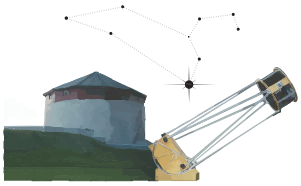
September 2014

Regulus

RASC Kingston Centre



One of our newer Centre members, **Malcolm Park**, captured a pass of ISS along with some meteors on the night of the predicted Camelopardalid shower. This image was taken with a 16mm f/4 for 25s at ISO 2500. Frames: 8 ISS transit frames were captured at about 3:35am ET. Meteor frames were 12:48 a.m. ET, 12:02 a.m. ET, and 10:49 a.m. ET.

Malcolm's photo was featured on APOD for May 25th, with this caption:
"From a camp on the northern shores of the Great Lake Erie, three short bright meteor streaks were captured in this composited night skyscape. Recorded over the early morning hours of May 24, the meteors are elusive Camelopardalids. Their trails point back to the meteor shower's radiant near Polaris, in the large but faint constellation Camelopardalis the camel leopard, or in modern terms the Giraffe. While a few meteors did appear, the shower was not an active one as the Earth crossed through the predicted debris trail of periodic comet 209P/LINEAR. Of course, the long bright streak in the image did appear as predicted. Early on May 24, the International Space Station made a bright passage through northern skies." apod.nasa.gov/apod/ap140525.html

Reports and Other Items

From Kingston Centre, the RASC, and Beyond...

Editor's Note

Regulus is back after missing the May and June issues. Even with this expanded issue, there is still a small backlog of material; this will be cleared up with the next (October!) issue.

Astronomy Column

Fred Barrett has a monthly Astronomy column in the Frontenac News:
frontenacnews.ca/regular-columns/what-s-up-in-the-sky

60th Anniversary

The Centre sends out hearty congratulations to **Terry and Ruth Hicks**, who celebrated their 60th anniversary on July 31st.

North Frontenac DSP

Guy Nason reports that bright green lights have been installed at the helipad and that these have ruined the adjacent dark sky preserve pad for observing. Stay tuned...

continues on page 2...

Upcoming Meetings

Thursday, September 11 7 p.m.
Members' Night

Saturday, September 13 8 p.m.
KAON Session

Saturday, September 13 Sunset
Public Session
North Frontenac DSP Pad

Friday-Sunday, September 26-28
Fall'N'Stars
Vanderwater Conservation Area

Thursday, October 9 7 p.m.
Regular Meeting:
Speaker: Randall Rosenfeld,
RASC Archivist

Saturday, October 18 Sunset
Public Session
North Frontenac DSP Pad

Thursday, November 13 7 p.m.
Annual Meeting

Meetings are held in Room 324 at Ellis Hall on University Avenue at Queen's University in Kingston, Ontario. kingston.rasc.ca

KAON (Kingston Astronomy Out-reach Network) sessions are held at Queen's Observatory on the 4th floor of Ellis Hall.
observatory.phy.queensu.ca/index.html

The **North Frontenac DSP Pad** is located at 5816 Road 506, just south of Plevna.
northfrontenac.com/dark-sky-preserve.html ★

In this issue:

...Reports and Other Items

...continued from page 1

Digitization Bonanza

This is the material (9½ linear inches) that was scanned by your Editor during the winter and (not-so) spring of 2013/14. Lots of bad weather has its upside! The bulk of the pile is made up of 39 editions of the *Observer's Handbook* up to 1955.

Cell Tower Update

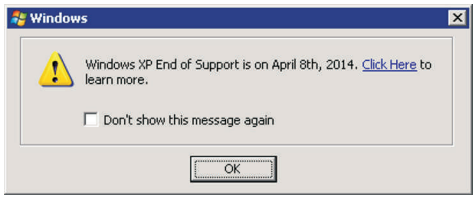
Kevin Kell *reports*: Last summer we had word of a new Bell cell tower going up in the vicinity of Cutler and Bethel Road (between Camden East and Yarker), within 1km of **Terry Dickinson**. This past week Kim saw a new structure in the sky while driving by from Napanee. The cell tower has been put up but not quite yet operational.

I took a drive by recently and took some images, wondering what to expect on our horizon (the Freeman Road Rogers cell tower proposal).

The Cutler Road Bell tower is far enough away that it is lost in the trees from Terry's. The power is not hooked up yet so there is no way to tell what kind, how many, or any other feature of the lighting.

Other Items

Windows XP is dead. Long live Windows XP! ... **Deseronto** has switched over to LED street lighting ... May 11th at 04:17:42 was **JD** 2,456,789.0123 ... The **AAVSO website** was hacked on June 6th (but quickly recovered) ... **KC's website** has been upgraded to Drupal 7.31 ... **Kingston**'s switch to LED street-lighting was due to finish in August ... Legendary comet hunter **William Bradfield** died on June 9th at age 86 ... The **RASC ED** resigned effective July 25th! ... Mark Kaye reports that as of August 1st, the **RASCals list** had 617 subscribers.★



Regulus Needs You!

Items of interest from members—full articles, or even just a couple of paragraphs are always welcome. Items are gratefully accepted on each and every day of the year! Send items to:

walter (dot) macdonald2 (at)
gmail (dot) com

If you are sending Word/Excel documents, please save them as Office 97-2004 format first.

The Fine Print:
Members of the Kingston Centre receive *Regulus* as a benefit of membership. Non-commercial **advertisements** are free to members of the Centre. Paid commercial advertising is also welcome and should be in electronic format.

Submitted material may be edited for brevity or clarity. Permission is granted to other publications of a similar nature to print material from *Regulus* provided that credit is given to the author and to *Regulus*. We would appreciate you letting us know if you do use material published in *Regulus*.★

RASC-KC Board of Directors

President:	Kim Hay
Vice President:	*vacant*
Secretary:	Rose-Marie Burke
Treasurer:	Kevin Kell
Librarian:	David Maguire
Editor:	Walter MacDonald
Nat'l Advisory Council Rep:	*vacant*
Director without Portfolio:	Paul Winkler

Committee Chairs/Coordinators

Equipment Loan:	Kevin Kell
KAON:	Susan Gagnon
Webmaster:	Walter MacDonald

RASC Kingston Centre
c/o 76 Colebrook Road,
RR#1, Yarker, ON K0K 3N0

E-mail:
kingston@rasc.ca

Website:
kingston.rasc.ca

Meeting Report: April 10

Kim Hay

THOUGH THE AFTERNOON HELD PROMISE and the sun was shining, by the time the dinner was over, there were clouds. We had three for dinner, and there were six that showed up at Lake Ontario Park: **Brian Hunter**, **Susan Gagnon**, **Bruce Elliot**, **Paul Winkler**, **Kevin Kell** and myself.

We did a walk around the park and saw some nice areas for individual observing, however the group observing will have to be re-thought. There are dusk lights that come on which are horrendous on the main building and the bathroom buildings. The trees are larger, and the new hospital ground work on the KPH site has taken place, so dirt, noise and lights from future cranes will interfere. This is a great place for kids and to take a walk by yourself, or with your pet.

I would like to try an area down by the water again, where we held the IYA events in 2009.

We were in great company. We heard about the student winners from the Science Fair from Bruce, and the tag team event from Bruce and Susan with the Brownies on April 8th. The hands-on approach always seems to work. Students can see the dynamics in action, and I believe grasp the ideas much better.

Thanks to Bruce and Susan for their outreach efforts over the last few weeks, and thank you all for coming out to endure the annual April Observing Bust.★

KAON Report: April 12

Paul Winkler

ON SATURDAY EVENING at the Ellis Hall auditorium, the Kingston Astronomy Outreach Network (KAON) presented **Matthew H. Chequers**, who spoke to a group of just over 60 people about his thesis project on "Riding the Waves: Why We Think the Milky Way is Ringing like a Bell from a Recent Collision."

The idea is that the Milky Way's satellite dwarf galaxies can pass through the Milky Way, creating waves (bobbing movements of groups of stars) that are perpendicular to the plane of our galaxy. There are two types of these waves, bending waves and breathing waves, and they have both been detected; computer simulations have been done to demonstrate the feasibility of Mr. Chequers' explanation.

Bruce Elliott and **Paul Winkler** attended from the RASC, and both found the talk interesting but rather technical. At the end of the talk, Nathalie Ouellette announced that the next KAON session would be held at 9:00 p.m. (change in time) on Saturday, 10 May. There was no mention of Astronomy Day or any other possible activities.

Susan: Thanks to Paul and Bruce for showing the flag at the open house. and thanks for the great report Paul. Being the KAON contact I feel as though I should get to them all but the lack of deck activity and general fatigue made me stay home. I always regret missing a good talk.★

Meeting Report: May 8

Kim Hay

WE HAD 11 MEMBERS DROP BY for dinner before the meeting and it was good to see you all.. it's been awhile.

The regular monthly meeting was held in Ellis Hall Room 324 at Queen's University. Kim Hay (Prez) opened the meeting at 19:00 and made welcome and introductions.

- A Regulus occultation simulation video was shown by **Kevin Kell**, with a reminder about why comets (and occultations) are like cats.
- Astrocats Hamilton reports were given by **Kim Hay** and **Kevin Kell**.
- **Rick Wagner** reported on "What's in the Skynews bag," followed by images of the event.
- **Hank Bartlett** talked about the Celestron Firstscope and Mak 90 telescope. These are portable scopes which are easy to use while travelling.
- A report on the April meeting was given by **Kim Hay**: Lake Ontario Park was cloudy, rainy and windy. Six members were there for a few minutes.
- Dome opportunity: **Kim Hay** gave a description and a call for volunteers to solve the problem of how to take apart a 16' dome, how to transport it, and where to store it until we find land.
- Drupal website: **Kevin Kell** reported on our new website content management system; we are still learning the ropes.
- Tardis Update: **Kevin Kell** said that the goal of commissioning would be complete by the end of the month. This week he is working on mounting the finder scope and getting the fine (8-star) alignment completed.

We then had a break and came back for members observing reports and imagery from **Leslie Roberts** (clusters and his equipment) and new member **Malcolm Park** (time lapse over Lake Ontario). Kim then ran over some notices of events which are upcoming over the next few months. We adjourned a little late, around 21:15.

We did not broadcast this meeting as our experience over the last year has shown us we lack the

Continues on page 16...

Observing Reports: April–July

Various Members

Tue/Wed, April 1/2

Kevin K: There was a break in the cloud cover Tuesday evening and I was out doing some more imaging of Jupiter. It was warmer, maybe 4C, but the wind from the NNE was stronger and the seeing was worse than Monday night. I could not achieve a crisp focus and the telescope did get jostled around noticeably. Jupiter was well past zenith from 20:00 to 20:30 last night and Mars was just about coming up over the eastern horizon!

Wed/Thu, April 2/3

Kevin K: Amazing! The third clear night in a row. I did another imaging run of Jupiter, a little later this time (21:00-21:30) and with an added bonus: a little bit of Mars.

Beginning first efforts only, attempting to get out enough to judge the results vs the sky (*i.e.* Monday was OK, Tuesday was bad, Wednesday was good), learning the software and starting to lay with the various settings, learning how to process the images afterward (cropping only so far), lay out results, etc.

Mars is just a blob. Jupiter was looking good.

I am using an aperture mask with circular holes from 2.5" (6cm) down. The right piece covers the left piece, allowing only one hole to be open. This will have to be re-made of black cardboard as the blue is too light and may affect the image.

I am also using a small black two-hole (6cm each) Hartmann/aperture mask for focusing. It does help on coarse focusing of the planets but not very well for fine focus.

Sun/Mon, April 6/7

Kevin K: It was clear again Sunday night (2014 April 06) and in between re-watching season 3 of the *Game of Thrones* and then watching the season 4 premiere, I managed to get out and do 30 minutes of imaging.

The first image is with the 20cm scope at f/10 (pretty typical from previous runs), but this time the aperture mask consisted of two 6cm holes at 90° instead of 180° apart.

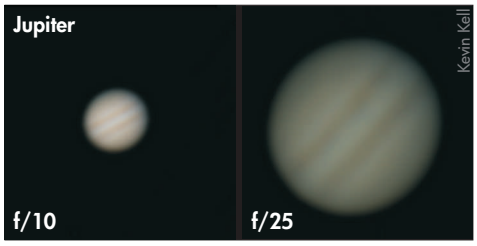
Focusing did not seem to be any better or worse using this new black cardboard mask.

Tracking was bad again so the number of frames per run is relatively low. Then I added an 2.5x barlow. The focus was off considerably and I had to use the Moon to get the coarse focus down, then shift back to Jupiter to work on the fine focus. The aperture mask was removed and several very short runs at f/25 were made.

Jupiter remains high in the sky and is a beautiful target.

Processing the AVI files from the Olivon camera was done with Registax 6.1 and was pretty much the same minimal aligning and stacking operation that I have described before. Cropped to 250x250 pixels with ACDSee and saved out as .png.

I do love the f/25 image. Better tracking would give more frames per run and certainly better images in the end.



Rose-Marie: I actually got out of my chair to photograph the ISS pass, which came from WSW and crossed near the Moon and Jupiter. Unfortunately there was a jet trail lit up by the Moon right close by.

Paul: I watched the same ISS pass. It passed just south of the Moon, and *just* by Pollux (almost occulted it.) Great pass. No contrails from my position.

Kevin K: Wow.. a *really nice* fireball right overhead. Captured on both camera systems. If only I was *retired* and could be outside all night long and witness these with the Mark I eyeball!

April 8

Kevin F: Ah, in 10 years I can watch the Sun get eclipsed!

Ian : I've put it on my calendar!

[*The 2024 April 8 total solar eclipse, with the path of totality running right over Kingston is, of course, something we've all been eagerly awaiting for many years now already!–Ed.*]

Wed/Thu, April 9/10

Kevin K: It was another warmer clear night last night. Kim & I went out to view Mars, albeit only 25° of altitude, with the more-than-First Quarter Moon at the zenith.

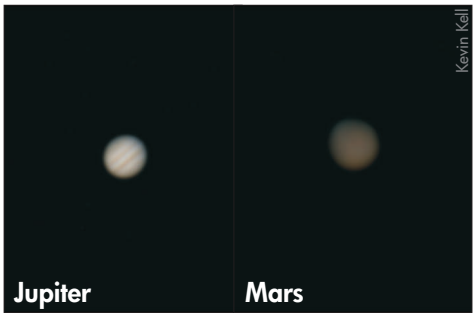
There was no surface detail in the 20cm Dobsonian (Starbuck) with a 9mm (133x) and then also with a 2x barlow (266x). This was mostly to be expected with the low altitude of the targets and the bright moon in the sky.

I did some more imaging runs of

Jupiter and also of Mars, the final runs with the Olivon (USB 1.1) camera. I then installed Kim's Orion Starshoot camera (USB2) and after a lot of technical difficulties (drivers, computer locking up, computer crashing, Orion software installing vveerryy sllowwly). It was up and running and I did some imaging of Mars with a 2.5x barlow. No surface details came up but again, not surprising as it was the first time this setup was run and I should have some better exposure control somewhere but have not yet found it.

I did not get a chance to image Jupiter as it was behind the trees already. The first thing I noticed was the much faster frame rate achieved. The Olivon camera got about 2½ frames/sec. The Orion did an easy 10 frames/sec. This makes for much better observing runs (less time sitting out in the cold!)

Below are a small image of Jupiter (f/10, two 6cm aperture hole mask, Olivon camera) and Mars (f/25, full 20cm aperture, Olivon camera).

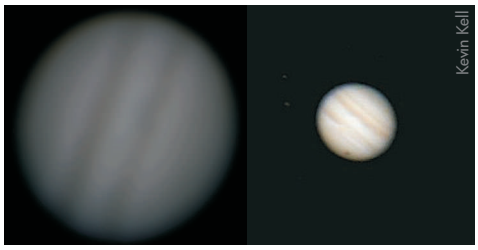


FRI/SAT, APRIL 11/12

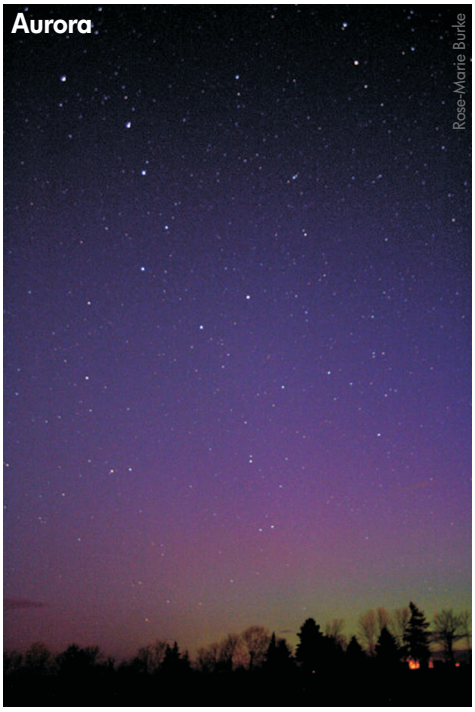
Rose-Marie: Looked at space-weather, a whole lotta red showing. Just went out with the camera to see if it was picking up any colour, but no, the Moon's too bright.

Kevin K: Another 45 minute imaging run friday night...cool but not cold, a little windy. Walter says that the seeing is defined by how easy it is to focus. Given that I would have to say the seeing was pretty bad. This is Jupiter with the LX200 20cm f/10 scope with a 2.5x barlow and the Orion Starshoot camera working at 1024x768 pixels. It is a 500-frame run processed with Registax v6 and then cropped to 250x250 pixels (same as past images over the last week or two).

There were two distinct equatorial bands, but not much else. I compare this image to one taken back in 2013 Jan 10...I can't find the particulars on that image (*lower right*; I need better record keeping), but it is sure the heck much better!



Rose-Marie: At around 4:30 a.m. on the 12th I awoke, looked out the window, saw the big fat bright gibbous Moon heading for the horizon, turning a deep red/orange as it prepared to set. I dragged myself around, got dressed, took BigWet-Nose out for a short walk, saw the moon hit the horizon. Slightly more awake I took the beast back into the house and turned on the computer, it was still showing a wide aurora oval, so I grabbed the camera and tripod and headed out to the cemetery. After the moon disappeared and my eyes adjusted there was a faint glow to the north, just barely discernable to the naked eye, so I took a couple 30 second exposures to see if anything was showing up. Yes! Some green and a bit of purply pink glow. Dawn was coming; I only managed a few shots between the glow of moonset and approach of sunrise. The timing for these auroras was unfortunate, had it been a new moon and dark night no doubt it would have been a good show. I'm just happy to have captured a few shots in the short window of visibility. Mars was shining bright and red to the west, Venus big and bright in the east. It felt good to be back out and about under the stars again, after having been deprived of observing time by the brutal cold and clouds of this miserable winter.



Above: 04/12/2014 5:07 a.m., 18 mm f/3.5, 32 seconds at ISO 1600. Lower left: 04/12/2014 5:13 a.m., 18 mm f/3.5, 28 seconds at ISO 1600. Both images were shot in raw format, converted to jpeg, and tweaked vigorously to bring out the colours.

MON/TUE, APRIL 14/15
TOTAL LUNAR ECLIPSE

Mark K: Right now, it is clear and I can see the Moon rising. Hopefully those same clear skies will move to the other end of the lake by the time the eclipse starts. Right now, it is

supposed to be cloudy with rain or ice pellets. The temperature was 20 a little while ago, but now it is 4. I hate it when it does this kind of thing. If it was just raining, I could go to bed. Now I am going to have to get up and check every hour to make sure there is not a pocket of clear air...

Rose-Marie: I'm sitting here laughing, thinking how glad I am you posted this! I saw a couple small gaps in clouds in the satellite shot, and thought...hmmm...maybe a wee window during the night? You won't be the only one up checking, Mark...you won't be the only one!

Kim: Well, it was cloudy the whole night according to Kevin. I wanted to at least get up at 3:00 a.m., but missed that. 4:50 a.m. showed cloud, cloud, oh yes and more cloud.

Hank: It is snowing heavily here in Toronto!

Paul: At 3:46 a.m. it was solid overcast with just a mist of a rain here in Kingston town.

Rose-Marie: I got up at 2:00 a.m. to check, just solid cloud cover. Said to heck with that and headed back to bed and curled up next to BigWarm-FurryDog.

Rick: I arose mid-eclipse and confirmed that under overcast skies it was far darker than it should have been for full moon (and far darker than it had been ~22:00 when I had last checked the skies.) I consider the eclipse to be "observed."

Paul: Then I observed the eclipse too, Rick!

Rick: Glad I could help out.

Richard: Needless to say, I was very disappointed in the lack of the lunar eclipse viewing, here in Sandhurst. I was up during the night a few times and found the cloudy sky bright and then getting progressively dark, so there was an eclipse after all!

Being an amateur backyard astronomer requires a large degree of patience. So far I have missed all of the lunar eclipses due to weather, hope October 8 is a clear night...

Kevin K: The next one (total lunar eclipse) takes place on October 8, 2014 peaking at 6:54 a.m. ET. Unfortunately, you'll only be able to see the whole eclipse if you live west of Regina and Saskatoon, as the Moon will set before it is complete in the rest of Canada. However, the peak of the eclipse should be visible almost right across the country.

The last two eclipses of the tetrad will take place on April 4 and September 28, 2015.

Sat/Sun, April 19/20

Walter: I was looking forward to an all-night imaging session. After a couple of computer hiccups trying to boot (the computer is showing its age, I guess), the run lasted until about a quarter after three when the computer woke me up—it had clouded over! I still got 148 variables, so I was happy even though there were still a bunch of Her and Lyr Miras to be done.

Rose-Marie: At least you got something accomplished. I looked at the clock, and thought oh, the ISS is coming over in a few minutes. Dashed around grabbing camera, coat, boots....got out there one minute too late, missed it. Took a few generic sky shots. Went back in to check spaceweather, since there had been predictions of auroras. The auroral oval showed large, I went out to check, nada. Watched TV until 1:00 a.m. when I finally gave it up and went to bed. Shoulda been out there for moonrise, it was a pretty orange coming up.

Rick: How does your computer detect if it has clouded over? Have you a Boltwood cloud detector or something else?

Walter: If there are six consecutive plate solve failures, the computer plays music (which wakes me up).

Rick: That's cool. I had been thinking about developing some similar process for my own imaging, based on detecting the presence of stars in the field. Another option I'm considering is variations in the background. That would have the benefit of potentially alerting me to non-photometric conditions. SExtractor (photometry program) for instance can output an image of the sky background which could be reviewed for variation between images or larger than appropriate standard deviation.

Sunday, May 4
Daytime Meteor

Eric Briggs (*on RASCals*): On May 4th, a bolide appeared east of Toronto and was video-recorded by several dashboard cameras. Sonic booms were heard in the Peterborough area. I think there was a consensus at the time that a meteorite may have fallen, but there's been no real discussion about this subject since then. Is there a private meteorite hunt going on, or none at all?

Mark K (*on RASCals*): Teams of NYAA members were out the next week combing fields using best guesses provided by UWO. The trouble is that it is planting season and getting permission to walk fields was tough and time limited. Nothing was found. After the first week, farmers where just turning in their soil and getting ready to plant. A crop in hand is worth more than a unlikely meteorite in the field.

Kevin K: Very cool. There were many reports on the AMS report page. We unfortunately were indoors at Astrocats at that time. None of our all-sky cams are turned on in the daytime anyways.

Mon/Tue, May 19/20

Rick: Hey Kevin, I was out shooting two evenings ago and one of my shots

has a very bright flaring trail across it. It was some time between 22:20 and 22:25EDT on the evening of the 19th, just past (i.e. within ~1°) the variable star SS Leo in the far south reaches of Leo. Did your cameras catch anything? Did anybody else see anything? I've checked Heavens Above for any satellite passes, Iridium flares, etc and none match (you'd be surprised how many satellite tracks are close enough to need fairly careful elimination.)

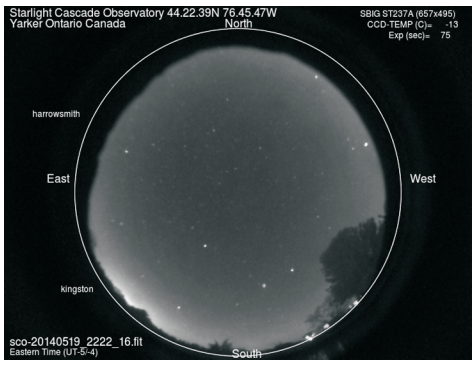
Kevin K: Both of our all-sky camera systems are not 100% and each has its own issues.

Allsky1 is a very old system that takes 75-second exposures but then goes offline for ~10 seconds while the image is downloaded. We've tried increasing the exposure to give a lower percentage of downtime but then the image is more easily overexposed.

Allsky2 is controlled by software only looking for meteors and is sometimes incorrect. In addition it does not expose as well and without the background calibration model it is often difficult to identify position.

So, that said, I went through images from the night of Mon/Tue May 19/20. The first major event is listed as UTC 02:49:37 May 20. Not quite within your time frame. There was nothing before that.

I have included the Allsky2 image, compared it to a planetarium program of the night and it appears in the WSW, as does Leo at that time.



I have also included something from Allsky1 at 22:22:16 EDT from May 19. It shows a short almost point source just west of Mars. Regulus can be seen just above the large tree.

The new astro camera comes with a 150° wide angle lens and I also hope to test it out as a colour higher resolution high-end all-sky camera system...

Rick: It is not likely since my 'fireball' was quite far in the S. I'll have to take the time to measure the path orientation and advertise to a wider audience to see if anyone else saw this.

Fri/Sat, May 23/24
New Camelopardalid Shower

Mark K (about midnight): I am at a reasonably dark sky site and I have already seen a couple of fast meteors out of Camelopardalis. Going to catch a couple of hours of sleep and then get back up for the predicted peak.

Mark K: Well, if that was a storm anywhere, then it was not last night. Maybe two more meteors from the radiant the entire time were seen by me and possibly two more from others. On the heels of ISOFF, the general public is going to stop listening to us about exciting things happening in the sky...

Hank: Another Astronomical Failure!? ...or was Hank looking the wrong way?

I saw one faint (mag 4ish) Camelopardalid about 2:35 heading west of Polaris and one heading SE of Polaris at 3:55 which was about -1 and about 15° long. Were it not for flashing geos, tumbling flaring, and normal satellites I would have fallen asleep.

Did anyone have better luck? There was a heavy fog in the north here that came as high as the Dipper and Polaris at times.

GOOD NIGHT!

Rose-Marie: Well Hank, you saw one more than I did! Glad to see I wasn't the only one suckered to leave my nice warm nest to stand out in the chill dampness.

I had set my alarm for 2:00 a.m. to check. Hit the snooze button, then dragged my groggy self out of bed. Clear sky! Bundled up with warm clothes and big klunkety boots that would keep my feet warm and dry in the rain soaked grass, collected camera and tripod and headed out to where I had a view of Camelodorkus just over the trees. Set up and waited. Held my breath with anticipation. And waited. Fiddled with the camera. Whistled to the whippor-will. And waited. Meteor "shower" my ***! Saw one fast little meteor whizz across Ursa Major, watched the ISS and a couple of satellites come over, but meteor "shower?" Nada. Once again my hopes for lovely sparklies was dashed like fine crystal over a rock cliff.

This sleep-depriving bone chilling stiff-neck-inducing event of major disappointment brought to you by the same sadistic fiends who promised me that Comet Eyesore would be the comet of the century. Pfft! Phooey! Rats!

Kevin K: We observed from 02:05 to 03:12 and saw maybe four meteors, two of which were camels. Very dis-appointing! This was probably another dry scientific paper pre-diction that the media got ahold of and blew way out of proportion. The ones we saw were very fast and very

dim (mag 3 or 4). The other two were sporadics and much brighter and slower.

There was nothing on Allsky1 or 2 as they are designed for fireballs (brighter than mag –4 or –5). We had heavy ground fog that blew away once in awhile.

More later after the coffee sets in.

Kim: Here is the report for Kim Hay and Kevin Kell (though both observing from the same location, we were looking in different areas of the sky):

We had storms and rain earlier in the day, which cleared, but gave us sky and ground fog. Temperatures 10-12C, fluctuated. Wind from the SE, slight. Location 44.22.39N 76.45.47W, 155m elevation. Start Time 6:07 UT. Finish time 7:12 UT. 1.05h of t_{eff}. Meteor estimates will be off due to fog. The Moon did not rise until 03:11 UT.

Kevin was observing Cassiopeia's six stars, which faded with the fog, looking NE. Camelopardalids: 2 (1 @ 6:17 UT) (2nd @ 7:10 UT by Polaris, train 15°) faint; sporadics: 3.

Kim was observing facing Muscida (the head of UMa, mag 3.34). Limiting magnitude (using 1999 charts from NAMN) Area 3:

6:13 UT	10 stars =	5.49
6:30 UT	6 stars =	4.56
6:53 UT	5 stars =	4.48
7:07 UT	7 stars =	4.83

Camelopardalids: 1 @ 6:17 UT, mag –1, fast, 60° from FOV.

I did see bright spots but unable to determine if meteors, behind trees and observatory.

We had a very loud Eastern whip-porwill accompany us with background music, and a cat calling from the window.

Rick: The orbital calculations for the meteors will give the speed and they were expected to be (and the one I saw was) very slow. You likely saw sporadics.

Kim: If this is the case there were more sporadics than Camelopardalids!

Malcolm: I think that was the sentiment from NYAAers I talked to yesterday out at Oak Heights north of Cobourg: more sporadics than Camelos!

Richard W: Report from Sandhurst Shores: I was up at 3 a.m. and saw only two very rapid flashes. The night was a success as this was a clear, warm, windless early morning and I took plenty of astrophotos of the constellations, at all four compass points. Summer is coming as Sagittarius and Scorpius are visible in the SW!

At ~03:30 a.m., I watched the waning crescent orange Moon rise SE. At ~05:30 a.m., I watched Venus appear from the clouds in the E and found this nice pairing with the Moon in the SE. I watched the Sun rise and took several photos through the trees and fog for the start of this day!

Malcolm: I drove SW and had a great night at Rondeau Provincial Park; there very few meteors—certainly no storm! That said, I got a few nice pics, such as this one (see front cover).

Rick: I was out from 00:30 to 03:45 with a couple of short breaks to get some entertainment (MP3 player) and snack (both of which help to keep me awake.) Limiting magnitude was 5.8. My sky is rather restricted and there was a cloudy period, so I estimate my efficiency of observing at somewhere about 20%; *i.e.* someone in clear skies with good horizons would have seen five times as much sky as I did. I saw (only) one very slow Camelopardalid, mag 3, about 7° long, straight up from the horizon, between the bowl of the Little Dipper and the head of Draco.

However, I also saw two extremely fast sporadics at mag –1 and 1, paths 2° apart and nearly parallel, separated by less than a minute. And another six less spectacular sporadics. And two unexplained <0.1s flashes, one at 01:11 EDT in southern Hercules, the other at 02:34 EDT near Draco. Six satellites including (for me unexpected) an ISS pass and a mag –8 Iridium flare. One of the satellites was clearly tumbling: it would flash about mag –3 for like 1/10 sec, every six seconds. It doesn't seem to match with anything shown on Heavens Above. So, although the 'meteor storm' was a bust, the observing session was quite a success.

Rick Huziak (on RASCals): The CAM's are VERY slow meteors, only 18 km/s, among the slowest. ...no storm, but the shower is detectable, though I was clouded out by 7:20 UT. I did, however, observe two highly probable shower members (crossed the radiant, and were VERY slow.) The first was even before the sky was dark (04:55 UT), a –3 fireball with smoke that lasted 4 seconds. Great! I though things were going to happen. There were two sporadic meteors over the next two hours, then the second CAM meteor (6:36 UT, 2.5 mag lasting 2 seconds. My LM for most of the night was 5.5 (I was only 6 km W of Saskatoon.)

Andy Beaton (*on RASCals*): I was observing from Long Sault Conservation Area north of Bowmanville; I saw 2 field meteors and 1 potential 4th mag Camelopardalid between 01:00 EDT and 03:05 EDT when I decided getting home while I was still awake outweighed the chance of this turning into any kind of storm.

On the upside, I did notice SS Cyg was in outburst and I saw R CrB for the first time in many months so my time wasn't wasted.

Fri/Sat, May 30/31

Kevin K: We saw a nice crescent Moon low in the west with Jupiter

nearby. It was too late to image from the ground so we did it from inside and upstairs.

SAT/SUN, JUNE 21/22

Kevin K: It was a nice and clear night on the solstice evening and Kim & I were out enjoying it... up to the point the mosquitos became insane. They were swarming again; still damp out after the rains from Wednesday? I was trying out one of those new Off clip-on personal units...so far all I can say is that they are snake oil.

Of course how can you tell without a control? They were coming after me and biting left right center. Of course one could say without the Off unit, they would have been far worse. Oh well. We have it now; I will keep trying it out and see how it goes.

Saturn was very nice. Kim found it and Mars at 222x because I still had the Telrad on the bench for heater modifications and have not yet finished them. While she was looking for Mars, I noticed two bright flashes, ~20 seconds apart, coming from the vicinity of Mars, moving down and left. The flashes were brighter than first magnitude, certainly brighter than Mars. It was sometime around 20:15 to 20:30 EDT.

Rick: I saw several of these during the watch for the Camelopardalids. My theory is that there are rotating satellites which have large reflective planes. Much like the Iridium flares that plane surface reflects a beam of sunlight to the ground. However, because the satellite is rotating the beam passes over an observer very quickly, appearing as a bright flash. Sometimes the path of the beam is such that an observer can see two or several flashes, but usually only one as only one beam path crosses the observer. During my Camelopardalid watch I saw one that gave very brief very bright flashes every 6 seconds along a straight line in the sky.

Mark K: I do not give good marks to those Off personal battery operated mosquito units: as far as I can tell, they do not do anything. I also have tested and returned several propane tank mosquito traps that did not catch any mosquitos. The only thing that I find that works are the Thermacell units. The candle ones are nice for dinner settings, but not suitable for Astronomy. The handheld units work well and are Astronomy friendly. The trouble is, they take a while to work. You need to put them out at least a half an hour before you want to use the site. I find that two units are necessary, one on either side of where you are observing. Last year when I re-did the siding on the far side of the cottage, they kept me mosquito free all day, but if I did not use them, I was mugged. Off makes a candle version that uses basically the same thing as the Thermacell and they work, but are not suitable for Astronomy.

Rick: I've not heard good things about the Off clip-on unit—reviews indicate it is essentially useless. A lot of my observing buddies swear by the ThermaCell. They use several each at places like Nirvana where they are observing from the middle of a field of deep grass—mosquito hell.

On the other hand, the other evening I set up my scope at what I plan to be my observatory site—in an area of deep weeds and small brush. The mosquitoes were amazing, worst I've ever seen anywhere. I brought out my ThermaCell and it didn't seem to have much effect. However, I only had one unit, there was a light breeze blowing the fumes about (I tried to put it slightly upwind), and I didn't give it very long before I ran screaming to the house. I actually cut my observing program in half: I was going to do photometry through the scope and piggyback imaging at the same time but gave up on the photometry as it requires more careful setup and oversight. I know one evening last year in my normal observing site in our parking area I wasn't sure the ThermaCell was working until it stopped—I suddenly became a target!

Kevin K: Thermacell is the burning candle with smelly stuff at the top? If so, what do you do about the yellow flame vs. night vision?

I can relate to the running screaming to the house...it was like that for me last week.

Rick: No, the ThermaCell uses little paper pads soaked in repellant and a very small entirely enclosed butane (?) flame as a heat source. There is no visible light from the unit whatsoever. I'll have to take Mark's suggestion to perhaps get another one and put them out earlier.

Mark K: Thermacells come in various forms. The original and most useful for Astronomy is the ThermaCell mosquito repellent product: it uses a contained flame that is not visible except through a tiny window (to see if it is working). They also have several other models that are either candle-based or have an open flame.

The Off units are candle-based and all of them of both brands use pyrethrums as their insecticide. With the trouble brewing over neonicotinoids, I checked today to see what the poison was.

SUN/MON, JUNE 22/23

Kevin K: Another short observing session last night. For all of the clear skies, a look at the AllSky1 time lapse still showed a lot of cloud moving through the night. It was a work night, so it was not a long session, mostly trying to get Saturn imaging done.

Scorpius is getting nice and high

in the SW. No sign of Sagittarius yet. Attempted to view a "daytime" ISS pass after sunset but it was still too bright and we did not see anything.

Fri & Sat, June 27 & 28

Kevin K: Mosquitoes. There it was in one word. Here is another word: swarms. Actually Friday and Saturday nights I was out first light imaging with the ZWO ASI120MC camera that just arrived on Friday. I stayed out from about 21:30–22:00, and like Rick's earlier report, ran screaming into the house. Wave your hand and feel significant mosquito impact and resistance!

The seeing was not the greatest either night, with a lot of high haze, cloud and turbulence...but no moon! Processed images will be coming soon...still working on converting compression methods in .AVIs that Autostakkert! does not like and cannot open.

Tue/Wed, July 1/2

Kevin K: We went out late around 22:00 on Canada Day to blow off some celebrations. The mosquitoes convinced us otherwise. Never have we seen swarms like this. It was maybe 25C with a slight wind and the density looked in the flashlights like 100 per cubic foot. Solid and Noisy! What hope has the poor astronomer in conditions like this? Wow!

Wed/Thu, July 2/3

Hank: Just spent an hour out in the sweaty, sticky, bug sprayed, mosquito infested observatory. Back inside and cooled down now. WOW that was fun! This just reaffirms my satisfaction with solar observing.

I was just doing a dry run for some family company coming on the weekend. Saturn was surprisingly better than I thought it would be, Mars was too far west by the time I got out to be stable, and M13 was OK but not bright as it would be in a cooler sky. The crescent Moon was awesome in the C9.25, by Sat night it will be 55% and will not be as nice but should still impress the youngsters. Regardless, I am ready to show if I can get them out there.

Kim: Did have a great day outside yesterday (July 2) doing solar, in between the clouds , but it is amazing what a few days can do. June 30th the Sun was calming down, when the new group AR2104 and AR2107 came on...a few days later, AR2109 comes on. I usually am catching the Sun later in the day, so when the new groups come on, they have not been numbered yet, so it's nice to see these, so they can be followed over the next few days.

Saturday, July 5

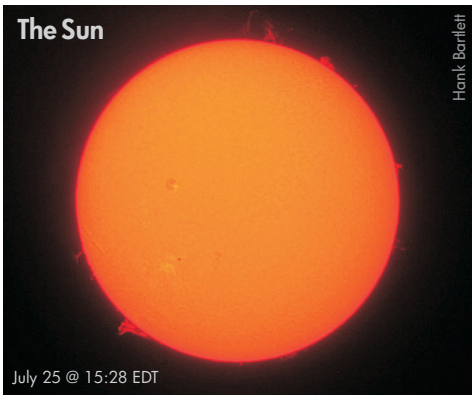
Kevin K: Kim & I drove up to Maberly (~70 minutes NE) to visit with Centre member Fred Barrett. Fred was doing public solar viewing at the Maberly Agricultural Society fund raiser, Pie in the Sky day. Needless to say, they were also selling pies.

We also ran into another volunteer helper, **Susan Gagnon** (visible in the picture). Fred's travelling scope is in the foreground, Susan's in the background.

We dropped off a supply of Starfinders, solar trading cards, moon maps and solar viewing glasses for Fred to distribute and use in his outreach events up north. All in all it was a great day for a road trip.

Friday, July 25

Hank: It appears we may have had an eruption on the Sun:



Monday, July 28

Rose-Marie: Hey...somebody tell these clouds to shove off; I was planning to try to see if there were any Aquarids in the wee hours.

Rick: And not just the clouds! We had the only quite good night right near new Moon essentially ruined by smoke. I was still able to get some photometry done but would have liked some visual work and was planning some pretty picture imaging.★

How closely L.C. Peltier at Delphos, Ohio, discoverer of the first comet of this year, watches the sky, is shown by the fact that he picked up Beyer's comet independently on March 21. He wired the writer about this finding, evidently having missed the notes in the daily papers about Beyer's comet. Apparently it is easier for Mr. Peltier to find a comet in the sky than in the newspapers.

—Professor Van Biesbroeck
[*Popular Astronomy*, April 1930]

Tardis Observatory Updates

Kevin Kell

UPDATE: APRIL 25TH

The Tardis replacement imaging computer "Tycho" is now stable enough in testing to be moved out to the Tardis on Sunday. It is a vintage 2003 AMD Athlon running at 1.8GHz with 1GB DDR ram and an 80 GB IDE drive running Windows XP. It has drivers installed for the cameras: Olivon, Orion Starshoot, and the SBIG ST402ME.

Since it is a desktop vs. a laptop, and there is not currently room for two desktops, some rearranging and rewiring will have to be done. We will fire up the entire system and see if it has survived the winter.

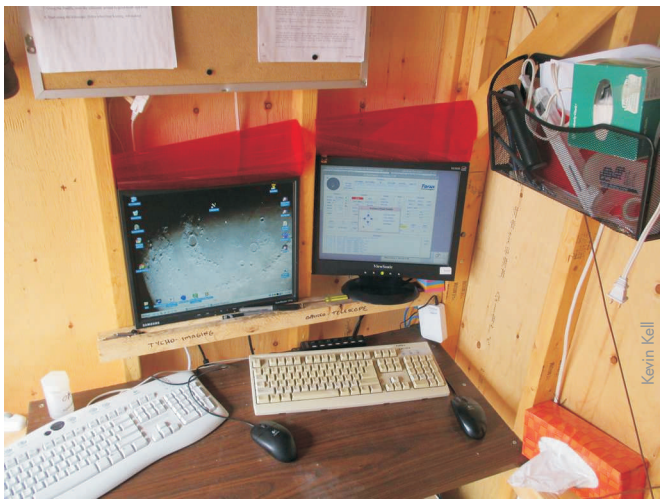
UPDATE: APRIL 28TH

The new Tycho desktop imaging computer (running Windows XP) was installed in the Tardis yesterday and then fired up. The Galileo desktop telescope computer (running Linux) was fired up. The Torus telescope was fired up. Everything survived the winter and looked fully functioning. There were no water or critters in the observatory, and nothing in the mouse trap.

Both desktop computers use PS/2 style keyboards and mice, eliminating one potential USB 1.1 vs 2.0 and mouse/keyboard-camera conflicts.

UPDATE: MAY 20TH

More work was done on the Torus telescope project this past week. A finder video camera with lens with a video-capture-to-USB adapter was mounted and aligned with the scope main optics. We are getting closer!



UPDATE: MAY 25TH

We spent 3 hours last week installing a new video camera and wide angle finder lens onto the Torus and it worked well. It is a very wide angle (6°x6°?) and it helps if there are a set of crosshairs on the video display to know it is absolutely centred.

UPDATE: JUNE 2ND:

Brian & I spent another 2-3 hours working on the collimation of the Torus telescope. We thought we were just getting close when around 22:30 EDT the Tardis observatory was struck by a power outage. Go figure! I could not identify where the issue was, all house and garage circuit breakers were good, but reset some of them anyways. We decided to park the telescope while we still had UPS power available (the telescope computer, display, and telescope, and one 7W light were powered by the UPS and two small 7AH batteries). It was maybe 20 minutes and we parked and shut down the operation.

Small adjustments to the primary mirror (i.e. ½ of a turn screw) slewed the field of view ½ to 1°. At time we were so far out that we didn't realize it (*i.e.* 3-5 full screw turns) and did some back and forth.

The power problem turned out to be a small surge suppressor power bar at the head end of the next observatory over: the built-in circuit breaker popped. I do not know why as the load going through it was constant for 2 or 3 hours. I have assumed that it was simply a "weak" breaker and removed it from the circuit (the power bar itself).

UPDATE: JUNE 6TH

We did a good, solid four hours of work with **Brian** on the Torus and saw some real accomplishments.

1. Seeing was not good: turbulent and there was a first quarter Moon up.
2. Collimation of the primary and secondary mirrors looks as good as it is going to get. It will need more fine tweaking but we need a very good sky to take a bright star out of focus very accurately for that.

We aligned the Telrad and video finder and then went and did a 4-star alignment. Not bad. The four stars were all in the east and south so went we went to northern objects the pointing was not as good as in the south. Using a 32mm eyepiece 125x every one of these objects appeared in the field of view: M3, M13, M57, M67, M94, M82, M81, M40, M5, Alcor, and M10.

We have to check on the installed star catalogs because it would not recognize Alberio or beta Cygni, or epilson Lyrae.

The Telrad dewed up (it will need a heater installed) but otherwise there were no power failures this time!

The mosquitos let up after the temp dropped to 10C. I think I saw a couple of fireflies as well, or critter eyeballs in the light.

UPDATE: JUNE 16TH

Brian dropped yesterday (Sunday) and we got two hours of work done before the fog/clouds and full Moon came up.

We installed another video finder and that worked out nicely—a low light video camera with roughly a 100mm lens.

We did achieve a 6-star calibration model solve and it was very good. Multiple targets all showed up

continues on page 16...

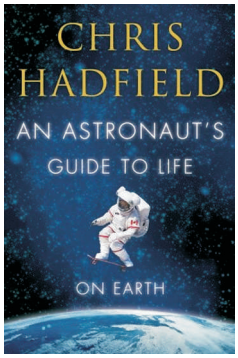
Book/TV Reviews

Kevin Kell

An Astronaut's Guide to Life on Earth by Chris Hadfield

Wow. What a read. I received this book back in December 2013 and took my time going through it, finishing it off just recently. This book is a very easy read with every chapter relevant and interesting.

He describes his entire career in space, in various orders and chapters, from the early beginnings to his final retirement. A lot of relates to life coaching and how astronaut training applies to regular, every day, down-to-Earth behaviour and outlook on life.



This book is recommended for anyone with the slightest interest in space and the nitty gritty of on-orbit operations, getting along with family members while working under intense training regimens and postings to far away places.

Cosmos: A SpaceTime Odyssey with Neil deGrasse Tyson

We watched episode one of the new documentary series featuring **Neil deGrasse Tyson**, which aired on Sunday, March 9th, 2014. It is the highly anticipated follow-up to the original 1980 *Cosmos: A Personal Voyage* featuring **Carl Sagan**. The verdict: one thumb up...maybe two, depending on subsequent episodes. The production quality was top notch, Neil was not bad as a presenter, and the storyline tied in to many points, locations, dialogue and thoughts from the original series. It did divert more into pragmatic scientific method memes and was aired on Fox network in the US, presumably because it was the best target audience for public education and outreach.

After the premiere, we watched episode one of the original series as a comparison. My impressions were that Carl Sagan had a great voice, lent more an air of magnificence of the cosmos that Neil did, but had less detailed information about the topics discussed. Both series are aimed at the general public and we should not expect state-of-the-art science results, but a more general background of the awesomeness of the cosmos.

Bad Astronomy Astronomer Phil Plait (guest speaker at the Calgary General Assembly in 2007) has a review which you can find on his blog.

The show is also being broadcast on the National Geographic channel.

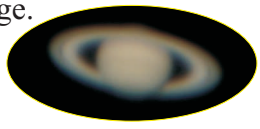
Recommended!★

ASI Camera Review

Kevin Kell

After a very long time looking at various cameras, I decided to finally go ahead and purchase my first Astronomy camera back in May. It was the ZWO ASI120MC for about $300 (give or take): a planetary imaging camera primarily (it is uncooled). I searched for some time before finding a Canadian retailer, Lire la Nature in Montreal, and ordered it in mid-May. Unfortunately they were out of stock and were working on a new wholesale shipment from China. Canadian cost was about $325 plus taxes and shipping and came to about $400.

After a few delays, it arrived on June 27th. First light was June 28th, imaging Saturn with the 20cm LX-200GPS telescope and a 2x barlow. Saturn was 30° up in the sky and the skies were turbulent and bad, but it was not a bad first light image at all! This was recorded by HandyAVI into an AVI of 457 frames and processed in a default manner by Registax 6. The best 50 frames were used to produce this image.



The camera also came with a wide angle lens which I have not yet tried. A five year old netbook was used to run the software. I also tried to connect it to the older computer with a 10' USB cable, a 15' USB active repeater and another 15' active repeater and got squares of unusable noisy video, almost like a test pattern. The camera manual says it is finicky with long cable lengths so I tried it with a shorter 10' cable and got the same results.

It did come with a disk of drivers and a basic Orion Amcap capture program. The drivers went in seamlessly (before connecting the camera!) and worked on every Windows XP and Windows 7 machine I tried it on. I use HandyAVI by default as it is a simple user interface and works. The recommended advanced software for the camera is a seperate developed program called FireCapture.

All in all, this is a very nice camera. It is much better than the Meade LPI and DSI cameras that I have tried in the past.

I can't wait for Jupiter to reappear in the morning skies and for next closest approach!★

Science Fair Report

Bruce Elliott

THE SCIENCE FAIR was well attended this year with over 500 participants. There were no classical Astronomy posters, but there was a lot on space travel, solar energy and one very interesting project that attracted my attention about light refraction.

The title was "Measuring the Refractive Indexes of Light." The hypothesis was that different media can affect the refractive index of light, and this can give information about the type of substances in the media. They made a special Lucite apparatus to hold water with different things in it: alcohol, flour, cream and some other things. They then measured the refraction of light through each medium and calculated the refractive indices. They had repeated their experiments 3-4 times and showed means and standard deviations—very impressive!

I had discussion with them about how radio-astronomers use information from the light from distant stars. Also they knew about the theory of relativity, photons and that $e = mc^2$ (energy is related to mass). This led to a discussion of the famous demonstration of light from distant stars bending as it went past the Sun to Earth. The two young ladies who presented this poster were quite knowledgeable and enthusiastic about what they had done. Their names are **Naomi Tian** and **Donna Gao** from grade 8 at Calvin Park Public School. I chose these two student as the recipients of this year's Enright award.

Thank you for the opportunity to do this. It was fun!★

THE LEO ENRIGHT AWARD FOR ASTRONOMY: award of $75 cash and the book "A Beginners Observing Guide." 2014 winner:
Measuring the refraction indexes of light when passing through different substances. Students: Donna Gao, and Naomi Tian from Calvin Park Public School

It was a great fair this year, with over 200 students displaying projects, another 150 attending workshops with their classes and around 230 adult volunteers participating over the two days.

Thank you for your support, as it is crucial to maintaining the wonderful Science Fair that we have in Kingston.

More Website Discussion

Various Members

Hank: Hey, I have just gone through the upper 500s of the Photo Pile and what a trip! I miss Csar, the fun, the outreach, the friends. Whatever happened to us? The Internet, politics, and old age got in the way and spoiled something beautiful. I can't believe you have the old wine labels and T-shirts and all that on there. OK, the Internet is good for something. Thanks to Walter and Kevin for all the hard work. Maybe someday Csar will get back to Earth. For those that are newbies, visit the 500s to see just what Kingston Centre used to be and how much fun we had!

Rick W: Geez, you mean it used to be even better!!??

Hank: Sometimes it was as if we were Wizards sharing the secrets of the universe. I miss it so.

Kevin K: Times change, people get tired, demographics change. *C'est la vie!* The closets will be emptied of a lot of the old T-shirts and sweatshirts.

This long winter and now cloudy spring is *really* taking a toll on Astronomy. This is why I no longer live on the west coast of Canada! Always cloud, rain, mold, damp, rust. I pity Englanders who also live in a lot of this on a regular basis.

We haven't had a lot of time to take advantage of the new website yet. It has great capabilities and one of these days we will be able to sit down and run people through what can be done.

I am still looking at some kind of chat/hangout session on a regular basis. I think that would help the social aspect.

A T-shirt quilt is a functional way to archive some astro history.

Walter: Unless you've worn them out, don't throw those old T-shirts away! They really just need to be moved from the clothes closet to the linen closet via the magic of quilting.★

Meeting Report: June 12

Kevin Kell

THE RASC KINGSTON CENTRE met on Thursday, June 12th from 19:00 to 21:15 in Ellis Hall Room 324 at Queen's University in Kingston. 22 people were in attendance.

Introductions were made, followed by announcements and discussion about the national RASC organization, upcoming astronomical events, and then we launched into two presentations from Centre members:

Richard Weigand on his foray into the Isabel Williamson Lunar Observing Certificate Program and **Hank Bartlett** on his recent experiences in southern hemisphere astronomy and his visit to Machu Pichu in Peru.

Following these were presentations on the Torus Project, the RMC project, and members' observing reports—including ones from **Susan Gagnon**, **Bruce Elliott**, **Rose-Marie Burke** and myself.

Refreshments were available during the break along with a small swap meet.

It was a good meeting and a good visit with you all!★

KAON Report: June 14

Kevin Kell

JUNE'S KINGSTON ASTRONOMY OUTREACH NETWORK open house at the Queen's University's Ellis Hall Observatory ran from 21:00-23:00. **Jonathan Sick** stood in for Nathalie Ouellette, who could not make it.

68 people were in attendance in the Ellis Hall auditorium when the evening started with the newly-minted ***Dr.* James Silvester** giving a presentation on "Observatories of the World." This was a travelogue of his journeys to various sites in the world during his graduate student career, starting with Pic du Midi in France and then moving through the Paranal Observatory in the Atacama Desert in Chile and finally to the Canada-France-Hawaii telescope on Manua Kea in Hawaii. James' delivery was very good.

After the talk we adjourned to the observatory, warm room, and hallway. The observing deck was closed again due to construction of the new air conditioning facilities on the adjacent roof. We suspect that the observing deck may not be available again until September. Note that the August KAON session is cancelled.

The AC area adjacent ot the rooftop observing deck.

Susan Gagnon did a presentation on her portable telescope in the hallway with **Kim Hay** assisting. **Brian Hunter** also fielded questions from the patiently-waiting-in-line people.

Targets in the Celestron C14 were Saturn and, near the end of the session, M57. The session ran past 23:00 and Kim & I had to leave as it was another 40-minute drive home and it had been a very long day for us. Jonathan and James closed the place down.

A couple of thoughts: it might not be a bad idea to add some low level LED red lighting to the stairs. Many of the public coming down the stairs had issues; some red flashlights (and white ones as well) should be standard issue in the dome area as well.

KAON sessions continue to be a lot of fun, and a good experience to interact with the public and chat about Astronomy and do a lot of basic Q&A. We encourage our members to think about volunteering on a individual event or regular basis. Even 2 or 3 new volunteers to man the 20 cm "Fitzgerald" Dobsonian telescope or to help manage/interact with the crowds would mean a lot.★

KAON Report: July 12

Susan Gagnon

SEVERAL DAYS OF BEAUTIFULLY CLEAR WEATHER gave way to hazy cloud as the evening Open House approached. **Nathalie Ouellette**, the observatory coordinator, gave a talk on the historical record of how our understanding of the basic structure and scale of our 'local' universe evolved. The contributions of Leavitt, Shapley, Curtis, and Hubble were cited. This was followed up with the variety of galactic structures we see today and the factors that influence their development. It was a great talk that generated a lot more questions than usual, which was terrific. Approximately 50 folks took in the talk.

There were tours of the dome, but there was little to be seen due to the weather, and fewer than usual went up for the tour. I had brought my scope along to do a little telescope show-and-tell for those waiting in line, but this was not required.

I had Moon handouts with a few major structures labeled as well as a picture relating the apparent size difference between apogee and perigee. Extras of these are pinned to the bulletin board for future use. I also left national brochures and a list of the times of day for all full Moons

Blast from the Past: Canadian Eclipse Party 1869

Commander E.D. Ashe, R.N.

WE HAD AGREED TO ERECT the observatory about half a mile from the station, on a rising part of the prairie; carpenters were engaged, and all arrangement made with a lumber merchant, who would supply what I wanted and take it back when I had done with it, only charging us for the damage done to the stuff. Early on Monday morning, the instruments were carted out and unpacked; and at sunset the four walls of the observatory were up. Now, as we thought it not advisable to leave all these things open on the prairie, it was agreed that some one should sleep there—and, of course, it was my duty to remain. They sent down a mattrass, pillow, and blanket; there was no wood to build a large fire outside, but I collected some chips, and lit a small fire inside, and placed my mattrass alongside. A little after sunset a musquito looked over the wall, and then sounded the assembly; on they came, and I with my head in the smoke kept blowing the fire, putting on wet grass to make a smoke; but, after half an hour at this work, I found out the fact that man was not intended for a pair of bellows, and although I assisted the action by compressing my sides with my hands, still at the end of the half hour that I blew I found that I was blown. When once my head was out of the smoke, the musquitoes flew at me; I stood up to fight them, but in so doing I had to fight myself also. Now an army was drawn up in contiguous columns on my cheeks, the skirmishers advancing through my eyebrows; at their first volley I felt as if I was struck with a hackle. I really think that they work their stings like the needle of a sewing machine. Maddened, I struck myself a fearful blow with both hands in the face, and had the satisfaction of making them "leave that," and so I fought myself and the musquitoes for some time: still they attacked me with an impetuosity truly marvellous, and where one fell two took his place. I was getting weak; a storming party had now taken possession of my right ear; I clenched my fist, and with a swinging blow, cleared the ear, but knocked myself down. Exhausted and worn out, I put my hands into my pockets, and gave them my head. In that half-dreamy state, the long, long hours were passed; and after they had breakfasted, dined and supped, they began to discuss me. "Ah," said one, "if you want a good drink, strike between the corner of the eye and the nose." "No, no," said a large party; "if you want a draught of good sparkling astronomer, sink your pump in his temple." "You are wrong," said a dissipated old fellow with frayed wings; "just creep up his cuff, and harpoon his wrist, and there you will drink until you lift yourself off your legs." Then they sung the following

SONG.

"The blood of the Indian is dark and flat,
And that of the buffalo hard to come at;
But the blood of the astronomer is clear and bright:
We will dance and we'll drink the live-long night.

Chorus:—"How jolly we are with flights so airy;
Happy is the mosquito that dwells on the prairie."

And then they quarrelled and fought with each other, and made speeches,—and so the dreary hours dragged along; but when the eastern horizon was tinted with beams of light, they staggered off to their respective marshes—some to die of apoplexy, others of *delirium tremens*. Verdict—served them right. From dawn until six, I had a refreshing sleep, and when my relief came, I awoke up, and began to think whether I had heard all this, or only dreamt it. I suppose I dreamt it.★

Commander Ashe and two others had travelled to Jefferson City, Iowa where they were ultimately successful in observing the total solar eclipse of August 7th, 1869.

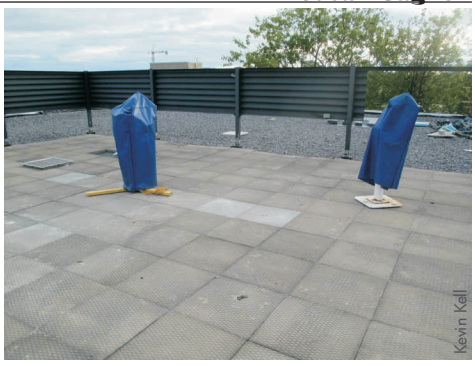
The published account of this expedition is in the RASC library and is available on rasc.ca.

...KAON Report: July 12

Susan Gagnon

in 2014. This last item was inspired by a woman I ran across last weekend who wondered about seeing the Moon during the day. I don't think it is something that people think about much unless they are into Astronomy.

The August KAON session is cancelled as there are so many Queen's folk away. I am hoping that September will see an end to the construction zone in the observing deck area. I also look forward to a chance to see the dome with the newly reduced pier. Apparently it was always too tall for any scope that was there and now has been halved.★



Right: The rooftop observing deck on the top of Ellis Hall where KAON's outdoor observing is done.

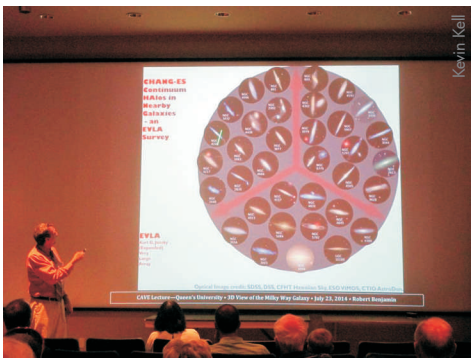
CAVE Lecture: July 23

Kevin Kell

BOB BENJAMIN gave an interesting talk about the 3D shape and structure of the galaxy and how that view evolved over time. Attendance was good at over 100 in a room that holds 247. It was a bit warm and in the dark I found myself nodding off a bit. The talk ran about an hour.

One of the highlights was to meet up with **Jayanne English** and **Jennifer West** from the University of Manitoba. I hadn't seen them in years! It was also good to see **Mark**, **Brian**, **Tessa**, **Richard**, **Paul** (and **Kim**!) amongst the crowd.

Judith Irwin gave the intro and thanked the Kingston Centre for its help in advertising and promotion.★



...Tardis Observatory Updates

...continued from page 11

within the 32mm eyepiece.

We then installed a Mallincam Universe camera to test some imaging but by the time we got to that point, M52 was being covered in haze, fog and lit up by the moon clouds.

UPDATE: MIRRORS RE-COATED!

On Thursday, August 7th the mirrors were removed from the scope in a half-hour operation. On Saturday, August 9th, they returned from Montreal all re-coated and looking great. On Tuesday, August 12th, the secondary mirror was reattached to its holder.

UPDATE: MONDAY, AUGUST 18TH

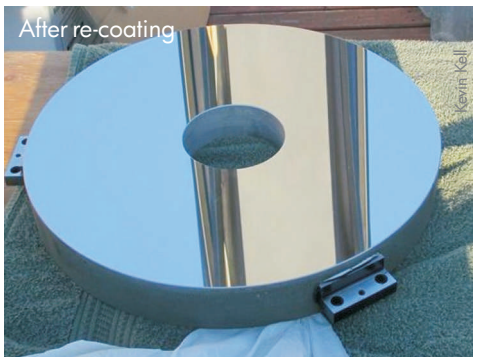
Susan, **Brian**, **Kim**, **Paul** and myself were on hand for the mirrors reinstallation into the Torus scope. It took about an hour and the secondary seemed to take more time than the much heavier primary to re-install.

We managed to complete a gross mechanical collimation of the optics but as we were about to go into a little further refinement the mosquitos attacked, even though it was already down to 12C.

We did manage to point to Vega and do a little quick look. The defocused star showed asymmetry, but not too much. A pinpoint best focus showed a lot of diffraction spikes and a pretty darn small pinpoint, but it can and will be better.

Cable management needs more work, pointing is still holding up pretty well but we still had to hunt around for Vega.

The imaging Windows XP computer was repaired.★



...Meeting Report

...continued from page 3

appropriate computer, camera and audio equipment to make it worthwhile. We will revisit this in the future.

Hank: I do not know how you recall so much of what went on. This was the first meeting in years that I was able to make the pre-meeting dinner and it was great! It was so nice to see everyone and catch up or just chat. The meeting went well and it was good to see what others are doing. I look forward to next month and getting there even earlier.

Thank you to the exec for their hard work.

Susan: I also really enjoyed the meeting. Something that cannot be over-stressed is the value of gadget photos. Leslie's pictures of his camera set up were very instructive. It was possible to see all of the parts and how they fit together.

Dinner was great too. It has been a long time (Christmas) since we've had so many members out to dinner.★