Regulus 2021 June

Newsletter of The Royal Astronomical Society of Canada - Kingston Centre
Celebrating our 60th anniversary 1961-2021 kingston.rasc.ca

Figure 1: Annular Solar Eclipse of 2021 Jun 10

From:
https://en.wikipedia.org/wiki/Solar_eclipse_of_June_10,_2021

An annular solar eclipse will occur on June 10, 2021, when the Moon will pass between Earth and the Sun, thereby partly obscuring the image of the Sun for a viewer on Earth. During the eclipse, the Moon's apparent diameter will be smaller than the Sun's, so it will block most of the Sun's light and cause the Sun to look like an annulus (ring). The annular eclipse will be visible from parts of northeastern Canada.
The Partial solar eclipse will be already underway at sunrise in the Kingston area, maximum eclipse at 05:41 EDT; the whole eclipse from SErn Ontario happens very close to the horizon in the NE

The ***2021 RASC General Assembly*** will be a virtual paid event that all members have just recently received email details about.
For more information see the website at https://www.rasc2021ga.ca/

THE STARS BELONG TO EVERYONE
JUNE 25TH - 28TH 2021
FEATURING KEYNOTE SPEAKER EMILY CALANDRELLI
ALSO FEATURING SPEAKERS AARON PERSAD, KATE RUSSO, KATIE MACK & KATE HOWELLS

Royal Astronomical Society of Canada

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. **Note** it is the same link for 2021 Jan-June!
Next Social: Wed 2021 June 16

RASC-KC Regular Monthly Meeting -
2nd Wednesday of the month 7pm Eastern. Zoom for members and Youtube live stream for the public. Members receive email registration link about 1 week beforehand. For Youtube.com search for RASC Kingston.
Note This is a unique link for each meeting

Next: Wed 2021 June 09
Guest Speakers: Doug Johnstone, HAA: "Up All Night: Life at the Summit of Maunakea"

In this issue

President's Tidbits for June 2021- Kim Hay

June the time for summer, and less night sky. However we have members that are still taking Astrophoto's of galaxies and nebulas, photometry and awaiting the aurora that has been predicted but has not shown up. Our daytime has a few solar observers in our group. Their pictures are put on the RASC Kingston Facebook page , Twitter, (@AstroKingston) and on our own centres email list.

Ontario has come out of the stay at home order, but we are still in a somewhat lock down for other events. So our transition to in person events will be hurry up and wait. Stay tuned we will advise you all on what our fall meetings will look like.

Our speaker on June 9th, 2021 will be Dr. Doug Johnstone is an astronomer at the National Research Council's Herzberg Astronomy and Astrophysics Research Centre in Victoria, BC. The title of the talk will be Up All Night: Life at the Summit of Maunakea. Here is the abstract of the talk:
" Research astronomers tend to fall into two categories. Those that theorize about how the Universe works, using our best understanding of physics and chemistry, and those that observe the Universe directly, using the most technologically advanced telescopes and instruments. I have been fortunate enough to straddle these two areas of research as I work to understand the formation of young stars and planetary systems. In this talk I will weave theories and observations together, taking you on a journey through the process of encountering a new idea about how stars evolve, turning the idea into a research proposal, planning the required observations, and journeying to the telescope to make the measurements. Along the way we will discuss a little astrophysics, encounter a pinch of astrochemistry, and veer near astrobiology, all while enjoying amazing views of the night sky."

We will also have Robert Bates of the RASC Belleville Centre will share his Astrophotography, Hank's Sunspot and Rick's What's up in the June and summer skies.

Since June will be our last meeting before the summer time fun begins, we will still carry on with our weekly socials on ZOOM , so please make sure you stop by to say Hi and see what other members are up too. Invites will be sent out via our Email chat list, so if you are not on there, please subscribe to the Google Groups "kingston astronomy chat" group.

Over the summer your Executive will be planning out the rest of the upcoming year for meetings. Since we do not know if we will be in person, we are leaning towards ZOOM meetings . However we would like our members input for talks .
If you can send a message to kingston@rasc.ca **Subject line Future Talks** this will help us plan.

The General Assembly is being held on June 25-28th, and registration is on the https://www.rasc.ca/general-assembly.
Have a great and safe summer , clear skies and see you in the Social or in September at our next Regular Meeting!

RASC-Kingston Center Board of Directors

President: Kim Hay
Vice-President: Laurie Graham
Secretary: Asser ElGindy
Treasurer: Susan Ganon
Librarian: Francesco Ambrogi
Editor: Kevin Kell
National Council Rep: John Hurley

Executive:
Past President: Rick Wagner
Webmaster: Walter MacDonald
Equipment: Kevin Kell

Kevin's Youtube recommendation:
Trevor Jones
https://www.youtube.com/channel/UCn3npsPixgoi_xLdCg9J-LQ

He is a well spoken, knowledgeable amateur astronomer in the Toronto area. His presentation and mannerisms are great.. backed up by his 283K subscribers to his youtube channel!
Try this one of his Mars imaging last fall
https://www.youtube.com/watch?v=veVN3e2n_r8

Skyward for June 2021 By David H. Levy.

Faint fuzzies.

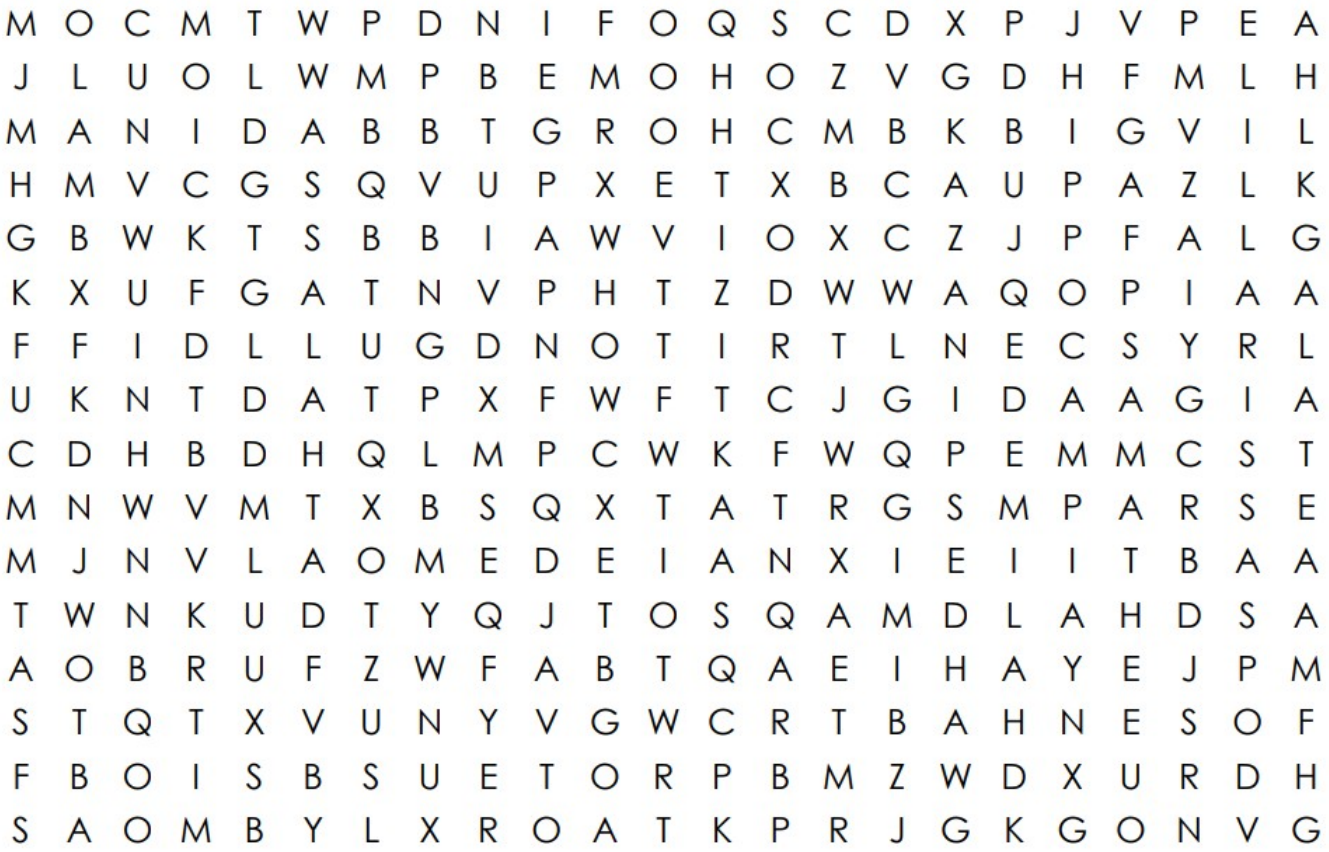
The night before last, a comet named Palomar (actually known as C (for comet)/ 2020 T2 Palomar) was gliding near one of the most beautiful clusters of stars in the entire sky. It was parading about at about magnitude 11, which means that for my oldish eyes, it would be too faint to see. In fact, just a few weeks ago I spotted a second comet, named ATLAS. That comet, at ninth magnitude, was so diffuse that I barely spotted it. So I was not going to try for this other comet.

However, this other comet was named Palomar after one of my favorite observatories! The mighty 200-inch telescope was opened in 1948, just a couple of weeks before I was born, and the big telescope has been sighting stars for more than 70 years. In 1994, I was allowed to sit in the prime focus cage, that beautiful place where light from what the telescope is seeing comes to a perfect focus. So sighting a comet with that hallowed name would be special. The comet was discovered by Dmitry A. Duev on images taken using Palomar's Oschin Schmidt telescope last October. As the comet was brightening slowly, I learned that on Friday evening, May 14, the comet was planning to glide past Messier 3, one of the brightest globular star clusters in the whole sky.

That was just too much to resist. Clusters of stars are scattered all over the sky, and our own galaxy has more than a hundred of them. Globular clusters consist of hundreds of thousands of stars. Messier 3 was discovered by Charles Messier, the famous Parisian discoverer of comets; it consists of some half a million stars and is more than 32,000 light years away. At about 11.4 billion years old, it is also one of the oldest things in the universe.

With the onset of darkness that Friday evening, I set up my telescope in my backyard observatory and pointed it toward Messier 3. The exquisite star cluster made its appearance. Then I nudged the telescope just a little bit to a nearby field of stars. Suddenly I spotted a faint fuzzy spot precisely where Comet Palomar was supposed to be. As I looked around, a meteor scratched the sky to the north. It was a bright and unusual member of the May Ophiuchid meteor shower, a bonus on this unforgettable night.

Comet Palomar is the 219th comet I have seen during my lifetime. Most of these comets have also been faint, barely visible spots of haze. But some have been wondrous. My first comet, Ikeya-Seki, was the great comet of 1965. Whether a comet is a faint fuzzy of a magnificent comet with a long tail, they are always welcome visitors to the Earth's region of the solar system, each one signing, as comet finder Leslie Peltier loved to write, "its sweeping flourish in the guest book of the Sun."



Graeme Hays' ASTROCROSS
Title: Moons of Neptune
DESPINA GALATEA HALIMEDE HIPPOCAMP
LAOMEDEIA LARISSA NAIAD NEREID NESO
PROTEUS PSAMATHE SAO THALASSA TRITON

In the Sky This Month - June 2021 – Rick Wagner

02 Jun - Last Quarter Moon
03 Jun - asteroid (63) Ausonia at opposition (mag 9.7)
06 Jun - asteroid (3) Juno at opposition (mag 10.1)
10 Jun - New Moon
- Partial solar eclipse already underway at sunrise(05:22EDT) , maximum eclipse at 05:41EDT; the whole eclipse from SErn Ontario happens very close to the horizon in the NE
10 Jun - extremely thin crescent Moon (~16hrs old!) very low in WNW soon after sunset. Very challenging observation!
12 Jun - Venus 1.5º south of Moon in the northwestern sky shortly after sunset

17 Jun - asteroid 1021 Flammario passes in front of 11.5mag star Tycho 6296-00667-1
18 Jun - First Quarter Moon
- Lunar Straight Wall (Rupes Recta) visible tonight
20 Jun - Summer Solstice 23:32EDT
23 Jun - Mars in the Beehive Cluster (Messier 44)
24 Jun - Full Moon 14:39EDT

RASC-KC Contact Information:

The RASC-Kingston Centre
c/o 76 Colebrook Road, RR#1,
Yarker On K0K3N0

email: kingston@rasc.ca
website: kingston.rasc.ca
Twitter: https://twitter.com/astrokingston
Youtube:youtube.com search for RASC Kingston
Facebook Page: facebook.com/rasckingston
Facebook Group:
facebook.com/groups/681409686039729/

Minutes of The RASC-KC Regular Monthly Meeting (via zoom) of Wednesday April 14th 2021

The eleventh Regular Meeting since the onset of the COVID-19 pandemic, was held remotely with Zoom video conferencing software and started at 19:00EST
30 people were in virtual attendance

Kim Hay Started the meeting at 19:02 EDT and welcomed everyone. The YouTube live stream and session recording were started. All participants were muted so that the presenters could be heard without interruption.

Kim introduced herself and the executive team members.

Kim presented the agenda for tonight's meeting

Kim announced the following:

- This year the Kingston centre is celebrating 60th anniversary
- Fall'N'Stars is scheduled for Sept 10-12th 2021
- RASC Weekly newsletter updates
- RASC General Assembly scheduled to June 25-27th
- Virtual Field trip on June 28th to university of Alberta meteorite lab
- Moon at Noon, on April 15th 12-12:30pm

David Levy welcomed everyone to the meeting and expressed his joy to join. David gave a poem by Robert Recorde from the Castle of Knowledge

Laurie Graham presented "A Tale of Two Tidally Torqued Terrestrial Bodies"

- She attended geology courses at SLC
- Quick review of planetary geology
- the moons Europa, Io, Titan and Enceladus are geologically active
- Io stats, discovery and exploration
- Enceladus fstats, discovery and exploration
- Discovery of volcanoes and cryovolcanoes on Io and Enceladus
- Orbital resonance and tidal effects on Io and Enceladus
- Internal composition models of Enceladus and Io
- Close up on Io volcanic craters and surface features
- Close up on Enceladus surface features
- Organic compounds present on Enceladus
- Conclusions
- Q&A session
- Poll

Malcolm Park presented PHD 2 Polar Alignment demo

- Pre-recorded steps of using PHD2 with voice narration from Malcolm
- Polar alignment successful
- Poll
- Q&A session

Hank Bartlett presented Hank's Sun Spot

- March 10 - April 14 solar activity
- Active regions and sun spots
- April 8th: Huge dark filament that arches back into the surface on the other side
- Q&A session
- Poll

Rick Wagner presented What's up in the sky?

Ground events

- 23 Apr - BAA Radio Astronomy Section
- 24 Apr - BAA Spring Webinars
- 24 Apr - AAVSO Webinar - Dr. Boris Ganiscke - The end of the worlds
- 01 May - AAVSO Webinar - How to start CCD photometry
- 12 May - BAA 29P/Schwassmann-Wachmann Webinar
- QUO - Fast Radio Burst Podcasts

Dark Sky viewing areas are closed

Sky Events:

- 20 Apr - Moon First Quarter
- 22 Apr - Lyrids maximum
- 24&25 Apr - Mercury and Venus after sunset
- 26 Apr - Full Moon
- 26-27 - Mars passes M35
- 03 May - Last Quarter
- 04 May - Moon below. Saturn & Jupiter before dawn
- 05 May- eta Aquariid meteor shower peaks
- 10 May - International Astronomy Week begins
- 11 May - New Moon
- 12 May - Moon 1deg from Venus

Asteroids this Month

- 16 Apr - Hi'iaka occultation
- 19 Apr - Aheas occultation

Explore the Universe

- Early Spring constellations
- Moon phases, maria
- Planets: Mars, Jupiter, Saturn

Rick presented his observatory building steps and pictures

- Digging the hole
- Materials
- Pouring concrete
- Pier inserted
- Foam insulation
- Starting building posts
- Decking installed
- Walls erected
- Rail structure
- Roof assembled
- Pier installed on concrete
- Garage door wheels and tracks
- Roof finished
- Mount installed
- Digging trench for power
- Floor painted
- Desk,chair and monitor ready
- Added shelves
- Telescope installed
- Interior walls painted pale grey
- Focuser motor
- Inside the telescope
- Power panel and switches
- Finished 4.5 years ago
- Q&A
- Telescope backstory
- Poll

Kim announced the upcoming regular meeting sessions schedule and speakers. Kim stopped the meeting at 21:06

Meeting minutes prepared by Asser ElGindy

Astrocross Answers

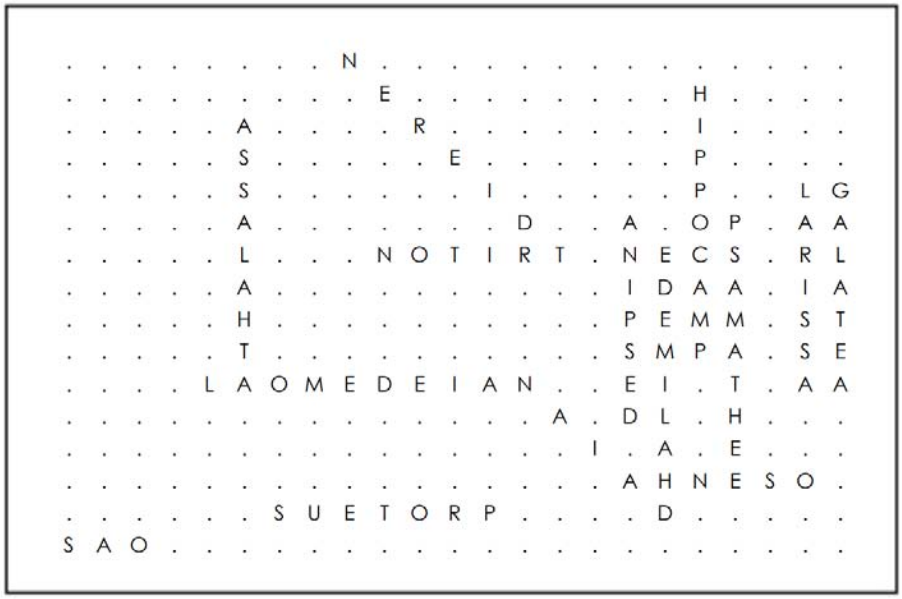


Figure 2: ISS Transit of the moon - 1 frame - Kevin Kell 2021 May 20

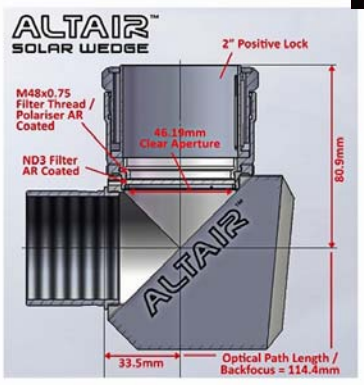
My first successful image capture at 23:58:08 UTC. of the International Space Station transiting the moon. Taken with a Meade 102mm SC FL=1000mm F10 on a Meade LXD55 tripod, and a ZWO ASI290MC camera with firecapture. We used an atomic clock android app for accurate time, started a 90 second image run full FOV with a fast exposure time as possible, about 45 seconds before the expected event. The resulting .AVI file was processed with Irfanview into 1242 .bmp files, manually inspected to find the one frame as show above.

RASC-KC Solar Cycle 25
Monthly Review

A review of solar activity and images during the past month
by RASC-KC solar observers.

May Day mayday, we have a quiet Sun for May 1st as the trio of AR 12818/820/821 quietly rotate around the SW limb leaving us blank and 10-7.5 once again. Insert sad face here ":-(" . That said it is all my fault as I have purchased an Altair Astro Solar Wedge for white light observing. The Herschel Wedge (...first proposed and used by John Herschel in the 1830s... Wikipedia) replaces the telescope's diagonal with a coated prism rather than a mirror allowing the bulk of the light and heat to pass through reflecting only a safe amount to the eyepiece or imaging device.

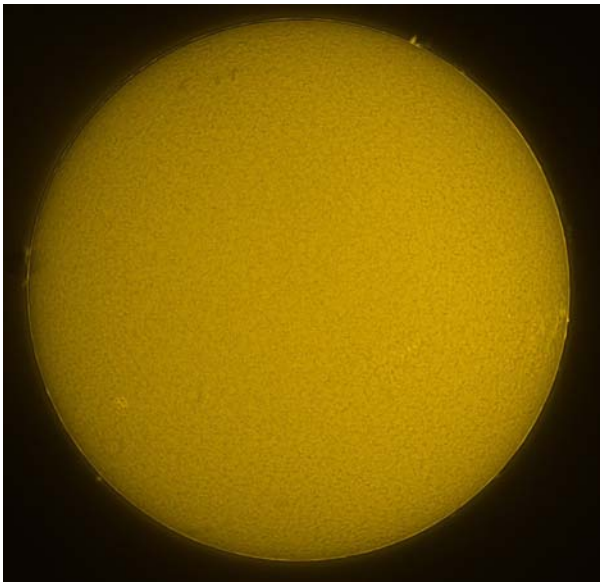
I have been a Baader Solar Film proponent for many years but the Altair Solar Wedge as intimidating as it was at first light with no solar reduction on the objective has performed well and I LIKE IT! Accompanied by a Baader Continuum green filter and a UV/IR cut filter the contrast and granularity has dramatically increased. This has resulted in my solar dslr imaging being switched to monochrome (I like ST. Patrick's Day but a green sun every day, NO). This indirectly lead me to using the monochrome setting for my h-alpha as well, re-colourizing and processing the image after the fact has resulted in higher detail and granulation in H-alpha as well producing images that I am much more satisfied with...



An interesting article...
ARE WE WRONG ABOUT THE SOLAR CYCLE? Solar Cycle 25 is just getting started. A new article in the New York Times examines a growing dispute among forecasters, who can't decide if the coming Solar Maximum will be boom or bust. Spaceweather.com is quoted likening the situation to an Elephant. Read it, from spaceweather.com

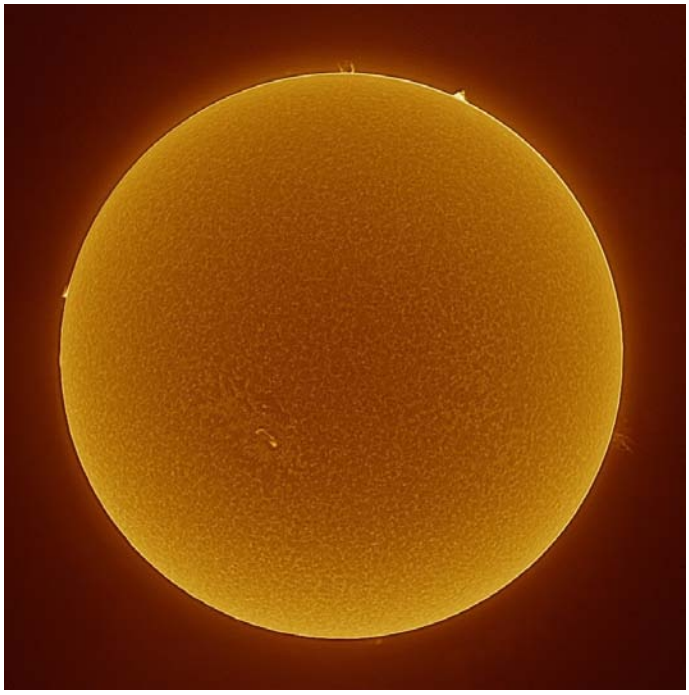
Other member solar images this month..

Figure 3: Kim Hay Coronado Solarmax 60

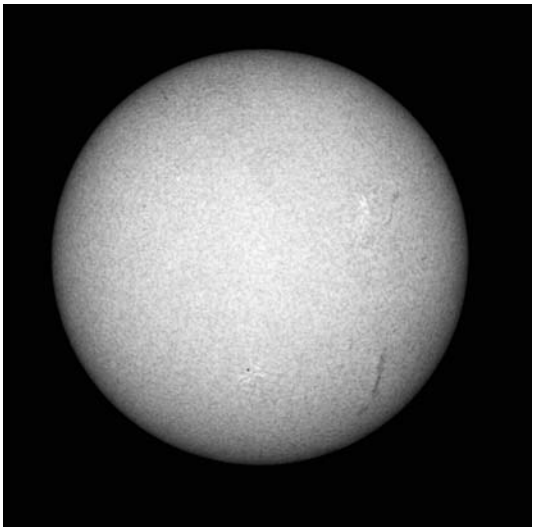


Still just learning. Rick Wagner

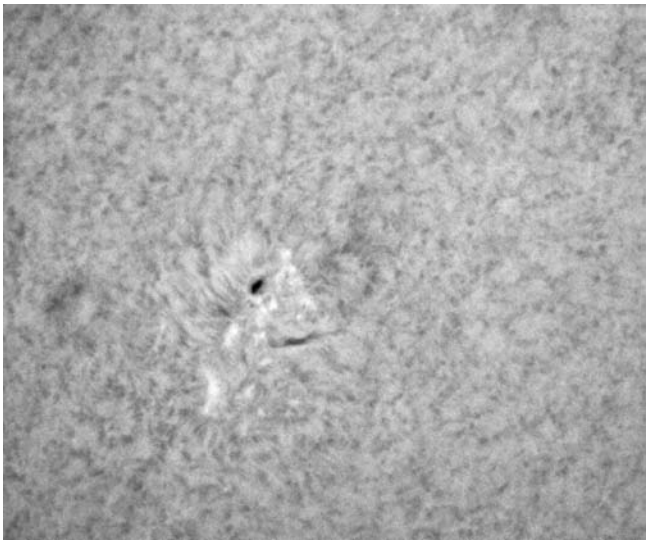
RW SolarMax40 20210528 QHY5III178C



Malcolm Park – Solarmax 70



Here's an image of the Sun from this morning – it's a combo of two images – Hank's 40mm Coronado, ZWO ASI174MM Mini monochrome camera, Televue 1.8x Barlow, prominences are a 30s video of 10ms exposures, gain 313, best 20% of 665 frames; the disk is 30s video of 2ms exposures, gain306, best 20% of 665 frames. Both stacked in Autostakkert3. There are the remains of two small dust donuts in the lower left (say about 7:45 on the clock face at ~60% and 90% radius.) Seeing was below average. Enhanced slightly and colourized in Photoshop.



The month of May has seen fewer new sunspots but there has been a couple of good ones, AR12822, 23 & 25 were short lived but 24 & 26 have provided us with some decent size and observing time. Today the 30th of May "Old Sol" has not let us down, with AR12826 and 824 now drifting over the NW limb it was looking bleak but we now have AR12827 & 28 to observe for the start of June.

To recap May we have had 4 M class solar flares ranging from M1.1 to M3.9 and 37 C class solar flares, 7 sunspots and the x-ray baseline is in the 10-6.5 range more often. RHA Obs has had 22 observing days for the month.

If you have any solar images during the month to contribute to RASC-KC Solar Cycle 25 Monthly Review forward it to rhaobs (at) gmail (dot) com along with exif and any other documentation about your observing session. Note that images may be cropped to specific content or for spacing.

Hank Bartlett

Figure 4: SCGO-Startrails from the Allskypi Camera system with its new wider angle 1.55mm lens with zwo asi 120mc camera.. 2021May12

The Fine Print:

ISS Moon Transit - Kim Hay

Brain H. had let the members of the RASC KC email list know that the ISS was going to transit the moon on May 20, 2021 starting at 21:34 pm. Yes it was daylight , but the pass was going to happen right over Yarker. So I in the Starlight Cascade Observatory and Kevin in Serenity we tried to capture this transit.
I had put the ZWO ASI120mm in the 80 mm Celestron Refractor and had it focused and running using Sharpcap . This is mounted on an Ioptron Mount. There was some high cloud that came by at the time of the transit. I was watching the sky with the binoculars (10 x 50) and saw the ISS pass off the moon into the sky in the NE. Fast is all I can tell you.
We looked at the avi in the house and saw the ISS transit. It is located near the bottom of the image. My first ISS lunar transit. I am quite pleased.

Page 10 (next) is Stephen Craig's Galaxy Images A Day from May 2021

NGC0160

NGC0169

NGC0266

NGC0278

NGC0470

NGC0488

NGC0514

NGC0520

NGC0523

NGC0536

NGC0660

NGC0672

NGC0684

NGC0691

NGC0740

NGC0740A

NGC0772

NGC0784

NGC0801

NGC0812

NGC0891

NGC0895

NGC0925

NGC0931

NGC0935

NGC0973

NGC1003

NGC1023

NGC1032

NGC1055

NGC1058

NGC5929