

# SKYNEWS



*Orion Nebula (M42), March 15<sup>th</sup>, 2021, by Lucky Budd*

## Island Starcation

During spring break, my wife and I had enjoyed some clear dark skies at Soule Creek Lodge, near Port Renfrew. We timed our getaway with the weather perfectly. We stayed in one of the lodge's eclectic yurts, well-distanced from others. The deck offered a good platform, with spectacular views of the Pacific and Cape Flattery, and an almost 360° field of view of the sky. Gravity chairs provided were also great for binocular viewing.

The transparency and seeing on first night, the next am, and next early evening were excellent. After collimating my 20cm aperture Newtonian Dobinson collapsible telescope, after the 2-hr bumpy drive from Victoria, the first object observed at sunset was the waxing crescent moon. We also caught a brief glimpse of Uranus about 3° above it before the high wispy clouds reduced transparency on the 2nd night.



I knocked off several targets on my *Explore the Universe* list, including several double-stars and clusters, plus other Messier & NGC dark sky objects. I 'discovered' several new galaxies, including Pinwheel (M101), Whirlpool (M51), Sunflower (M63), and Croc's Eye (M94). All appeared as faint smudges, their swirls not very discernible in my 25 mm and 10 mm eyepieces (48x and 120x magnification, respectively). Nebulas, other than Orion's, also remained elusive despite the dark sky. None-the-less, it was the best viewing I've had with my new toy.

During the day, we distanced ourselves further from the city with visits to Botanical Beach, Avatar Grove, and Big Lonely Doug. The fresh air and time in nature were great for the soul.

Soule Creek Lodge was purchased last year by the Pacheedaht First Nation, and is managed by Tania and Mark Lee; great hosts who observed all Covid protocols in providing clean accommodations and breakfast services. They previously managed Skitchine Lodge, north of Kamloops, which is part-owned by Tom Evans, whose award winning photos have been featured in *SkyNews* (*Ed. the other one*). Tania, Mark, and others in Port Renfrew have received their first vaccination shots and look forward to hosting more RASCals in the months ahead.

*Brian Barber*





## Editorial Remarks



Finding a generous horizon can be challenging for amateur astronomers on Vancouver Island. It's rare to find somewhere without a lot of trees, condos, or hills blocking your view and if you do manage to find a nice spot there's almost always a lot of light pollution to contend with. One of the best sites I've ever observed the night sky from was the Sechelt airport, where the RASC Sunshine Coast has their observatory and where they held their first and only RASC Star Party. Other than a few spindly trees to the north it was an almost perfect horizon. The airport isn't used at night, except for one emergency test landing a month. It's located on a plateau, up above Sechelt, and I wasn't quite prepared for the experience of observing the night sky below Sagittarius.

Brian Barber's article is a reminder that for those willing to go to a bit more trouble, there are still some outstanding observing locations on the South Island. I have a feeling that after reading this, there will be more than a few amateur astronomers taking a closer look at the resort discussed in the lead article, as RASCals look to venues closer to home and as more and more of us get their vaccinations.

Lucky Budd's astrophotography is not only a fine image, but a reminder that we are in the last weeks of being able to observe the Orion Nebula, as it sets earlier and earlier in the western sky. While we're enjoying a stretch of some of the best weather we've had for years, the night sky is in transition between the seasons of spring and summer, with Orion setting in the west as Hercules rises in the east.

In this issue of *SkyNews*, we'll have more recaps from our Centre's activities, an article about sextants by our new RASC Victoria Centre president, 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 April

I love the variety of categories in the Amateur Astronomy community. Most of us will be interested in several and passionate in a few. I'm just listing the following from the top of my head and I would appreciate your input.

We can categorize by equipment: naked eye, binocular, wide-field camera, telescopes, and a few who adventure outside visible light to study radio waves. Telescopes range in aperture, focal length, geometry, optical quality; plus mount style, motors, and automation.

How about by target: the constellations, the sun, the moon, the planets, binary stars, and the deep space objects - nebulae, clusters, and galaxies. There are also the ephemera: meteors, auroras, and the occasional comets. There are also the more predictable events such as eclipses, conjunctions, and occultations.

Some people simply observe, while others record notes, sketch, or photograph. Astrophotography has quite a range, from single shot, to stacking, to long exposures with specific filters.



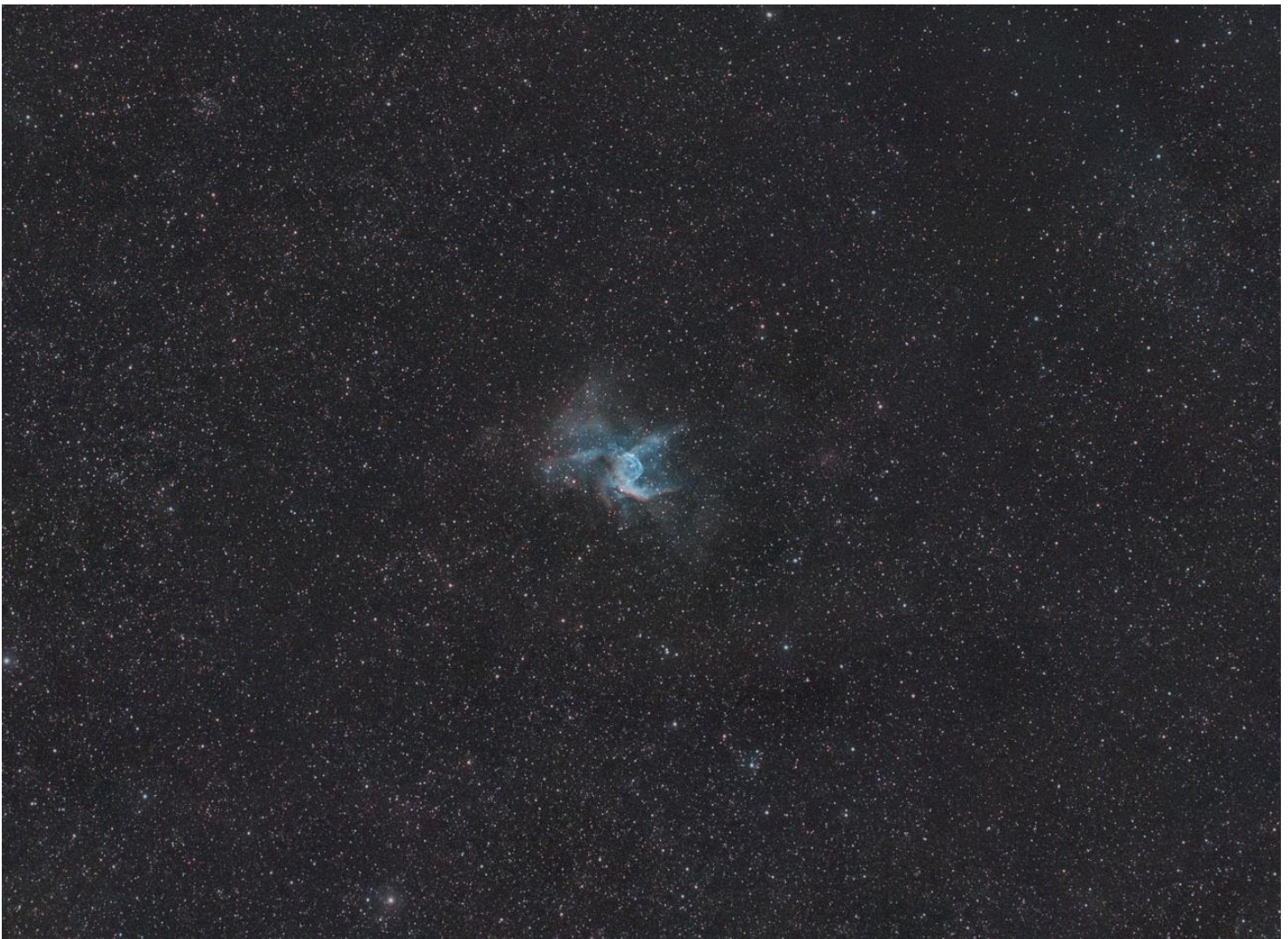
There are some specific studies, such as variable star photometry, spectrography, or plotting annual parallax. My 31-year-long time series of lunar phases and my recent addition of measuring changes in the lunar diameter would fit here.

And then there are the arm-chair categories – too many to be exhaustive: studies in stellar evolution, planetary evolution, exoplanets and exobiology, galactic evolution, astronomy across the entire electromagnetic spectrum and now gravity waves, black holes, and cosmology. Space travel and technology is a huge category on its own. I have a particular interest in the history of astronomy – how we got to understand things so distant and complex with simpler equipment and theory.

I know members of our community interested in every single one of these categories! And it makes me rejoice that we are together at all our different levels and complementary interests and skills.

*Look Up,*

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



*Thor's Helmet (NGC 2359), March 17<sup>th</sup>, 2021, by Dan Posey*



## Astro Café: Continues Online



The weekly social gathering of amateur astronomers on Monday nights, known as Astro Café, is now online. As with many groups, we're trying to find ways to still function as a Centre, without meeting in person. Members are posting their astrophotography, short articles, as well as links to astronomy stories from the Internet. Sadly, you'll have to make your own coffee and the only cookies are those your browser picks up when you visit our website. You can access the *Virtual Astro Café* at: <https://www.victoria.rasc.ca/astronomy-cafe/>

The first meeting of the month had the Prince George RASC Centre President, Malhar Kendurkar, as a guest to give an update about their observatory and its 24" aperture telescope; announcing that they will be starting Zoom sessions from the Prince George Astronomical Observatory and seeking a grant to expand research being done there. It's also home of our old 14" aperture Schmidt-Cassegrain telescope that was once the primary telescope at the Victoria Centre Observatory. Reg

Dunkley gave a summary on the goings on of the RASC Victoria Astro Café webpage and President Randy Enkin gave a lengthy presentation of his observations and process of earning an award for completing the challenging *Isabell Williamson Lunar Observing Program*. Brock Johnston live streamed an imaging session of the Horsehead Nebula in Orion (Barnard 33), remotely controlling his astrophotography process from inside his home, resulting in a technical discussion breaking out.

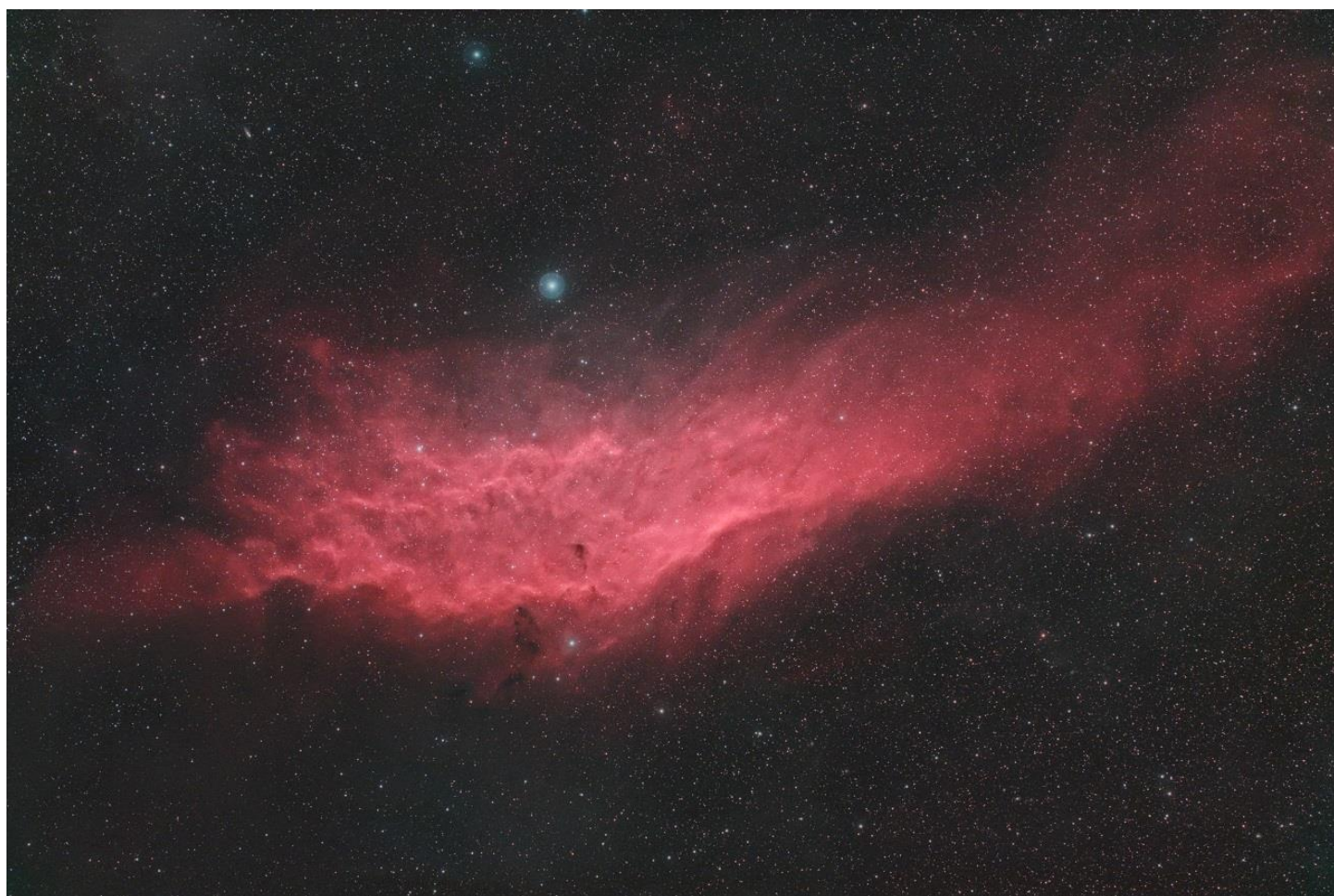
The 2<sup>nd</sup> Astro Café of the month was hosted by Chris Purse. Barbara Lane showed a video of a fireball meteor viewed from Gloucestershire; Randy shared an image Don Moffat had shared about an optical illusion causing a ship to seem to be hovering above the sea; Bill Weir talked about doing a house call to help out a shut-in with a telescope; Marjie Welchframe gave a short presentation on the naming of NASA's Perseverance Rover Landing Location, Dave Robinson showed some images from RASC Edmonton; and David Lee led a talk about SIGs, Slooh telescope service, and Photometry with a DSLR. Reg talked about the weather, A Map of Stellar Explosions article in *Sky and Telescope*, an older article he wrote for a 2017 issue of *Victoria SkyNews*, and summary of the Astro Café page.

The March 15<sup>th</sup> session of Astro Café was again hosted by Chris Purse. Ken Atkinson talked about Women scientists; Randy Enkin discussed the latest offering of *The Sky This Week* (from the other *SkyNews*) and an image of *Stars in Motion* taken from space; Reg gave a presentation on the *First Steps of Perseverance* rover on Mars and talked about some offerings on the AAVSO website; David Lee talked about Slooh and SIGs; and Garry Sedun did a short presentation on the recreation of the Antikythera Mechanism, an Ancient Greek astronomical instrument and the oldest known analog computer design (*Ed. the shipwreck is very likely from an overloaded ship that sank, filled with treasure from Luculla's smash and grab campaign in Asia Minor against Mithradates VI. The Poison King, as Mithradates was known, collected scientific instruments and the "Globe of Billarus" was recorded by Romans among the notable items seized from his palace in Sinope. Several of Luculla's treasure ships sank due to being carelessly overloaded. Over half a century earlier, in 212 BC, the Romans looted another astrolabe from Syracuse, which was for a while protected during a long siege by the war machines invented by Archimedes, until the Romans laid waste to the Greek colony*).

The 4<sup>th</sup> Astro Café, like many of them, was hosted by Chris Purse and Ken Atkinson shared a photo from a Nature magazine article, showing an *Antikythera Mechanism* (that was discussed at the end of the previous Astro Café). The rest of the evening was focused on the virtual visit by Allendria Brunjes, the *SkyNews* (*Ed: the other one*) editor in chief. She discussed taking *SkyNews* in a new direction and what it was they are doing. Allendria stayed on until after midnight her time, in Southern Ontario, which was much appreciated. Randy Enkin closed out the evening by reviewing *This Week's Sky*, from the website of *SkyNews* magazine.

The last Astro Café of the month was hosted by John McDonald and began with Chris Purse doing announcements of National outreach events, observing lists, and that there would be no Astro Café on the Easter weekend. Nathan showed an image of the Moon he made by stitching together 6 pictures of the various stages; talked about those puzzling pictures the Ancient Greeks saw in the sky; and his annual science project on water rockets. Randy discussed the astronomical calculations for determining Passover and Easter; Marjie gave a summary of the Kalamazoo Amateur Astronomy online course; Dave showed more images from RASC Edmonton; and Lauri talked about the upcoming International Astronomy Day, where RASC Victoria, DAO, FDAO, and UVic would all participate virtually. The jam packed session continued, with Brock Johnston giving a short presentation on using apps and software to find novas for astrophotography; David Lee talked about an upcoming lunar occultation of a bright star on April 23<sup>rd</sup>; John talked about black holes and showed some images of the Moon; and Randy presented a lunar sketch.

*Bruce Lane*



*California Nebula (NGC 1499), March 11th, 2021, by Dan Posey*



## The Sextant

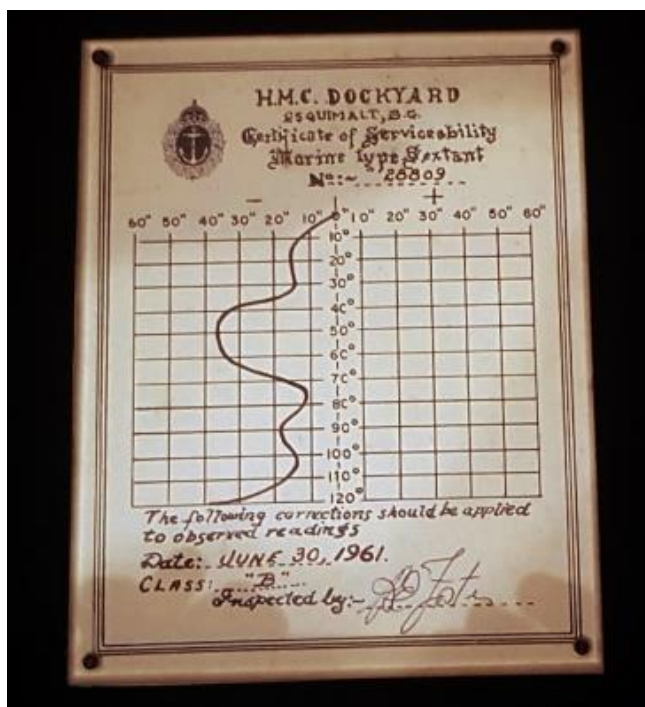
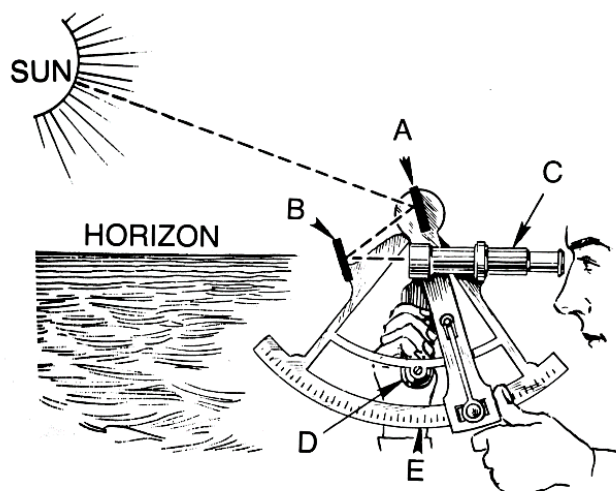


The heavenly bodies move across the sky in arcs that are wonderfully predictable. If you know your position, you can measure the angles to the bodies, to figure out the time. If you know the time, you can figure out your position. The classic way to measure the positions is to sight objects with instruments fixed to the ground – such as with a sundial. But what if you are on a ship?

The sextant is an elegant tool for accurate measurement of angles between objects. Sextants were invented during the 18th century, but you will still find one on every ship today because they provide a reliable backup system for navigation if all the power goes out.

The most common use of the sextant is to measure the angle the sun makes with the horizon. You view the horizon with the telescope (C) through glass sheet (B) which is half-mirrored. You then move the image of the sun with the movable mirror (A) such that it lines up with the horizon. With a clock and tables of the position of the sun, you can work out your location anywhere on Earth.

I got my sextant as a birthday present last year. It was made by Hughes and Sons in London, 1941. It was deployed in the Canadian navy, here in Esquimalt, but purchased from a family in Nova Scotia. I wish it could talk to tell me of all the places it's been.



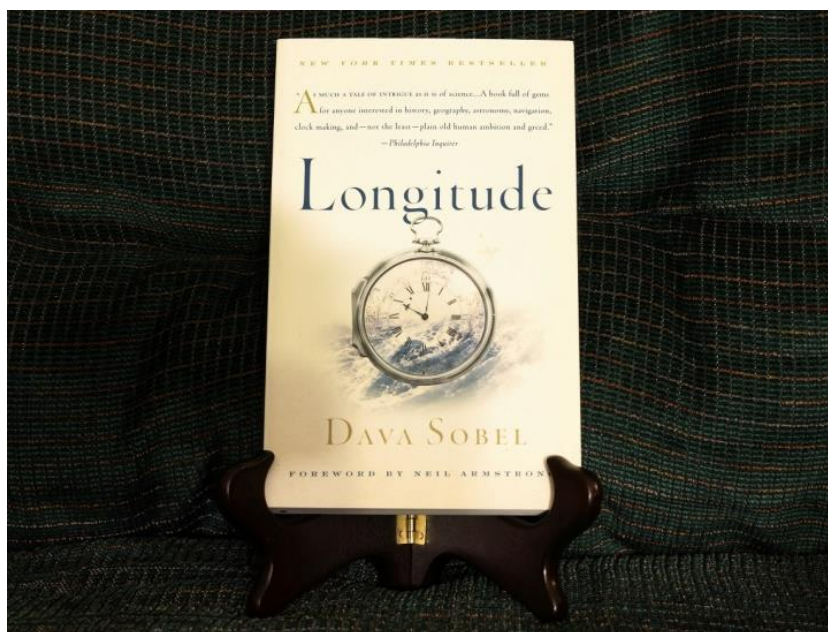
My individual measurements are repeatable to half a minute of arc. I was able to work out my location on Dallas Road to within 7 km. Not as accurate as GPS, but it gave me a feeling of connection with astronomers and navigators over the centuries. My main use is to measure the variations in the apparent diameter of moon. Every day I am able to see the moon, even in the middle of the night, I get out my sextant and take a measurement. I'll present the results at our Astro Cafe some day soon!

Randy Enkin

## From the Library

The RASC Victoria Centre Library is housed in the Astronomy Department's faculty lounge, located on the 4<sup>th</sup> floor of the Elliott Building, at the University of Victoria. It contains over 500 titles, curated by Alex Schmid, our RASC Victoria Librarian. 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. 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 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 *Longitude*, by Dava Sobel. Dava Sobel is an engaging science writer, who has written about many of the prominent and overlooked scientific figures of history. I have a few of her books in my personal library and have already written a review of *The Planets* for Victoria SkyNews. I'll almost certainly be using this column to review more of her books over time. A lifelong reader of the *Scientific American*, she now writes a science poetry column for the magazine, resurrecting a tradition of combining poetry and science from the earliest editions.



*Longitude* is the story of overcoming the greatest scientific hurdle of the age of sail. Many of the greatest minds of science had tried and failed to come up with a way to measure longitude, despite the ease at which navigators could determine latitude. Not long after the invention of the pendulum clock, it was already seen as a tool that could be used to measure longitude, despite the early instruments not being up to the task. The drive for exploration and empire continued unabated, despite this dangerous navigation deficiency, resulting in a number of shipwrecks. The term *dead reckoning* might have had more than one meaning to the navigators who relied on it. When the English Parliament posed the problem to an elderly Sir Isaac Newton, he gave them some idea of how it could be done, but suggested that it would be exceptionally difficult to accomplish. Afterwards, the Longitude Act was passed, which was the equivalent of an 18<sup>th</sup> Century X-Prize. There were prizes like this offered by many European powers, given the importance of figuring out longitude to navies and sea trade. This book tells the stories of some of the people who took up the challenge, including the English clockmaker John Harrison. *Longitude* is a captivating read and it's available by order from your local bookstore.

*Bruce Lane*





## Hill and Dale (Observing on the Island)

March was a much better month for observers and astrophotographers alike, with many more clear nights available to take in the night sky, as seen by the image taken of Bodes, Cigar, and Garland Galaxies by Alec Lee (*seen above*). On March 10<sup>th</sup>, Dan Posey spent the evening up at the Victoria Centre Observatory, working on the new Takahashi telescope and doing some imaging of his own up on Little Saanich Mountain. On the same evening, Randy Enkin was out at Cattle Point for some socially distanced observing. Randy met a couple of non-RASC amateur astronomers out at the urban star park, operating a 12" Schmidt-Cassegrain telescope.

The current restrictions up on Observatory Hill, with four observers allowed at the VCO and another two set up at the Plaskett telescope parking lot, are the norm for the foreseeable future. Pandemic health restrictions are subject to change though, so if you're on the VCO observer's email list, watch for continuing updates.

A reminder that although the VCO belongs to and is for the use of the members of the RASC Victoria Centre, with both weekly scheduled and unscheduled sessions run by our MiCs (Members in Charge). 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) [membership@rasc.victoria.ca](mailto:membership@rasc.victoria.ca) and we'll see you up there on the Hill some night soon.

*Bruce Lane*



*St. Paddy's crescent moon, March 17, 2021, by Lucky Budd*

## **Astronomical Term of the Month: Selenographic coordinates**

For most of us, we find our way around on the Moon by landmarks, almost like some old timer giving directions to a lost traveler: “*You go down the Alpes and take a left at Mons Piton, until you get to Eudoxus. Now if you end up in the Sea of Serenity you’ve clearly gone too far and missed your turn.*”

The Moon is often cut into quarters, by the amount of illumination from its cycle, useful for astronomers who want to know when they can observe when the Moon is washing out less of the deep space objects in the night sky. Amateur astronomers also slice the Moon up into the days of its lunar cycle, referencing sites of interest on the Moon, for the day when they will be closest to the terminator for the best contrast. It works up to a point. For when you need more specific coordinates, there are Selenographic coordinates that work on the Moon much like latitude and longitude do on the Earth.

The lunar equivalent of Greenwich, England (the Prime Meridian) and the corresponding equatorial latitude is the dead centre of the observable Full Moon or the part of the Moon closest to us, as it is tidally locked to the Earth. Coordinates are given off of this centre point, using the cardinal directions, degrees, minutes, and seconds.

For observers, the biggest difficulty with using a coordinate system or landmarks to navigate around the Moon can be the optics they are using. Using your unaided eyes or a pair of binoculars you see the Moon as it is, but looking through a telescope the Moon appears reversed or reversed and upside down, depending on the type of telescope used.

*Bruce Lane*



## In Closing



In most of Canada, it's starting to feel like we're indulging in the 3<sup>rd</sup> wave of this pandemic like a child at an all you can eat buffet (*Ed: does anyone remember buffets?*). In the same way that having more cases means rare medical effects will be much more numerous, we're also seeing an increased number of variations of this virus; especially from countries where covid-19 has been going through the populace like a runaway freight train. Many variants of covid-19 will have very little effect on the virus or even make it less dangerous, but some will be more easily transmitted, deadlier, or even be more resistant to the vaccines currently being distributed. These less than benign covid-19 variants didn't come to British Columbia by floating ashore on a piece of driftwood. They

were brought here by travelers, who are ignoring public safety rules so they take vacations and get new pictures to post on their Instagram accounts. Given how widespread these virus variants have themselves traveled, along with the combination of poor administration and a lack of personal responsibility, we'll very likely have to get yearly inoculations against covid-19 variations for at least the near future in the same way many people get yearly flu shots.

Canadians have spent a lot more time thanking their lucky stars that they're not living in places like Brazil or Alabama and not enough time questioning why we can't be doing a better job of managing this pandemic, like they've done in Taiwan or New Zealand. The Maritimes have done an outstanding job of navigating their way through this crisis, because their goal is zero cases. It's a stark contrast to the rest of our governments, who seem resigned to limp from partial-lockdown to partial-lockdown, in an attempt to juggle the economy with an acceptable number of cases, until we can all get vaccinated. Vancouver Island is still primarily protected by geography, despite BC Ferries adding extra sailings for the Easter weekend, while at the same time telling us we should only be doing essential travel and stay in our health regions. Vaccine nationalism has yet to completely turn off the tap to our supply from the European Union, thanks to the contribution of our abundant natural resources to the fight against the Pandemic. Quite a few RASCals have already gotten their first shot in the arm and many more have appointments to be vaccinated, as case counts continue to soar.

At least the weather is nice. The weather we're currently enjoying is as good as it gets here on Vancouver Island. With the warmer weather, but the long summer days not yet upon us, it's a great time to get outside under the night sky. To help inspire amateur astronomers, RASC National has its Observer Programs (<https://www.rasc.ca/certificate-programs>) to help provide some structure when for so many people marking the passage of time has become a bit of an indistinct blurry calendar. For many of us it is still March, 2020. RASC National even have the *Explore the Moon* and *Explore the Universe* programs for getting started as observers of the night sky that are a bit less daunting than some of the programs designed for more experienced observers. If you have any questions about observing lists, you can email our local RASC Victoria Observing Chair, Jim Stillburn ([obschair@victoria.rasc.ca](mailto:obschair@victoria.rasc.ca)) or ask any of our experienced observers regularly hanging out online at Astro Café on Monday nights.

*Bruce Lane: SkyNews Editor*

## Photography Credits

Cover: Orion Nebula (M42): Taken on March 15, 2021 by Lucky Budd. Best 175 shots (30 seconds exposures each) using 8" edge HD SCT on an evolution mount, with an IDAS NBZ filter through an asi294mc pro and a 0.7 focal reducer. Processed in APP, with 200 lights, 20 darks, 50 flats, 20 dark flats, and 50 bias.

Page 2: Soule Creek Lodge yurt, March 17, 2021, by Brian Barber

Page 2: Brian Barber with Dob (cropped), March 17, 2021, photo by Yoshiko Barber.

Page 3: Crop of Bruce Lane (SkyNews Editor) at 2013 RASCal Star Party in Metchosin, by Chris Gainor

Page 3: Randy Enkin (RASC Victoria President) with Sextant, Feb 20, 2021, by Eva Bild.

Page 4: Thor's Helmet (NGC 2359), March 17, 2021, by Dan Posey. 1h9m of exposures using Askar 108mm refractor (415mm focal length), using Canon Ra at iso 1600 through a Hutech NB1 filter. The frames were calibrated with bias/flats.

Page 5: Photograph and Design of Astro Cafe Mug, by Joe Carr

Page 6: California Nebula (NGC 1499), March 11, 2021, by Dan Posey. 3h3m (61x3m) of exposures taken with a Askar FRA600 at f3.84 (415mm), with my Canon Ra at iso 1600, using a Hutech NB1 filter. and calibrated with bias and flat frames.

Page 7: Picture of Sextant, by Randy Enkin

Page 7: Sketch Showing use of Sextant, wiki-commons, public domain.

Page 7: Sextant Data, picture by Randy Enkin

Page 8: Posed Book, "Longitude", taken in Editor's home on July 15, 2020, by Bruce Lane

Page 9: Bodes, Cigar, and Garland Galaxies, March 15, 2021, by Alec Lee. 100, 25-second images taken with a Nikon D500 with a Nikkor 200-500 lens (set at 500mm), at ISO 2500, f5.6. Processed using Sequator and Photoshop.

Page 10: St. Paddy's Crescent Moon, March 17, 2021, by Lucky Budd. Image from 2 minute video shot with asi294mc pro, using 8" edge HD SCT on an evolution mount. The video avi file was converted to .PIPP and stacked in Registax.

Page 11: "Hawk", Ameraucana chicken, Feb 26, 2021, by Bruce Lane

Page 13: Apollo 15 training and preparations, Flight Rover during checkout at the Cape. April 8, 1971. Scan by J. L. Pickering. Courtesy of NASA.

## Call for Article and Photo Submissions for the May Issue

SkyNews is looking for submissions of astronomy photos and articles for the May issue of our Victoria Centre's magazine. Send your submissions to [editor@victoria.rasc.ca](mailto:editor@victoria.rasc.ca)



## RASC Victoria Centre Council 2021

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President	Randy Enkin	<a href="mailto:president@victoria.rasc.ca">president@victoria.rasc.ca</a>
1 <sup>st</sup> Vice President (Acting)	Sherry Buttnor	<a href="mailto:vp@victoria.rasc.ca">vp@victoria.rasc.ca</a>
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Treasurer	Deborah Crawford	<a href="mailto:treasurer@victoria.rasc.ca">treasurer@victoria.rasc.ca</a>
Secretary	Barbara Lane	<a href="mailto:secretary@victoria.rasc.ca">secretary@victoria.rasc.ca</a>
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