

# STARBUST

Newsletter of the  
**Royal Astronomical Society of Canada**  
World Headquarters, Edmonton AB



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Volume 56 Issue 8



*Some people were astonished to see that the sky has reversed recently, although the majority of Earth's residents couldn't care less.*

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Telephone numbers should be preceded by **780** unless otherwise indicated.

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<b>Stardust</b>	Articles for Stardust may be submitted by email to <a href="mailto:mward@interbaun.com">mward@interbaun.com</a> . Submission deadline is the last day of the previous month (e.g. for the May issue submit by 30 Apr). Submit in any standard document format (MSOffice, OpenOffice, AbiWord, plain text). TimesNewRoman 10pt single-spaced is preferred. Don't bother with fancy formatting, odd spacing, strange fonts, etc.; it will only be discarded. Graphics (GIF or JPG please) may be submitted as separate files, and clearly identified.

**Edmonton Area Astronomy Discussions**

[astro@mailman.srv.ualberta.ca](mailto:astro@mailman.srv.ualberta.ca)

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## Upcoming Events, Meetings, Deadlines, Announcements

### MEETINGS 2010

	General	Council	Observers	NewMoon	FullMoon	Blackfoot
Jan	11	25	4	15	30	15-16
Feb	8	22	1	13	28	12-13
Mar	8	22	1, 29	15	29	12-13
Apr	12	26	28	14	28	16-17
May	10	24	24	13	27	14-15
Jun	14	28	28	12	26	
Jul			26	11	25	
Aug			23	9	24	6-7
Sep	13	27	20	8	23	3-4
Oct	18	25	20	7	22	8-9
Nov	8	22	17	6	21	5-6
Dec	13		20	5	21	3-4

### MEETING LOCATIONS 2010

**Regular General Meetings** are at 7:30pm in Telus World of Science, 11211 – 142 St. *follow the signs, from the main entrance*

**Council Meetings** are at 7:15 pm in the ATA Building, 142 St & 111 Ave. *follow the signs, from the main entrance*

**Observers Meetings:** *location varies*

*This is real – ed.*



## The 2010 Star-B-Q Public event - Open to Everyone!

Eccles Ranch Observatory  
Caroline, Alberta  
July 9-11, 2010

**Astronomical fun for the whole family!**

The Eccles Ranch Observatory site is just north of Caroline in beautiful west-central Alberta. We look forward to you joining us for some good times and great viewing under wonderfully dark skies!

<http://www.calgary.rasc.ca/starbq.htm>

[abstarbq@shaw.ca](mailto:abstarbq@shaw.ca)

### The Planets by Murray Paulson [not a joke – ed.]

**Mercury** starts off this month, on the 8<sup>th</sup>, at Greatest Eastern elongation. Look in the south west after sunset with binoculars. The ecliptic is very steep and makes this one of the better apparitions of the season. Mercury sets 2 hours after the sun. At this time it shines at magnitude 0.0 and shows a 7.7" fat crescent. It sits 19.35 degrees from the sun at this time. It is approaching earth, and will expand over the following week to 9.4", but will fade to magnitude 1.5. It rapidly disappears as it swoops in to the April 28<sup>th</sup> Inferior conjunction. At the time it will pass just 42' from the sun's edge.

This month **Venus** shines at magnitude -3.9 and flirts with Mercury in the evening twilight for the first 2 weeks of the month. In the eyepiece you can see its fat 10.7" gibbous disk. It sits at an elongation of 21 degrees from the sun. Over the month it will continue its slow climb up the ecliptic and by the end of the month, it will increase in size slightly to 11.3" but it remains at magnitude -3.9. By month's end Venus will have moved to 26.6 degrees elongation from the sun.

**Mars** looked good on International Astronomy Days and I managed to talk many of my guests into noticing the polar cap and some of the dark features on the planet's face. At the beginning of April, Mars presents a 8.7" gibbous disk and shines at magnitude 0.3. It has gotten much smaller, and now only major features are glimpsed. You need very high powers to make much out of it. The one thing I notice is that even though it gets small it still is bright and has good contrast between major features and the disk. Mars continues to shrink over the month, and by the month's end it shows a 7.3" 90% illuminated disk in the eyepiece. It now shines at magnitude 0.7.

**Jupiter** is in the morning twilight glare and due to the shallowness of the ecliptic on a spring morning, remains in the twilight glare over the month. By the month's end Jupiter sits only 9.5 degrees above the horizon at sunrise. It will be at the summer star parties that we will finally get a good glimpse at Jupiter.

**Saturn** looked like a ball on a stick on the nights of Astronomy days, and everybody loved it. The month starts off with the rings tipped up at only 2.5 degrees, and Saturn shines at magnitude 0.6. In the telescope you will see a 19.4" disk and an array of small moons about it. The moons orbital planes are very shallow like the rings, so you will see them in line with the rings.

The shallow angle of the rings will reduced their glare and make hunting the elusive inner moons much easier. By months end Saturn will fade slightly to magnitude 0.8 and the planets disk will reduce to 19.0". The rings will become more shallow at 1.9 degrees, with even shallower still in late May.

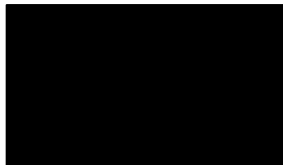
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### Exciting New Exoplanet Images by Trillian

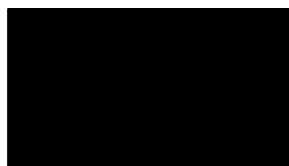
Recent advances in technology have led to some astounding discoveries as well as amazing imaging opportunities. In the 15 years since the first confirmed detection of an exoplanet, the technological ability to discover and observe these objects has exploded.

Now, for the first time exciting new images have been released, not of new exoplanets but of the night sky *from the surface* of two new exoplanets! These photos were produced using equipment and techniques recommended by an expert in amateur astroimaging, M. Ford Taurus (whose Earth name was chosen as to be suitably inconspicuous).

The first exoplanet visited was the legendary Magrathea, in the heart of the Horse Head Nebula. As the entire population lives beneath the surface of Magrathea and the planet does not have any satellites, there is absolutely no light pollution to mar the image. This image was taken over a 6 hour period centered around local midnight (the mid point between the time of sunset of the second sun and sunrise of the first sun) over several nights, with each frame having a 5 minute exposure. The view of the interior of the Horsehead Nebula is, as can be clearly seen in the image, stunning. A total of 500 frames were stacked to create each image.

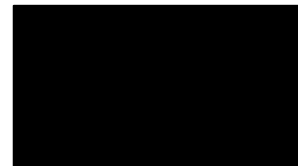


All-sky mosaic night view from Magrathea



0.5° field of the most interesting bit of the night sky of Magrathea

The second exoplanet visited was even more remarkable. Being the first aliens to land on the planet Krikkit in millennia allowed an untainted view (from a distance) of their customs and mythology. Again, these images were taken in a 6 hour time period around local midnight, and midnight was easier to determine in this case as Krikkit only has the one sun. It should be noted that the exact coordinates of the planet Krikkit is classified, with the only published location being "within a dust cloud". The exposures time for this image is much less than those at Magrathea due to the necessity to re-locate quickly precipitated by the extreme xenophobia of the native population. Note that again the light pollution was minimal due to the need to hide in the darkest spots possible to avoid notice by the locals. Each frame was a one-minute exposure, and a total of 100 frames were stacked for this image.



30° mosaic of the night sky from Krikkit

The photographer was able to "borrow" a 10", f/4 SCT as well as an 8" SCT pushed to f/2, with matching SBIG STL11000 cameras from Earth (before the Vogons began the work on the hyperspace bypass) and smuggle it aboard the good spaceship Heart of Gold. Eddie, the on-board computer, stacked the raw images as they were created with CCDStack v.1000000.42 and completed all of the image processing to give maximum enhancement. Eddie also handled the alignment and tracking of the telescopes in order to maintain rock-steady images with no blurring or trails.

Any galactic hitch hiker is encouraged to visit these planets to experience the darkest night skies in the known universe!

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### Telescope Care Tips by Garry Solonyko

Here are some tips and techniques for taking care of your telescopes and accessories.

Sometimes you may notice a blue or green sheen on your new eyepieces. This can be removed with acetone and gentle rubbing after disassembling the lenses.

Prevent fog or frost from building up on optical surfaces by applying a thin layer of petroleum jelly. Simply smear the Vaseline evenly across the exposed surface of every eyepiece, corrector plate, lens or mirror in your telescope and eyepieces.

How clean is your mirror? Do the flashlight test! In a partially darkened room shine a flashlight at different angles on your mirror. You will be amazed by how much dust is on a supposedly clean mirror, and how many tiny scratches are

present on even a brand new mirror. How do you clean the mirror? Well, Windex and dishtowels work great, but your mirror is also dishwasher safe so go ahead and put it in with the next load (just don't forget that Jet Clean).

Incidentally, the new Ethos eyepieces that everyone is raving about are also dishwasher safe!

Most people are aware that a telescope needs to be cooled down before it can be used, but what about when you drive out to the darksite in your nice warm car. Doesn't a half hour drive like that warm up the scope? Of course it does! That is why you should not transport the scope inside of a warm vehicle. If you have a roof rack, simply strap it on with the open end facing the front, then remove the dust cover. This way, as you drive down

the road the cool air will flow over your mirror and your scope will already be cool when you arrive.

Speaking of cool down times, is there a technique to rapidly cool down a mirror? Yes there is, for those situations where you

can't wait a hour for it to cool. All you need is a CO2 fire extinguisher. Those babies will blast out an ice cold stream of vapour that will cut your cool down time to seconds!

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**General Assembly 2010 is Coming in 807 Days\*** by Howard Gibbins [not a joke – ed.]

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\* Unless you are reading this after Stardust has been mailed to you!

Well it's official Edmonton Centre is going to once again be hosting the society's General Assembly. It will take place between Wednesday June 27 and Monday July 2, 2012. This will be the fifth one our Centre has hosted – so you'd think by now we would have learned our lesson, but obviously not. Actually, it isn't as bad as many make it out to be – yes, it is a lot of work, but the benefits are worth it in the end. In addition 2012 will also mark both Edmonton Centre's 80<sup>th</sup> anniversary, which is pretty impressive in and of itself; and the possible end of the world if the Mayans were correct – which if they are will also make this the last General Assembly ever. Yeah, I know that this is a lot to lay on your shoulders right now, but I know you can handle it.

The GA will once again be held on the University of Alberta campus, with accommodations being at the new Mary Schäffer Hall, which is a 3-star conference facility. Originally it was proposed that we look at going to an actual hotel, however the room rates being offered at the University were so much lower – in most cases over half (and in some case much more than this), that we were sure this would be a drawing feature. The majority of the planned events will also take place in this complex, but there will also be a fair number of tours, and other events in and around Edmonton for delegates to partake of.

At present we have talked about tours to such places as Fort Edmonton Park, John Janzen Nature Centre, Elk Island National Park & Beaver Hills Dark sky Preserve, Ukrainian Heritage Village, Royal Alberta Museum, The Alberta Gallery of Art, The Reynolds Museum, Aviation Heritage Museum, West Edmonton Mall, Muttart Conservatory, Edmonton Queen Riverboat, Devonian Botanical Garden, Telus World of Science – Edmonton, Valley Zoo, and Edmonton's extensive River Valley trail system (walking, cycling, and Segway® tours available of the River Valley trails.

If you know of any additional sites that you think delegates would be interested in seeing, then let us know.

When we ran our last GA in 1996 the core organizing committee was composed of ten people, and we had approximately fifteen extra members helping out part-time with various tasks. We expect that we will likely need roughly the same number of people again, but much of that depends on what is scheduled, when, and where. For example, in '96 we were moving delegates around a fair bit, and this required a number of members to work as drivers. With the majority of the conference being held in one location this time we won't need as many drivers, but we will have need of volunteers to fill other roles.

### **So what does this mean for you as a member of Edmonton Centre?**

Well first off, we would like you to consider volunteering your time for the GA in some capacity or another – we are not asking for hundreds of hours of your time, but if you are interested then consider volunteering during the event for a specific task. On the other hand if you would like to be more involved there are a number of jobs that require ongoing planning, and if you think your expertise would be helpful then

please consider giving us a hand.

At present we will require the following on-going positions to be filled in the relatively near future (and seeing as time is relative – that's real soon):

- **Awards & Displays** – these people are responsible for co-ordinating the display competition, arranging for prizes, establishing the judging criteria, and supervising the judging; in '96 we also had a few retailers selling their wares, and this person looked after them as well.

- **Hospitality** – a small but important group that ensures coffee, tea, snacks during the paper sessions and other meetings are available. They also operate and ensure the hospitality suite is open and available to delegates, and will assist with off-hours registration as the registrations typically move to the hospitality suite following regular hours.

- **Observing** – these people co-ordinate trips to our various observing sites. Considering that the GA is on the July long weekend, and our latitude we don't have very dark skies, but then again our dark sites aren't exactly within walking distance either, so they will likely have to enlist the services of the tours and transportation gang.

- **Paper & Poster Sessions** – this is a busy group of people who schedule all the members who wish to present papers or posters; they also gather, edit, and publish the paper abstracts in the conference handbook; in addition they co-ordinate all the technical requirements for the speakers – count yourself lucky last time we had a couple of temperamental slide projectors.

- **Programming** – this is a biggie, this lucky person is in charge of scheduling everything – speaker sessions, paper sessions, tours, general timetabling; they essentially make sure we aren't trying to put the delegates in two places at the same time.

- **Publications & Printing** – this person begs people for submissions; then writes, edits, and arranges for printing of the conference handbook; they also look after printing all signage; and co-ordinate design of any memorabilia for the GA (e.g., t-shirts, pins, or whatever we decide to do).

- **Registration & Accommodations** – these folks co-ordinate memberships, assign accommodations to delegates by liaising with the University of Alberta, co-ordinate parking permits for those delegates who arrive by car, as well as liaising with the Tours and Transportation people to arrange for delegates to be picked up and dropped off at the airport, bus, or train.

- **Tours & Transportation** – these hardy people make all the tour arrangements for delegates during and after the GA; as well as picking up and dropping off delegates at the airport, train,

or bus.

- **Treasurer** – this one is pretty self-explanatory, but it helps if you are good with numbers. For the last two GAs we have hosted, the position has been filled by the Centre's treasurer, but that is not a requirement.

- **Venue Liaison** – this person deals with contract negotiations for the venues, as well as the various planned food functions. This is actually the only position that is officially filled at this time (by me), as this had to be first (no place to stay = no GA – funny how that worked, but we just couldn't convince them to let us pitch tents in Coronation Park).

Now you might think that some of these jobs could easily be handled by one person, while others will likely need a few – well you're right! Some of the jobs are primarily paperwork oriented, while others need a fair bit of leg-work, extra bodies to do specific jobs, and such. An example of this is the registration and

accommodations which can easily be done by one person up until the registrations start arriving then can likely handle a couple more people until the conference starts, when they will have to have a few more to ensure delegates get their registration packages, badges, etc. What this all means essentially, is that if you really want a particular job, then step right up. But, if someone beats you to it, then chances are they'll need a hand so don't be too down-hearted.

As I mentioned above, with the exception of the Venue Liaison, all these positions are open, so if you are interested let me know. You can contact me at 2012ga <at> edmontonrasc <dot> com. For those of you who are thinking of volunteering your time, the committee holds meetings on a monthly basis at present (but once we get a few things sorted out the frequency will likely drop a bit). We also run a list server for communications through yahoo groups, and a fair bit of the business will be most likely done on-line over the next few months in addition to the live meetings.

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### **President's Report** by *Zaphod Beeblebrox*

Greetings Earthlings! So sorry to interrupt your puny existence, but I thought I would pop in here on my grand tour of the universe, being your President and all. What, you've never heard of me? I'm deeply hurt by that, and also stunned to see that there are no fantastic pictures of me displayed in every conceivable place. I'll have to contact the writers at the great publishing corporations at Ursa Minor and have them update the Observer's Handbook of the Galaxy. Obviously, the description of Earth should be changed from "Mostly Harmless" to "Mostly Harmless and Oblivious".

Anyway, I just stopped in on my way to the legendary planet of Magrathea. Oh, you haven't heard of that one either? Right, right, oblivious and all. Magrathea is only the planet that is home to Deep Thought, the supercomputer that came up with the answer to Life, the Universe and Everything! 42, by the way, for those that haven't heard. No, I don't know what the answer means, but I am leaning toward what is six times seven?

I also thought I should pass on my deepest apologies for

signing the order that sealed your planet's fate. You know the one. It has been posted in your local planning department at Alpha Centauri for fifty years now. It was the order that authorized the Vogon Constructor Fleet to demolish Earth to make way for a hyperspatial express route. So sorry, but progress must be maintained. I mean really, you don't want to inconvenience the rest of the galaxy, do you? We can't have the rest of the galaxy going around your star system. Why, that would add an extra 0.000001 microseconds to our journey! At any rate, it was all a misunderstanding. I really believed that I was signing an autograph for one of my adoring fans.

Anyway, I see the dolphins are leaving, so that is my cue to go too.

Hugs and kisses,  
Zaphod

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### **Planetary Currencies** by *Zaphod's smarter sister*

Most planets tend to use rare materials, pretty gems or metals as the basis for their currencies. Some of the more popular metals in use on several planets include Gold and Platinum. In particular both Gold and Platinum have a beautiful lustre to them and can be used to create things of beauty such as art and flat screen televisions. Some planetary residents hold flat screen televisions in such high regard that economies based on Gold and Platinum have soared.

One interesting case involved the planet, Bolgos. On Bolgos a beautiful gem was found. This gem was of such brilliance and clarity that the government of the day was at a loss of what to do with it. Should they risk cutting the stone which would increase its wealth or not take the chance in case the stone shattered?

Some fifteen governments later it was decided to cut the stone. The planet searched for years to find the universe's best stone cutter. By the time one was decided upon another twelve governments fell and rose. It took another seventeen governments to study the stone but finally the big day came. Several television networks were on hand and all of the residents of Bolgos had their eyes glued to their flat screen televisions.

The hammer rose.

Wham!

The cut was perfect. The lustre, the color and the quality of the stone was perfect. In fact it was so perfect and beautiful that it was decided that the stone was equal in wealth to the entire planetary resources. Thus the Bolgos were the first society to base their entire currency on one object.

This has the interesting effect that the owner of the stone is the richest man on the planet while the rest of the population is dirt poor. One would think that this would halt the economy but strangely enough it doesn't. The poor tend to work very hard, boosting the economy, because they don't want to own the stone and pay the taxes on it.

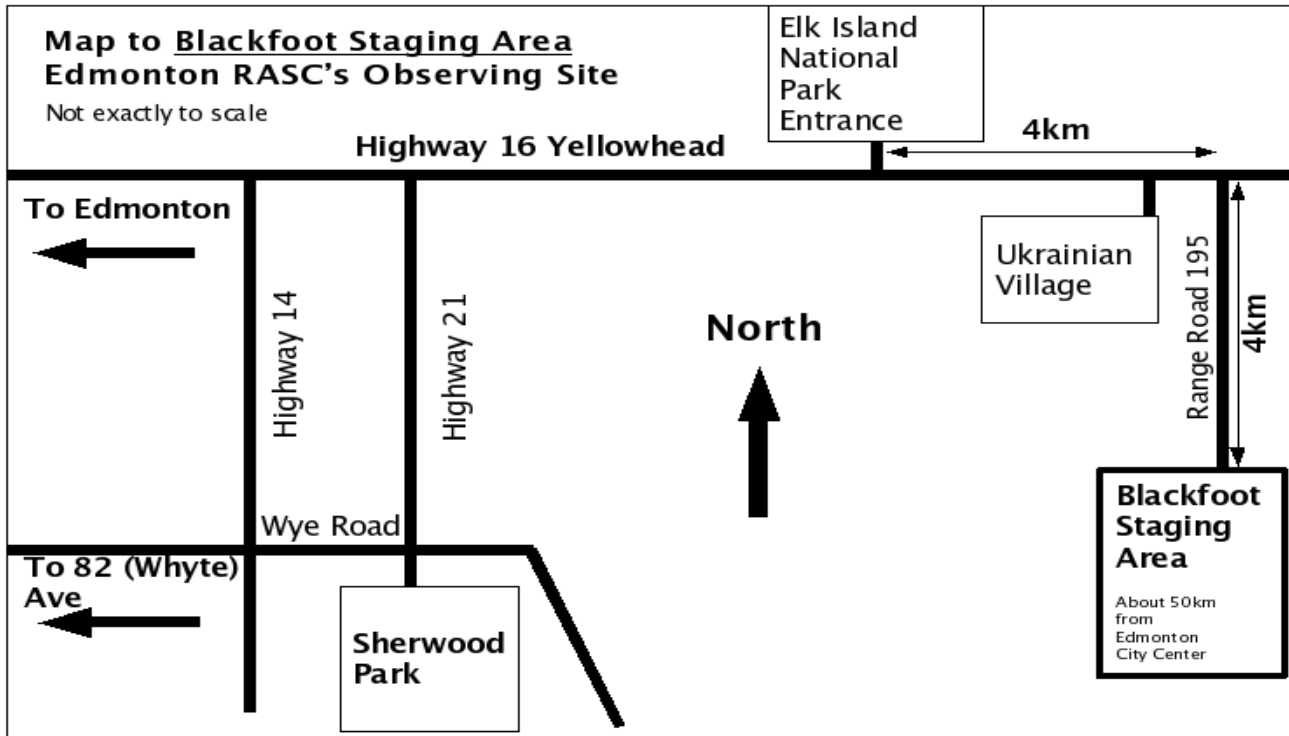
As mentioned before, its usually rare materials or items that are the basis for planetary currencies. Yet, the planet Garnod decided to base their currency on paper which is a relatively abundant material. Now Garnod is situated way out in the Perseus arm almost to the edge of the galaxy. It was a beautiful and lush planet with trees and grasses all over the planet. The orbit of the planet is almost perfect so that the planet experiences almost perfect weather. It supported a lush and vibrant ecosystem that was perfect. In short, this was a perfect planet.

For some unknown reason the residents of Garnod based their currency on paper. The idea was to use Gold ingots as money to trade paper with. Now paper is not that hard to make. All it takes is wood, some hot water, some hard work and it's done. Almost overnight the residents of Garnod became prospectors. In short order, everyone on the planet was a billionaire. The trouble was that a simple cup of coffee was 62 billion. That seemed to put the price of flat screen televisions out of the reach of all the billionaires.

Inflation got so bad that at one point it actually took an

infinite amount of paper to purchase one Canadian Loonie. Most residents of the galaxy don't know what a Canadian Loonie is but they do know that Canadians live in ice houses and drive teams of sled dogs to work.

Oddly enough, when the prospectors finally cut down the last tree, paper became a rare commodity and it actually increased in value. The trouble is there was no more paper to be had so it has to be imported from Canada which has vast forests. Even more odd Canadians only want Gold ingots for their paper.



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