

# Regulus 2022 April

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



## “The Fun of Making Large Aperture Ultra-Fast Newtonians”

This presentation is about the joy of making and using large aperture ultra-fast telescopes. The convergence of three enabling technologies have allowed telescope makers to design and build telescopes that just a few years ago were not possible. This is your opportunity to hop aboard the rebirth of amateur telescope making to obtain that low cost large aperture yet physically small telescope that you've always wanted. Finally say goodbye to ladders and hauling trailers!

We'll discuss low cost thin yet very stiff mirrors, new mirror figuring and testing techniques along with low cost and effective spray silvering techniques.

By Peter Pekurar

**RASC-KC Regular Monthly Meeting -**  
Wednesday 2022 April 13 at 19:00 EST  
**A virtual Zoom videoconference.**

**The zoom registration link will be published a few days ahead of the event. We will also be streaming live on our Youtube channel (less CPU intensive, but less interaction than the Zoom meeting)**

### **The RASC Kingston Centre: Vision and Goals**

1. We are looking for a few acres of land: to use for observing groups, to base an observatory, to base equipment storage.

The price of land has exceeded our resources and continues to increase faster than our bank balance. Long term partnerships, leases, donations or other ideas are welcome

2. Clamshell dome: any member looking for an observatory project?

3. Ash Dome: This is a large dome still in storage at a members home. Any ideas of what we can do with it?

### **September Meeting location suggestions welcome.**

We are not fixed to Queen's University by any means and are looking for suggestions for other possible locations (good parking, ease of access, few stairs, not too \$\$\$\$).

## MEETINGS

**RASC-KC Wednesday Weekly Social** videoconference. 7pm Eastern all weeks except the 2<sup>nd</sup> Wednesday of the month. For members and their guests. Email list subscribers receive the link weekly 1 or 2 days beforehand. Next Socials:  
Wed 2022 April 06 & 20

The next Regular Monthly Meeting is Wednesday 2022 April 13<sup>th</sup>, 19:00 EDT. See ----- for details.

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

## **In the March Issue**

- \* **The President's Nook – Kim Hay**
- \* **Library Notes – Kim Hay**
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- \* **Remembering My first View Of Saturn - Peter Hutchison**
- \* **Minutes 2022 February Meeting – Elena Zanetti**
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- \* **RASC-KC Solar Cycle 25 Monthly Review – Hank Bartlett**
- \* **Stephen Craig's Galaxy of the Day**

**Editor: Kevin Kell**



## The President's Nook - Kim Hay

Spring has sprung, though the weather does not seem to keep this in mind and keeps producing snowflakes, rain and cold wind. This past week earth was hit by the solar wind from a CME that produced wonderful Aurora in many parts of Canada and mid states of the US, but we were under cloud. However going to the Internet or Facebook or Twitter you can see some of the Aurora which was spectacular. One of our members suggested this online location to view the Aurora from Churchill, Manitoba <https://explore.org/livecams/zen-den/northern-lights-cam> We can still catch some of the winter constellations, but they are quickly disappearing, so now is the time to catch the winter Messier Objects.

The Frontenac, Lennox & Addington Science Fair (FLASF) is happening with results to be announced on April 8th, 2022 stay tuned for an update from Bruce Elliott at our next meeting.

Next on the Outreach side of things is the Science Rendezvous being held on May 7th, 2022. This also coincides with Astronomy Day. We will be participating with in person visual viewing ( following all Covid protocols) with Queen's and RMC with Solar Telescopes in white light, hydrogen alpha and testing our new EAA (Electronically Assisted Astronomy) setup. We also have files prepared for the Virtual part of the Science Rendezvous.

The RASC New Observers to Visual Astronomy (NOVA) has opened up on the RASC National website <https://www.rasc.ca/nova> . It is a virtual course so if interested, please sign up.

We are still meeting virtually by ZOOM for our Regular Meetings. Queen's has lifted some restrictions but has not opened up the facility for our group yet. The Executive is looking at possible new venues as things open up across Kingston and the province.

In May we will have member Richard W. Schmude from Gordon College giving us a talk. June is open for speakers at this point, so if someone would like to present a short talk, please send a note to [kingston@rasc.ca](mailto:kingston@rasc.ca) Subject June Speaker.

That's all till month.

Clear Skies, and Keep Looking Up!



## Library Notes Librarian Kim Hay

The Book "Not Yet Imagined- A Study of Hubble Space telescope operations by Christopher Gainor" was offered as a free pdf version. This has been downloaded and made available in the Electronic Library (<https://kingston.rasc.ca/index.php/library/books>) . We also have a hard cover copy for those who like to read book in hand.

## Skyward April 2022 - David H. Levy



Omicron!

Over the last few months you must have read dozens of articles, online or in print, about the Omicron variant of COVID-19. Fortunately, this is not one of them. This article is about Omicron<sup>2</sup> Eridani. It is a faint star in the constellation of

Eridanus, the River.

Actually, there are two Omicron stars in that constellation. The first is brighter, and is a variable star. The second one is one of the closest stars to the Sun. Omicron<sup>2</sup>, also known as 40 Eridani, happens to be not a disease but one of the most interesting star systems in the entire sky.



Omicron<sup>2</sup> is a triple star system that is only about 16 light years away. Its brightest component is a Sun-like star faintly visible to the unaided eye on a good night. It lies in northern Eridanus, the River, just a few degrees west of Rigel at the foot of Orion. The secondary is a white dwarf star. Unlike the companion of Sirius, this star is 9th magnitude and not near the brighter star so it is easy to see in a small telescope. The third star is not far from the secondary, but at 11th magnitude it is also not difficult to spot. This third star is a red dwarf.

Although red dwarf stars are the most plentiful, by far, in our region of the Milky Way galaxy, they are almost impossible to see because they are so small. The closest one to us is Proxima Centauri, or Alpha Centauri C, which at 4.24 light years is the closest star to the Sun. Also because they are so small and intrinsically faint, only a few of them are easy to find. 40 Eridani C is one of the easiest to find.

This interesting star has something else going for it. In 2018 astronomers discovered a planet orbiting the primary star. With a rapid orbit around Omicron<sup>2</sup>, such a planet would receive much more radiation from the primary star than Earth gets from the Sun. But in 2021 new observations cast doubt on whether this planet exists at all.

Whether Omicron<sup>2</sup> Eridani really hosts a planet is subject to debate. But in the universe of Star Trek, it surely does. It is the home of Vulcan, Mr. Spock's home world. In the episode "Operation Annihilate", which appears near the end of the first season, Spock is blinded by the intense light used to immobilize the invading parasites on the planet Deneva. However his blindness is temporary because of the existence of an inner eyelid. Vulcan is said to orbit Omicron<sup>2</sup> Eridani's primary star, and since it is so much brighter than our Sun, even though Vulcan is at the same distance that Earth is from our Sun, they need the inner eyelid to protect their eyes.

I rather enjoy the idea that the fictitious Vulcan happens to orbit one of my favorite real stars. And unlike the Omicron variant, which one hopes will be eradicated soon, we admire Omicron<sup>2</sup> Eridani, the real star, and wish it to "Live long and prosper."

## 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 FLA Science Fair 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 are provincially incorporated as a not-for-profit corporation (September 2005) and are a registered Charity with Revenue Canada (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

Wednesday, April 13, 2022 – 19:00 Regular Monthly Meeting-ZOOM videoconference  
Guest Speaker: Peter Pekurar (RASC Sudbury)  
Topic: TBA

Wednesday, May 11, 2022 – 19:00 Regular Monthly Meeting-ZOOM videoconference  
Guest Speaker: Richard Schmude (RASC Kingston) Topic: TBA

Wednesday, June 08, 2022 – 19:00 Regular Monthly Meeting-ZOOM videoconference  
Guest Speaker: TBA

July, August – summer hiatus – no regular monthly meetings

### Current Centre Members as of 2022 March 5:

Total: 75

New Members 2

Non-Paying Life Members 7

Pending Renew 4

OnHold-Expired 7

Inactive 12

Active 59

## The Sky This Month 2022 April - Rick Wagner

01 Apr - New Moon 02:24EDT

01 Apr - extremely thin crescent Moon only 18 hours old, very shortly after sunset, just up and to the left of the point where the Sun set.

04&05 Apr - Mars about 0.5° from Saturn low in the southeast dawn sky, both are about mag 1 and are 7° to the right of very bright Venus

08 Apr - Lunar X near the crater Werner visible this evening

09 Apr - First Quarter Moon

12 Apr - (8) Flora at opposition (mag 9.7)

16 Apr - Full Moon 14:55EDT

22 Apr - Lyrid meteor shower peaks - this is a relatively minor shower badly affected by a waning gibbous Moon in the pre-dawn sky

23 Apr - Last Quarter Moon

27&28 Apr - Jupiter and Venus are quite close in the dawn sky shortly before sunrise with a thin crescent Moon below

the pair. On the 27<sup>th</sup> Neptune is less than 0.5° left of Venus and on the 28<sup>th</sup> it will be 2/3° right of Venus - at mag 8 and low to the horizon it will be very difficult.

29 Apr - Mercury (mag 0.3) at greatest elongation east - low in the western sky shortly after sunset, just beside the Pleiades star cluster.

29 Apr - (10) Hygiea at opposition (mag 9.2)

30 Apr - Jupiter (mag -2) 0.5° left of Venus (mag -4) low in the eastern sky before sunrise. Mars (mag 0.9) and Saturn (mag 0.9) are respectively 16° and 33° to the right and slightly higher. Notice the very low angle of the ecliptic relative to the horizon in the spring dawn sky.

30 Apr - New Moon 16:28EDT



### Notes from Members

#### All Things Astro Google Calendar— Kevin Kell

We are trying out a new feature... a shared google calendar that has all things astro in one place:

<https://calendar.google.com/calendar/u/0?cid=YXN0cm9raW5nc3RvbjE5NjFAZ21haWwuY29t>

We hope to have all local meetings, astronomical whats up events, and relevant online webinars, etc on the calendar. Since this is a public access calendar, we cannot include private zoom links for events, but we can point people to registration links, etc.

#### Remembering My first View Of Saturn - Peter Hutchison

My first great view of Saturn was with a 3.5" Questar telescope. Digging through my past astronomy logs I found this entry:

August 19, 1988- I met a bearded Terrence Dickinson at Charleston Lake Provincial Park for an evening of viewing with four different scopes including a 3.5" Questar from Mr. & Mrs VanAsperen of Brockville. We saw Saturn, Titan, Rhea, Mars, the Hercules Cluster, M11, the Andromeda galaxy, M31 as well as all the constellations out that night- Big D, Little D, Casseopeia, Hercules, Corona Borealis, Sagittarius, Northern Cross etc.

The sky was nice and dark and the excellent optics of the Questar showed Saturn as unforgettably stunning. There is a good photo of this instrument on the cover of David Levy's

A Nightwatchman's Journey. That's "Cupid"- a Maksutov cassegrain which was a gift from his wife Wendy. Its engraving and build quality is truly impressive.

Hein and Regina van Asperen were wonderful hosts who explained their passion for astronomy as they set up their scope on a victorian table with an elegant cloth top. After sunset I returned to their station for a tour of the universe, starting with Saturn. !!! WOW !!! A breathtaking sight.

Today I read the obit for Regina in the Brockville Recorder and Times. Here is an excerpt:

Regina was born in Holland in August 1920, where she still has many nephews and nieces who remember her there as a loving gentle aunt. She survived WWII, quietly supporting her older siblings who were involved in the underground, giving up her ID and passport to a Jewish scientist who needed to escape the German invasion, and by helping hide her husband to be, along with other gentlemen, from having to be conscripted into the invading army. She was able to cross through German checkpoints because she presented as a gentle young woman that spoke the German language very well, and in this way she was able bike out of the city to help get food for her family and neighbors back and forth from the farm lands in the surrounding area when so many in her country died of starvation.

She immigrated to Brockville, Canada with her husband and oldest daughter in 1954. In 1970, after her oldest child moved away to university, she was instrumental in adopting 3 siblings in order to grow her family and provide a much needed stable loving home. She volunteered throughout her life in schools, playing piano for the choirs, and in the hospitals in Brockville. She passed on her love of music, art, and languages to her children and grandchildren in the hours after school and even moved to Kingston in 2008 to be closer to them. She traveled with her husband across Canada and Europe in their retirement years and was a member of the Royal Astronomical Society of Canada for many years, active in the Kingston branch.

So a few people shared some memories of them at tonight's meeting but no one knows what

became of that telescope. R.I.P. Regina. Thank you for sharing your love of astronomy.

## Save the Date!!! Fall'N'Stars 2022

Friday-Sunday 2022 September 23-25

<https://rascbelleville.ca/fallinstars/>

This is SouthEastern Ontarios' Star Party organized by the RASC Belleville and Kingston Centres, annually since 2000!

Registration forms and detailed information will be published in the next month or two.

## Notes from The Net

Jokkess Frooommm Spppaacceee!

Why did the astronomer send his salad back at lunch?

Because he wanted something a bit meteor

What did the photon say when the hotel manager asked to help with her luggage?

No thanks, I'm traveling light.

What is the most popular reality show watched on Star Trek Deep Space Nine?

Keeping up with the Cardassians!

What would you call a spouse that travelled to Mars with Elon Musk and left you behind?

They would be your Space-X.

Did I tell you about the latest book I am reading about Anti-Gravity. It's so good I can't put it down!

What do astronomers do after calculating the time between sunrise and sunset.

They call it a day!

# RASC KC February 2022 Regular Meeting Minutes - Elena Zanetti

Wednesday February 9th 2022  
Minutes of the RASC-KC Regular Monthly  
Meeting (via ZOOM and live on YouTube)

Created by Elena Zanetti

The meeting started at 7 p.m. with 44 Zoom registrants and YouTube live streaming. Kim Hay welcomed members and guests, locally and across the continent.

Kim introduced our Kingston Centre executive: Kim Hay – President, Laurie Graham – Vice President, Susan Gagnon – Treasurer, Richard Wagner – Past President, John Hurley – National Council Rep, Kevin Kell – Editor of *Regulus*, Elena Zanetti – Secretary.

Our guest speaker, Dr. Jennifer West, is a Research Associate at the Dunlap Institute for Astronomy & Astrophysics. She uses large radio surveys and radio polarimetry to study magnetic fields in supernova remnants and in the Milky Way Galaxy. Last speaking to us in January, 2018, today we welcomed Dr. West speaking on "Inside the Galactic Tunnel in the Sky".

John Hurley, our National Council rep, reported no updates other than apology letter issued by the National President a month ago. If you wish, please send feedback.

Susan Gagnon, our Fall'N'Stars 2022 chair reports that Steve Burr has booked the South Bay campsite (same as last year) and it will be held Sept. 23 – 25. Kingston is the lead and Susan is looking for ideas on whether Saturday will be how-to sessions and/or speaker ideas, etc.

Hank's Sun Spots for Jan. 13 – Feb. 8 2022. Hank Bartlett reported on an enjoyable month of viewing with 14 observing sessions. The 4 M-class flares during this period did not produce any significant aurora and January 14th had the highest number of sunspot groups with 8 appearing the same day. Kim Hay contributed images of C-class flares in white light and Hank shared images in white light and H-alpha. Active regions = 20 consisting of AR12924 – AR12943. Solar Flares – X = 0, M = 4, C = 148, Total = 152.

Rick Wagner presented Our Sky this Month February 2022.

Local Events:

Feb 11 – Queen's U: Rachel Friesen (UofT) Green Bank Ammonia Survey  
Queen's University Observatory (QUO) producing Fast Radio Burst Podcasts

-Living Universe: The Paradox  
-Our Lonely Galaxy  
-<http://observatory.phy.queensu.ca>

BAA Events:

Feb 16 – Webinar – All things all sky (14:00)

Mar 5 – Deep Sky Section Annual Meeting

AAVSO Webinars

Feb 26 – Dr. Margarita Karavaska: "Variable Stars and Interacting Binary Systems in High Definition" (members only)

Mar 5 – how-to hour, topic TBA

Sky Events – February

Feb 9 – Eyes of Clavius and Mercury visible for the coming week

Feb 11 – Algol decreasing towards minimum in the evening

Feb 12 – Venus at greatest illuminated extent

Feb 13 – Venus 7 degrees N or Mars

Feb 14 – Algol at minimum about 8 pm

Feb 16 – Full Moon 11:56 EST

Feb 23 – Last Quarter Moon

Feb 27 & 28 – Moon, Saturn, Mercury, Mars, Venus gather in dawn sky

Sky Events – March

Mar 2 – Mercury 0.7 degrees south of Saturn and New Moon at 12:35 EST

Mar 5 – Jupiter in conjunction with Sun

Mar 6 – Algol at minimum about 10 p.m.

Two comets of interest:

Comet 67P Churyumov-Gerasimenko and Comet c/2019 L3 (ATLAS)

Asteroids

Feb 26 – (4) Vesta in perfect straight line between Venus and Mars

David Levy presents poetry: David read a quotation from Homer's *Iliad*, translated by Alexander Pope, on comets.

Bruce Elliott reported updates on the Frontenac, Lennox and Addington Science Fair (FLASF) which will be held virtually again this year in March. Bruce is looking for volunteers to judge entries and outlined when the projects will be available to view. Please contact Bruce if you would like more information or are willing to judge at this fun event. Check our RASC-KC website for last year's winner.

Kim Hay reported on Science Rendezvous. It will be a month-long event in May and more information will be forthcoming.

Our next meeting will be Wednesday, March 9th, 7 p.m. and our guest speaker is Marcus Leech.

"Hunting FRBs on a budget: the SIFT Telescope". Every Wednesday (except 2nd Wednesday meeting night) we have a members Social Zoom Time – email is sent to the Centre chat list – to join please contact us at [kingston@rasc.ca](mailto:kingston@rasc.ca) On social media, we are at Facebook: RASC

Kingston Centre Group, Twitter: @AstroKingston, YouTube: RASC Kingston Centre, where past meetings are online along with other Astro events. RASC Handbooks are still being mailed out as per National Office.  
Meeting adjourned at 8:30 p.m.

## **Wednesday March 9<sup>th</sup> 2022 Minutes of the RASC-KC Regular Monthly Meeting (via Zoom and live streamed on YouTube)**

The meeting started at 7 p.m. with 32 participants on Zoom and with YouTube live streaming. Kim Hay, our President, welcomed member and guests, locally and on YouTube. Two new Kingston Centre members are Brian McCracken, an astrophotographer, and Siobhan Baker. Welcome!

Bruce Elliott gave a FLASF update. The 2022 Science Fair will again be online. Along with Graeme Hay, Bruce is looking for one more volunteer to help judge astronomy related projects for the Leo Enright Award. Project links will be available March 28<sup>th</sup> to view and to be chosen by April 5<sup>th</sup>. Since the meeting, a volunteer has come forward.

David Levy presents poetry: David read from the Iliad, Alexander Pope's translation, in part, "... while dreadful comets glaring from afar, forewarn'd the horrors of the Theban war".

This month's guest speaker, Dr. Marcus Leech, is the President of the Canadian Centre for Experimental Radio Astronomy, founded in 2016 as a Federal not-for-profit, and spoke to us on "Hunting FRBs on a budget: The SIFT telescope". You may find this talk on our RASC Kingston Centre YouTube channel. <https://www.ccera.ca/> and [http://www.sbrac.org/about\\_us.html](http://www.sbrac.org/about_us.html) for further information and kindly email [info@ccera.ca](mailto:info@ccera.ca) to make a donation.

John Hurley, our National Council Rep, reports: Calendars are again available for purchase and the latest issue of SkyNews is in the mail. Please contact National Office for membership issues. The GA will be end of June, virtual, and registration information is coming. A generous donation of \$1,000,000 has been donated to the National Office and John gave a visual

presentation of the new building, new offices and an intro to staff, old and new. NOVA – New Observers to Visual Astronomy begins this spring. New programming this year is available on the website. Robotic Telescope for Classrooms for is available to science classes and teachers, basic and advanced offered and virtual field trips, please spread the word. Yearly Astrophotography Data Packages are available to members to have access to data from the Remote Telescope for a small fee. Astronomy Software Training for Stellarium (a free download) is free to RASC members. The National Education & Public Outreach Committee keeps busy with observing certificates, high school club resources and Creation Station for youth. Online training webinars: Insider's Guide to the Galaxy (Year 3). Working with the CSA to promote the Artemis 1 launch and will have programming across Canada in April and May. <https://rasc.ca> will have detailed information on these activities.

Hank's Sun Spots for Feb. 9 – Mar. 8 2022. Hank Bartlett reported on not great seeing and a bit of a boring month with 14 RHA Observatory imaging sessions. Feb 12<sup>th</sup> was an exception with an M1.4 flare originating from AR12944 followed less than 9 hours later by a C9.2 and C8. Images by Kim Hay in white light colourized and H-alpha and Hank Bartlett in white light and H-alpha were shown. Active regions = 23 consisting of AR12943 – AR12965. Solar Flares – X = 0, M = 4, C = 64 (large drop from 148 last month), Total = 68. Hank thanked Kim for her images and welcomes images from all members.

Rick Wagner presented Our Sky This Month March 2022 and Astronomy Events  
Local Events

Mar 11 – Queen's U Astronomy Dept: Kate Scholberg (Duke) – What Stubs and Sparkles in Vast Vats of Liquid Will Tell Us About Exploding Stars

QUO (Queen's University Observatory) – Fast Radio Burst Podcasts

- Living Universe 2: The Great Filters
- Cupid's Arrow Hits a Black Hole with Charles Woodford
- <http://observatory.phy.queensu.ca/>

BAA Events

Mar 16 – Webinar – History of Mirror Silvering (14:00?)

AAVSO Webinars

Mar 26 – Dr. Emily Levesque and her book The Last Stargazers (members only)

Apr 5 – how-to hour, topic TBA

## Sky Events - March

Mar 10 – First Quarter Moon

Mar 13 – Daylight Saving Time begins 02:00EST

Mar 18 – Full Moon 02:18EST

Mar 20 – Venus at greatest elongation east – furthest distance east of the Sun in the southeastern dawn sky

Mar 20 – Vernal Equinox 11:33EDT – spring begins in the northern hemisphere and we get roughly equal hours of day and night

Mar 22+ - zodiacal light in the west towards the end of evening twilight

Mar 25 – Last Quarter Moon

Mar 26 – Earth Hour – 20:30-21:30EDT – turn off all your electrical items and go out and enjoy the sky!

Mar 28 – Moon, Venus, Saturn, and Mars form a compact group in the southeast before sunrise

Mar 29 – Venus 2° north of Saturn in the southeastern dawn sky

Mar 29 – Algol at minimum about 21:00EDT

## Sky Events – April

Apr 1 – New Moon

Apr 1 – 18hr old crescent Moon in the west after sunset

Apr 4 – Mars 0.3° South of Saturn

Apr 9 – First Quarter Moon

## Asteroids

Apr 12 – (8) Flora at opposition (mag 9.7)

There will be 4 possible asteroid occultations.

Mar 12 – (874) Rotraut occults a 9<sup>th</sup> mag star – max 6.8 sec duration

Mar 16 - (68) Leto occults a 12<sup>th</sup> mag star – max

32 sec duration

Mar 17 – (356) Liguria occults a 14<sup>th</sup> mag star – max 16 sec duration

Apr 5 – (153) Hilda occults a 10<sup>th</sup> mag star – max 13.5 sec duration

Announcement by Kim Hay

Science Rendezvous 2022 will be a month-long event in May with various virtual and in-person events. Our centre will be working with Queen's and RMC to have solar observing.

Our next meeting will be Wed Apr 13 at 7:00p.m. and our guest speaker is Peter Pekurar, "The Fun of Making Large Aperture Ultra-fast Newtonians".

Every Wednesday (except 2<sup>nd</sup> Wed meeting night) we have the members Social Zoom Time – to join, let us know at [kingston@rasc.ca](mailto:kingston@rasc.ca)

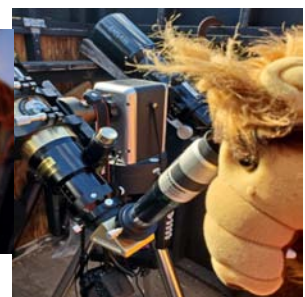
On social media we are: Website at [Kingston.rasc.ca](http://Kingston.rasc.ca). Facebook at RASC Kingston Centre Group. Twitter at @AstroKingston. YouTube at RASC Kingston Centre, tonight's and past meetings located here.

Kim thanked all for attending and the meeting ended at 8:43 p.m.

Created by Elena Zanetti, Secretary

## RASC-KC Solar Cycle 25 Monthly Review

Highlights of solar activity and images during the past month  
by RASC-KC solar observers for March 2022



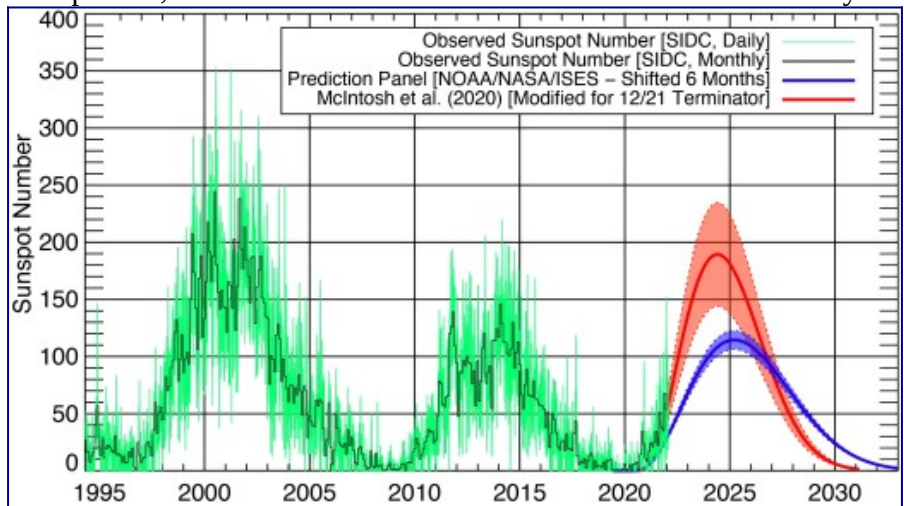
March 1 and off to a good start with a snowy cloudy day! Solar speaking March neither came in like a lion or a lamb but there were 5 sunspot groups being AR 2954 through 58. Although March weather can be rather changing the temperature swings are less extreme and the seeing is getting much better. Before I get into imaging there is this story below to have a look at...

spaceweather.com came through with this Mar 1 2022 story that you can find more about through their archives/Time Machine in the upper right of their home page. This is a very interesting article that may change the way of forecasting solar cycles.

**THE TERMINATION EVENT HAS ARRIVED:** Something big just happened on the sun. Solar physicists Scott McIntosh (NCAR) and Bob Leamon (U. Maryland-Baltimore County) call it "The Termination Event."

"Old Solar Cycle 24 has finally died--it was terminated!" says McIntosh. "Now the new solar cycle, Solar Cycle 25, can really take off."

The "Termination Event" is a new idea in solar physics, outlined by McIntosh and Leamon in [a December 2020 paper](#) in the journal *Solar Physics*. Not everyone accepts it--yet. If Solar Cycle 25 unfolds as McIntosh and Leamon predict, the Termination Event will have to be taken seriously.



**Above:** Predictions for Solar Cycle 25. Blue is the [official prediction](#) of a weak cycle. Red is a new prediction based on the Termination Event.

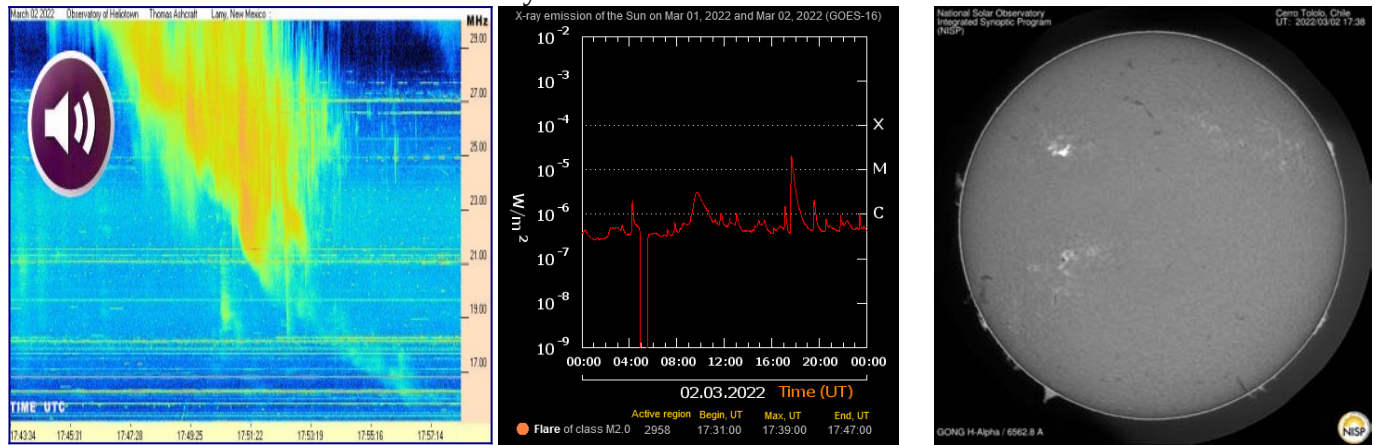
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March being of the transitional weather time of year the first week only gave me 3 days of observing/imaging but results were quite decent. AR 2954&55 disappeared around the west limb by the end of the week but AR2960–62 arrived keeping the group count up & 60 was a very nice grouping.



Despite the size of AR 2960 it only released a few C class flares but diminutive AR2958 sent an M flare our way on the 2<sup>nd</sup> surprising everyone. Thank you spaceweather.com and these contributors for this post... (ctrl/click hyperlinks to open)

**RADIO NOISE FROM THE SUN:** Yesterday, March 2nd @ 1739 UT, sunspot AR2958 exploded, producing an M2-class solar flare. Moments after the explosion, a roar of static filled shortwave radio loudspeakers on the dayside of Earth. "It was a Type II solar radio burst," says Thomas Ashcraft, who recorded the sounds from his observatory in rural New Mexico:



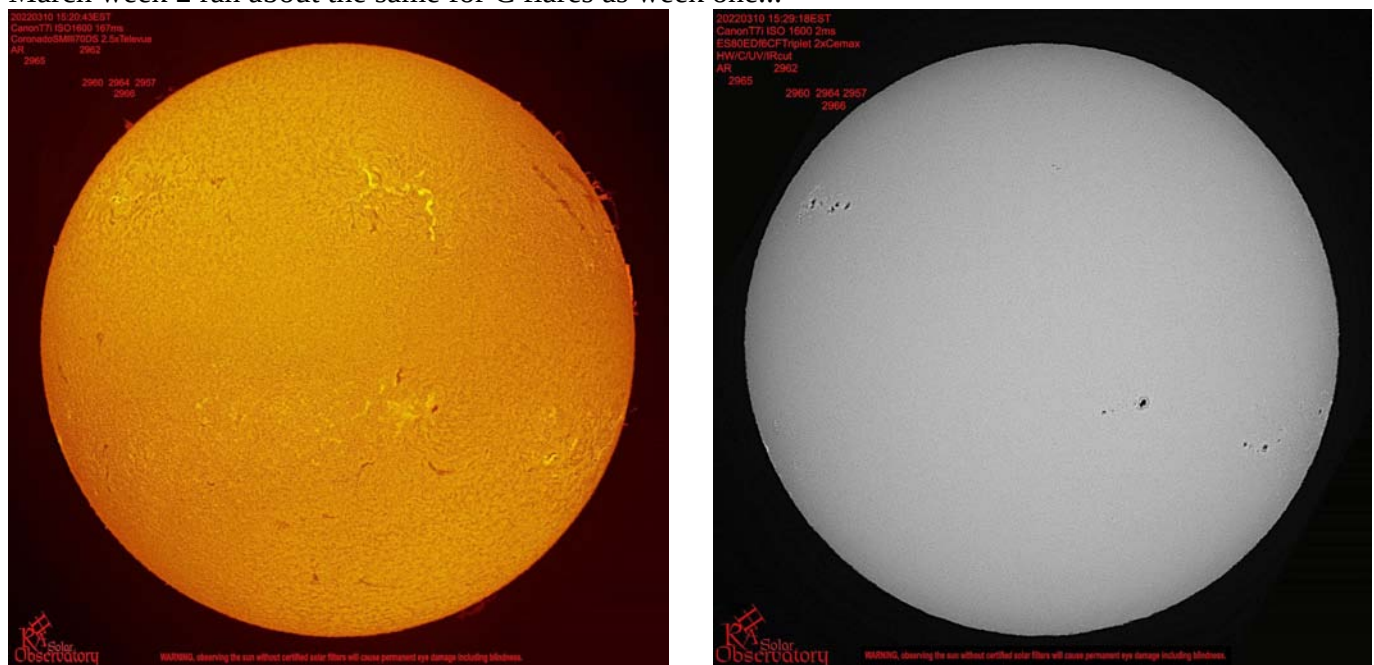
"The radio burst kicks in at the 15 second mark of [the audio file](#)," says Ashcraft. "It's a stereo file, with 23 MHz in one channel and 22 MHz in the other. Try listening using headphones. You might be able to hear the frequency drift."

Jordi Gonzalez of Landete, Cuenca, Spain, [also recorded the radio burst](#).

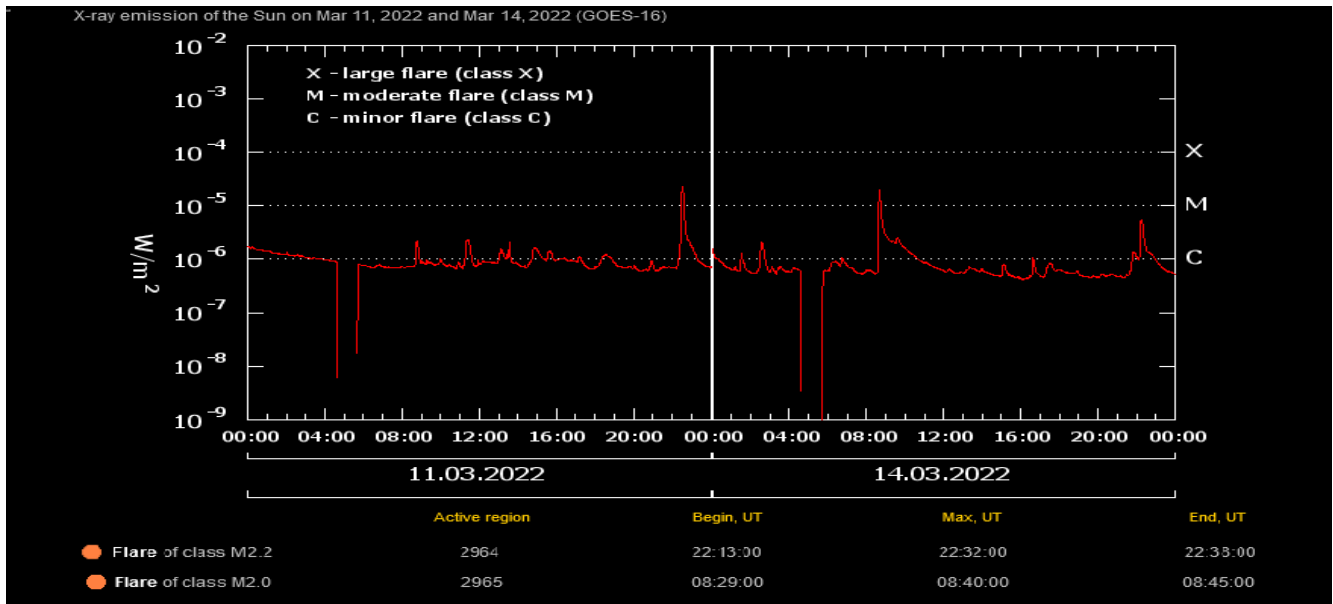
Type II solar radio bursts are caused by shock waves rippling through the sun's atmosphere. They drift through the shortwave band, always from high to low frequencies, and almost always indicate that a CME is leaving the sun. A NOAA analysis of this event suggests that the CME was moving about 690 km/s (2 million mph). Stay tuned for updates about a possible Earth-directed component. **Aurora alerts:** [SMS](#) [Text](#).

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March week 2 ran about the same for C flares as week one...

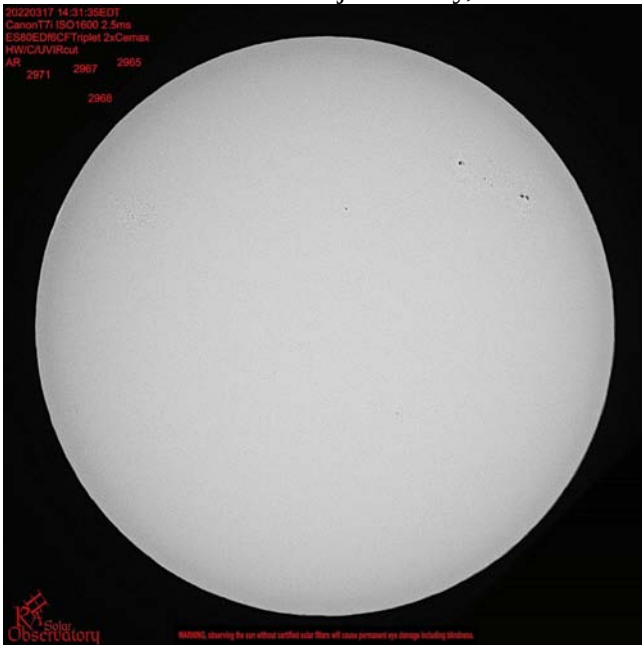


...but double the M flares with two (2022 03 11 & 14), things are looking up and so am I!



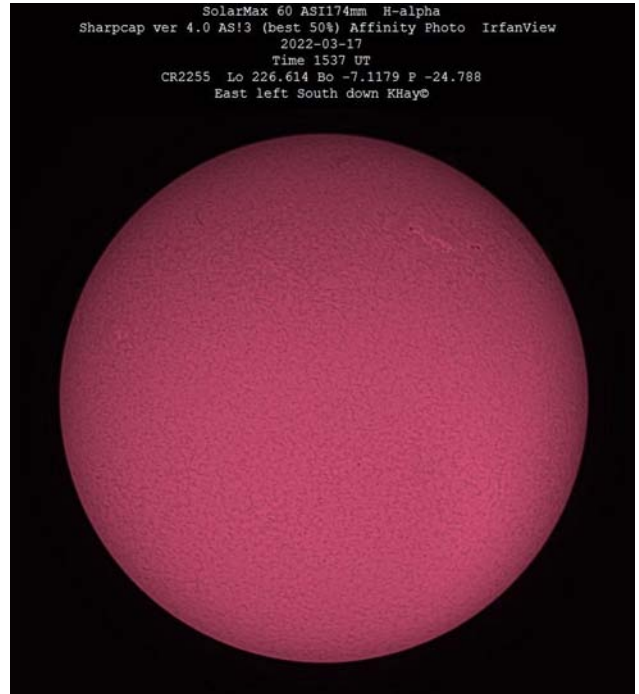
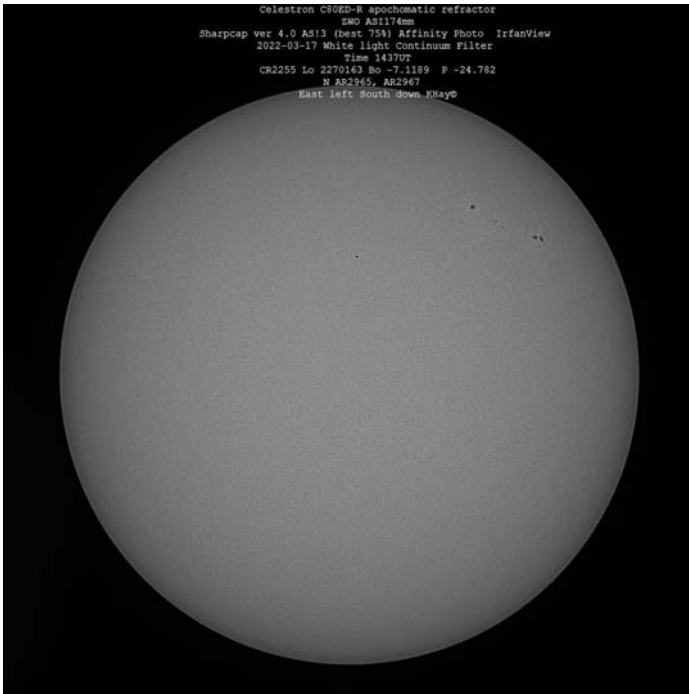
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March 17 was not just sunny, SEEING WAS GOOD! Hence these two steady images.

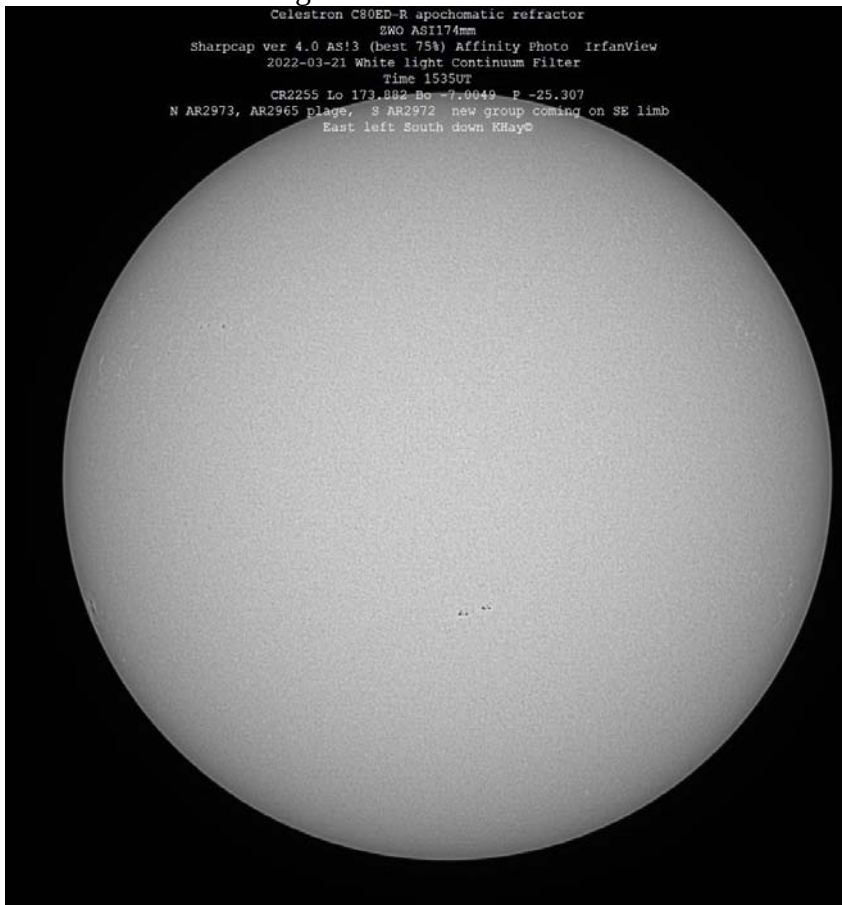


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I am closing this month off with these recent images from Kim, she has as most will know acquired a new camera the ZWO ASI174mm, Congrats on the new toy Kim and clear sky to boot! Kim, you must be living life right.



This (below) is yesterday's Sun (March 21, 2022) in White light. Its with a new camera the ZWO ASI174mm, I get full disk now.



This month's report has been cut to 3 weeks as Di and I prepare to join the family in Playa Grande, Costa Rica. As of Mar 21<sup>st</sup> the sun has generated the following flare stats...

X flares = 0  
M flares = 5  
C Flares = 60

Sunspot Groups = 21

Active Regions 12954 - 74

The Rogues' Hollow Astronomical Solar Observatory had 9 observing/imaging days.

I will be observing and imaging a 34 degree higher sun but with lower quality equipment while away so I may not be adding to this report. I am hoping to catch the meeting or a chat or two.

See you all in late April.

## Steve Craig's Galaxy of the Day for March 2022



last was 7320 day 335

Day 336 NGC7331 is a spiral galaxy about 40 million light years away in Pegasus. It is the brightest member of a group of galaxies known

as the Deer Lick Group. The collection of galaxies got its name after amateur astronomer Tom Lorenzin had a memorable view of it from the Deer Lick Gap, which lies in the mountains of North Carolina. The fainter galaxies are not actually associated with NGC7331 as they lie over 300 million light years away. NGC7331 was discovered on September 5, 1784 by William Herschel.

Day 337 NGC7332 (lower) is an edge on lenticular galaxy about 67 million light years away in Pegasus.

NGC7339 (upper) is an edge on spiral galaxy about 60 million light years away.

They were discovered on September 19, 1784 by William Herschel.

Day 338 NGC7393 is an irregular galaxy about 120 million light years away in Aquarius. It is catalogued as #15 in the Arp Atlas of Peculiar Galaxies. It was discovered on October 5, 1785 by William Herschel.

Day 339 NGC7416 is a barred spiral galaxy about 60 million light years away in Aquarius. It was discovered on August 25, 1864 by Albert Marth.

Day 340 NGC7448 is a spiral galaxy about 80 million light years away in Pegasus. It was discovered on October 16, 1784 by William Herschel.

Day 341 NGC7469 (left) and IC5283 (right) are a pair of interacting spiral galaxies about 200 million light years away in Pegasus. Together they are catalogued as #298 in the Arp Atlas of Peculiar Galaxies. They were discovered on November 12, 1784 by William Herschel.

Day 342 NGC7479 is an intriguing barred spiral galaxy about 105 million light years away in Pegasus. It is thought that it is the result of a recent merger with a smaller galaxy. It was discovered on October 19, 1784 by William Herschel.

Day 343 NGC7541 (upper) and NGC7537 (lower)

are a pair of interacting galaxies about 103 million light years away in Pisces. They were discovered on August 30, 1785 by William Herschel.

Day 344 NGC7550 (middle) NGC7549 (lower) and NGC7547 (upper) are a group of galaxies about 222 million light years away in Pegasus. They are #99 in the Arp catalogue and Hickson Compact Group #93. They were discovered on November 2, 1850 by Bindon Stoney.

Day 345 NGC7606 is a spiral galaxy about 100 million light years away in Aquarius. It was discovered on September 28, 1785 by William Herschel.

Day 346 NGC7609 (middle) is a pair of interacting galaxies about 545 million light years away in Perseus. It is catalogued as #150 in the Arp Atlas of Peculiar galaxies.

The upper galaxy is MCG +01-59-046 The lower galaxy is CGC -406-067

They were discovered on October 5, 1864 by Albert Marth.

Day 347 NGC7640 is a spiral galaxy about 30 million light years away in Andromeda. It was discovered on October 17, 1786 by William Herschel.

Day 348 NGC7674 is a spiral galaxy about 350 million light years away in Pegasus. It is listed as #182 in the Arp catalogue. Just above is NGC7675, an elliptical galaxy about the same distance away. NGC7674 was discovered on April 16, 1830 by John Herschel.

Day 349 NGC7678 is a barred spiral galaxy about 165 million light years away in Pegasus. It was discovered on September 15, 1784 by William Herschel.

Day 350 NGC7714 (upper) and NGC7715 (lower) are a pair of interacting galaxies about 100 million light years away in Pisces. They are catalogued as #284 in the Arp Atlas of Peculiar Galaxies. They were discovered on September 18, 1830 by John Herschel.

Day 351 NGC7721 is a spiral galaxy about 93 million light years away in Aquarius. It was discovered on November 27, 1785 by William Herschel.

Day 352 NGC7723 is a barred spiral galaxy about

90 million light years away in Aquarius. It was discovered on November 27, 1785 by William Herschel.

Day 353 NGC7727 is a peculiar galaxy about 89 million light years away in Aquarius. It harbours two galactic nuclei with a super massive black hole in each. It is catalogued as #222 in the Arp Atlas of Peculiar Galaxies. It was discovered on November 27, 1785 by William Herschel.

Day 354 NGC7741 is a barred spiral galaxy about 40 million light years away in Pegasus. It was discovered on September 10, 1784 by William Herschel.

Day 355 NGC7743 is a spiral galaxy about 72 million light years away in Pegasus. It was discovered on October 18, 1784 by William Herschel.

Day 356 NGC7752 (upper) and NGC7753 (lower) are a pair of interacting galaxies about 272 million light years away in Pegasus. They are catalogued as #86 in the Arp Atlas of Peculiar Galaxies. They were discovered on November 22, 1854 by William Parsons.

Day 357 NGC7757 is an unusual spiral galaxy about 135 million light years away in Pisces. It is catalogued as #68 in the Arp Atlas of Peculiar Galaxies. It was discovered on September 24, 1830 by John Herschel.

Day 358 NGC7783 is a cluster of interacting galaxies about 365 million light years away in Pisces. It is catalogued as #323 in the Arp Atlas of Peculiar Galaxies. They were discovered on September 9, 1864 by Albert Marth.

Day 359 NGC7805 (lower) and NGC7806 (upper) area pair of interacting galaxies about 221 million light years away in Pegasus. They are catalogued as #112 in the Arp Atlas of Peculiar Galaxies.

They were discovered on October 9, 1790 by William Herschel.

Day 360 NGC7814 is a superb edge on galaxy about 40 million light years away in Pegasus. It is known as the Little Sombrero Galaxy. It was discovered on October 8, 1784 by William Herschel.

Day 361 NGC7817 is a spiral galaxy about 85 million light years away in Pegasus. It was discovered on September 15, 1784 by William Herschel.

Day 362 NGC7818 is a spiral galaxy about 290 million light years away in Pisces. It was discovered on October 23, 1886 by Lewis Swift.

Day 363 NGC7837 and NGC7838 (center) are a pair of interacting galaxies about 470 million light years away in Pisces. They are catalogued as #246 in the Arp Atlas of Peculiar Galaxies. They are a part of a larger cluster. NGC designations are not in the second image. They were discovered on November 29, 1864 by Albert Marth.

Day 364 IC0167 is a barred spiral galaxy about 110 million light years away in Aries. It was discovered on January 4, 1889 by Guillaume Bigourdan.

Day365 IC342 Is a large face on spiral galaxy about 11 million light years away in Camelopardalis. Though it is a very close galaxy it is very faint because of the interstellar dust it is shining through in our galaxy. It was discovered in 1892 by William Denning.

That's it for the Year!  
Many thanks to Steve Craig for consistent, reliable and stellar/galactic content!

# Stephen Craig's Galaxy Image of the Day



NGC7331



NGC7332



NGC7393



NGC7416



NGC7448



NGC7469



NGC7479



NGC7541



NGC7550



NGC7606



NGC7609



NGC7640



NGC7674



NGC7678



NGC7714



NGC7721



NGC7723



NGC7727



NGC7741



NGC7743



NGC7753



NGC7757



NGC7783



NGC7805



NGC7814



NGC7817



NGC7818



NGC7837



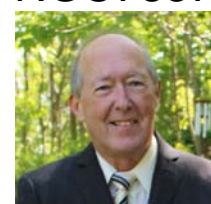
NGC7837B



O-IC0167



O-IC0342



stevecraig