand controller of a scope and move it around. Meanwhile I would pretend to look into the finder and say, "Stop! You got it!", and ask the student to zoom in on the target. At that point we would tell something extraordinary about the target.

Without any doubt, the part of the presentation that caught the kids' imagination was the Sun exhausting its hydrogen reserve and turning into a Red Giant. To illustrate what the Sun would look like when that happens, I put a picture of a nice sunset in the presentation. After contemplating the apparent size of the Sun, a click on the mouse would display an enlarged photo taken by SOHO filling almost the entire sky. Probably not very scientific, but I tried to keep the correct proportions assuming that the Sun would swallow Venus. A question and answer session at the end clearly showed that the Red Giant story was hot!

We also built a scaled down version of the solar system by asking ten students to act as the Sun and the planets, pretending that the Sun was a marble of 1 cm in diameter. Once Pluto was in place 42m away, I asked who wanted to be Proxima Centauri, the closest star. One girl decided to fill that role, but when I told her to go the airport and land in Calgary she wasn't sure I was serious (I was!).

At the end, we gave away certificates to the students who attended the presentation. Pat and I got a nice pen and a card from the teachers, a lot of thanks, and a request to "please come back again!"

We were supposed to complement the event with an actual observing session that very night, but the weather didn't cooperate. Since we had done quite a lot of campaigning to get the largest possible audience, we decided to postpone the observing session by one week (Friday, April 27). A second certificate will be handed out to the students who show up for this observing session.

A series of questions that we could not answer was given to me before leaving. Here are some (verbatim):

- 1. Have you ever been in space?*
- 2. Has one of your Dad's friends travelled to space?*
- 3. Will the Sun be a white dwarf forever?*
- 4. Will the spaceship go out of gas?*
- 5. Are the planets closest to the Sun explode or be destroyed?*
- 6. How hot is the Red Giant's core and what if they made a SPF (Solar Protection Factor) of 10000000000000000000000?*

We certainly had great time and we are planning to do this at other schools.

Observer's Report by Paul Campbell

Rain, rain go away. Come again another decade. I don't know about you but I'm getting tired of cloudy new moon weekends. For me, my work schedule wouldn't let me go observing but I hear one Sunday night it was clear and that Larry Wood and Sharon Tansey spent a night at Blackfoot. I never got a full report on their activities but I can only presume they had a good night observing galaxies and other objects.

Has anyone seen Comet Lovejoy yet? I know Mike Noble has photographed it. I saw some of Mike photographs at the observers meeting and I must say this about them. They are awesome. His photograph of M51 was truly incredible. I'm going to have to have Mike show off some of his work during one of our meetings. Great work Mike!

Going to these observers meetings that Larry Wood has so kindly arranged is a great way to see what other astronomers are doing. I recommend that you come if you are interested. For the most part it's held at Boston Pizza on 105th Ave and 124th Street on a full moon Monday. Everyone is welcome.

In my humble opinion the most exciting thing I've heard about observing this past month was the occultation of the asteroid Fortuna. Michael Hoskinson and the team of Bruce McCurdy and Alister Ling headed west of the city for this one. I remained in the

Now that's what Astronomy Day is all about, folks.

On Sunday, April 22, Bruce, Sharon, and I set up our display boards at Hawrelak Park in celebration of Earth Day. We had lots of visitors in our tent. Bruce estimates at least 1000 people, but I am a little more pessimistic: I would say about half that. Regardless, Sharon and I were pretty busy showing people four telescopes I brought down from MacEwan's physics laboratory: a Celestar 8, an Astroscan, 15 x 70 binoculars, and a 102 mm Sky Watcher refractor. Our efforts demonstrate that people flock to telescopes regardless of the target, which at Hawrelak consisted of the main stage performers and tree tops. The same thing happened at TWOSE on Saturday where I had the Astroscan; kids loved to look through the eyepiece, even if the image was out of focus. It is definitely something to keep in mind at other venues where we are asked to set up a 'manned' display, such as Relay for Life or Sunday in the City.

Bruce reports that on Sunday evening we had a regular Observatory session as well as one impromptu sidewalk astronomy session under clear skies and great seeing, a fitting conclusion to a generally successful weekend.

city as the asteroid occultation path did include all of the city of Edmonton as well as St. Albert.

My observation was not very successful. I made the mistake of placing the voice recorder too close to the WWV radio I had. Therefore I could not hear when the disappearance happened. All I heard was the reappearance event. I've had a lot of Murphy's law type problems doing these observations and now I think I'm getting better. After all I'm up to half an observation now. One must use baby steps.

Michael, Bruce and Alister had much better success and got some scientifically useful data. That data was sent off to the International Occultation and Timing Association (IOTA).

With the addition of a few observers in the United States as well as my data thrown out IOTA was able to generate this graph. Congratulations to Michael, Alister and Bruce.

By the time this article gets to the meeting we will have had another new moon observing session at Blackfoot. I really am hoping it clears off, as I'm getting desperate. May is usually our last kick at the cat for astronomical twilight. After this it's NLC time. Anyway keep on observing and please send me your observing reports. I need something to write about.

Light Pollution Abatement Committee Report by Bruce McCurdy (chair)

Environmental issues dominate the news these days. One such issue of particular concern to astronomers is light pollution. Urbanites have become so accustomed to artificial lights as a necessary and benign contributor to modern society, that the problem of wasted light is largely "hidden in plain view." While nobody is seriously opposed to "smart lighting" where and when it is needed, a substantial fraction of generated light is wasted for no better reason than poor planning and ill-conceived lighting fixtures. We naturalists of the night have an opportunity if not an obligation to educate and inform all sectors of society. Not only is the night sky our own particular passion, it is *everybody's* birthright, and a timeless source of wonder and inspiration for our future scientists, artists, and poets.

The issue is much larger than "just" astronomical. As Chair of the Edmonton Centre's Light Pollution Abatement Committee, my approach is not to hide my special interest – as an astronomer I mourn the gradual degradation of the night sky, one of humanity's greatest natural treasures. But then I expand on that – as a concerned citizen, I am opposed to the needless burning of fossil fuels and creation of greenhouse gases; as a taxpayer, I resent the cost of sending light up into the sky; as a driver, I fear the glare in my eyes that may cost me a moment of reaction time at the worst possible split-second; and so on.

Given the "win-win-win" solutions to this problem, it's important to form partnerships with other potential winners. In Edmonton Centre we have formed a solid relationship with

national and provincial parks. An important result was the recent declaration of Beaver Hills Dark Sky Preserve (BHDSPP), which formally protects in perpetuity 293 km² surrounding and including our long-standing observing site at the Blackfoot Staging Area.

Our goal as astronomers was not merely to create a “Sky Zoo”. We are using our new status as stakeholders in the area to connect with surrounding communities and promote smart lighting initiatives.

In recent months we have acted on this concept. Important progress has been made with the Beaver Hills Initiative, a five-county, multi-disciplinary group whose mission “values the region for its natural beauty, quality of life, and supports co-operative efforts to sustain quality of water, land, air, natural resources and community development.” The region in question is the Cooking Lake Moraine, an area of some 1600 km² that in turn completely surrounds, and includes, BHDSPP.

In February we were given the opportunity to speak to the BHI board, which consists of representatives of several levels of government as well as industry and environmental non-government organizations. Speaking on behalf of RASC were Sherrilyn Jahrig, Edmonton Centre’s first DSP Coordinator; Dave Robinson, our Outreach Coordinator and general lighting expert; and me, Light Pollution Guy. It seemed we made a very positive impression. We subsequently hosted a table at BHI’s annual information session, and RASC may soon be formally added to the list of stakeholders in the Initiative. For certain we have raised awareness of artificial lighting issues in Strathcona County, and have been asked for technical input on more than one occasion from this expanding group of contacts. This is where the technical expertise of heavy hitters like Dave Robinson will be called into action.

Within the city our objectives are similar. We have already made promising initial contacts with Telus World of Science – Edmonton and the Valley Zoo, whose own mandates include environmental leadership and public education. I attended a couple of open houses hosted by the River Valley Alliance who have proposed a future mega park stretching from Devon to Fort Saskatchewan. In May I will be attending the Edmonton session of the public consultation on the provincial Land-Use Framework. Urban sprawl may be inevitable, but it is critical that sound lighting practices be a central plank to future development. Much better – and cheaper – that the right lights are installed the first time. This is first and foremost an awareness issue. We will try to convince town planners and private developers that smart lighting will be “The Look” of environmentally sensitive communities of the future – and who doesn’t want to live in one of those?

An important awareness tool has been a long-term light pollution display at Mountain Equipment Co-op, whose clients/members are outdoor-oriented demographic particularly sensitive to environmental issues. The response has been

tremendous, and we have constantly had to restock the display with brochures promoting responsible lighting (courtesy of our friends in Calgary Centre), the International Dark Sky Association, and BHDSPP.

In the process of publicizing the issue, we are also raising awareness in astronomy. Since the declaration of BHDSPP, our co-signatories Parks Canada and Alberta Parks & Protected Areas have both taken significant steps to include astronomy in their interpretive programming, and have included us in the planning and delivery process. In March Sherrilyn was invited to give a keynote presentation on DSPs at the parks forum “Benefits Beyond Boundaries”, held in Canmore.

Besides the above activities RASC has also hosted a light pollution table at International Astronomy Day, Earth Day, and Night of Artists. Thanks to this busy schedule my LPAC focus to this point has been mostly outreach and very little at the committee level, but in the long run the success of this effort depends on membership participation. RASC members are involved in all sorts of initiatives from volunteer boards to community leagues to condo associations. I ask for you all to be aware of LP basics, and to be sensitive to opportunities to present smart lighting alternatives. Once you’ve established first contact, by all means put people in touch with me, ideally by email at lightpollution@edmontonrasc.com.

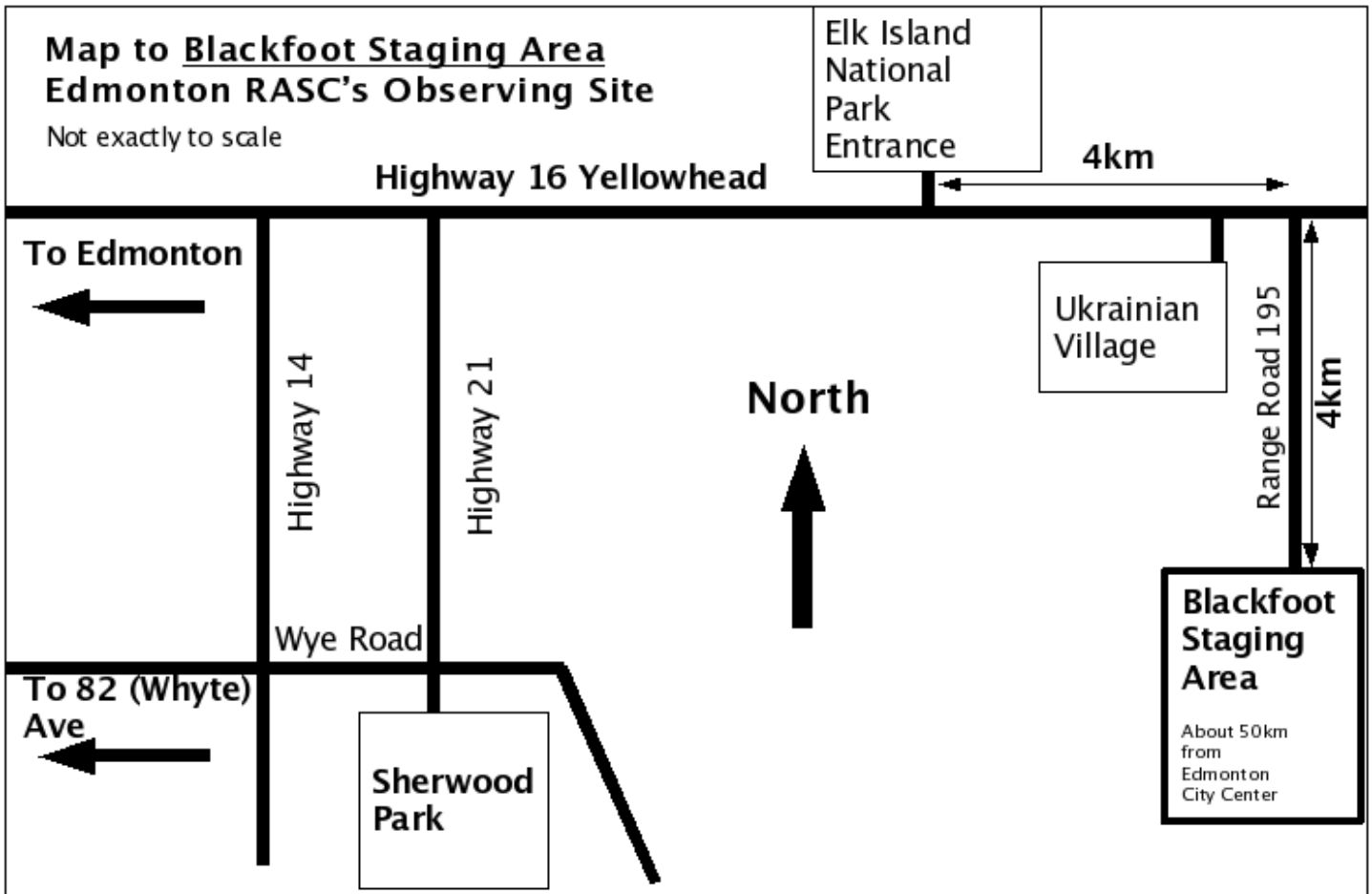
For those who wish to become more formally involved, I invite you to join in the still-under-construction LPAC committee. The object of this group will continue to be community outreach rather than internal navel gazing, with a goal of conducting most committee business by email rather than through frequent meetings. Please contact me if interested. Our first order of business will be to develop a snappier acronym; I’m currently leaning towards the Smart Lighting Action Plan.

We also need to nourish partnerships within the astronomical community, with other Centres and other astronomy clubs. RASC is a national organization with members and resources from coast to coast. As the flurry of activity on the national LPA discussion list has shown, we have much to learn from each other. The imperative remains to “think global, act local”.

Now is an ideal time to be taking action, when public awareness of environmental issues is high. A recent Canada West Foundation survey confirms a significant majority of urban Canadians care deeply about these issues, and there is increasing pressure on politicians to pay more than lip service to the matter. We must ensure that light pollution is recognized for the wastrel it is and included prominently in the public discussion.

At its core, this is a commonsense issue of controlling waste by shining lights only where, and when, they are needed. As the sage Leonard Cohen wrote in *Sisters of Mercy*: “Don’t turn on the light, you can find their address by the moon.”

Adapted from an editorial written for the upcoming issue (June 2007) of the Journal of the RASC.



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