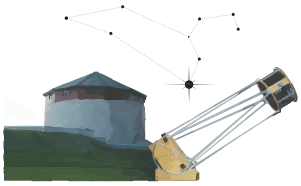
May 2015

Regulus

RASC Kingston Centre



Malcolm Park imaged the summer Milky Way, including Nova Sagittarii 2015 No. 2, on March 29 at 05:04 EDT.

Upcoming Meetings

Thursday, May 14 **7 p.m.**
Members' Night:
Discussions on how to build an observatory.
Malcolm Park on the *Sky Safari* app.

Saturday, May 16 **7 p.m.**
Observing Session
North Frontenac Dark Sky Site

Thursday, June 11 **7 p.m.**
Regular Meeting
Rick Wagner:
Creating Variable Star Light Curves

Saturday, June 13 **9 p.m.**
Observing Session
North Frontenac Dark Sky Site

Meetings are held in Room 324 at Ellis Hall on University Avenue at Queen's University in Kingston, Ontario. kingston.rasc.ca
The North Frontenac Dark Sky Site is at 5816 Road 506, just south of Plevna.
kingston.rasc.ca/observing/sites★

In this issue:

The MacLachlan Woodworking Museum
http://woodworkingmuseum.ca/

Meeting Report: April 9

Susan Gagnon

EXAM TIME AT QUEEN'S in April leaves our usual meeting room unavailable and the woodworking museum, located alongside the Grass Creek Park was of interest as a possible dark observing site for possible public events. Equipped with an SQM, we were prepared to evaluate the sky—but it rained.

Kim Hay, President, called the meeting, with 10 members in attendance, to order at 7 p.m. in the meeting room of the McLachlan Woodworking Museum. Kim began with an update of recent activities. **Bruce Elliot** had been to the Science Fair and had awarded the *Leo Enright Prize*. **Greg Latiak** had sat in online on the recent National Advisory Council meeting. The meeting lasted most of the day. **James Edgar** continues to chair these meetings. Greg reported that there was wide discussion on many issues but no indication that ideas would influence any board decisions. Perhaps this system has yet to evolve.

Future Events: April 25 and May 9. Astronomy Day will officially be May 9th which corresponds to Science Rendezvous at the KRock Centre from 10 a.m. to 3 p.m. RMC has a booth inside and will conduct solar observing outside if it is clear. KC members may be able to help out with this.

For a nighttime public event, the Centre will host an observing night at Fairfield Park out highway 33 on April 25th [*see page 3*]. There will

Continues on page 12...

There is lots of parking and potentially a good spot for observing.

Variable Views & News

Walter MacDonald

Highlights

GK Persei had another outburst this winter, reaching V=10.0 in early April. After several attempts, **R CrB** is almost back at maximum, reaching V=7.5 in late February, though it has dropped to V=8 in late April. So it's once again a binocular/small telescope object for the first time in about 8 years. What a show! (See *Regulus*, February 2013, page 13.)

Another Asteroidal Imposter

Observer SPK announced this bit of interesting information about DE Cnc on AAVSO:

In February 2005 Dr. Gerold Richter and Dr. Wolfgang Wenzel confirmed, after checking the Sonneberg plates, that the object "in outburst" on 1977 February 21 was indeed (588) Achilles.

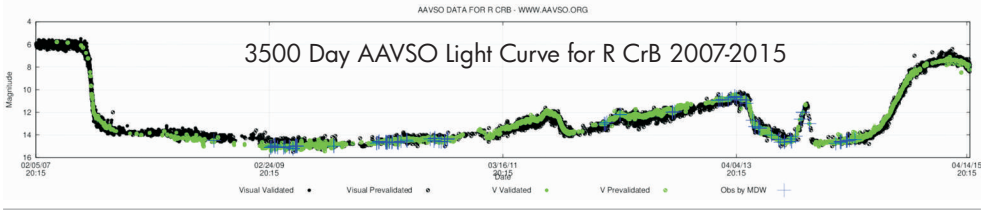
For a list of other variables that turned out to be asteroids, see "A Star by Any Other Name," *Regulus*, March 2007, page 5.

Fifteen Minutes of Fame

Any time you submit observations to the AAVSO, your contribution is listed on the front page of aavso.org

(as shown here), at least until somebody else submits some obs. These days that could be minutes—or even just seconds—later.

One other thing to note is that there is rather brisk competition to be the one who submits a milestone observation: typically a multiple of 1, 5, or 10 million obs. There is even a pool to predict when the milestone will be reached (just for fun, as there is no prize for winning this). The 30 million milestone is coming up, so get ready for fireworks! ★



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

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Meeting Report: March 12

Susan Gagnon

KIM CALLED THE MEETING TO ORDER at 7 p.m. with 16 in attendance. Announcements were made: April 9th meeting will be at the MacLachlin Woodworking Museum. We will have a small meeting room there from 6:30 to 9:30 p.m. and will wind up with an observing session if clear. Frontenac Dark Sky Site event dates have been confirmed and posted on our website.

Member **Tim Sietz** was our feature speaker for the evening and he spoke about Navaho Astronomy. Over many years of exposure to the southern US Tim developed a love for the area and the Navaho culture. The reserve he came to know is 29,000 square miles, the largest in the US. The main theme running through the Navaho astronomy lore is the family. The Big Dipper is man and Cassiopeia is woman. Other constellations were involved in telling the story of creation. Even the construction of homes (dwelling called a Hogan) was influenced by the rising of the sun with the doorway opening to the east. If you are interested in more I am sure Tim could recommend some books.

After the talk there were a few brief member presentations **Richard Weigand** distributed 3D glasses and took us on a tour of a website of 3D Lunar crater images. It was very cool. **Richard Wagner** had a set of photos testing the trailing limits of exposure length with his barndoor tracker as it relates to focal length. There was evidence that the focal/exposure relationship was linear with respect to resolution with an increase in focal length requiring a shorter exposure. **Rose-Marie Burke** and **Malcolm Park** had great photos of recent aurora.

The meeting adjourned at 8:42★

Observing Report: Saturday, April 25

Kevin Kell

EVEN WITH 50-90% CLOUD COVER, we headed down to Fairfield Park in Amherstview to meet up with **Susan Gagnon** who was already onsite mallard hunting.. or was it loon lurking? Apparently telescopes can be used to observe fowl. Fowls. Many fowl.

We set up and had two pleasant surprises. First was, the 20cm "Starbuck" Dobsonian had all of its pieces when we set it up on the waterfront just in front of the parking. It moved very well...too well. Too much WD40 methinks.

Second was a guest from RMC.. **Mike Earl**. He set up an older Celestron Orange 8 along with portable power centre and small battery, turned it on and presto, it was operational. I shudder every time the Meade LX-200 needs a complete reset... 20 minutes later your observing event is already over!

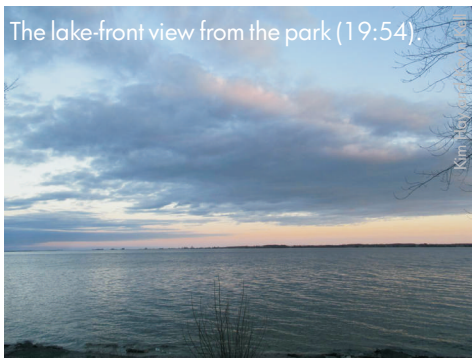
The third pleasant surprise was a visit from **Sandy McHattie**, visiting from somewhere down south. He and his guest stopped by and chatted with everyone while we waited for sucker holes to appear for Jupiter and 4 moons, Luna, Venus and a lot more cloud. From inside to out were: Callisto, Io, Ganymede, and Europa.

We were observing a small Jupiter with at 63x (19mm eyepiece). It was very nice to observe through Mike's tracking scope at high power... It was doing quite well.

We were packing up as the cloud was getting worse when Mike brought out a small 2m handheld radio and started communicating through a relay transponder on SO-50 FM (Saudisat 1C) Country of origin: Saudi Arabia. Mode V/u FM Transponder, 250 mW. VHF uplink: 145.850 MHz FM, 67.0 Hz tone. UHF downlink: 436.795 MHz FM. The pass lasted for about 10 minutes before we lost the signals. Still, it was fun listening to live satellite relays from Cuba and the US.

We packed it in before 21:30 and head home.

Susan: Why are so many failed public events so much fun? I had a great time last night. Thanks to Kim and Kevin for coming out.★



The lake-front view from the park (19:54).

The first quarter Moon was out. 20:12 EDT. 1/125s ISO 160

Kim Hay and Kevin Kell

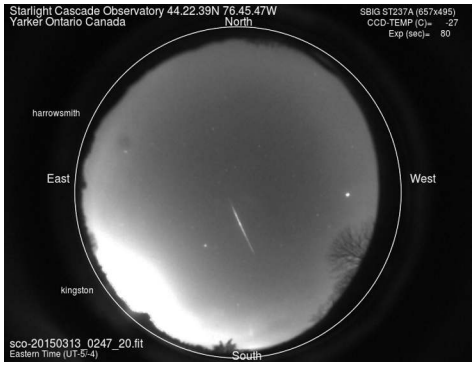
L to R: Mike Earl, guest, Sandy Mchattie, Kim and Susan. (1s hand-held shot at 20:34)

Observing Reports: March–April

Various Members

THU/FRI, MARCH 12/13

Kevin K: I was reviewing the AllSky camera overnight events and came across this awesomely bright event at 02:46 EDT this morning. It is the brightest we have seen in a long time. This is an AllSky1 camera image, 80 second exposure.



Mark Kaye, viewing the image on his shoe phone, asked how Kevin could be sure this was a fireball and not an Iridium flare.

Kevin K: Past history. Iridiums do not get nearly that bright and that long at the same time. The brighter, the shorter path length to start. A –8 Iridium barely shows up except maybe as a point source.

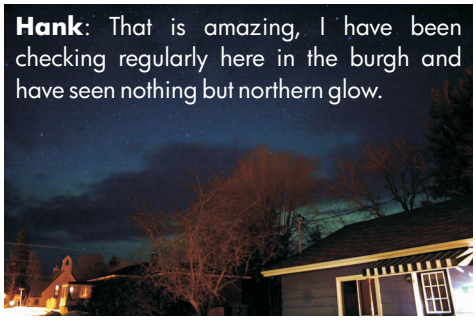
TUE/WED, MARCH 17/18

Malcolm (*18:27*): Kp is still 7. I'm going aurora hunting, heading up to Roseneath, north of Brighton.

Rose-Marie: I went out with the camera and took a couple test shots... yeah, there's green in between the gaps. So I said heck with it, got bundled up, loaded camera gear in the truck, and headed down Unity Rd. to the Collins Creek Swamp. Hey. Bigger gaps. Waited. Damn, it's starting to clear! Could it be clearing? Big gap now! It's clearing! And there's green!! So set up and started shooting. The green got brighter, after an hour or so spikes began to appear...and then...THE PEAK. Oh man...I haven't seen aurora like that for many years!!

Am now warming myself and the camera up, going to download the 200 or so shots. PLEASE please PLEASE let them turn out in focus!

Okay, starting to feel my toes again. Good thing I remembered to grab a couple hand warmers, they sure came in useful tonight.


Hank: That is amazing, I have been checking regularly here in the burgh and have seen nothing but northern glow.

Hank (*just past midnight*): Way to go; I am giving up and going to bed.

Malcolm (*the next afternoon*): I did go up to Oak Heights and the green auroral band was the most prominent feature for about 2 hours.

As twilight faded, it emerged as a complete arc across the northern horizon about 25° up. There were thin wispy spikes from time to time but nothing really dramatic. And the green band was all I could see visually.

For a Kp8 there sure wasn't a lot going on. This had more of a Kp6 feel to it and at no time was any aurora overhead and it just didn't seem that the sky was energized.

But still, always a nice show when you can see aurora. It was extremely windy and cold; I managed to stay out for about 2 hours then around 10 p.m. I called it quits.

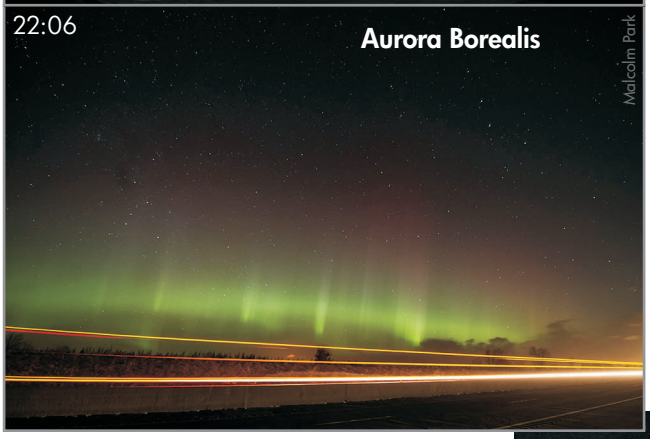
Not long after that, as per Murphy's Law, there was a brief flurry of activity, with spikes and dancing curtains for about 20 minutes. I saw most of this part of the event from the car driving south to the Big Apple, then east on the 401 driving towards Trenton.

At the Brighton exit I diverted north (frustrated that I was missing the best part of the show) and tried to find a nice dark secluded spot with a vista. But I gave up, and not long after the show died down.

On my way home my exit is the Wooler Road exit, and I was through there about half an hour before the pile-up on 401. Lucky for me, not as lucky for those involved.

Rose-Marie: Oooh, couple beautiful landscape shots in there. Yes, there wasn't much happening for the most part, for about 20 minutes around 10:00 p.m. was when the spikes were happening. It was very low to the horizon; from up here near the house I couldn't see much of it. It wasn't until I was down looking across the valley from Unity Road that I could see the arc. I used the wide angle lens most of the time, since I wanted the wider sky view; I was kicking myself

Rose-Marie: It was low on the horizon, so I'm glad I went down to the Creek where there's a wide open view:



that I didn't pop the 50mm lens on and take a few shorter exposures to get sharper bands on the spikes. But...I'm happy I got out there and saw it. My neighbour has a two storey house; he says he had looked out a few times but didn't see anything.

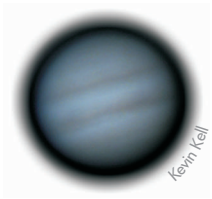
Glad to hear you got home safe and sound. The problem with this hobby is the night-time aspect of it.

Hank: Beautiful images Malcolm. There is a lot to be said for taking the time to travel, set-up and good foreground in images. All of which I am generally to lazy or rushed to do.

Kim: Very nice Rose Marie. I love the spikes and sprites. I did go out this morning, and there was a faint glow (5:10 a.m.). I took a shot of Scorpius, and looked for Sagittarius, unfortunately as you say, there was too much skyglow from the south over Kingston. [*Note how nicely Saturn is enhancing Scorpius –Ed.*]

Wed/Thu, March 18/19

Kevin K: I went out to do another Jupiter imaging run. I still haven't built a dew shield or added heat to the Meade 10 cm Schmidt Cass front corrector plate. I did five runs with the Celestron 2x barlow and two without.



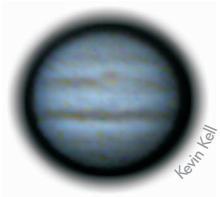
25ms exposures were taken for 60 seconds. Then 50% of those were stacked to create this (fuzzy) image. (2x Barlow used.)

So far it looks like the 20cm Dobsonian using drift scan gives the best images to date.

The AllSky1 camera system showed a little aurora in and around 22:00 EDT, but for less than an hour either side.

Thu/Fri, March 19/20

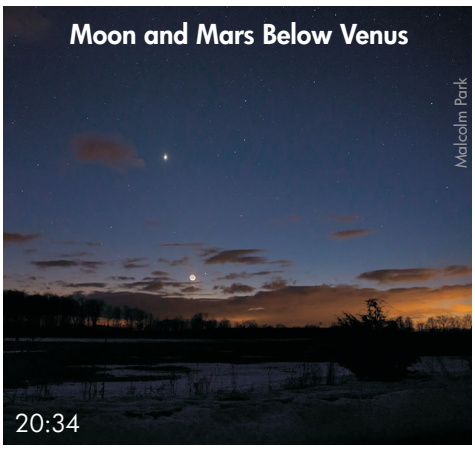
Kevin K: I did another quick imaging session of Jupiter between periods of Ottawa running over the Bruins. Seeing was bad, transparency was below average, and we were testing out internet broadcasting the observing session as well.



5ms exposures were taken at 100-150 frames per second for 60 seconds. Then 50% of those were stacked to create this image.

Over the course of 30 minutes the images got worse. I checked the corrector lens but it appeared clear. I did refocus a couple of times and the temperature of the scope optics are at ambient, so temp should be a minimal effect.

Sat/Sun, March 21/22



Rose-Marie: Lovely shot. 'Twas clouded out here.
Kevin: There was a little aurora this morning around 04:00 EDT (nothing to write home about) as seen on the AllSky1 camera. I was out imaging last night for about 15 minutes and did not see anything naked eye.

Sun/Mon, March 22/23

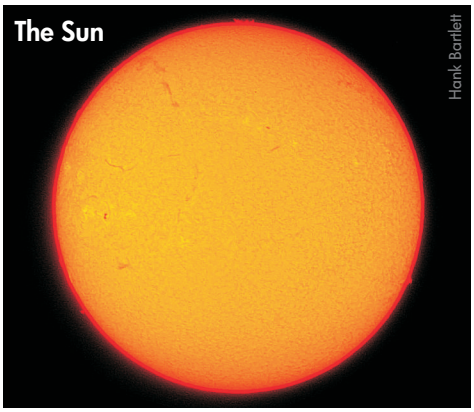
Walter: The Moon and Venus were absolutely gorgeous this evening, with spectacular Earthshine!
Rose-Marie: We had clouds to the west at sundown, missed the Moon/Venus/Mars show.

Late in the evening I kept checking the aurora indicator, and sticking my nose outside, didn't see anything. Around 11:00 p.m. it looked like something brightening and dimming to the east, so took the camera out into the field across the road for a few shots. It was a cloud, something was making it bright. Clouds were hanging on the northern horizon, so nothing there. Set the alarm for 2:00 a.m. to check, nada.

BigWetNose was curled up next to me, she heard something at 5:15 a.m. and exploded into a barking fit. Looked out, sky looked clear, so got dressed and headed out to see what Sagittarius looked like. Took a few pics but dawn was already starting, between the light pollution and sunrise and a faint haze I doubt the nova will show up.

Image: March 23, 4:59 a.m. Specs: ISO 1600, f/5, 28s, 18–55 lens at 41 mm. Cropped and enlarged.

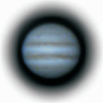
'Twas getting towards dawn, and I was bleary eyed; didn't have time to fetch the barndoor tracker to try a longer exposure. At 40 mm it started trailing a bit. I went out again even earlier on the Tuesday morning, but the haze was so bad you couldn't even see Sagittarius.



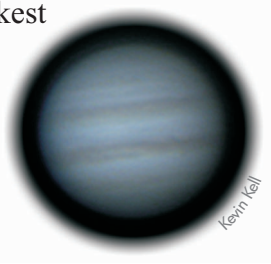
Hank: I have been watching and imaging the Sun. I took 88 images today and kept 7, the best of the lot is shown above. The sunspots do not look as big in H-alpha but you can see the energy region around it. There has been little activity in the past few days.
Kim: I arrived home and after 5:00 pm did some white light solar observing. There are a few small pores that have appeared, and a new set of sunspots coming on 2308, 2309, 2311.

Mon/Tue, March 23/24

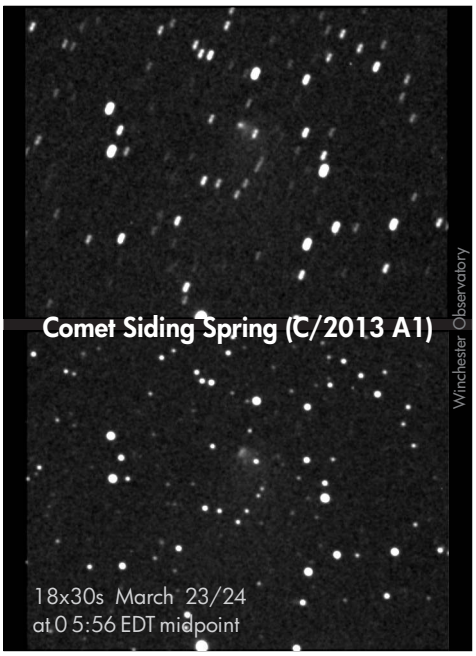
Kevin K: Clear skies, but it was cold and there was a good wind that came right up and over the observatory walls and inside. I only lasted 30 minutes or so.



The new (temporary) dew shield was finally completed out of an old purple file folder (this was the darkest colour I could find). I did see an improvement over the past few sessions—enough so that I went back from no Barlow (smaller image) to the Celestron 2x barlow (larger image).



Walter: I did some visual observing in the dome this evening, then put the camera back in and did CCD imaging of variables stars (01:17–05:44). Working in twilight I then imaged C/2013 A1 (the only semi-bright comet these nights) and finally finished up just before sunrise by taking new flat frames.



Tue/Wed, March 24/25

Kevin K: I did some lunar and Jupiter imaging. The lunar stuff autostacked badly, so needed manual work and some of them eventually turned out great. I also got a 15s exposure of Sagittarius just before 06:00 but the sky was too bright and there is no sign of either of the novae.

[*Nova #2 (arrowed) is faintly visible.–Ed.*]

Sat/Sun, March 28/29

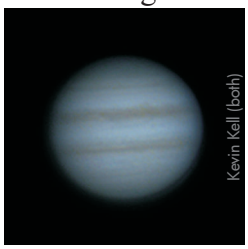
Kevin K: Both Kim & I were out saturday night during Earth Hour, doing imaging runs of the Moon and Jupiter. A brief survey of the local neighbourhood showed little to no participation in this conservation statement.

Tonight was the first use of the Televue 2.5x barlow as well on the Meade 10cm SC. The quality of Televue shows over the Celestron. Even at 2.5x. I believe the results were better than the 2x. Still though, focus is soft, constrast is soft, and it is now time to move up to larger primary mirrors.

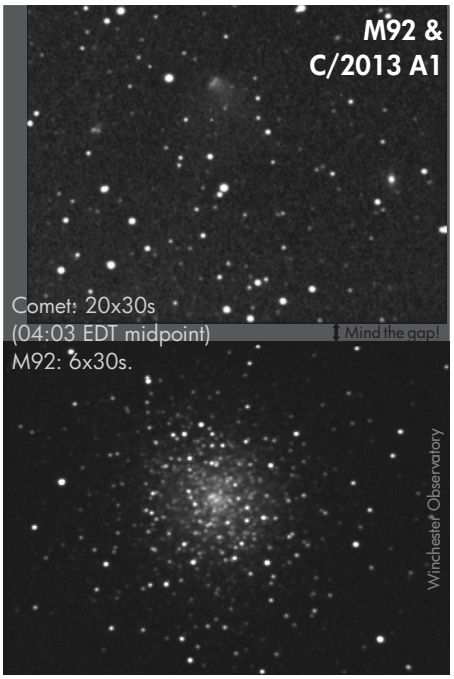
The seeing was poor, transparency was average. We were out from 20:00–21:00 EDT. It was still twilight, but it was good for imaging the the Moon and Jupiter. It was still cold though: –10C with a wind. Brrr.

Here is the first image of the run, Jupiter at f/10 (1000mm), 5ms exposures for 60 seconds for 5359 frames in total.

And here is the last of the images with the Televue 2.5x barlow, giving f/25 (2500mm), 35ms exposures for 60 seconds (1712 frames). For both images the best 75% of the frames were used.



Walter: I was able to get up at 3:30 this morning (I was going to get up ~03:05 at the end of the news, but it took that long to motivate myself to get out of bed). I imaged 12th mag Comet Siding Spring again, this time next to M92. This was shot as a mosaic, but in my haste I failed to notice an almost one arcmin gap between the two frames. Oh well, the result is still nice. (The comet was much closer to M92 for people in Europe a few hours earlier—this comet is really trucking along.) Then



I pulled out the CCD camera and looked at a few variables, M13, and Saturn visually. After that I put the camera back in and got it refocused so it is ready to do new flat frames on the next clear night (whenever that is).

Malcolm: I got up at 4 a.m. this morning, and the sky was perfect, but it was –8c and there was a steady north wind with some bite to it. Winter's last gasp perhaps?

It was interesting to note that I was seeing the summer constellations (Scorpius, Sagittarius) the Galactic Core, etc. over a frozen lake!

I used a softening filter on the lens which is more of an artistic interpretation, making brighter stars appear larger. Borderline bloated, but I went with it! It does emphasize the major stars and make the constellations easier to pick out. Scorpius was standing right on the horizon when I took these shots, with Saturn wandering through. [*This is our front cover image!–Ed.*]

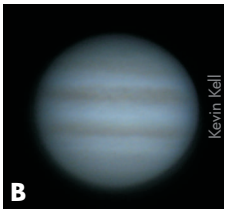
Wed/Thu, April 1/2

Kevin K: I got in some quick imaging of Jupiter after 9 p.m. last night. There was an almost-full Moon within 30–40° of Jupiter did not help too much.

Meade 10cm f/10 SC

A) No barlow
5ms exposures for 60s
75% of 8189 frames

B) Televue 2.5x barlow
31ms exposures for 60s
75% of 2044 frames



Seeing and transparency were average. Having the Moon in the sky did not seem to affect quality of images that much. There was some haze moving in, ahead of the next weather front. It looks like this is the best that a 10cm can do, so it is time to move on to the next scope.

Fri/Sat, April 3/4
Total Lunar Eclipse

Kevin K: Well, we got up early and headed out around 05:45 driving west for about 15 minutes. It was dark, cloudy and snowing. All of the satellite imagery showed a chance that it would clear up in time. We were onsite by 06:00 and it was still snowing.At 06:15, U1, it was still snowing.At 06:30 it was getting light.. and it was still snowing.At expected moonset of 06:45 it was still cloudy and snowing.Here is an image looking west towards the never-seen-moon from the great event!

On the way home, it cleared overhead.

Malcolm: Same here in Prince

Edward County, except it seemed to be mostly fog and the light dusting of snow that had fallen earlier in the night.

Mark K: Light snow here. There is an astronomers myth about it always being clear at full Moon. I guess that needs to be modified to say it is always clear at full Moon when there is not an eclipse. It is clearing up now, of course...

Tue/Wed, April 7/8

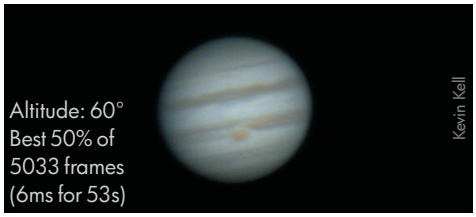
Kevin K: I went out last night at 23:30 UT and again at 01:00 UT April 8th. This was my first time out with the Meade 20cm LX-200 (first power up since the fall), with dew heaters but no shield, the ZWO ASI 120MC camera, and FireCapture software.

At 19:30 it was too bright to do a two star alignment but I manually drove to Jupiter and did one run using the drift scan method of imaging. It actually worked out not too bad. Seems to have caught the GRS coming on and a moon shadow on the surface of Jupiter.

After 01:00UT it was dark, I did a two star alignment on Capella and another star in Auriga (fighting a wonky hand controller). It found Jupiter in a low power eyepiece, so I synch'd on Jupiter and put the camera in. Centring Jupiter and focusing was much harder at 2000 mm focal length (f/10). Eventually I prevailed.

It was cold sitting out in a chair by the scope, so I thought, let's ramp it up a bit. I hooked the camera and telescope into a USB hub, connected it to the 5m USB repeater that went into the observatory, and put the chair inside. It was much warmer there, even with the doors open. Tracking was not bad, but I still wanted some remote control of the scope. Firecapture has a telescope control option but only for autoguiding, and I have not come anywhere close to learning about that. *Stellarium* doesn't, and I finally settled on HandyAVI which also allows you to slew and to control the microfocuser. Bonus: it worked!

Jupiter now covers about 112 pixels. The Great Red Spot features prominently in the southern equatorial belt. The planet is rotating from left to right. North is up.



I can't wait to add a new dew shield and better pointing and tracking. The neighbours graciously turned ON their two back lights and left them on for the full session.

Rick W: Good to hear you were out and having some success Kevin. I put the photometry scope out in the early evening, and tried out my twilight flat field script but it still seems to be having problems (I thought I had this debugged months ago); hopefully I've made the necessary corrections now.

I've chosen a whole slew of new variables to observe; three were predicted to go through maximum at different times during the night. I carefully estimated the shapes of the light curves to figure out when best to switch between targets, when to meridian flip, etc.

The first star of the night was TT Cancrii. I watched as the star made its final dip to minimum and them begin the rapid climb to maximum and then begin to fade as the cloud moved in near midnight. Aaargh. However, it looks like it was running an hour or more late which is good to know. And it is the first time I've observed it so at least I got a few hours of its light curve.

So I gave up, set the camera to shoot dark frames (takes about 6 hours to do a whole set) and went to bed.

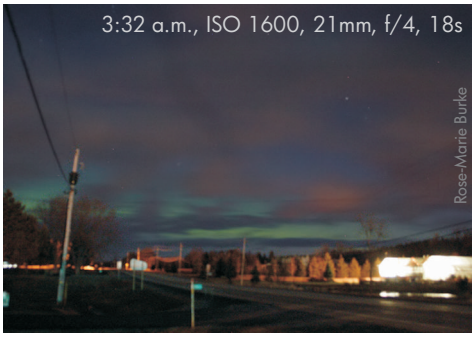
At 03:30 I awoke to clear skies. Aaargh. I went back to bed. But after 5 minutes all I could think of was clear skies so I got up, started the camera shooting AR Her which was predicted to max about 03:45 (so all I got was a beautiful linear downslide from max, but again I need to get its whole light curve so any obs are good obs).

While the camera worked I got the 20cm f/5.6 Newt out and spent two hours looking at the Moon. Seeing was poor to awful but I managed to pick out a number of interesting objects.

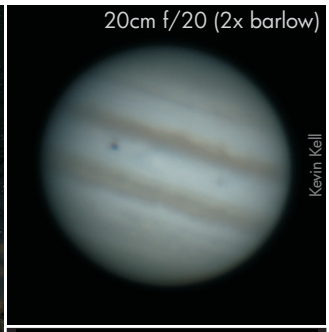
I went to bed again about 06:00 with the sleeping mask on so as not to wake when that pesky Sun ruined the sky.

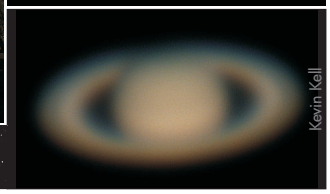
Fri/Sat, April 10/11

Rose-Marie: We missed some good auroras last night. I know this because the BigWetNose rousted me out at 3:00 a.m., and I could see a green glow in the tiny gaps in clouds to the north, a glow bright enough for the naked eye to pick it up immediately. I went in and got the camera, and took a few shots from the end of the driveway. Thee was a lot of cursing at clouds and at that strong wind. Had it been clear I would have hopped in the truck and driven down to the valley.



Malcolm: I left my camera running last night despite the clouds. Kp was 4 all night, and I did capture some aurora, but mostly clouds. Here's a frame from a clear moment at 00:36





SAT/SUN, APRIL 11/12

Kevin K: Wow: great night, great seeing. I went out after 21:00 EDT and spent an hour imaging with a 20cm scope and then about half way through adding the 2x Celestron barlow.

In the second image [*top centre of page*] that is Io and Io's shadow transiting Jupiter. North is up.

MON/TUE, APRIL 13/14

Kevin K: We went out around 03:45 after the storm had cleared through and were taking a look at Saturn and Nova Sagittarii #2. It was cool (~2C) with a slight breeze, definitely chilly. Transparency was average, and the seeing was poor. Saturn was bouncing around in the FOV a lot. The 20cm SC front plate dewed over pretty quickly. 35ms exposures were taken at 10–12 fps for 60s.

TUE/WED, APRIL 14/15

Rick W: Wow, pretty blurry. However, I am picking up hints of the Cassini Gap. And congratulations on being able to start observing at that time of the morning. It isn't often that I can convince myself to get out and start observing once I'm ready for bed, let alone warm and sleepy in the bed.

It was still cloudy here in the early morning, but cleared off by 9ish. It's clear now—the scope is shooting RW Cnc. Hoping to shoot all night and then again tomorrow night, though two nights in a row is almost unheard of around here. Even one night in a row is rare enough! And indeed the IR satellite looks like some cloud might come through in an hour or two.

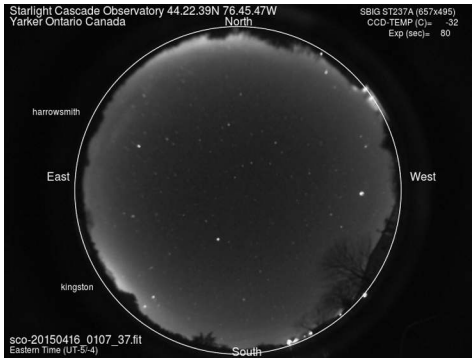
WED/THU, APRIL 15/16

Rose-Marie: By golly, we had some nice aurora tonight. I took the camera and went down Unity Road to the marsh and got some pics.

Kim: We were out; Kevin was imaging Jupiter, I was just taking some pics of the night sky.

It looks like it started a bit early.

Kevin K: starlightcascade.ca/allsky1/ shows some nice low level aurora overnight at various times: 23:00–03:00 and again 03:30–05:00 Exposures are 80 seconds and showed the aurora not getting more than about 10° off the horizon.



On Sunday, April 12, the AllSky1 camera system was renovated to an extreme degree. The 14" dome and the entire wooden housing went. What was left was the bare camera itself with integrated lens. Luckily the mount allowed it to be oriented in almost the exactly correct orientation (north is up).

So far so good. It does not look like we need to add a 4" dome and heater...yet. I will carefully monitor it over the next few types of weather to see how it holds up.

Malcolm: I was up until about 4 a.m. The Aurora was obviously there to the naked eye, but there was no definition. Soupy. But in the camera, it was a different story. I was also shooting M81 and M82, 10 frames of 4 minutes each at ISO 2000.

Fri/Sat, April 17/18

Kevin: We went out after 21:15 EDT Friday night to set up and observe Jupiter and the moon transit. Visually it was spectacular, especially with the new 3x Televue barlow. Photographically, not so much.

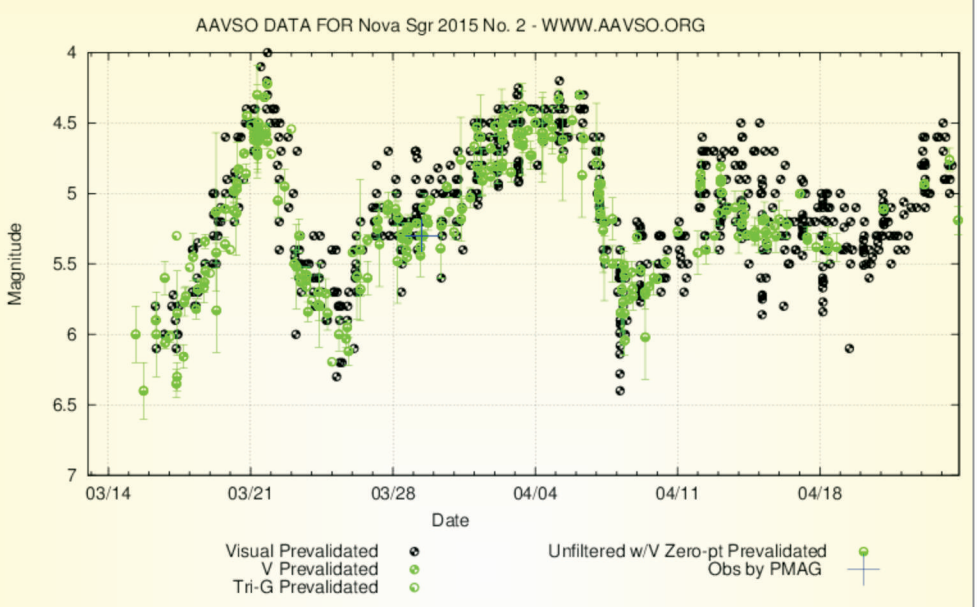
This time with the 20cm Meade LX-200 and the 3x Televue barlow, it was still extremely difficult to focus, with soft and low contrast. Seeing was poor again (the image was jumping around like crazy). Only 209 frames in 30 sec, exposure = 66ms, 75% of the best frames used to stack.

Tuesday, April 28

Malcolm: Was anyone imaging the sun today? There was a huge filament floating off the edge of the sun this afternoon it looked like a cloud on the sun. I tried to connect my DSLR but I couldn't reach focus.

Hank: Hank was, but unfortunately one hour too early with too much to do afterwards and as a result I missed the separation.

A Pair of Novae in Sagittarius



Nova Sagittarii 2015 #1

Discovered on February 12th (see aavso.org/aavso-alert-notice-509), this nova is just above the spout of the Teapot, but peaked at about V=8.7 so it has not been the prime binocular object that nova #2 has.

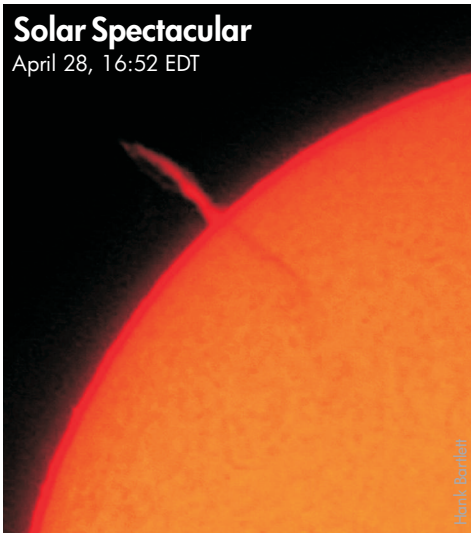
Nova Sagittarii 2015 #2

The second nova was discovered on March 15th (see aavso.org/aavso-alert-notice-512) and is nicely entered below the lid of the Teapot. It peaked at V=4 and so far has been brighter than V=6.

Note on Malcolm Park's cover image

With a little mentoring from Rick Huziak, Malcolm has measured the brightness of Nova #2 in his image and submitted it to the AAVSO. Malcolm's AAVSO observer initials are PMAG—which is quite a coincidence since what he submitted was a 'photo-mag' or 'p-mag' measurement. Welcome to Club VSO, Malcolm! Keep imaging this baby every night you can and submit those obs!

As of April 7th, Rick notes that 7 of 76 (= 9%) of Nova #2 observers in the AAVSO data are Canadian, and this also equates to a measly 0.18% of RASC members. (*Sounds like a hint...*)★



Tues/Wed, April 28/29

Rose-Marie: Last night around 11:15 p.m. when I took the BigWetNose out for last call there was a lovely white meteor starting near the moon and heading NW towards the bottom of Auriga. Bright enough to see in the moonlight, just wondering if it showed up on the AllSky?

Kevin: Not in AllSky1. There were clouds and a bright moon; with a long (80s, ending at 23:15:29 UT) ex-

Continues on page 12...

Torus Updates

Kevin Kell

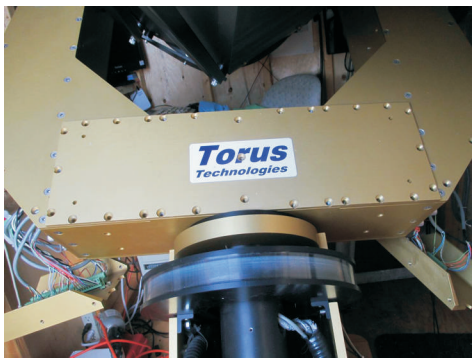
Sunday, April 19

The peat bog around the observatory has dried up enough to walk through. The old Galileo computer survived the winter and started up fine without issues. The Torus fired up as well, did a dec home, focus home... RA home... RA home... RA home...

The scope did not move in RA. Damn! Looks like it did not survive the winter. In the spare moments between now and then I'll try to get the access covers off (they are tightened down like nobody's business!), check cables, and start looking at redesigning the power, control and data line runs to accommodate operation with the front doors closed (for mosquito season).

Tuesday, April 21

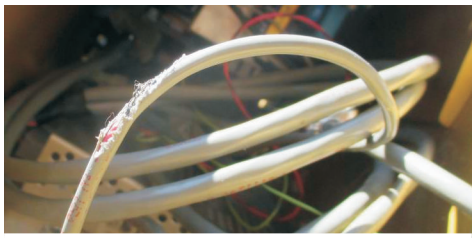
I got the cover access plates off today, and found a big mouse nest with no mice and no other evidence of mouse stuff in the cavity. There are just the initial chewed wires I spotted in the side access hole for the cables. Hopefully all that will be required will be to just do a closer inspection with lights, insulate some chewed wires, possibly splice one or two wires, and look for a bigger problem elsewhere.

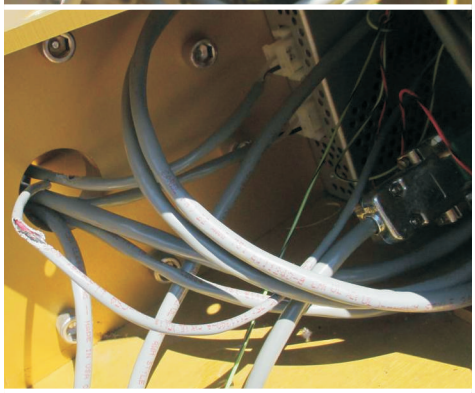


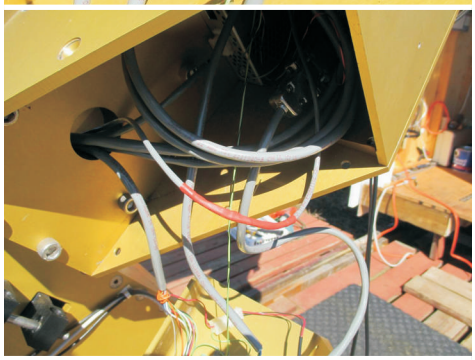
Saturday, April 25

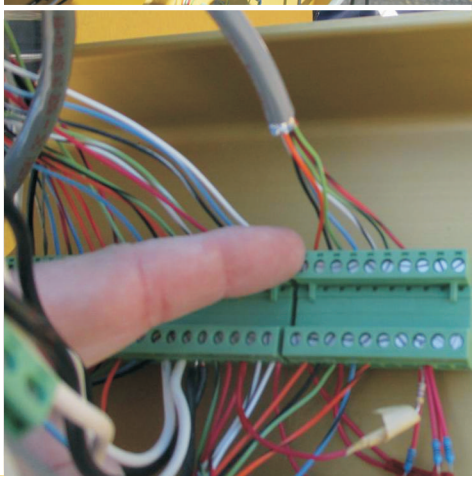
Brian Hunter, **Mark Kaye**, **Kim Hay** and myself got the Torus running again during a two-hour morning repair session (a few wires were spliced, cut, and re-spliced). We tried to observe the Moon for a while afterwards but there was always a cloud in the way.

OK. The scope is moving in RA and dec again. The next jobs are rerouting cables, and working on a finder videoscope. Every time the collimation changes, the pointing model gets out of whack and needs to be 6 or 8 star realigned, for which you need a good video finder.









Tues/Wed, April 28/29

The Torus telescope was fired up last night in the 2nd attempt to get some imaging after Apr 25th repairs. Back then, we could not confirm that the fixes we did had any affect on the telescope, other than the fact that it was working again. Can anyone say 'coincidence?'

Last night it slewed to near the Moon (pointing not yet corrected), manually slewed to the moon and then tracked it for approximately 20 minutes. Twice during that time, while looking away from the displays, the moon disappeared from view. At the time I thought it was more of the cloud obstructing it, so I manually slewed a bit and it came back into view. Hmmm.

Continues next page...

...Meeting Report: April 9

Susan Gagnon

be a fair bit of Moon and Jupiter to see. This will be a first at Fairfield for the Centre to test the sky there. If you have a scope for either occasion please bring it along and join in.

The May 14th meeting will be all about home observatories. If you have an observatory or know of some interesting example, bring pictures along on a flash drive for all to see. This will help those hoping to build in the future

The June 11 meeting will be members' presentations. If you can contact Kim ahead of time to get your name on the agenda please do so.

July and August will be meeting free but there is likely to be a working BBQ at Kim and Kevin's place at some point to work on the Torus.

All confirmed observing nights for the North Frontenac Dark Sky Observing Site are now posted on the Kingston Centre website.

Member Presentations

Susan: A first viewing of a plaque to be presented to Queen's Astronomy was circulated. There will likely be a late summer or early fall opportunity to present it. As promised there has begun a review of potential permanent observatory land nearby (~40 km radius) based on landholding of Queen's University and The Nature Conservancy of Canada. These large tracks of land are hoped to be the perfect light sinks that will shield properties from encroaching development. Searching land registry for these properties is an interesting process.

Malcolm: Astrophotos of Sagittarius nova photos and his first experience with submission of data to the AAVSO. *Sky Safari* software was used to estimate magnitudes and Malcolm presented the AAVSO light curve showing how his first attempts compared to others [*see page 10*]. He was pleased with his results and found the opportunity to contribute to 'real science' quite satisfying.

Leslie: Moon photos, using free AVI stacking software. Leslie showed us some highly detailed photos with amazing contrast that was more persistent across the photo than ususal to this observer's eye. The source of the great contrast is in the software's ability to select 'best' areas of each photo rather than stacking the full content of each. The result is a stack of mosaics, more or less. Leslie used a 15 to 20 second MOV file which yielded ~1000 frames.

Kevin: Astrophotography, the process of getting to know your camera and software. Kevin's pursuit of the perfect photo has lead to a pattern of more consistent observing sessions. This in turn has allowed a gradual building of skills as the time between trials seems only limited by the weather. The target of choice is Jupiter and some wild early effort photos were shown. The focus and stacking practice is yielding impressive returns. Kevin is using AutoStakkert! software.

The meeting adjourned at 20:44.★

...Torus Updates

...continued from page 12

Then it started making a new and different noise.. maybe like a gear or motor straining, then a soft noise and the OTA vibrating like it does when it hits a stop while in motion, normally while parking it in the dec direction.

Then it did it again, a little louder. Then again, but this time it slewed itself from about az 230 to its home park position at 180ish. And then it would not move in RA/AZ again. Not my selecting a target and telling it to slew, now manually with the paddle control. So it got parked in Dec as well and put away for the night while we come up with some thoughts and plans.

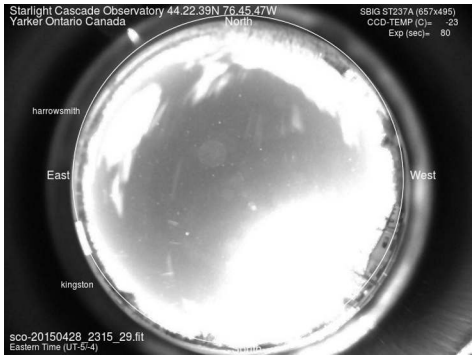
Brian suspected that it previous behaviour may have been to a bad stop sensor (i.e. the scope thought it had hit a hard limit and stopped moving). We had lubricated the sensors, checked the wiring in those areas and moved on. Tuesday's scope pointing did not come close to the normal hard stop sensors and the pointing coordinates in the software looked OK.

The control software did not show any anomalous messages either. We will fire it up again and see if this is a trend or a one off event.★

...Observing Reports

...continued from page 10

posure, this is what you end up with:



AllSky2 does not show anything with a timestamp of 23:15 + 4 = 03:15 UT.

Wed/Thu, April 29/30

Rick W: I hope you planetary and lunar guys are out observing—seeing at my place is great: I give it a 4.8/5. I can see 4 craterlets on the floor of Plato, crater Artemis is visible, the rimae in Gassendi just go on and on, Jupiter's moons (there are only three visible) are clearly different sizes and different colours.★