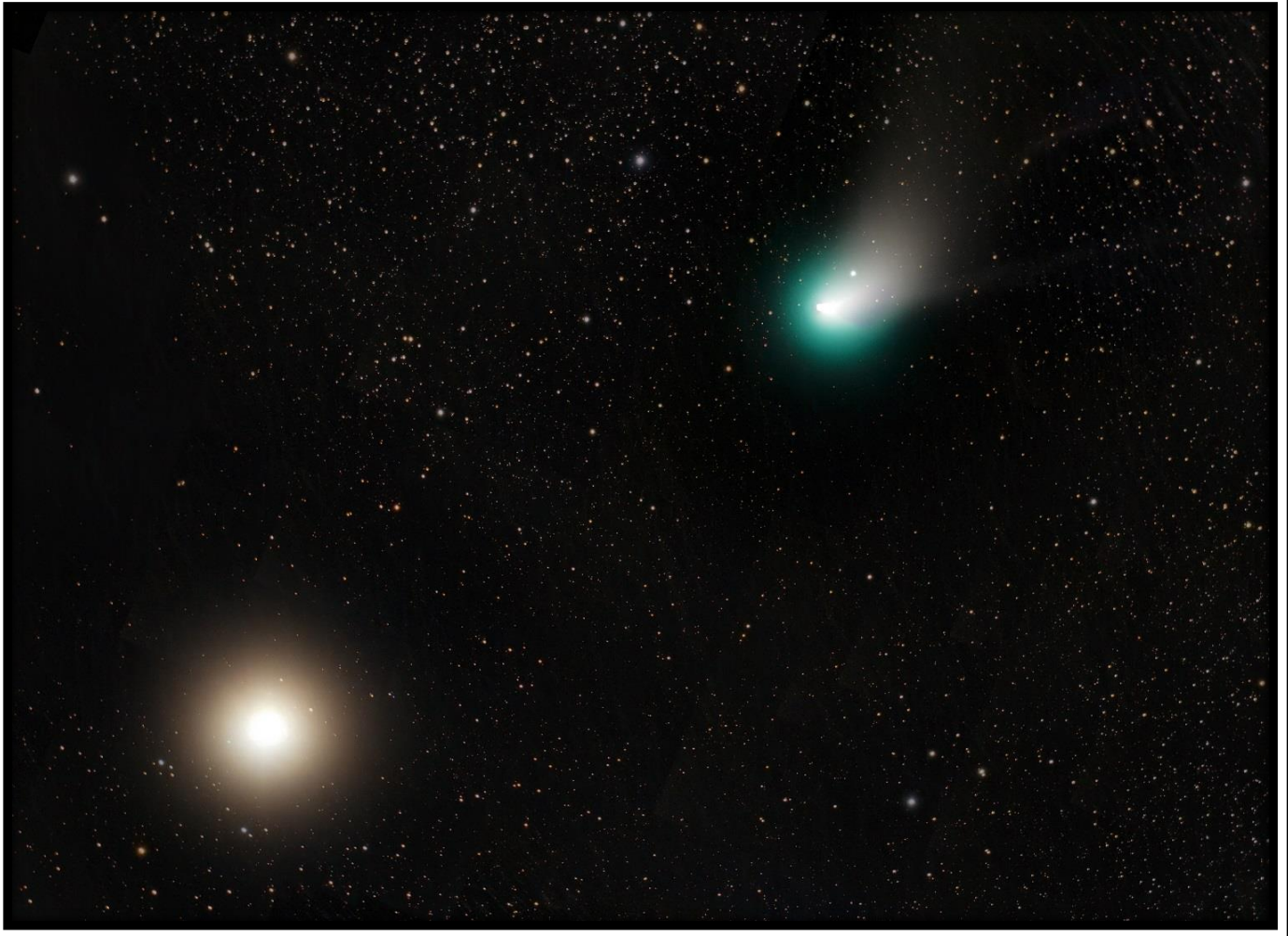


# SKYNEWS



Comet C/2022 E3 ZTF, February 10<sup>th</sup>, 2023; by Lucky Budd.

## Comet Tales

The Comet C/2022 E3 (ZTF) continued to be a favourite target for amateur astronomers and in particular astrophotographers, being a better comet for imagers than for observers. On the evening of February 10<sup>th</sup>, the comet was close to Mars in the night sky, providing a great opportunity. Unlike many such evenings, this time the skies were clear; all the more remarkable considering how bad the weather has been in February.



Comet C/2022 E3 (ZTF) Near Mars

February 10 2023

©2023 David Lee

David Lee was out at Cattle Point and in his own words: *There was an opportunity on Friday to image the comet. Skies were clear with hazy areas, especially near the horizon and some urban sky glow in the West at Cattle Point. The temperature was a chilly 6C. The south view contained numerous areas of interest: Orion, Hyades, Pleiades, Mars, Auriga, and Gemini.*

*All I wanted was a snapshot of the comet next to the brilliantly red planet Mars, so I only roughly polar aligned the Star Adventurer tracker and imaged with a 200mm lens. To simplify things, I only captured a series of 30 second light frames, without the usual calibration frames. Around 60 frames were captured between 7:58pm to 8:34pm, but some were removed during processing. A star alignment was used, so the comet is smeared, but you can still see the fan like tail. I hope the 14<sup>th</sup> is clear, when the comet will pass by the Hyades and Aldebaran.*

Lucky Budd was at home, imaging the comet, and had the following to say: *I imaged this using my 8" Edge HD on an Evolution Alt-Az from my back yard, starting at about 8pm on Dec 10. I used a hyperstar, Optolong UV/IR filter and asi294mc pro camera. We were very fortunate to have a clear night, since the forecast was for mostly cloudy. I knew the window for the darkest sky was prior to 10:30 when the Moon would be coming up. I was really excited to see if I could fit both Mars and the comet into the field of view, so I took a bit of time to try to frame it so I could catch as much of the tail*



*as I could - with the comet heading away from the Sun, the tail is much shorter than it was a week before. I took 75 minutes of 20 second shots and stacked all of them using Astropixel Processor. In order to get an image with a crisp comet and no star trails, you have to stack the data twice: once for round stars and once for a sharp comet. I then blend the two images together using Starnet++ to remove the stars from the crisp star image, and then Photoshop to combine the two. I have made a video tutorial on YouTube if you would like to see how the processing works (just search @LuckyBudd). Great learning and lots of fun!*

Dan Posey visited with Lucky to do some imaging from his place: *This is 144x30s (1h22m) of shots with my Canon Ra and Sigma 105mm at f1.4 at ISO 800. I shot from Lucky's place, near Gonzales, and calibrated with bias, dark and flat frames. I pushed the background harder here.*



Comet C/2022 E3 ZTF, Mars, and the Hyades (cropped and pushed), February 10<sup>th</sup>, 2023; by Dan Posey.

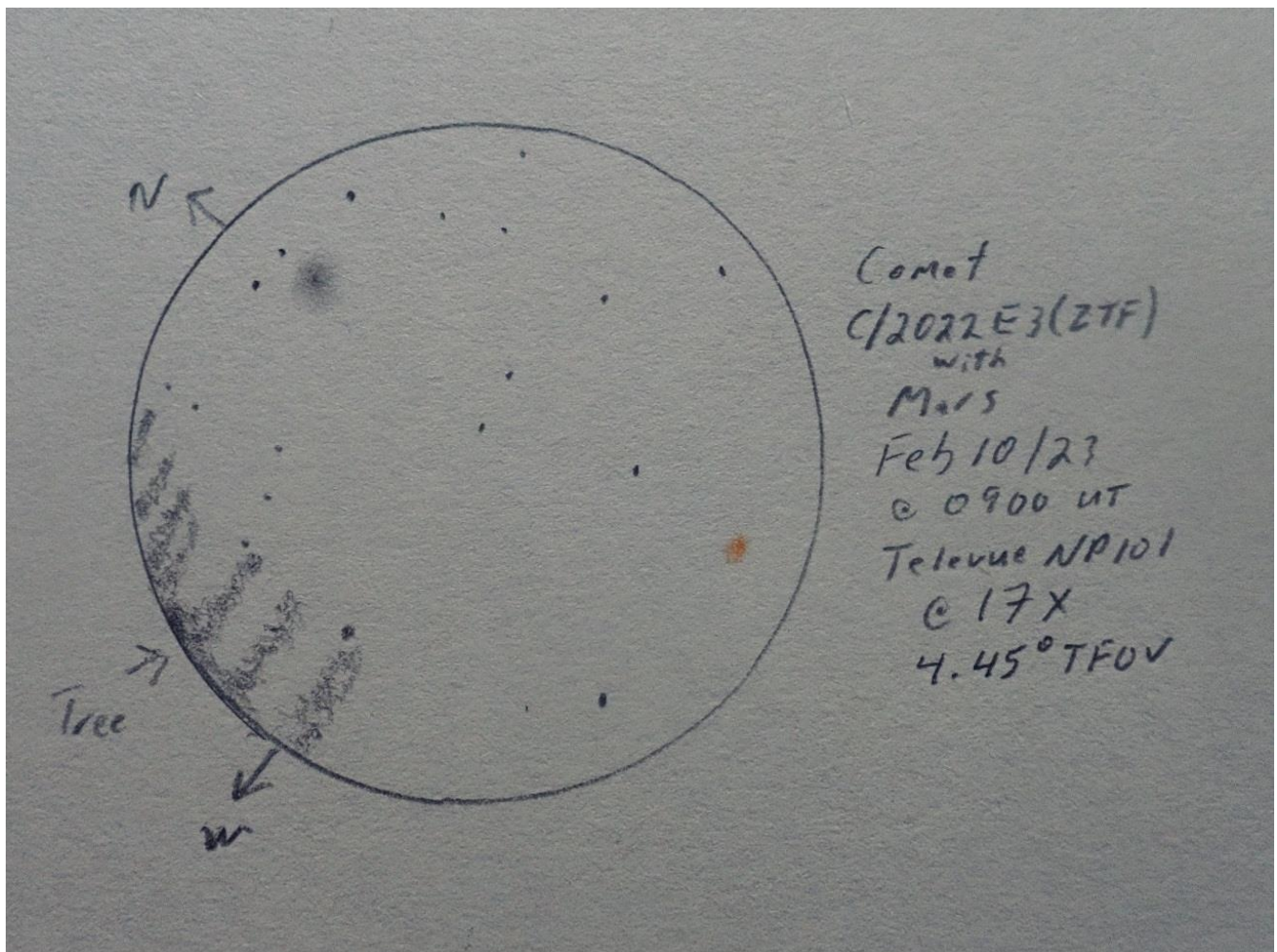
Bill Weir was in Metchosin: *Last evening around 1830hrs, while cooking supper, I noticed it had cleared out. Without even turning off any lights, I grabbed my cheap 15X70 Celestron binoculars and walked outside to see how close C/2022 E3(ZTF) was to Mars. I couldn't quite fit them together in the same FOV, so held out hope for later in the evening where I could use a wider FOV with my refractor. I put the scope out back, where it was covered, and it would be cooled for later on. Then, the heavy rains happened and continued all evening. Sigh.*



Finally, as I was about to head to bed and was putting one of the dogs out, I noticed patches of clear, but now the area of the sky I needed was diving into the 60metre fir trees to the west of the property. I moved to the far opposite side and could see I had minutes. I quickly grabbed the scope and tripod, and squeezed myself between a garden bed and a hedge of tall bamboo. I managed two sketches. One sketch being the usual magnification and FOV I've been using all along for the comet and the other at very low power for a very wide FOV. All the while, water was dripping down on me off the bamboo. If I hadn't been ready, it wouldn't have happened. So, Be Ready. Always Be Ready. Because, as can be seen in the second sketch, I didn't have much time. Oh, and it doesn't hurt to have dogs.

Those willing to brave the cold were rewarded with a few mercifully clear nights of observing and imaging of the Comet C/2022 E3 (ZTF). There's predicted to be an even more spectacular comet in the sky for October of 2024: C/2023 A3 (Tsuchinshan-ATLAS). This comet has a predicted magnitude of 0.7 when it is at it's closest to Earth on October 12<sup>th</sup> (Universal Time), although it's always best to wait and see with these kinds of predictions. Sometimes these comets aren't as bright as predicted and sometimes they get badly damaged during their orbit when they are closest to the Sun. Next year's comet has an even longer orbit than our recent long period comet visitor. Comet C/2023 A3 hasn't been in the vicinity of Earth since around the time when Neanderthals and modern human diverged into two separate species, from a common ancestor, about 800 660 years ago. Comet C/2023 A3 was only discovered a couple of weeks ago (February 22<sup>nd</sup>), by ATLAS-SAAO (Asteroid Terrestrial-impact Last Alert System) in South Africa and the Purple Mountain Observatory in China. Hopefully, we'll have good weather when this comet is nearer to our planet and it's as spectacular as scientists have predicted it will be.

Bruce Lane



## Editorial Remarks



plaguing us for the long haul.

Here at the Victoria Centre, we'll be holding our Annual General Meeting tomorrow, at 7pm on March 13<sup>th</sup>. Just make sure to set your clocks ahead, since it's on the first Monday after Daylight Savings Time begins. It's also the night of the Juno Awards, but our meeting is on right afterwards so you won't have to worry about missing the live Nickelback performance (*Ed. for the record, unlike the fake haters trying to be trendy after being told to hate the band by out of control memes and social media influencers, I actually like Nickelback's music*). The Annual General Meeting is when we elect and appoint our new RASC Victoria Centre Council, and also when we receive reports from our treasurer and secretary about what kind of a year that we had in 2022. Like many recent years, it was a tough one for a non-profit society trying to navigate the Pandemic. Unfortunately, with so many people deciding to pretend that this public health crisis is over, it's likely going to be

With so much turnover on the RASC Victoria Council, Past President Reg Dunkley has had his hands full finding new candidates to fill all of the vacant positions. In recruiting people for leadership and support positions, he faced two challenges that are unique to these last few years. The first is that new members of RASC Victoria in recent times have had much less opportunity to work shoulder to shoulder with other volunteers at public outreach events. New members have also had less of a chance to go up to the Victoria Centre Observatory, to be with fellow observers and astrophotographers. We've seen the recent return of some annual public outreach events, but other than the Special Interest Groups, there just hasn't been the same level of interaction for new members to gain the experience and confidence they need to take on more responsibility within our society. The prolonged road closure up to the Centre of the Universe and Plasket Telescope hasn't helped much in that regard, given how much the focus of RASC Victoria's public outreach has shifted to Observatory Hill over the last eight years.

The other difficulty has been the opportunity to recruit new members for council. Along with reduced public outreach and event cancellations comes the reality of members seeing much less of each other, and along with that reduced connectivity. While there has been a return to in-person Astro Café, there is yet to be a return to the monthly meetings at the University of Victoria, which had a greater number and range of membership in attendance, as well as providing more opportunities to approach members about volunteering (before the meeting, after the meeting, and later up at the Astronomy Department Lounge). This has had the effect of turning our past president into a RASC Council telemarketer, calling members over the phone, instead of being able to talk to fellow RASCals face to face at more regular and numerous gatherings that used to be a regular part of the RASC Victoria Centre experience.

In this issue of *SkyNews*, we'll have more recaps from our Centre's activities, an article about astronomy balloons, an update on the other *SkyNews*, images from the Skylab missions as we rapidly approach the 50<sup>th</sup> anniversary of NASA crewed missions aboard their early space station in orbit, as well as all the astrophotography and articles you've come to expect from the *Victoria Centre SkyNews*.

*Bruce Lane: SkyNews Editor*





## President's Message for March



I've been something of an amateur astronomer since I was little. I like to say it was the Apollo missions that sparked my interest – all my friends wanted to be astronauts – but I thought the astronomers on the ground had the really interesting jobs. My observations of lunar phases started back in 1990 and I have dabbled in other astronomical projects since. After the 2017 Solar Eclipse, I decided to buy a better telescope, and then another, and now we're at a dozen!

But the biggest thing that happened after the eclipse, was getting invited to give a talk at the Victoria Centre Astro Cafe. And I got to meet this wonderful community – this set of interesting and entertaining people. And then, two years ago, you elected me President of the Victoria Centre of the Royal Astronomical Society of Canada. There's nothing like being president to get to know people and learn what's going on in a group! Fortunately, our community is strong with enthusiasm and volunteerism. We get stuff done!

We successfully made the transformation to online events and then to hybrid events. We have continued outreach events, such as the International Astronomy Day, the Saanich Fair, and the Fall Fairfield. We have started new programs like our Special Interest Groups and the Sky Darkness Survey. We have combined our star party with the Cowichan Valley Starfinders' star party to develop a unified *Island Star Party*, which we hope can thrive for decades. We have successfully developed and ushered in a new set of bylaws, to bring our community into the electronic age and provide for a smaller, more supple board of directors. And we have a promising set of executives and directors nominated to lead us into the future.

Thank-you for two excellent years. I often feel more like a cheerleader than a leader. But mostly, I feel I have found my people. I look forward to seeing photos and sketches of the sky: in emails, social media, and in *SkyNews*. I love learning about the sky at Astro Cafe. I love having people with whom I can share my learning about astronomy.

As we look forward to the new year of the Victoria Centre, we also remember to Look Up!

*Look Up,*

*Randy Enkin,  
President@Victoria.RASC.ca*



## Astro Café: Hybrid Meetings



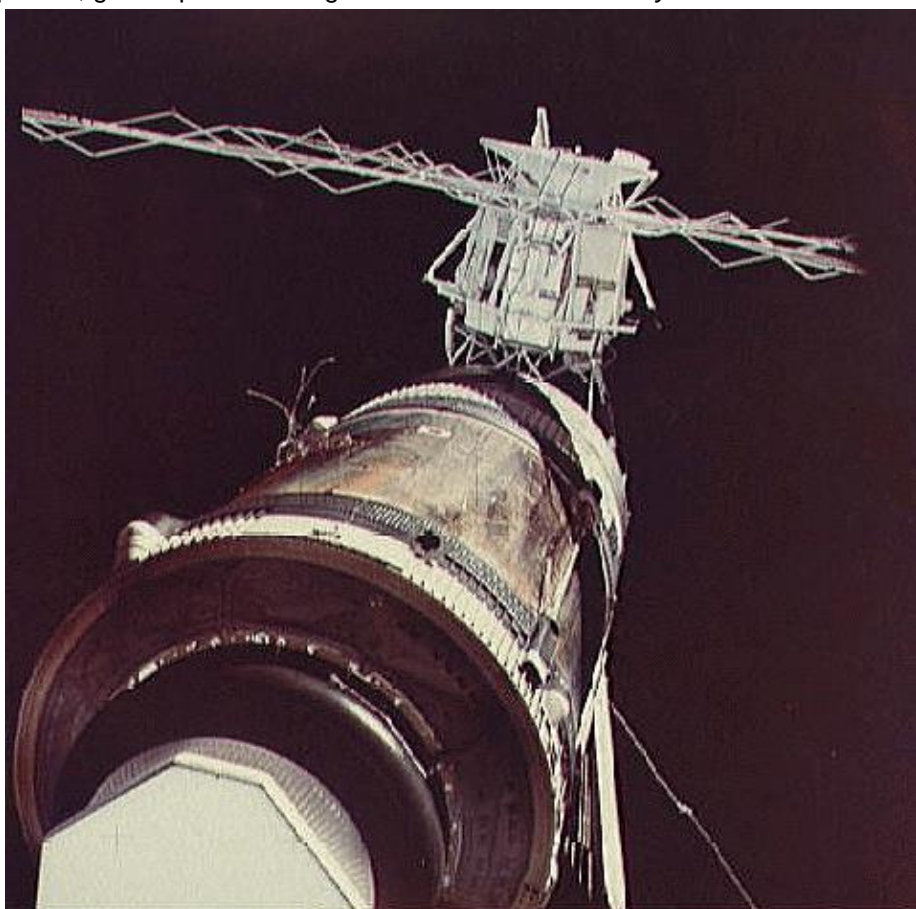
The weekly social gathering of amateur astronomers on Monday nights, known as Astro Café, was reduced to being an online gathering via Zoom for the beginning of the Pandemic. As with many groups, we were trying to find ways to still function as an astronomical society, without being able to meet in person. While the Pandemic isn't ending anytime soon, RASC Victoria has shifted from Astro Café being online only, to being a hybrid event. It's still accessible online, but RASC Victoria members can also attend this event live at the Fairfield & Gonzales Community Association Centre. Of course, this dual format means double the hosting requirements, so RASC Victoria will need more of a volunteer commitment, both online and onsite. You can access updates about Astro Café at the Virtual Astro Café at: <https://www.victoria.rasc.ca/astronomy-cafe/>

The first Astro Café of February was hosted by Jeff Pivnick and started with a discussion about the Silent Sky, currently playing at the Langham Court Theatre. David Lee talked about the Beginners' Special Interest Group meeting, scheduled for the next evening, and desire of members to do more in-person activities. Randy Enkin was out of town, but made some pre-recorded announcements and a presentation about the angular momentum of black holes. Jeff Pivnick gave a talk about Uranus; Dorothy Paul showed the horizons from her observing trips to the White Mountains, in California; and Dave Payne showed some recent comet images by astrophotographers and talked about Comet C/2022 E3 (ZTF).

The second Astro Café of the month did double duty as a special general meeting to vote on the new RASC Victoria Centre bylaws, before the remainder of the evening reverted to a regular Astro Café evening. Sara L. Ellison (University of Victoria Astronomy Department) was the in-person, guest speaker who gave a talk on *A Brief History of Galaxies: from the discovery of island universes to the clash of the Titans*. Afterwards there was a series of announcements.

After skipping the Family Day holiday, Astro Café returned on the 27<sup>th</sup>, hosted by Jim Cliffe. Randy Enkin talked about the Pacific Victoria Opera production of *The Birds*, a picture and thesis about zodiacal light, and led a discussion about some upcoming Victoria Centre annual events. David Lee gave an introduction about citizen science; Bill Weir and Chris Gainor led a discussion on the current upheaval at RASC National; Bill mentioned his observation of an odd crater on the Moon; Laurie mentioned the last guest speaker (Amy Archer) at the FDAO and that RASC Victoria should invite her as a speaker for one of their events; while Brock Johnston showed some images and sketches by members of Comet C/2022 E3 ZTF.

Bruce Lane





## Special Interest Groups

### Getting Started in Astronomy

The beginners group in February took advantage of some clear nights and met live at Cattle Point, led by Jill to view the southern sky. Many started their *Explore the Universe Certificates* and are well on their way to their completion. Early March, we continued our discussion about naming conventions with some comet naming conventions. We also talked about the apparent retrograde motion of planets like Mars, and their dependence of perspective on Earth and the speeds of their orbits around the Sun.

In the coming months, we will introduce a segment on double star observing. For more information on this group, please contact David Lee at [david@victoria.rasc.ca](mailto:david@victoria.rasc.ca)

### Astrophotography

The astrophotography SIG The Astrophotography SIG continues discussions on both object choices and processing techniques. The topic of *Siril* has come up a number times as a free alternative to *PixInsight*. Artificial intelligence has been topical for image processors, as its presence can be found in many processing extensions to image processing software. A discussion was had about the “*reality*” of images processed with these new tools. For more information about this group, please contact David Payne at [vp@victoria.rasc.ca](mailto:vp@victoria.rasc.ca).

### Makers

The Makers SIG is open for business to discuss member projects, and to answer questions associated with repair and maintenance. For more information about this group, please contact Jim Cliffe at [jim@victoria.rasc.ca](mailto:jim@victoria.rasc.ca).

### Citizen Science SIG

We will be starting up a new citizen science focused SIG on March 9th. We will discuss the different types of projects, which vary from easy ones that one can contribute to if you had a few hours in a night, to more complex ones requiring the development of extra data science and analysis skills. For more information on this group, please contact David Lee at [david@victoria.rasc.ca](mailto:david@victoria.rasc.ca)

David Lee





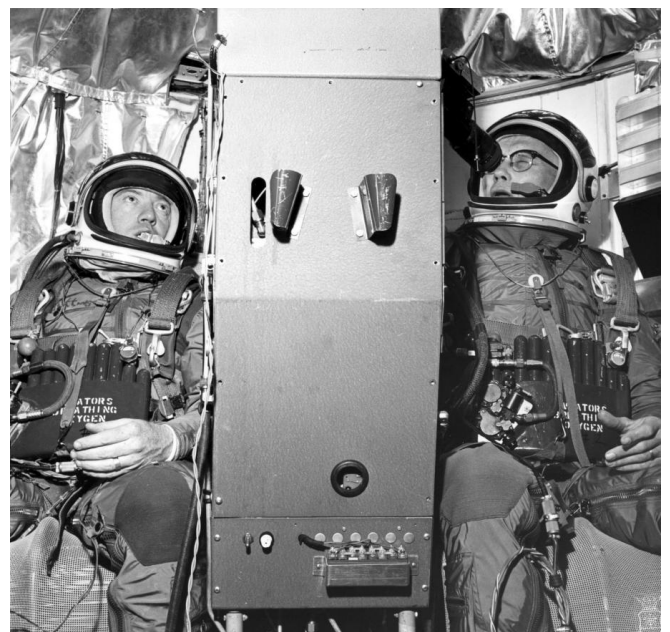
## Floating on Air

In recent weeks it's been a tense time for balloon operators and owners. There were certainly more than a few jokes made at the expense of the Goodyear Blimp appearing at the Super Bowl, with the US Air Force getting a bit trigger happy versus dirigibles, both foreign and domestic in origin. It's a bit of a concern, given the amount of science being done with balloons. *Balloon Astronomy* isn't just the name of an alternative rock band from San Diego, it's also a little talked about but important part of astronomy data gathering.

The fact that our atmosphere does such a great job at limited the amount of radiation we can potentially be bombarded with is great for life, but bad for astronomy. Our atmosphere also limits our ability to resolve clear images at higher magnifications. In the case of radiation that has a very short or long bandwidth, it means we need to locate telescopes into orbit to properly detect them. Some people (most recently sycophants defending Elon Musk's shiny satellite swarms) have suggested that if the astronomical community has a problem with light pollution, they can just use telescopes in space. With over ten thousand astronomers, from seventy nations, registered as members of the International Astronomical Union, the cost to build enough space telescopes to keep up with demand would be a bit on the prohibitive side.

One of the solutions to the restrictions of our atmosphere has been mounting optics and sensors on balloons capable of flying up to 50km above sea level. Data gathered from these ballooning missions also helped prepare NASA for crewed space exploration and were responsible for many scientific discoveries. The downside of using balloons for astronomy is that they tend to be a bit *crashy*, when it comes to landings. This can be problematic when they fly off course, due to people either grabbing them as salvage or nobody being able to find them at all, if the onboard data needs to be physically recovered. Some of these high-altitude missions last for hours and others for months. SuperBit (Super-pressure Balloon-borne Imaging Telescope) is a NASA/CSA (Canadian Space Agency) joint mission, carrying a 0.5 meter telescope into the stratosphere. This is a project that some believe will revolutionize the way we think about space telescopes. It's estimated that the \$5 million (USD) SuperBit budget would increase by one thousand times if the same instruments were launched as a satellite on a rocket. The balloon arrived in New Zealand near the end of February and is expected to launch, likely sometime in March.

While the primary focus of the *Space Race* was about figuring out how to use rockets to put humans into space, to show off the technical expertise of competing nations, others were making use of much older technology. Project Stargazer was created in 1957, with the goal of putting a crewed lab (Strato-Lab) and 317mm (12.5") aperture telescope into the stratosphere with a balloon. This reaction to Sputnik was a joint US Air Force and Navy project, working alongside civilian partners from the Smithsonian Institute and MIT (Massachusetts Institute of Technology). Its first flight in 1961, started well enough. Experienced balloonist and Air Force Commander Malcolm Ross, along with US Navy Lieutenant Commander and flight surgeon Victor Prather, set a crewed balloon altitude record of nearly 35km that stood until 2012 and a general crewed altitude record that was broken soon after it was established. The mission was the final test of the Navy Mark IV full-pressure suit. Once they descended into breathable atmosphere, the balloonists opened their face plates on their suits to get some fresh air. The balloon missed its landing mark on the deck of the waiting aircraft carrier and splashed down into the water, where a helicopter was on hand to rescue them. Ross got onto the rescue hook fine, but when it was Prather's turn, he slipped and fell back into the water. Assuming the Lieutenant Commander was still wearing his face plate, rescue divers weren't immediately deployed. Victor Prather's pressure suit filled up with water and he drowned before he could be rescued.



The day after the death of the Project Stargazer mission specialist, Alan Sheppard broke their altitude record aboard Freedom 7, during the first crewed Project Mercury flight. After spending most of his naval career with balloons, after his 1961 flight, Malcolm Ross never flew in a balloon again. Despite this, he still continued to advocate the importance of balloons in scientific missions. Space is hard on its pioneers.

In 1962, Joseph Kittinger (Air Force captain) and William White (civilian astronomer) reached an altitude of 25km, on a Strato-Lab mission lasting nearly 19 hours. Captain Kittinger was already an experienced balloonist, having been part of Project Excelsior in 1960, where he made a series of extremely high-altitude parachute jumps. This included the highest altitude parachute jump ever completed at over 31km (until the record was broken by Felix Baumgartner in 2012). Despite the scientific achievements of Project Stargazer, the program was rapidly overtaken by Project Mercury and they lost their funding. The pressure suits tested by balloonists for use in the stratosphere would find themselves put to work in the Mercury space program. Captain Kittinger went back to flying combat jets and was deployed to Vietnam. Where he ended up spending nearly a year as a prisoner of war, after ejecting over enemy territory. Following his retirement from the Air Force in 1978, Kittinger flew balloons and planes for airshows. He made the first solo crossing of the Atlantic Ocean by balloon in 1984 and even worked on the support team for Felix Baumgartner, who broke his record. After breaking the fifty-three year old record, Baumgartner only held onto the space diving altitude title for two years, before his accomplishment was bested by Alan Eustace. After flying into the stratosphere in a balloon gondola, William White spent the rest of his life closer to *terra firma*, much of that time with various environmentalist and charitable organizations, including being among the founders of the Global Child Nutrition Foundation (along with his wife).

While crewed balloon astronomy observatories ended with Project Stargazer and humans now only travel to the stratosphere by balloon for extreme parachuting stunts, retrofitted passenger jets were also pressed into service to get telescopes to the edge of space. NASA started out with the *Galileo Observatory* aboard a Convair 990 jet, to study an eclipse in 1965. The *Kuiper Airborne Observatory*, a 36" telescope carried by a Learjet, was first put into service in 1975 and made its last flight in 1995. The KAO was responsible for numerous discoveries, including the rings of Uranus. The most recent aerial observatory was SOFIA (Stratospheric Observatory for Infrared Astronomy), with a 2.7 meter telescope in an exposed compartment of a Boeing 747-SP. Flying above 99% of the atmosphere, SOFIA gave astronomers access to longer wavelengths and sharp resolutions at higher magnifications that are normally only available when using space telescopes. Among the discoveries made with this airborne observatory was the first detection of heavy oxygen in the upper atmosphere. After numerous attempts to kill this project, the bureaucrats finally succeeded, and SOFIA had its last flight on September 30<sup>th</sup>, 2022.

Bruce Lane





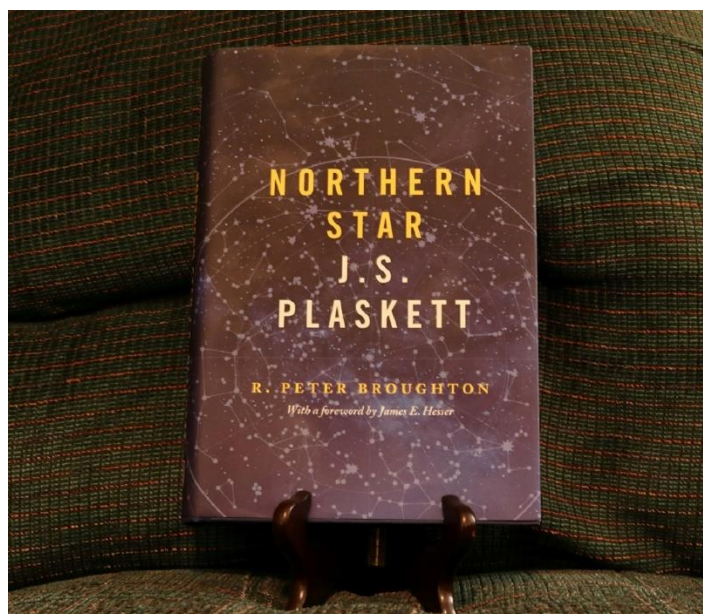


Supernova remnant Witch Head Nebula with the super-giant star Rigel, Jan 28, Feb 10 and 11, 2023 by Lucky Budd.

## From the Library

The RASC Victoria Centre Library is housed in the Astronomy Department's faculty lounge, located on the 4th floor of the Elliott Building, at the University of Victoria. It contains over 500 titles, curated by Alex Schmid, our RASC Victoria Centre Librarian. Alex is currently running our library in the same way the Greater Victoria Public Library runs its shut-in branch, driving around to do deliveries and pickups for our membership to provide access to books from the collection. For more information or to make a book delivery request, please contact Alex Schmidt at: [librarian@victoria.rasc.ca](mailto:librarian@victoria.rasc.ca)

Our library covers many aspects of astronomy: observing, astrophotography, telescope construction, space exploration, astrophysics, and much more. Normally, the library is opened up during the social gatherings in the faculty lounge, after our monthly meetings, with coffee, juice, and cookies provided by our Centre. In the past I've been doing book reviews of the contents of our Centre's library, but until the resumption of our monthly meetings at the University of Victoria, I'll mostly be doing reviews of the astronomy books from my personal library, ones that can be purchased online or better yet at your local bookstore.



This month we're taking a closer look at *Northern Star: JS Plaskett*, by R Peter Broughton. Broughton is a long-time member of the Toronto Centre and the only person who has served in all of the RASC National's executive positions: Librarian (1969-1972), Treasurer (1976-77), Secretary (1981-87), 2<sup>nd</sup> Vice-President (1988-90), 1<sup>st</sup> Vice-President (1990-92), and President (1992-94). He's also the author of *Looking Up: The History of the RASC*, as well as being published in several astronomy magazines. After *Northern Star* was published Broughton was awarded the Chant Medal (2018) and the Osterbrock Book Prize (2023). Asteroid 16217 *peterbroughton* (located in the Main Asteroid Belt) was named in his honour. Peter Broughton does a lot of public speaking on the subject of the history of astronomy and is just the kind of person that RASC Victoria would do well to consider dipping into the National Speaker Fund for.

*Northern Star* is a meticulously researched biography of JS Plaskett and a large chapter of the history of Canadian astronomy. John Stanley Plaskett got his start in astronomy as a mechanic (*technician*), working for James Loudon and John McLennan at the University of Toronto, setting up experiments for the professors. Plaskett's ability was quickly recognized and he became a student, in what were the early days in Canadian Physics and Astronomy. Plaskett himself was under consideration to become a professor at the University of Toronto, but instead was sent to work at the observatory being built in Ottawa.





Plaskett did photography as a hobby, but enjoyed it more for its technical aspects. He gave a popular lecture using the techniques of James Clerk Maxwell: using red, green and blue filters with three black and white photos of the same subject, to project colour images. It was the first time that colour photography of any kind was known to have been done in Canada.

William Frederick King became the Chief Astronomer of Canada in 1889. This didn't sit well with Otto Klotz, who became the Assistant Chief Astronomer. Klotz had been the first recognized astronomer in the Dominion of Canada and felt the leadership post should have been his. Plaskett and RM Smith were both hired on as staff for the new observatory under construction. The Dominion Observatory was completed in 1905, featuring a 38cm (15") aperture refractor. Shortly after the observatory was

operational, Plaskett was promoted from mechanic to astronomer. Chief Astronomer King showed his grasp of media relations, when during the first press tour, he ensured that there was no shortage of Scotch whiskey on hand for the visiting reporters (*I similarly advised a concerned art gallery curator, worried about an exhibit they didn't think was going to be well regarded at its opening, telling them to double the wine order. It was a smashing success*).

One of Plaskett's early projects was preparing scientific equipment for a steamship journey to Labrador, for the solar eclipse in 1905. While the conditions for the eclipse were less than optimal, cloudy and everyone ravaged by black flies, it did put Plaskett in a position to connect with fellow members of the astronomical community outside of Ottawa and Toronto. While Plaskett was involved in using his technical skills to design and build instruments for the Dominion Observatory, he wanted more information about the latest technical instruments being used in astronomy, so he got permission from King to go on an observatory tour in 1906 and several subsequent trips in the years that followed. JS Plaskett wrote many letters to his fellow astronomers throughout his life, in part because of how few colleagues he had in Canada, but there was no substitute for visiting other astronomers and astronomical facilities.

He visited the Mount Wilson Observatory that was being built by the genius of George Ritchey, on behalf of George Hale. Milton Humason would have been among the muleskinners bringing up people and supplies up the rough mountain trail, before later becoming a celebrated telescope operator at Mount Wilson and later at the Palomar Observatory. When Plaskett attended the opening ceremony for the 1.5 meter reflector, he realized that for his ambitious plans of measuring the radial velocities of fainter stars, he needed a bigger telescope than what was at the Dominion Observatory. Aperture fever was coming to Canada. George Ritchey tried to convince Plaskett to build what would later become known as a Ritchey-Chretien telescope, but naysayers in the American astronomy community had already poisoned Plaskett about this design that would go on to be used later in many famous telescopes, such as the Hubble Space Telescope. Instead, Plaskett was gifted with a copy of the design plans for the 1.5 meter Mount Wilson reflector telescope. The Hale family would become close with the Plaskett family over the years, with them often staying at each other's homes. George Ritchey would go on to design the 2.5 meter Hooker Telescope and then be banished from Mount Wilson without ever having the chance to use it.

Plaskett went to the Lowell Observatory, where Vesto Slipher was doing spectrographs of planets and later focused on the red shifting of galaxies. As well as doing a series of experiments to perfect his own spectrograph design, Plaskett made a number of design changes to the corrector lens for the Dominion Observatory's Cassegrain telescope. The results impressed Slipher enough to order one, based on Plaskett's design changes, for the Lowell Observatory. Plaskett was present at the American Astronomical Society meeting where Vesto Slipher made his ground breaking presentation with 16 spectrographic plates of galaxies, showing that 11 of the 16 were red shifting away from us at great velocity. When Plaskett got a lot of the credit for the initial work regarding the fact that stars are a lot brighter than they appear, due to the absorption of light by interstellar dust, he made an effort to ensure Vesto Slipher got credit for his pioneering work on the subject. When the National Academy of Sciences awarded Plaskett the Henry Draper gold medal in 1938, one of the many awards and honours he received during his career, Vesto Slipher wrote his award citation.

While Plaskett was in awe of the newer telescope that were located in the Western United States, he still wanted to build his new telescope in Ottawa. It was both home and where his friends in government were easiest to find. During his lobbying of the astronomical community, Edwin Frost of the Yerkes Observatory refused to support Plaskett unless he agreed to site his new telescope at the best possible site for astronomy. This would mean somewhere with as little

temperature variation as possible. This opinion was echoed by John McLennan, but both King and Plaskett felt that the project would get more support from the federal government if it was located in Ottawa. Plaskett decided on a Cassegrain reflector design and travelled to Europe to visit with observatories, astronomers, and optical designers there. While visiting the Saint-Gobain glassworks, Plaskett came up with the idea of pushing a core through the melted glass after it was poured, to avoid potential shattering when the hole for the secondary mirror was drilled. While in Europe, Plaskett took part in an international astronomical conference, something he relished and would do his best to attend such gatherings for the rest of his life.

With Victoria finally chosen at the site for the ambitious new observatory, Little Saanich Mountain was purchased by the government and work got underway. Plaskett gave a speech to the public on March 4<sup>th</sup>, 1914 that led to the creation of the Victoria Centre of RASC. The RASC picnic on the site of the future telescope that became an annual event was held for the first time a couple of months later.



Frederick King died in 1916, it created a power struggle between Plaskett and Klotz to succeed him and take control of the new observatory. Klotz being of German descent during the First World War didn't do him any favours. His wife being the daughter of a German consul and vocal about her support of Germany probably didn't help his cause much either. Plaskett was appointed as the Chief Astronomer of Canada in 1917 and the master of the new Dominion Astrophysical Observatory, while a bitter Klotz had to accept being the director of the Dominion Observatory in Ottawa. The timing for the official opening of the new 1.83 meter telescope was just after the 1918 solar eclipse in Washington State, ensuring a lot of prominent astronomers would be in the area. As the largest telescope in the World, it drew large crowds. Plaskett had learned a thing or two about capitalizing on publicity to help make things happen in astronomy.

The Leviathan telescope in Ireland had the same aperture as Plaskett's new telescope but it no longer functioned. The Leviathan was the telescope that Leon Foucault called a monstrosity, for still using speculum on its mirrors and criticized the *Irish astronomy mafia* for dismissing outright his improvements in mirror silvering. The DAO's status as the world's largest telescope was short lived. In 1919, the 2.5 meter Hooker Telescope on Mount Wilson was completed. In 1935, the University of Toronto built the David Dunlop Observatory with a 1.88 meter telescope that is now operated by the RASC Toronto Centre.



Otto Klotz didn't take his failure to take control of Canadian astronomy lying down. After King's death, Plaskett had also been bestowed with the title of Honorary President of RASC. Despite being against the idea of using resources to popularize astronomy, Klotz took a run at the position and it took quite a few people a lot of effort to wrestle the title away from Plaskett. Despite being the Honorary President of RASC, Klotz also didn't like the popular Saturday night public outreach events at the observatory. A change in government presented another opportunity for Klotz, who lobbied to become new Chief Astronomer of Canada. The government was convinced that it made more sense to have their top astronomer living and working in Ottawa, despite Plaskett's furious opposition, but at least he remained the director of the DAO.

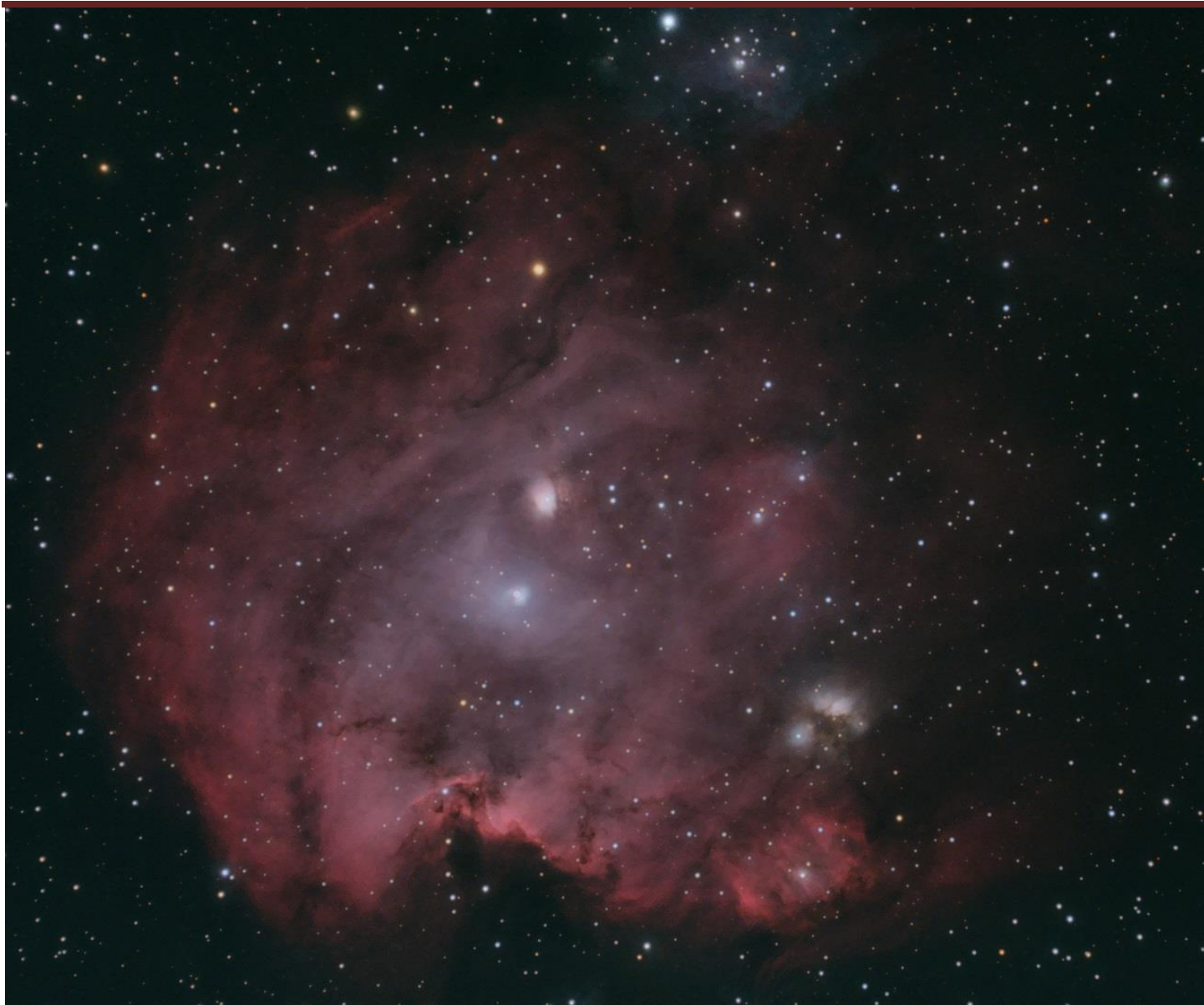
During Plaskett's study of O-type stars, he discovered what became known as Plaskett's Star (actually a double star), the most massive ever discovered at that time. Naturally Klotz was unamused that he had named it after himself. Plaskett's problems didn't end with the death of Otto Klotz in 1923, owing to his hand-picked successor (R Meldrum Stewart) having many of the same biases towards Plaskett. It was a miracle that Plaskett wasn't fired for his many tirades over any interference or perceived interference with his operation of the DAO. A culmination of many years of research, JS Plaskett and fellow DAO astronomer Joseph Pearce published their catalogue of Type O and B stars in 1930. Meanwhile on Mount Wilson, in 1933, Fritz Zwicky was no doubt using the problem-solving techniques of his general morphological analysis system to be the first person to hypothesize about the existence of dark matter, based on gravitational irregularities of the Coma Cluster (Abel 1656) that he was studying the Doppler shifts of.

JS Plaskett worked long after the age of mandatory retirement that was enforced on most people working for the federal government, due to the value of his labours and his stubborn refusal to retire. He died in 1941 of heart disease. While his home in Esquimalt was demolished to make room for a development project, the name of the road it was on was changed to Plaskett Avenue. His impact and connections in the astronomy community ensured that despite a few detractors in Ottawa, his career is a celebrated one. There is a memorial, stained glass window dedicated to JS Plaskett, showing scenes of the life of St John, is located at the St Peter and Paul's Anglican Parish Church in Esquimalt. A group of astronomers who first summited a peak in the Rockies, name it after Plaskett. JS Plaskett also got a crater on the Moon named after him, but if you were thinking of pointing your telescope at the Plaskett Crater you'll be in for a disappointment, because it's located on the far side of the Moon. Asteroid 2905 was named in honour of both JS Plaskett and his son (an accomplished astronomer in his own right), thanks to the suggestion by Chris Spratt of RASC and the discoverer of the asteroid (Tedd Bowell) agreeing to it. The DAO telescope was named after Plaskett on its 75<sup>th</sup> anniversary in 1993. The National Research Council Research Associate Program has a Plaskett Fellowship that was created for post doctoral students. Otto Klotz has an urban park named after him in Cambridge, Ontario. The park has a playground and a sports field that's regularly used for Little League Baseball, so it's exactly the kind of thing that Klotz would have probably hated to have named after him. I think he would have genuinely preferred a library or prestigious school.



*Northern Star* a well written story about our local observatory and its impact on the field of astronomy, containing a treasure trove of facts and trivia about the history of astronomy. It does take a few dozen pages for the author's voice to emerge from the background information, but once it does it's an enjoyable read about an important historical figure in the field of astronomy. *Northern Star* is an essential read for anyone wanting to know more about JS Plaskett and the Dominion Astrophysical Observatory. It's available by order from your local bookstore, the RASC Victoria Centre Library, and the RASC National website (*where it was on sale, last time I looked*).

Bruce Lane



### Hill and Dale (Observing on the Island)

February skies. Rainy and cloudy, with the odd clear spot in the evening. The clear night when comet was near Mars was particularly enjoyed by a number of astrophotographers, as you saw in this issue's first opening article. Aside from the comet, there were also astrophotographers busy working on deep space targets in the night sky, like Brock Johnston's image of the Monkey Head Nebula, taken on February 12<sup>th</sup> (seen above).

Access to the Victoria Centre Observatory is still restricted due to road construction on Observatory Hill. A reminder that although the VCO belongs to and is for the use of the members of the RASC Victoria Centre. In the *Before Times*, MiCs (Members in Charge) ran both weekly scheduled and unscheduled sessions to take advantage of the weather, but for the foreseeable future observing sessions will be a lot less scheduled and less frequent. The VCO is located on National Research Council property. This means that all visitors to our observatory must be on our observer list and registered with the NRC. To get on the list, just contact Chris Purse (Membership Coordinator) at [membership@rasc.victoria.ca](mailto:membership@rasc.victoria.ca) and we'll see you up there on the Hill one of these nights in the not-too-distant future.

*Bruce Lane*



## The Fate of SkyNews

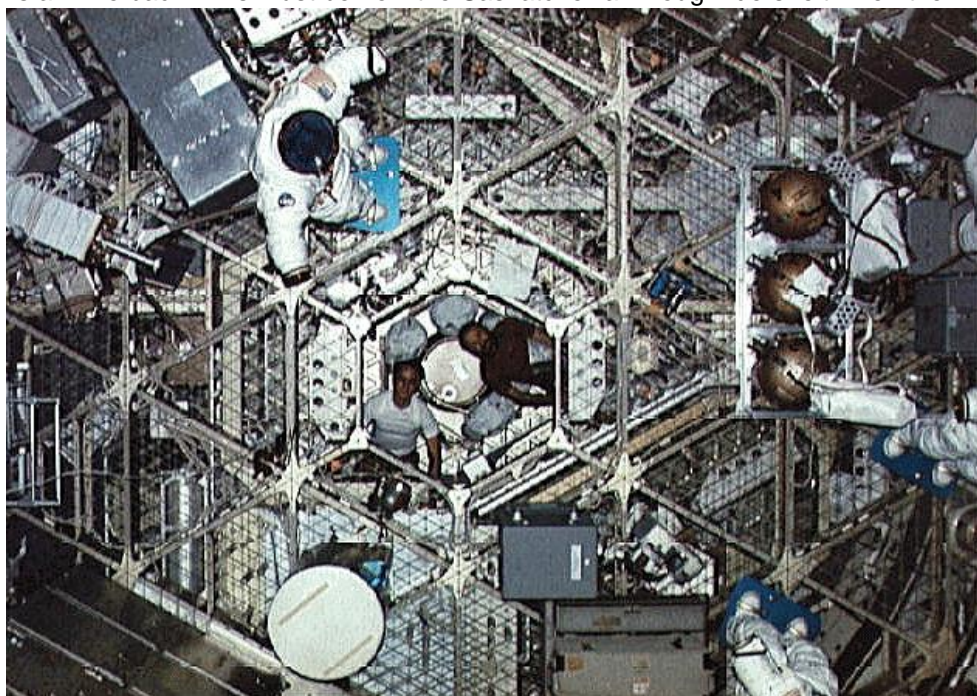
*SkyNews* is no more! I'm talking about the other one; the magazine that took the same name we were already using for this publication. The glossy *SkyNews* magazine has been commercially available for three decades, most of that under the stewardship of Terence Dickinson, before his retirement in 2016. Since 2015, it's been owned and funded by RASC National, but financial troubles resulted in discussions about RASC divesting itself of the magazine to save on expenses. *SkyNews* caused a bit of a stir online when they made an unsanctioned announcement on their website that they were closing up shop, which was quickly removed from their website without explanation. RASC has since stated that their board of directors passed a resolution for *SkyNews* to cease operations, in an attempt to address their finances, as they are the sole shareholder of the magazine and the privately operated magazine has been losing money. The Board of *SkyNews Incorporated* hadn't yet had a meeting to vote on this matter themselves, but have since done so and passed the resolution sent to them by RASC National to cease operations. It's unknown at this time how much of the magazine content from *SkyNews* will find its way into the RASC's publications, specifically the *Journal* and the *Bulletin*. Certainly, seeing the last issue of *SkyNews* in my mailbox last week was a bit like finding a letter from a friend you've recently lost.

At the time of the initial announcement, I saw some contradictory replies on a Facebook post about the status of *SkyNews*, but RASC needed to get out ahead of this a bit more aggressively and sooner with their own post on the subject that clearly states their position on their Facebook page. They've also replied to a post about the *SkyNews* closing announcement on the RASC National Forum, which you might need a Ouija board to find on their website for the first time. RASC did start a couple forum threads stating their official position on the forum, but neglected to have a forum admin pin it to the top of the page, to keep it from getting buried below the more confusing thread on the subject. In any case, it's sad to see the passing of this magazine, which for many shut-ins is their only tangible part of their RASC membership, other than the *Observer's Handbook*. The timing for all of this is made much worse by the recent passing of Terence Dickinson, as this publication was an outstanding legacy of his in the amateur astronomy community.

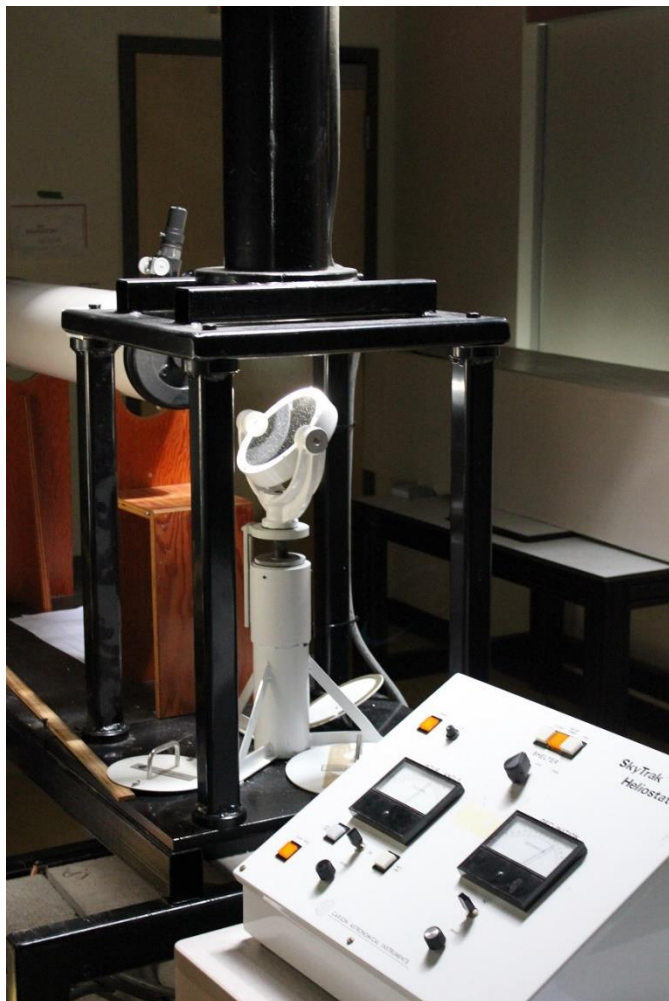
Having an astronomy society adopting an astronomy magazine isn't a unique situation. The American Astronomical Society purchased *Sky & Telescope* in 2019, after its parent media organization went bankrupt. Despite having had the name first, one of the things I wanted to do as editor was to change the name of our Victoria Centre publication to *The Rascal*, to once and for all put an end to the confusion over the two publications having the same name. That seems to be less of a concern now, other than the new reality of whenever the name of our newsletter is brought up, someone will mention that they thought it closed down its operations a while back. This must be how the Saskatchewan Roughriders felt when the Ottawa Rough Riders folded in 1996. While the Victoria Centre *SkyNews* will be taking a six-month, extended break after this issue, to allow for the next editor to get their affairs in order, this publication will continue.

Terry Dickinson (Editor of *SkyNews*) on the subject of the 2015 purchase of the magazine by RASC: *"Our readers have supported us as the magazine has doubled in size since its founding. I am absolutely delighted that The Royal Astronomical Society of Canada will be moving into the driver's seat as we head into the next two decades."*

Bruce Lane



## Astronomical Term of the Month: Spectroscopy



While most of us think of telescopes as visual optical instruments or as really big camera lenses, for nearly as long as there have been telescopes people have been using prisms to split light and analyze the spectrum being emitted from astronomical objects. Especially for the last century and a half, spectroscopy has dominated the work being done by astronomers. It's gotten to the point where many professional astronomers, studying data sets, would have trouble remembering the last time they put eye to eyepiece, when using a telescope.

This all seemed to have gotten its start at the dawn of the Enlightenment with Isaac Newton, who on top of all his other contributions to science invented the Newtonian reflector telescope that many amateur astronomers use today. Newton set up an experiment where sunlight went through a hole and was split by a prism, into the colours of a rainbow, forming what he called *spectrum*. The paper he wrote about his experiment was his first submission to the Royal Society.

In the early 19<sup>th</sup> century, Joseph von Fraunhofer, was among several scientists who made improvements to the spectroscope, such as by adding a lens to focus the light. Fraunhofer would discover the existence of absorption lines, sometimes referred to as *Fraunhofer lines*, and created diffraction grating to better observe the spectrum. He discovered through spectroscopy that different stars had different spectrum. Unfortunately, Fraunhofer died young, at the age of only 39; poisoned from breathing toxic gases due to

his chemistry experiments and work as a glassworker. By the time JS Plaskett was experimenting with spectroscope designs, it was composed a slit, a collimator, 1-3 prisms (or a diffraction grating), and a camera.

Later in the 19<sup>th</sup> century, long before the Perimeter Institute existed, scientists from different fields were collaborating in their research or they were polymaths who did so as individuals, like Newton. Robert Bunsen, who was a German chemist and almost certainly a pyromaniac, was like many ground breaking scientists finding that new experiments required that he invent new tools. In Bunsen's case, one of those was the lab burner that bears his name. Robert Bunsen refused to patent this or any of his inventions, because he wasn't in science for the money and all that time filling out patents, as well as defending them in court, was time that could be better spent lighting things on fire.

Gustav Kirchhoff, a German physicist, began collaborating with Robert Bunsen and they lit the scientific world on fire. Bunsen was doing spectroscopy studies of matter by lighting them on fire to study the spectrum of elements and compounds, while viewing the results through a coloured filter. Bunsen complained about the results he was getting and Kirchhoff suggested using a prism. These studies revealed the existence of the new elements of cesium and rubidium. Kirchhoff did an experiment, adding sodium to the light from a lamp, which recreated the spectrum of sunlight. Other than being the opposite of a discovery, it's not dissimilar to incidents that have occurred when chronic smokers *discovered* unexpected amounts of potassium present in the spectrographs of stars, after striking a match or six in their work space. It's just another reason for making observatories non-smoking areas. The two scientists did experiments that showed the presence of a number of elements previously not associated with the Sun, including trace amounts of gold. While there is only a miniscule proportion of the Sun's mass that is composed of gold, it's still said to be enough gold to more than replace the volume of all of the oceans of Earth (2.5 trillion tons).



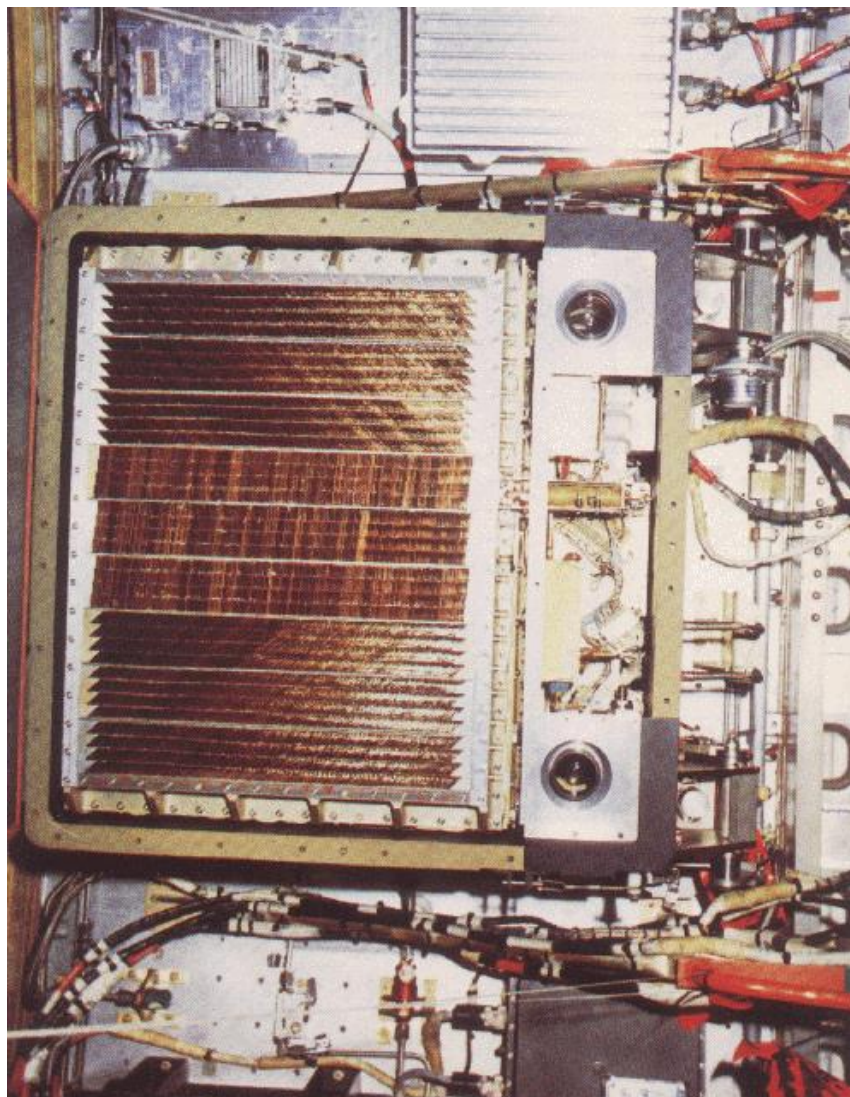
This and other experiments would lead to Kirchhoff proposing the *Three Laws of Spectroscopy*. It's a great shame that Kirchhoff isn't the household name that many of the other great shapers of modern science have become (*obviously, he should have done something involving cats if he wanted to be properly embraced by pop culture*). Kirchhoff's *Law of Thermal Radiation* had within it the mystery of black-body radiation. This mystery was due to the inverse relationship between radiation wavelength and heat not agreeing with existing equations, sometimes referred to as the *ultraviolet catastrophe*. This would later be partially solved by Max Planck (Planck's constant), which would lead him to pioneer what would become *quantum mechanics*, a term created by Planck in 1924. Having gotten his doctorate in science at the age of 19, Planck was disturbed by the fact that the direction he was going in was undermining the certainty of the laws of physics, including the *2<sup>nd</sup> Law of Thermodynamics* he'd written his doctoral thesis about. Albert Einstein would finally be the one to sort things out, when he tackled writing an equation to describe the *photoelectric effect*.

Radio waves were predicted by the *Theory of Electromagnetism*, written by James Clerk Maxwell, and instruments would begin to be invented by the end of the 19<sup>th</sup> century to detect them. Radio astronomy began in 1932, as a result of Karl G. Jansky investigating a source of interference to short-wave radio communications, between North America and Europe. Jansky's work resulted in the first discovery of a radio wave originating from beyond our own solar system, being emitted from a pulsar in a galaxy within the Sagittarius constellation. Radio astronomy would join visible light as part of the study of spectroscopy.

X-rays were the last of the three types of light to be added to the study of astronomical spectroscopy. It took even longer for x-rays to become the subject of astronomical inquiry after their discovery. X-rays in outer space weren't found until 1948, when an x-ray emission was detected coming from the Sun's corona. Later, the US Army successfully detected x-rays when they launched a captured Nazi V2 rocket in 1958, with a sensor fitted in the nose cone. Since then, x-ray astronomy has been conducted by sensors aboard satellites, missiles (sounding rockets), and even balloons.

Spectroscopy is used by astronomers to study the Doppler effect, by observing the red and blue shifting of galaxies, as well as the chemical composition of stars and planetary atmospheres. The spectroscope allows scientists the ability to look beyond what regular optics are designed to show us, similar to how chemistry allows us to analyze the elements that everyday objects are made from. It's amazing to think of just how far science evolved from using prisms to study light, with the real treasure at the end of the rainbow being quantum mechanics, the Theory of Relativity, and whatever *Theory of Everything* inevitably emerges in the *future fantastic*.

Bruce Lane



## In Closing



The weather is kind of frightful. It's been cold. It also rained a lot. It's also been a lot windier than normal over the course of the winter. It even snowed a few times. It probably wasn't the best weather for the annual bird count in February, where the only thing colder than the birds (still suffering the results of the worst avian flu in recorded history) were the volunteers out counting them. I remember winters in Victoria that were colder, but not when it was this cold for this long. The meteorologists weren't wrong about the Siberian polar vortex coming to Canada in February. One of the problems we face as a result of Climate Change is an increase in precipitation in the atmosphere. This means that instead of

the light snowfall in Victoria that vanishes within hours, we'll have more substantial snowfalls in our future. As it almost always is, our cold weather here means human popsicles elsewhere are suffering much worse weather. We're unlikely to find much sympathy from the rest of Canada, just because we've finally figured out what winter is, when it's still much milder than what the rest of the nation is currently enduring. Hopefully, Victoria's flower count in March has some decent results. A much less light hearted count was recently undertaken on the homeless population in Victoria by the *Point-In-Time* count, with over 200 volunteers taking a closer look at the faces of the city that most turn away from.

The meetings and events hosted by other astronomical societies on Vancouver Island continue, regardless of the weather. The Centre of the Universe and Plaskett Telescope on Observatory Hill are hosting monthly events, with the next evening scheduled being their Astronomy Day on April 29<sup>th</sup> (RASC Victoria Centre is having our Astronomy Day on April 30<sup>th</sup> at the University of Victoria). These public outreach events on Observatory Hill are hosted by the National Research Council and Friends of the Dominion Astrophysical Telescope, with volunteers from the RASC Victoria Centre also taking part. The University of Victoria is hosting weekly Wednesday open house events at the Bob Wright Centre Observatory, from 8-10pm. The Nanaimo Astronomy Society have their next monthly meeting for members scheduled for March 23<sup>rd</sup>. These events by the Nanaimo group are hybrid events, with both in person and online attendance via ZOOM. The Comox Valley Astronomy Club's next monthly meeting is at the Courtney Public Library on April 3<sup>rd</sup> and they're having a public outreach event out at Cumberland Village Park on May 21<sup>st</sup> (9:30-11pm), provided the weather cooperates.

This is my last issue, as the Editor of *SkyNews*. I already had a pretty clear idea of what I wanted to do, before I wrote my first issue for December of 2018. While my high school journalism class and associated work on the high school newspaper was a long time ago, I still wanted to focus on the *nuts and bolts* of *who, what, where, when*, and whenever possible *why*. I looked at a number of magazines to study the conventions that are commonly in use. I decided against traditional double columns right away, probably due to coming at this from the perspective of a fiction writer and not a magazine columnist, focused on making room for ads. I wanted regular articles that focused on what we do and the resources that are available to RASC Victoria Centre members. I figured that if I took care of that, it would afford me the indulgence to write about some of the historical figures in astronomy and big moments in aerospace, like the 50<sup>th</sup> Anniversary of the Apollo missions. For historical figures my aim was mostly focusing on the rebels, the downtrodden, and the overlooked, who were often the subject of cruelty by *the powers that be* in this field of science; people like: Leon Foucault, Vesto Slipher, George Ritchey, Fritz Zwicky, and Milton Humason.



The *Better Know a RASCal* interview series was aimed at portraying the different facets of the amateur astronomy experience, so that someone just getting started or trying to find their way could see what their peers were doing and be inspired to follow similar paths. *Astronomical Term of the Month* was a good way to help people navigate a lot of those late-night conversations at the observatory, where the terms being used were unfamiliar to the listener and possibly also to the sleep deprived person using them. The *Hill and Dale* column was both to promote the Victoria Centre Observatory, as well as focus on imaging and observing activity being done on Vancouver Island by members of RASC Victoria. It's important to promote astronomy activities happening here and less so everywhere else, because the vast majority of the membership are right here looking for things to do here on the Island. It wasn't random chance that the first book featured in the *From the Library* column was *Nightwatch* by Terence Dickinson. Dickinson, who passed away recently, has had a huge impact in the amateur astronomy community, both as an author of instructional books about astronomy, as an astrophotographer, and as the editor of several astronomy magazines; including as the founding editor of the other *SkyNews*. *Nightwatch* is regularly the first book recommended to amateur astronomers starting out in this hobby.

Writing and editing *SkyNews* is about never getting enough time to do everything you want. Sometimes that means dumping a couple sentences that you'd like to include in a historical article, because it would probably take two weeks of research to properly factcheck them. It means not using photos you want, because it would take six weeks to get permission from some institution to use them, if permission was even given. It sometimes means writing articles half the size you planned on writing for lack of time. That or having a few half-written, orphaned articles bouncing from issue to issue, looking for a home and just hoping to get completed. I had six installments of a three-panel web comic all *story boarded* out, but never managed to find the time to do the actual drawing. Every time I was about to start doing preliminary sketches, someone or something would always decide they needed my undivided attention. Ideally, I'd like the chance to do a lot of full edits, revisions, and more editing but on some occasions, I was lucky if I got one quick comb through of an issue before it went out. It can sometimes feel a bit like the constant series of FTL jumps (*faster than light*) during the first episode (Hugo Award winning "33") of the 2004 *Battlestar Galactica* series, where immediately after one issue was sent out, the countdown clock starts again to get the next one done. It gets much worse when the deadline to get an issue out the door starts playing bumper cars with other deadlines you might have in your life.

In the last 4 years and 4 months as *SkyNews* editor, I've written entirely too many obituaries. Some were for those closest to me in this organization and some were those I took for granted that they'd always be around to talk to more at the next meeting or public outreach event. Connectivity has been a big issue in recent years, mostly due to returning to our individual solitudes during the ongoing pandemic. Having lost contact with many of the active members I spent the most time alongside, either because they moved away or were lost to us, can take a toll on one's sense of connection to both the Centre and the hobby itself. Having only a finite amount of spare time under constant assault, means that I've had a lot less time behind a telescope since taking over as editor. I'm hopeful that after finishing this last issue of *SkyNews*, I'll have more time to get back to my neglected projects and hobbies, amateur astronomy among them.

For the next *SkyNews* editor I'd recommend choosing your priorities and figuring out what exactly you can budget the time to do. If that's a two-page newsletter, then it's a two-page newsletter; like what *SkyNews* was thirty years ago. If you can find a way to incorporate your personal interests (*hopefully astronomy*) into this effort, you'll enjoy it more. Set aside time for editing, revisions, and formatting, but don't be too surprised when the odd mistake gets by you. Unlike larger publications, you're working with a staff of one, and you're only ~~humane~~ human.

Bruce Lane: *SkyNews* Editor



## Photography Credits

Cover: Comet C/2022 E3 ZTF, Feb 10, 2023; by Lucky Budd.

Page 2: Comet C/2022 E3 ZTF Near Mars Feb 10, 2023; by David Lee. Camera: Nikon Z6II with FTZ adapter, Lens: Nikkor 70-200/4 at 200mm (image cropped), Sensor ISO: 800, Exposure: 51 light frames used - f/5.6 for 30 seconds, Processing: PixInsight and Adobe Photoshop CC 2023

Page 3: Comet C/2022 E3 ZTF, Mars, and the Hyades (cropped and pushed), Feb 10, 2023; by Dan Posey.

Page 4: Comet C/2022 E3 ZTF and Mars, Sketch by Bill Weir, Feb 10, 2023.

Page 5: Crop of Bruce Lane (SkyNews Editor) at 2013 RASCal Star Party in Metchosin, by Chris Gainor

Page 5: Skylab-3 orbiting over the Amazon River, Aug 1973. Courtesy of NASA.

Page 6: Randy Enkin (RASC Victoria President) with Sextant, Feb 20, 2021, by Eva Bild.

Page 6: Skylab-3, August 1973. On a spacewalk, astronaut Owen K. Garriott, science pilot, retrieves an imagery experiment from the Apollo Telescope Mount attached to the Skylab in Earth orbit. Courtesy of NASA

Page 7: Photograph and Design of Astro Cafe Mug, by Joe Carr

Page 7: Skylab-2, May 1973. The Skylab space station during a mission flyby. Courtesy of NASA.

Page 8: Skylab-4, Feb 1974. *Scientist-astronaut Edward G. Gibson has just exited the Skylab extravehicular activity hatchway. Astronaut Gerald P. Carr, Skylab 4 commander, took this picture during the final Skylab spacewalk that took place on Feb. 3, 1974. Carr was above on the Apollo Telescope Mount when he shot this frame of Gibson. Note Carr's umbilical/tether line extending from inside the space station up toward the camera. Astronaut William R. Pogue, Skylab 4 pilot, remained inside the space station during the spacewalk by Carr and Gibson.* Courtesy of NASA.

Page 9: Joseph Kittinger and Astronomer William White seated in the Operation Stargazer gondola (US Air Force photo, 050316-F-1234P-022). Courtesy of US Air Force.

Page 10: SOFIA, unattributed photo, date unknown. Courtesy of NASA.

Page 11: Supernova remnant Witch Head Nebula with the super-giant star Rigel, by Lucky Budd; Jan 28, Feb 10 and 11, 2023

Page 12: Posed Book, "The Northern Star", taken in Editor's home on Mar 11, 2023, by Bruce Lane

Page 13: Plaskett Telescope Skyline, with red light, Sep 8, 2018 (cropped); by Bruce Lane.

Page 14: The Christmas Tree cluster, Cine Nebula and Rosette Nebula, by Lucky Budd; over 3 nights (Jan 29, Feb 14,15, 2023) from back yard

Page 15: Jim Hesser and Laurie Roche cut the Plaskett Anniversary Cake at the RASC General Assembly being hosted by the RASC Victoria Centre. Jun 26, 2014; by Bruce Lane.

Page 16: NGC 2174 The Monkey Head Nebula, Feb 12, 2023; by Brock Johnston. *This image of NGC 2174, The Monkey Head Nebula, was captured on February 10th 2023. This is an emission nebula in Orion, and part of the open cluster NGC 2175. I used a Celestron Edge HD 925 with a 0.7 reducer, an ASI 2600MC Pro, all pointed by an iOptron CEM70 mount. I managed to get 5 hours, 5 minutes total exposure time, with 61 x 300s subs. I processed it in Siril, Starnet and GIMP.*

Page 17: Skylab-4, Feb 1974. The interior of the Skylab station with the crew. Courtesy of NASA

Page 18: Solar Lab at UVic, Astronomy Day 2011 open house, by Bruce Lane

Page 19: Skylab-3, August 1973. S150, X-ray detector. Courtesy of NASA

Page 20: "Princess" Buff Orpington chicken, Feb 10, 2023; by Bruce Lane



## RASC Victoria Centre Council 2023

Director Positions	Name	Email
Past President	Reg Dunkley	<a href="mailto:pastpres@victoria.rasc.ca">pastpres@victoria.rasc.ca</a>
President	Randy Enkin	<a href="mailto:president@victoria.rasc.ca">president@victoria.rasc.ca</a>
1 <sup>st</sup> Vice President	David Payne	<a href="mailto:vp@victoria.rasc.ca">vp@victoria.rasc.ca</a>
2 <sup>nd</sup> Vice President	Garry Sedun	<a href="mailto:vp2@victoria.rasc.ca">vp2@victoria.rasc.ca</a>
Treasurer	Deborah Crawford	<a href="mailto:treasurer@victoria.rasc.ca">treasurer@victoria.rasc.ca</a>
Secretary	Jill Sinkwich	<a href="mailto:secretary@victoria.rasc.ca">secretary@victoria.rasc.ca</a>
Officer Positions		
Public Outreach	Malcolm Scrimger	<a href="mailto:outreach@victoria.rasc.ca">outreach@victoria.rasc.ca</a>
Schools Program/Telescopes	Sid Sidhu	<a href="mailto:telescopes@victoria.rasc.ca">telescopes@victoria.rasc.ca</a>
Schools Program/FDAO Liaison	Laurie Roche	<a href="mailto:schools@victoria.rasc.ca">schools@victoria.rasc.ca</a>
Observing Chairperson	Jim Stilburn	<a href="mailto:obschair@victoria.rasc.ca">obschair@victoria.rasc.ca</a>
Light Pollution Abatement	Dave Robinson	<a href="mailto:lighting@victoria.rasc.ca">lighting@victoria.rasc.ca</a>
Technical Committee Chair/Sys Admin	Matt Watson	<a href="mailto:admin@victoria.rasc.ca">admin@victoria.rasc.ca</a>
Website Content	Joe Carr	<a href="mailto:web@victoria.rasc.ca">web@victoria.rasc.ca</a>
Librarian/UVic Liaison	Alex Schmid	<a href="mailto:librarian@victoria.rasc.ca">librarian@victoria.rasc.ca</a>
SkyNews Editor	Bruce Lane	<a href="mailto:editor@victoria.rasc.ca">editor@victoria.rasc.ca</a>
Membership Coordinator	Chris Purse	<a href="mailto:membership@victoria.rasc.ca">membership@victoria.rasc.ca</a>
National Representative/Pearson College Liaison	Bill Weir	<a href="mailto:Nationalrep2@victoria.rasc.ca">Nationalrep2@victoria.rasc.ca</a>
National Representative	Nathan Hellner-Mestelman	<a href="mailto:Nationalrep1@victoria.rasc.ca">Nationalrep1@victoria.rasc.ca</a>
NRC Liaison	James di Francesco	
Members at Large	Jim Hesser      David Lee	John McDonald      Jeff Pivnick
	Chris Gainor      Dan Posey	Marjie Welchframe

