Orbit

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Roger Hill, Editor

Okay, just as I thought people were actually reading Orbit, I've got proof that that's not the case. The last issue was for February. The title at the head of my column read "Issue Number 3, January, 2008" when it should have read "Issue #4, February, 2008". Now you know my dirty little secret (or one of them anyway), that I take last months Orbit, and modify it!

So, True Confessions out of the way.

That was quite the month wasn't it? One of the most beautiful lunar eclipses in a while, but possibly the coldest! As it turned out, I observed the eclipse from my backyard observatory. I attached my Canon 10D to my ZenithStar 80mm, and for about 2 hours, I took a picture every 15 seconds. Initially, I used ISO 100, and 0.5 second exposures at f/6 (prime focus) and about 10 minutes before the onset of totality, I took a freshly charged battery out of my pocket (where it was being kept warm) and put it in the camera. I also changed the exposure to 2 seconds. I kept the interval the same, so I've got a series of almost 300 exposures, 2 seconds long, every 15 seconds for about 70 minutes. I have put together a crude movie, and the first thing it showed me was that either my polar alignment is off, or I don't have my telescope attached as securely to the top of my 12" SCT as I might like!

Either way, I just monitored the camera, made sure that it kept taking pictures (I expected the battery to fail in that temperature, but to my immense surprise, it just kept on going!) and sat back to enjoy the show. Every now and then I'd have someone get in touch with me via Microsoft's Live Messenger asking me if I was watching the eclipse, or asking questions. Most of the evening though, was spent in quiet contemplation of the night sky, of the stately movements of moons and planets, and enjoying the peace and tranquility of a beautiful event. Interrupted every fifteen seconds by the sound of the camera shutter!

One of the most frequent questions from the non-astronomers who contacted me as the identity of the "star" to the left of the Moon. Of course, we knew it was Saturn. Other questions rose from people trying to figure out the geometry of what was happening. And of course the inevitable question of why, when it's in the Earths shadow, why doesn't it disappear completely? Telling people about refracting light got a bit tedious, until someone said "Oh...it's the light from all the sunsets in the world that are going on!" Precisely, and a lot more eloquently expressed than I managed! Then again, they weren't spending a large amount of time outside, playing nursemaid to a camera!

The other bit of excitement in the Centre in February had to do with an offer to relocate the Trillium Scope to Chile, and set it up robotically. Add in a cooled CCD camera with a back illuminated, thinned, chip, and this would be a set up that many amateurs around the world would give their eye-teeth for. A research grade telescope, with a research grade CCD and situated in what many regard as the finest spot on the planet for astronomy. Wow! All this, in exchange for half of the observing time one it. When the term of the contract was up, we'd get the telescope back, and all at no cost to the Centre.

There was a lot of discussion, both for the proposal and against it, some of it getting quite heated. One of the things in favour of the project was that it might have been possible to sell the excess time on the 'scope for a fair bit of money. One quick analysis that was done indicated that in two years time, we could have purchased an identical

scope. One of the things against it was that the Hamilton Centre might see a large influx of non-local members, joining just to get access to the scope. Other people were against the whole idea of moving the scope to a "Third World country", asking that if it could be run robotically from Canada, why can't it be run robotically when it's in Flamborough? In the end, the Board decided not to take up the offer to move the scope, and it will remain at our Observatory for the foreseeable future.

The discussion did raise a few points, though. Not the least of which was the ability to robotically control it now. There are a couple of answers to that one. The first of which is that we do have fairly frequent visitors to our site, and they are frequently NOT members—just people who want to use a parking lot hidden from the road for purposes that have nothing to do with astronomy. You can imagine the reaction if such a someone arrived and found the roof open with no-one around. The possibility of vandalism would be very large. Further, I'm not sure if our insurance policy would cover us in such a case.

The other main point is the extreme difficulty of getting internet access at the Observatory. Yes, strange as it may seem in these days of hand held devices, and almost ubiquitous access, we can't get cheap access from the site. Bell does not offer ADSL service that far from their local Central Office, and the local cable company does not run a line along 7th Concession. Wireless access is difficult due to the trees in the way. Even cellular reception is not particularly stable.

Internet access is possible over satellite, but the initial costs range from a few hundred dollars to over a thousand bucks. There is another service that is coming to rural Halton county (just across the road from our site) that might solve our problem, but trees will be a problem since the service runs at 2.4 gHz. They expect to be up and running in the area in June, so we'll see then if it's possible.

Finally, I'd like to offer to John Williamson the condolences of the entire Centre on the loss of his father in late January. It's been a tough ride for John, recently, with the arrival of a baby in the family, his ongoing University studies, and now the loss of his father.

The trip to Manitoulin Island for some observing the first weekend of May is still on. I'm happy to report that Gordon's Park on the Island will be happy to take us. If you want to go, contact them in April, and meet us there. At the moment, we have over half a dozen confirmed people, and another ten or so who are very interested. More next month!

There's also a group of people heading down to Chile in March. Those of you who saw Steve Barnes photos at the January meeting will have some idea as to why. There are only of a handful of truly great observing sites in the World. In North America we have Arizona, Hawaii and Texas (and I'm fortunate to have been to two of them), but the best skies on the planet just may be Chile. Hopefully some more magnificent pictures will come back.

This month, Ev Rilett contributed the photograph on the front of Orbit. She took it with a hand-help Canon SD630 powershot pointed through an eyepiece on her Televue Pronto. We have another installment of MYTHOLOGY AND COSMOLOGY by Carlo Felix. This month features Lepus. We have articles from Grant Maguire on his most memorable astronomical event, Ev Rilett on a Public Night she was involved in recently, and Andy Blanchard fills us

Photographs from the Chilean site where the Trillium Scope would have gone to.

Pictures were taken by Arto Oksanen. More can be found at http://picasaweb.google.com/artooksanen/Atacama

What you missed: February, 2008

Out main speaker was well known area amateur and friend to astronomers around the world, Jim Kendrick. Jim, who developed the first commercial anti-dew systems (and has a newer, cheaper one coming out), observing tents, focusing and collimation aids now has a most intriguing addition to the line-up. It is an immensely portable device that allows owners of digital SLRs, or small telescopes, to accurately track the stars. Jim claimed that the device has a periodic error measured in arc-seconds, is easy to set up and a joy to use. He also said that when he took the device to NEAF (North East Astronomy Fest), that a number of manufacturers, including Meade, were taking all sorts of photographs of it. Like so many of the things that Jim has been involved in, this looks like a winner!

Jim, with a sample of the less expensive heating bands he will be offering soon.

John Williamson was absent, so Andy Blanchard took the reins for the evening.

Les Nagy had a few things to say.

Geez, it's bad enough that this guy hogs the pages of Orbit, but does we have to listen to him, too?

Astronomy Funnies:

Culled from newsgroups, and other places.

Here's what happens when you're thinking more about astronomy than other things:

I was walking in downtown DC the other day [Mar 2004], near where I work, when a young man with a clipboard approached and asked, '*excuse me, would you like to help us clean up mercury?*'

Without thinking I replied, '*Mercury? Shouldn't we clean up Earth first? Besides, no one lives on Mercury!*'

I left him slack-jawed and speechless. I was two blocks away before I realized he was referring to the chemical, not the planet.

I guess he's got a story to tell, too.

Kevin B., NOVAC

These are reputedly real answers to questions on science tests:
When you smell an odorless gas, it is probably carbon monoxide.
Water is composed of two gins, oxygin and hydrogin. Oxygin is pure gin. Hydrogin is gin and water.
Nitrogen is not found in Ireland because it is not found in a free state.
When you breathe, you inspire. When you do not breathe, you expire.
Three kinds of blood vessels are arteries, vanes, and caterpillars.
Before giving a blood transfusion, find out if the blood is affirmative or negative.
The moon is a planet just like the Earth, only it is even deader.
The pistol of a flower is its only protection against insects.
A fossil is an extinct animal. The older it is, the more extinct it is.
For fainting: Rub the person's chest, or, if it's a lady, rub her arm above the hand. Or put her head between the knees of the nearest medical doctor.
Equator: a menagerie lion running around Earth through Africa.
Rhubarb: a kind of celery gone bloodshot.
The skeleton is what is left after the insides have been taken out and the outsides have been taken off. The purpose of the skeleton is so that there is something to hitch the meat to.
To remove dust from the eye, pull the eye down over the nose.
The body consists of three parts - the brainium, the borax and the abominable cavity. The brainium contains the brain. The borax contains the heart and lungs, and the abominable cavity contains the bowels, of which there are five - A, E, I, O, and U.

Quotes:

Every so often, I like to stick my head out the window, look up, and smile for a satellite picture.
- Steven Wright

Black holes are where God divided by zero.
- Steven Wright

The scientific theory I like best is that the rings of Saturn are composed entirely of lost airline luggage.
- Mark Russell

There are 10^11 stars in the galaxy. That used to be a huge number. But it's only a hundred billion. It's less than the national deficit! We used to call them astronomical numbers. Now we should call them economical numbers.
- Richard Feynman

Have you noticed that the astronomers and mathematicians are much the most cheerful people of the lot? I suppose that perpetually contemplating things on so vast a scale makes them feel either that it doesn't matter a hoot anyway, or that anything so large and elaborate must have some sense in it somewhere.
- Dorothy L. Sayers

Space isn't remote at all. It's only an hour's drive away if your car could go straight upwards.
- Fred Hoyle

MYTHOLOGY AND COSMOLOGY

by Carlo Felix

Lepus

Mythology

Beneath the prominent constellation Orion, is that of Lepus,the Hare. Its stars are, perhaps fittingly, less radiant, as it seems to suit best with the tendency□f inconspicuousness of the animal itself. Worthy of note is that the constellation, Lepus, rises at about the same time as Canis Minor and slightly earlier than Canis Major. The two dogs, as marked by Procyon and Sirius, appear to pursue the Hare across the sky, throughout the night, until Lepus sets in the western horizon. The dogs never quite attain their prey. And by morning their objective remains unfulfilled, which occasions a renewed pursuit the following night.

The Greeks called the star figure "Lagos" and the Arabs called it "al-Arnab", both of which mean the Hare.

There is a fable connected with the constellation, Lepus. It is said, by Hyginus, that to the island of Leros, a man once brought a pregnant hare And the people were much pleased. But, afterwards, the prevalence of these animals overran the fields and destroyed their crops, reducing the island's inhabitants to near starvation. As a result, the islanders drove the hares off their island. But they put its image in the sky among the stars.

Cosmology

Lepus is mainly comprised of a group of third-magnitude stars forming the figure of a trapezoid. Gamma Leporis is at a distance of 29 light years from Earth, and Alpha and Beta point to a triple-star, Herschel 3752. Also surprisingly, the relatively dim and small constellation boasts a Messier object and an NGC object. M79 is a globular cluster, one of the very few in the winter sky, as most globular clusters are found in the summer sky. Its vague aspect can be excused due to the distance at which it resides, that is 42,000 light years away, about twice the distance of other spring and summer globulars. And, of course, there is NGC 2017, whose cluster is coloured with an orange star. Hence, this unassuming constellation proves worthy of an evening's exploration.

M79—Digitized Sky Survey.

NGC2017, Digitized Sky Survey

Introduction to Astronomy: Grant Maguire

If memory serves, my first encounter with astronomy took place in 1992. I was living on my own in Burlington and was an avid listener of CBC radio. I was listening to a morning radio show where they were talking about the Perseid Meteor Shower that was to take place and how spectacular it was going to be. I decided that I was going to find a dark location in Burlington to view this great event.

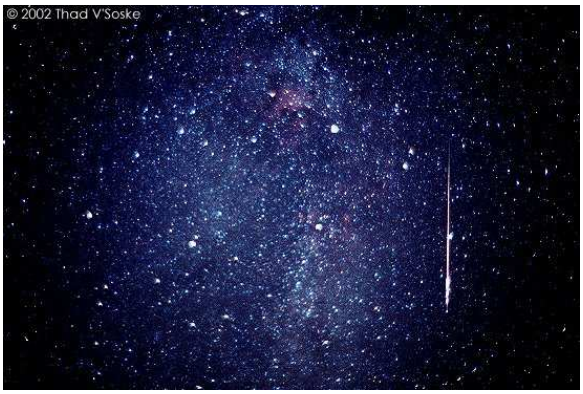
I Started up Guelph Line looking for some place dark. I remembered Crawford Lake Conservation Area from my hiking days. So I pulled into the long dark driveway, thinking I was a trespasser or something. Pitch Black!

I grabbed my lawn chair and started hiking up this small hill where I found my spot. As my eyes adjusted to the dark I discovered there were many people here looking up into the sky. A regular little party including wine and one telescope.

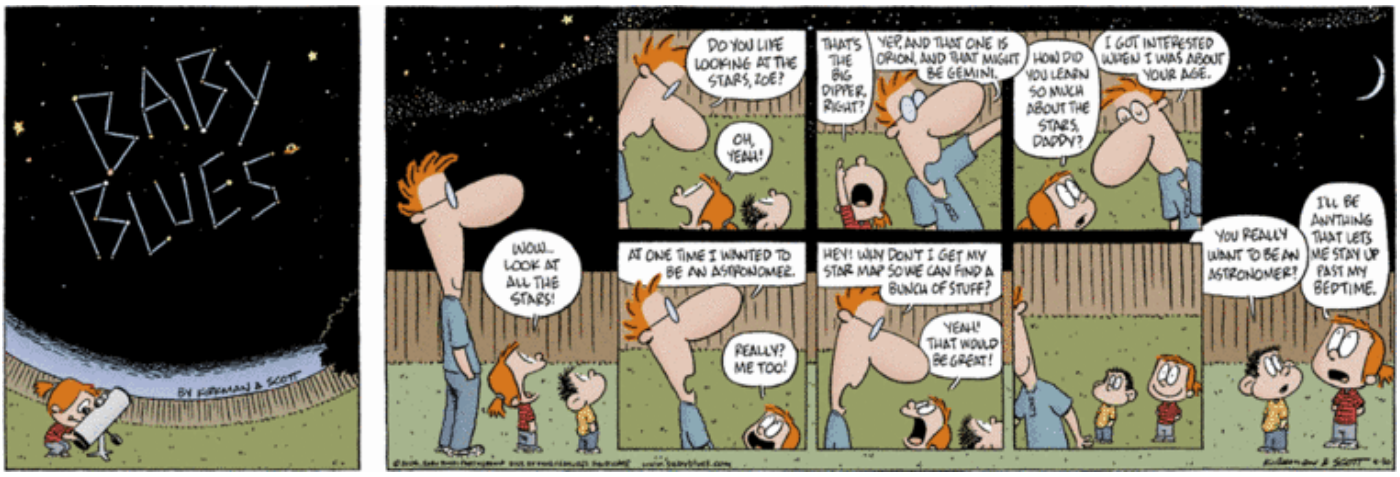
I did see a few meteors that night and my first look through a telescope was at some fuzzy spots. That was pretty cool at the time.

That was my introduction to astronomy. After two other spectacular events: Comet Hyakutake in 1995 and Comet Hale-Bopp in 1996, I promised myself a telescope, and eventually found the RASC Hamilton Centre, where the real fun began.....

Grant Maguire



So, does anyone out there remember anything going on at Crawford Lake? Who were these people that Grant met in the night?



GRAS (Global Rent A Scope)

By Andy Blanchard

Last month I tried out a bit of astrophotography on-line at GRAS. I thought I would spend a little time sharing with everyone some of the merits of the site. GRAS operates 7 scopes around the world, two in Australia, one in Israel, and the balance in New Mexico.

Well the first thing you should do is visit their sire at http://www.global-rent-a-scope.com/. Immediately I was impressed at the variety of scopes and cameras available to members of GRAS. For a small fee of $15 you get to take some pretty expensive equipment out for a test ride.

You start off with excellent tutorials on how to take single shots and progress through several videos until you are scripting color series.

My first couple of shots turned out poor to say the least, but after a bit of trial and error I was able to produce this shot of M81. It still needs work, but as far as pictures go, I'll keep it. The best part is that I did it from the comfort of my office. No -20C knee knocking, nose frozen, boot banging, wondering what I am doing out to 3am blues.

The best part is that all your pictures come with flats, bias and darks in your own FTP file. Develop the pictures at your leisure. If you want you can you can access other GRAS user files and practice developing LRGB FITS. I have had access to hundreds of hours of images all for the cost of $15. I think this is the best deal going, as I get to play with expensive toys for a token membership. (hehe)

I love taking out my equipment and tinkering around in the dark. In fact I am missing it right now, just not the cold part. Yet another part of me is thoroughly enjoying a different part of this hobby, and with a little luck I might even learn a thing or two.

After all what's an astrophotographer to do in Ontario in Jan and Feb until the TV writers guild starts to release more Boston Legal, and Dexter episodes.

Public Education by the Campfire

Ev Rilett

On Wednesday Feb 27 Paul Brandon, Oscar Flores and I headed to northern Burlington to Appleby Line and No. 2 Side Rd to the Trinity Baptist Church. It was a very cold night approx –15 to –20 degrees and we were going to meet a Church Group of kids for a public education night. I had my doubts about the sky, very cloudy in Burlington near the lake, but Paul was more optimisitic. He came prepared with sky charts, a telescope & binoculars.

When we arrived, there were a few sucker holes and we could see Orion's belt and Sirius. We were met by Aric Verduyn with a warm welcome. There were about a dozen kids, mixed gender, ages 8 – 12, We started indoors and Paul had sky charts for all. He talked about what was in the sky tonight and how we use pointer starts. I showed them the winter hexagon.

Outside, one of the older kids had his dad's telescope, but the finder was off the mark and he was unable to locate anything. That was a shame. Paul showed the kids, Orion, M42, Pleaides, Alcor & Mizar and Saturn gave us a fairly good showing.

Aric had built a campfire at the other end of the lot and we all huddled around that in between looks and oh, how inviting it was. The fire itself was delightful, the heat was so welcome and of course no fire is complete without the smoke and it's wonderful aroma. Then we all gratefully headed indoors where we were hosted to hot chocolate with marshmallows. A very nice treat. We were thanked by Aric and the kids. It was clear they had a grand time and enjoyed the views. It was a very nice evening.

Home again, Home again, jiggity jog.

CANIS MAJOR

The great Overdog,
That heavenly beast
With a star in one eye,
Gives a leap in the east.

He dances upright
All the way to the west,
And never once drops
On his forefeet to rest.

I'm a poor underdog,
But to-night I will bark
With the great Overdog
That romps through the dark.

Robert Frost, 1916

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From the Hobbservatory at mid-eclipse 10:26PM EST, using a Canon 30D, through a Televue TV101 on a Paramount ME.

Lunar Eclipse Tales.

1—Ev Rilett

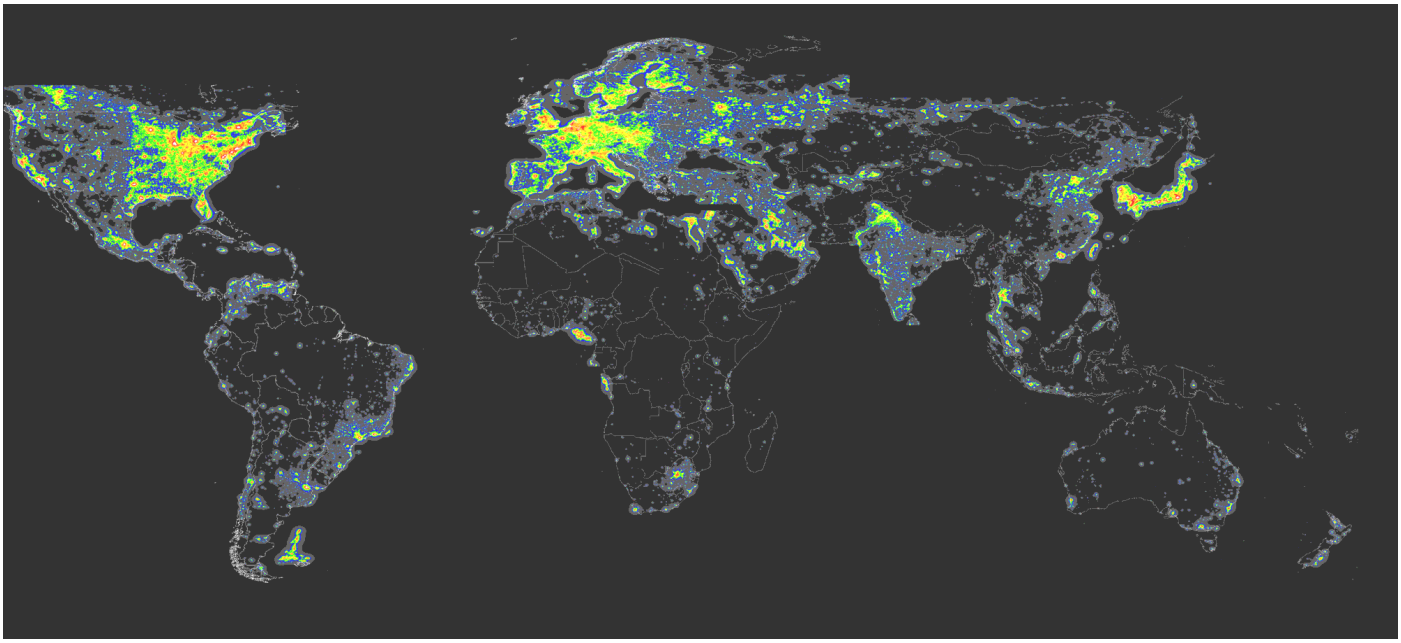
At the observatory, 4 of us ventured out in the bitter cold approx. -20 degrees to view the eclipse. There was no wind and it was a gorgeous night. After the months of cloudy nights, the astronomical gods were definitely with us. The plowed lot had a fresh layer of snow from earlier that day and it crunched under our feet. I loved every minute of it.

I took a number of pictures but it's a challenge with my simple equipment. To take the images, I used my little Canon SD630 powershot. They are taken through the 70mm Pronto telescope, hand held @ 1 second exposures / a-focal. So many images were out of focus. These two were among the few good ones, so I thought I'd share them with you. I hope everyone had a chance to step outside and see this beautiful sight.

Ev contributed this months cover photo. This is the other one.

2—Glenn Kukkola from Shakespeare, ON

Here are a set of four digital pictures I took of the Feb 20 2008 Lunar eclipse. They show from start to totality. I took them with a Megrez 90 Apo refractor on a Synta Eq5 mount, eyepiece projection with a 13mm Baader planetarium 13mm eyepiece (68 degree FOV) , with a Fuji Finepix E510 digital camera on a manfrotto tripod. The pictures are not processed as I have a new laptop and have not had a chance to lead Registax onto it. I did not use the canon digital rebel because of the cold. It turns out that my small digital camera could be easily removed from the tripod, and tucked inside my coat to warm up, between shots! I enjoyed the night immensely observing through the telescope, binoculars and naked eye, while people popped in and out of their homes to brave the cold and have a peek.



Can You See the Stars?

Join thousands of other students, families and citizen-scientists hunting for stars from **Monday, February 25, through Saturday, March 8**. Take part in this international event called GLOBE at Night to observe the nighttime sky and learn more about light pollution around the world.

GLOBE at Night is an easy observation and reporting activity that takes approximately 15-30 minutes to complete. Citizen-scientists record the brightness of the night sky by matching its appearance toward the constellation Orion with 1 of 7 stellar maps of different limiting magnitude. They then submit measurements online. For all the details, follow the link to: http://www.globe.gov/fsl/GaN/?lang=en .
Resulting maps of all observations are created and placed back online by the GLOBE at Night staff within the few weeks that follow.

The five easy star-hunting steps, for which more information is provided online, are:

1. Find your latitude and longitude.
2. Find Orion by going outside an hour after sunset (about 7-10pm local time)
3. Match your nighttime sky to one of our magnitude charts.
4. Report your observation on our website. (Observations can be made February 25 through March 8; you may report through March 15).
5. Compare your observation to thousands around the world.

Helpful and user-friendly ancillary materials such as a teacher packet and science standards, a family packet, and student games and information are provided online at:
www.globe.gov/globeatnight/

During the inaugural event in 2006 over 18,000 people from 96 countries submitted 4600 observations, including data from every U.S. state. In 2007, the number of observations almost doubled. Help us exceed 10,000 observations in 2008!