Regulus
2022 September

Newsletter of The Royal Astronomical Society of Canada - Kingston Centre
kingston.rasc.ca

Jupiter – Kevin Kell @ the Serenity Observatory at SCGO
Europa and its shadow on August 20th.

Did You Know? 2023 Calendars!

2023 Calendars have been ordered!
Limited quantities that go fast so reserve now by emailing kingston@rasc.ca
Prices if purchased from the centre remain $20!

N=R*fp*ne*fl*fi*fc*L

Legendary Astronomer Frank Drake has Passed Away

Legendary astronomer Frank Drake has passed away at the age of 92. Known primarily for his Drake Equation — an estimate of the probability of intelligent extraterrestrial life — he pioneered the field of SETI, the Search for Extraterrestrial Intelligence, and was a noted astronomer and astrophysicist. His work and life have left an indelible mark on humanity and given hope and wonder to all our hearts.

From:
https://www.universetoday.com/157420/legendary-astronomer-frank-drake-has-passed-away/

MEETINGS

RASC-KC Wednesday Weekly Social videoconference. 7pm Eastern all weeks except the 2nd Wednesday of the month. For members and their guests. Email list subscribers receive the link weekly 1 or 2 days beforehand.
Next Socials: Wednesdays 2022 September 07, 21, 28

The next Regular Monthly Meeting (zoom) is Wednesday 2022 September 14th 19:00 EDT.
Guest Speaker: Andrew Godefroy
Format: Virtual via Zoom only

RASC-KC Members will be emailed a zoom meeting registration link, others may watch on our Youtube channel.

In the September Issue

Editor: Kevin Kell

The President's Nook - Kim Hay

Those north breezes are in the air, gently reminding us of the next season, but not yet..not until September 22nd. Then we have our Fall N Star's event on September 23-25th at Johnson's RV Park in Picton, Ontario . There is still time to register visit https://rascbelleville.ca/fallnstars/

The members have spoken, its "Bring your own Dinner" gathering at Lake Ontario Park on September 7th, meeting up at 4:30-5:00 pm. under "The Tree".

Our September Regular Centre meeting will be held on September 14, 2022 at 7:00 pm. Currently we are having this on ZOOM, as we are still awaiting word on if we are to be going back to Queen's University. We will let everyone know if this changes on the website and by email. Our speaker for September will be Andrew Godefroy who will be speaking to us on the 60th Anniversary of Alouette Satellite.

In other news around the RASC and beyond, Nathalie N.-Q-Ouellette, who brought us news on the James Web Space Telescope and recently spoke at Starfest 2022, now is the Deputy Director of the Observatorie du Mont-Mégantic at Université de Montréal.

Manitoba has its first Dark -Sky Preserve. It was announced August 31, 2022 that Spruce Woods Provincial Park received its official designation. Lots of hard work from the RASC Winnipeg Centre, RASC LPA Committee and Friends of Spruce Woods Inc. made this happen. This is Canada's 27th Dark Sky Preserve. Below is a news articles and an audio clip by Richard Huziak.
https://winnipeg.ctvnews.ca/provincial-park-receives-manitoba-s-first-dark-sky-preserve-designation-1.6049713

https://www.cbc.ca/listen/live-radio/1-111-up-to-speed/clip/15934036-celebrating-manitobas-dark-sky-preserve

On August 23rd, 2022 Bruce Elliot and I attended online a meeting for the 2024 Total Solar Eclipse , with Queen's University, RMC and many other partners. The eclipse glasses for Queen's and the RASC eclipse glasses have been ordered. More plans are in the works. We will need volunteers to help out with the Kingston Event. More information will be coming forward.

Queen's University Observatory has new Observatory Coordinator's, Akanksha Bij and Lawrence Faria. Conner Stone is continuing on with his studies as a PhD Candidate.

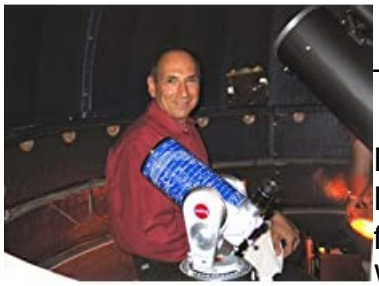
If your out and about on September 24th and not attending Fall N Star's, there is a public event on the long awaited Kingston's Third crossing Bridge.

In October we will have Member's Night for our Meeting which is October 12th (location to be determined-in person or ZOOM). So if you would like to present at the meeting, please let us know at kingston@rasc.ca

November will be our Annual Meeting and Elections for Secretary, Editor, National Council Representative, and Librarian. If you are interested in any of these positions, please let us know at kingston@rasc.ca . The Board structure consists of seven positions of two year terms. The terms are staggered with the President, Vice President and Treasurer's terms being up in odd numbered years and the Secretary, Librarian, Editor and National Council Rep being up in even numbered years. Source: RASC-KC Bylaws (2006). The Executive consists of the Board, and other appointed Officers.

We will also have Guest Speaker, Kristine Spekkens from RMC .
As the night time is getting longer for more observing, make sure you dress warm, there is lots to see in the sky, so keep looking up!

Skyward September 2022
- David H. Levy



The sky reborn

Ever since I read Bart J. Bok's foreword to Rose Wilder's and Gerald Ames' *The Golden Book of Astronomy*, I have marvelled at what the night sky had to offer and how much of that has changed. "Such wonders," Bok wrote, "fill this book." I have never forgotten those beauties, in particular Bart's favourite: The Eta Carinae nebula, deep in the southern sky.

On Tuesday, July 12, 2022, NASA released the first light pictures from the Webb telescope. One of them is the Eta Carinae nebula. If Bart Bok could come back to us for one minute, he would be thrilled and elated beyond expression. The image is unadulterated joy. It shows so much more than anyone has ever seen before. It tells how this faint star suddenly became the second brightest star in the sky in 1843, the year of a great comet, and it had a second eruption near the end of the 19th century. If Eta Carinae should one day become a supernova it may become as bright as, or even much brighter than, Venus.

The other picture that really got to me was Stephan's Quintet. It was the first compact group of interacting galaxies ever discovered. First observed from France by Éduard Stephan, it consists of four galaxies interacting with one another; plus a fifth, NGC 7320, which is much closer to us. I have seen this cluster many times. Seeing these images from the new telescope pierced my eyes, and warmed my heart. But my mind kept returning to the image of Eta Carinae, and to Bart and Priscilla Bok and their lives together.

Bart loved to tell the story of how he and Priscilla attended the opening of the Flandrau planetarium in November 1975. They arrived early that morning, and they walked toward an exhibit in the back, in the galaxy room. Suddenly Priscilla stopped. "Bart," she said softly as she gazed upon a picture of Eta Carinae, "When I am gone, I will be in this nebula. Whenever you look at the nebula, you will see me there."

Priscilla passed away just four days later. In her memory Bart funded a beautiful concrete bench in the aviary at the Desert Museum. Bart often visited the museum and always enjoyed her bench. "Another audience with the roadrunner soon took

place," I wrote later. "As he watched this roadrunner, Bart's thoughts wandered off to a far off place and time. A memory of Priscilla, happy and alert as she fed a group of magpies, filled his mind. Slowly the image faded, and he imagined once again the exquisite swirls of the nebula in Carina."

The James Webb space telescope belongs to the world. In January 1610, Galileo pointed his telescope at Jupiter. Over the course of a few nights, he discovered four moons orbiting the solar system's biggest planet, and the night sky has not been the same ever since.

In July of 1994, the Hubble space telescope also pointed at Jupiter. It recorded the crash of a comet on the solar system's biggest planet, and the night sky changed again.

On Tuesday, July 12, the world saw the James Webb Space telescope's first view of the Eta Carinae nebula. The night sky will never be the same.

Brian Hunter Observing the Universe from the Atacama Desert in Chile, 6 years ago (2016). Yes that is a very tall stepladder.
Yes those are the Magellanic Clouds!

Did You Know? Spruce Woods Provincial Park: Dark-sky Preserve

News broke today that Spruce Woods Provincial Park will receive its official Dark-sky Preserve designation in a ceremony on September 4th, during the Spruce Woods Star Party. Congratulations to the DSP team who worked over a decade to accomplish this - to the Park who did a fairly massive lighting upgrade and now meets the requirements for a DSP and to the Winnipeg Centre members who worked so hard to get this done.

I am honoured to be one of the speakers at the star party, and will also represent the National LPA Committee and National RASC for the ceremony. SWDSP becomes Canada's 27th Dark Sky Preserve and finally fills in the gap between eastern and western Canadian DSPs!

It's all over the news .... here are a few of the articles.

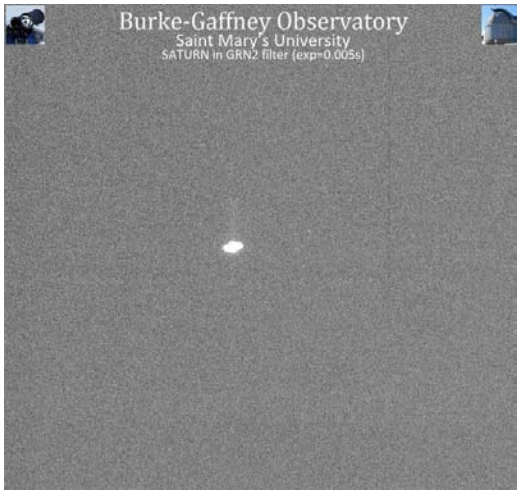
https://winnipeg.ctvnews.ca/provincial-park-receives-manitoba-s-first-dark-sky-preserve-designation-1.6049713

https://www.iheartradio.ca/virginradio/winnipeg/news-trending/provincial-park-receives-manitoba-s-first-dark-sky-preserve-designation-1.18442326

https://canadatoday.news/ab/the-provincial-park-receives-manitobas-first-dark-sky-protected-area-designation-15187/

Please support and promote your local DSPs and work towards making more!

Rick Huziak, RASC Saskatoon



Planetary Imaging

Just because you have a very expensive telescope, it does not mean it can do everything :)
For example, the BGO observatory telescope is a fantastic scope.. for Deep Sky Objects… but not really designed for good at planetary objects . So For all of you who have recently made the foray into planetary imaging.. take heart!

Jokess Frommm Spaceee!

What is an astronomical unit?
One hell of a big apartment.

What did one photon say to the other photon?
"I'm sick and tired of your interference."

How many astronomers does it take to change a light bulb?
None, we prefer to use standard candles.

"You can observe a lot by just watching."
- Yogi Berra, a famous American astronomer and philosopher

"To bin, or not to bin, that is the question."
- Hamlet, a medieval Danish astronomer

Astro grad students were funnier ~20 years ago:

"The Super Huge Interferometric Telescope: A New Paradigm In Optical Interferometry"

ui.adsabs.harvard.edu/abs/1999AAS.....

"This array of 5800 Astroscan telescopes ..."

(I actually remember seeing that poster 😃)

#TelescopeTuesday

More Images Comparisons from the Just Wonderful Space Telescope (JWST)

#TheRingsOfPower

Hubble #JWST

Yet again, an incredible new image from #JWST!

Solar Dynamics Observatory #JWST

An astrophysicist finds an ancient-looking lamp, and rubs it, as one does.
A genie pops out.
"My Master, you can have three wishes! Money, fame, #JWST time!"
"I only have one wish: I want the referees to ALWAYS like my papers!"
"You can have five OTHER wishes"

Did You Know? Snolab

From: https://www.queensu.ca/gazette/stories/advancing-canada-s-research-infrastructure

On Friday, at SNOLAB, the Honourable François-Philippe Champagne, Minister of Innovation, Science and Industry, recognized the key role of research infrastructure by announcing more than $628 million to support 19 research infrastructure projects at institutions across the country, including two research facilities affiliated with Queen's University. From the Government of Canada and through the Canada Foundation for Innovation's (CFI) Major Science Initiatives (MSI) Fund, this investment will support the ongoing operation and infrastructure needs of research facilities of national importance.

Receiving $102 million in infrastructure funding is SNOLAB, an internationally renowned ultra-clean facility primarily focused on the study of neutrino properties and sources and the search for galactic dark matter. A research consortium bringing together Queen's University, Carleton University, Laurentian University, University of Alberta, and the Université de Montréal, SNOLAB is at the forefront of unravelling the mysteries of the universe as one of only two laboratories in the world with low radiation backgrounds to support cutting edge measurements.

From Kevin Wenkoff:

Awesome!

Important Announcement:
Yoda has inspired some of the evolving dome mechanics:

From Mark Deslauriers:

The moon was a pain but here it is.

Owl Cluster 2022 August 06
Stack of 31 frames of 124 sec with display stretch

The Fine Print

The Royal Astronomical Society of Canada

RASC is a national, non-profit, charitable organization devoted to the advancement of astronomy and related sciences. Founded in 1868, The Royal Astronomical Society of Canada is Canada's leading astronomy organization, bringing together over 5,000 enthusiastic amateurs, educators, and professionals. In addition to many national services, our 30 Centres offer local programs across Canada.

The Royal Astronomical Society of Canada – Kingston Centre
aka Kingston's Astronomy Club

We are Kingston's Astronomy Club, a local centre of The Royal Astronomical Society of Canada, founded on June 2nd, 1961. We hold monthly meetings, on the 2nd Wednesday of each month (September-June), via zoom videoconferencing and inperson before the pandemic and hopefully again soon in late 2022, from 7:00-9:00pm Eastern Time

* We do public outreach programs in the form of helping the Cubs and Guides, teachers, Science Fairs and many public Education and Public Outreach events.

* We help out our members with questions in astronomy and equipment use, and hold private observing sessions, and also with Queen's University Observatory Open House, on the second Saturday of each month, at Ellis Hall, Queen's University (closed during the pandemic).

* We support the local Frontenac, Lennox & Addington County Science Fair (FLASF) with a prize in astronomy.

* We are here to answer your questions on astronomy.

Board of Directors & Officers 2022
President: Kim Hay
Treasurer: Susan Gagnon
Secretary: Elena Zanetti
Vice President: Laurie Graham
Editor: Kevin Kell
Librarian: Kim Hay
NCRep: John Hurley

Honourary President: David Levy
Webmaster: Walter MacDonald

We provincially incorporated as a not-for-profit corporation September 2005 and are a registered Charity with Revenue Canada since September 2006:

CRA Registration #827905720RR0001

Benefits of Membership to the RASC-Kingston Centre

RASC Central based benefits:
* annual print edition of the Observers Handbook
* bi-monthly digital edition of the RASC Journal
* monthly digital edition Bulletin of the RASC
* 6 issues of Skynews Magazine (paper)

Centre provided benefits:
* monthly Centre Newsletter – Regulus
* weekly social videoconference chat (members and guests only)
* monthly videoconference Meetings (open to the public)
* equipment loan program

JOIN US: https://kingston.rasc.ca/join

Upcoming Meetings in 2022

September-November – remote zoom videoconference by default.. still up in the COVID air!
December – Annual Social Dinner also up in the air!

Current Centre Members as of 2022 Sept 01:
Total: 71
Youth: 1
Adult: 62
Life Members: 8

The Sky This Month 2022 September - Rick Wagner

03 Sep - First Quarter Moon
07 Sep - Mars is a little over 4º from reddish Aldebaran for several days either side of the 7th
07 Sep - minor planet (3) Juno at opposition (mag 7.9)
10 Sep - Full Moon 05:59EDT
16 Sep - Neptune at opposition (mag 7.7)
17 Sep - Last Quarter Moon
22 Sep - equinox 21:04EDT, autumn begins in the northern hemisphere,
25 Sep - New Moon 17:54EDT
26 Sep - Jupiter at opposition (mag -2.9, diameter just a hair under 50 arcseconds)

Oh, I was a busy boy today. This is the new deck for the Hankscope. At some point I will run angle iron along the sides and build a little roll-off observatory. Hopefully before winter. But for now I can now look through the finder without a ladder and will be able to setup another telescope on the back end of the deck.

Notes from Members

The RASC-KC Tardis Observatory housing the Torus telescope project was recently repainted to keep it and the equipment inside it safe from the elements.

Thanks to Kim Hay for the work!

Meteor Showers 2022 – Cathy Hall

Attached is a copy of the IMO 2022 Meteor Shower Calendar. Print yourself off a copy of page 25, the Working List of Visual Meteor Showers, has both major and minor showers.

IMO_INFO(3-21) 25

Table 5. Working List of Visual Meteor Showers. Details in this Table were correct according to the best information available in June 2021, with maximum dates accurate only for 2022. The parenthesized maximum date for the Puppids-Velids indicates a reference date for the radiant only, not necessarily a true maximum. The given ZHR is based on recent observed returns. Possibly periodic showers are noted as 'Var' = variable. For more information check the updates published e.g. in the IMO Journal WGN.

Shower	Activity	Maximum Date	$\lambda_\odot$	Radiant α	Radiant δ	V_∞ km/s	r	ZHR
Antihelion Source (ANT)	Dec 10–Sep 10 –	March–April, late May, late June		see Table 6		30	3.0	4
Quadrantids (010 QUA)	Dec 28–Jan 12	Jan 03	283.°15	230°	+49°	41	2.1	110
γ-Ursae Minorids (404 GUM)	Jan 10–Jan 22	Jan 18	298°	228°	+67°	31	3.0	3
α-Centaurids (102 ACE)	Jan 31–Feb 20	Feb 08	319.°2	210°	−59°	58	2.0	6
γ-Normids (118 GNO)	Feb 25–Mar 28	Mar 14	354°	239°	−50°	56	2.4	6
Lyrids (006 LYR)	Apr 14–Apr 30	Apr 22	32.°32	271°	+34°	49	2.1	18
π-Puppids (137 PPU)	Apr 15–Apr 28	Apr 23	33.°5	110°	−45°	18	2.0	Var
η-Aquariids (031 ETA)	Apr 19–May 28	May 06	45.°5	338°	−01°	66	2.4	50
η-Lyrids (145 ELY)	May 03–May 14	May 10	50.°0	291°	+43°	43	3.0	3
Dayt. Arietids (171 ARI)	May 14–Jun 24	Jun 07	76.°6	44°	+24°	38	2.8	30
June Bootids (170 JBO)	Jun 22–Jul 02	Jun 27	95.°7	224°	+48°	18	2.2	Var
July Pegasids (175 JPE)	Jul 04–Jul 14	Jul 10	107.°5	340°	+15°	61	3.0	5
Piscis Austr. (183 PAU)	Jul 15–Aug 10	Jul 28	125°	341°	−30°	35	3.2	5
July γ-Draconids (184 GDR)	Jul 25–Jul 31	Jul 28	125.°3	280°	+51°	27	3.0	5
S. δ-Aquariids (005 SDA)	Jul 12–Aug 23	Jul 30	127°	340°	−16°	41	2.5	25
α-Capricornids (001 CAP)	Jul 03–Aug 15	Jul 30	127°	307°	−10°	23	2.5	5
Perseids (007 PER)	Jul 17–Aug 24	Aug 13	140.°0	48°	+58°	59	2.2	100
κ-Cygnids (012 KCG)	Aug 03–Aug 25	Aug 18	145°	286°	+59°	25	3.0	3
Aurigids (206 AUR)	Aug 28–Sep 05	Sep 01	158.°6	91°	+39°	66	2.5	6
Sep. ε-Perseids (208 SPE)	Sep 05–Sep 21	Sep 09	166.°7	48°	+40°	64	3.0	5
Dayt. Sextantids (221 DSX)	Sep 09–Oct 09	Sep 27	184.°3	152°	+00°	32	2.5	5
Oct. Camelopard. (281 OCT)	Oct 05–Oct 06	Oct 06	192.°58	164°	+79°	47	2.5	5
Draconids (009 DRA)	Oct 06–Oct 10	Oct 09	195.°4	262°	+54°	20	2.6	10
S. Taurids (002 STA)	Sep 10–Nov 20	Oct 10	197°	32°	+09°	27	2.3	5
δ-Aurigids (224 DAU)	Oct 10–Oct 18	Oct 11	198°	84°	+44°	64	3.0	2
ε-Geminids (023 EGE)	Oct 14–Oct 27	Oct 18	205°	102°	+27°	70	3.0	3
Orionids (008 ORI)	Oct 02–Nov 07	Oct 21	208°	95°	+16°	66	2.5	20
Leonis Minorids (022 LMI)	Oct 19–Oct 27	Oct 24	211°	162°	+37°	62	3.0	2
N. Taurids (017 NTA)	Oct 20–Dec 10	Nov 12	230°	58°	+22°	29	2.3	5
Leonids (013 LEO)	Nov 06–Nov 30	Nov 17	235.°27	152°	+22°	71	2.5	10
α-Monocerotids (246 AMO)	Nov 15–Nov 25	Nov 21	239.°32	117°	+01°	65	2.4	Var
Nov. Orionids (250 NOO)	Nov 13–Dec 06	Nov 28	246°	91°	+16°	44	3.0	3
Phoenicids (254 PHO)	Nov 28–Dec 09	Dec 02	250.°0	18°	−53°	18	2.8	Var
Puppid-Velids (301 PUP)	Dec 01–Dec 15	(Dec 07)	(255°)	123°	−45°	40	2.9	10
Monocerotids (019 MON)	Dec 05–Dec 20	Dec 09	257°	100°	+08°	41	3.0	3
σ-Hydrids (016 HYD)	Dec 03–Dec 20	Dec 09	257°	125°	+02°	58	3.0	7
Geminids (004 GEM)	Dec 04–Dec 20	Dec 14	262.°2	112°	+33°	35	2.6	150
Comae Berenic. (020 COM)	Dec 12–Dec 23	Dec 16	264°	175°	+18°	65	3.0	3
Dec. L. Minorids (032 DLM)	Dec 05–Feb 04	Dec 20	268°	161°	+30°	64	3.0	5
Ursids (015 URS)	Dec 17–Dec 26	Dec 22	270.°7	217°	+76°	33	2.8	10

Table 6 (next page). **Radiant positions during the year in α and δ.**

Fall'N'Stars 2022
Friday-Sunday 2022 Sept 23-25
https://rascbelleville.ca/fallnstars/
This is SouthEastern Ontarios' Star Party organized by the RASC Belleville and Kingston Centres, annually since 2000 (we missed 2020)!

Notes from RASC Central

Changes at SkyNews

We've been working with our current subscription management partner and service desk, Inovva, for almost a decade. Sadly, the company has suffered client losses due to COVID and will be closing its doors.

We are pleased to start working with Canadian industry leader Pelcro to deliver our product to you. Within the next few weeks, *SkyNews* magazine subscribers will notice a new, self-serve user interface on our website. Our subscription mailing address, service desk and renewal notice marketing will also change.

Lastly, SkyNews will also be hiring a new managing editor to help with the editorial side. If you or someone you know fits the description, contact us here.

Membership Fees have gone up!

https://secure.rasc.ca/membership/account/register?member_type=1

Kingston Centre ($101.00)

The local Centre received $23 of this amount (and that has stayed the same since 2010, when we dropped it from $28!). Since 2010 Total Membership fees have risen $31, up from $70!

We are still demanding a justification for this from the RASC Central Board, along with **many** other Centres. No. Word.

This is from Friday morning of Saturn nearing opposition. Close enough to not even matter! This is the best image of approx 34 runs that morning. It was at 07:33 UTC-4=03:33 EDT taken with firecapture, stacked with Autostakkert! v3, wavelets in Registax v6, annotated with Imagemagick in Linux

It was taken past its highest altitude, down from maybe 30 degrees to 23 degrees in this image. more airmass to see through!

Atmospheric dispersion can be seen with blue on the top and red on the bottom of various features (like the rings). Seeing was poor, transparency was poor, the near full moon was very close within 4 or 5 degrees.

Still the best saturn image I have ever taken! Letsee what Saturday and Sunday night runs look like!

New linux bash text file manipulation has allowed me to bring in more data from the firecapture logfile, namely: airmass, Altitude, Central Meridian , Diameter and frames captured, and annotate it to the bottom of the image.

Kevin Kell

Last week I gathered 5 2-minute exposures in each of Red, Green and Blue, along with 10 2-minute exposures in Oiii of NGC6960, the "witches broom" portion of the Veil nebula in Cygnus.

I used a ZWO1600MM CMOS camera, with ZWO's RGB, Sii, Ha and Oiii filters. The telescope was a Barska 80mm f/7 Apo triplet, and the mount was my iOptron CEM120. No guiding was used.

I used imagesPlus to stack each of the four components and then used an action in Photoshop CS2 to create an RGB image, and finally employed photoshop again to use the Oiii image as the luminance. After that, I just played with the levels and curves.

Although imagesPlus will have aligned each of the four images, I didn't have to align them in photoshop, so I can only assume that my polar alignment was pretty good. I'd used the new Polar Align via Plate Solve (PAPS) in AstroPhotography Tool (APT), but this was the first time I'd had a chance to test how good it was.

Anyway, as for the resulting image, I think I'm doing something wrong, as I'd expected more in the way of colour, but apart from that, I must admit to being pretty happy with the way it turned out.

Time to try again, but with a few hours of data!

Roger Hill

Better around 13:00, seeing was not best but transparency was good. 2 images attached, I rarely get them processed this early but it was a hot do nothing afternoon except a good Iced Tea float around the pool for an hour.
Hank Bartlett

The UWO Allsky2 camera system captured 78 events last night (Fri/Sat). Kim & I were out on Friday evening and spotted a few while waiting for Saturn to come up.

Allsky1pi saw only a few but it does not to motion detection and therefor does not save out individual events... only the entire nights video or sifting through several hundred individual images. One day will have to find software that can analyze this for us! Kim Hay & Kevin Kell