

SKYNEWS



Dolphin Head Nebula, by Lucky Budd; imaged January 27th, 29th, and 31st, 2022

Mercury Rising

Early in the morning of February 16th, planetary observers got to have a look at Mercury, during its longest western elongation of the year. For those who have never tried to observe Mercury, it can be a bit tricky target, given its proximity to the Sun. For a lot of keen planetary observers there are a couple stretches every year where you get enough separation, in this case 26° between the planet and our local star.

You still need to be careful about pointing a telescope that close to the Sun, but it's a great opportunity for a seldom observed planetary target. A lot of people prefer using a #21 Orange Filter to try to pick out planetary detail on Mercury. I haven't seen any observing reports from RASC Victoria, despite the mostly clear skies, but there was no doubt someone out there having a look. The next time you'll have the opportunity to take advantage of the year's longest elongation (western) from Mercury will be on January 30th, 2023.

Bruce Lane



Monkey Head Nebula, imaged on January 20th, 2022; by Lucky Budd

Editorial Remarks



One of the members of the RASC Victoria Centre didn't just get a *piece of the rock*, he got the whole rock named after him. For his many years of dedication as a leader in astronomy public outreach, Sid Sidhu was honoured by the International Astronomical Union by having an asteroid named after him. 10109 Sidhu 1992 KQ is out there somewhere in the asteroid belt between Mars and Jupiter. Given its absolute magnitude of 12.54, it could be some time before any members of the centre get a good look at it. If it's high enough above the horizon the next time RASC Victoria observers get a chance to use the Plaskett Telescope, it might be on the list of targets for the evening.

In this issue of *SkyNews*, we'll have more recaps from our Centre's activities, our first installment of the *Star Hop* column, as well as all the articles and astrophotography you've come to expect from the *Victoria Centre SkyNews*.

Bruce Lane: *SkyNews* Editor

President's Message for February

A colleague recently told me that my family name, *Enkin*, in Japanese literally means "near-far" (遠近). One sense of the Japanese word "*enkin*" is "perspective"; another is "*bifocal glasses*". My colleague flatteringly suggested that if we could get some of our other colleagues to spend time wearing *Enkin glasses*, we could probably quickly achieve consensus regarding a scientific controversy that we have been involved in for the last 30 years.

One of the joys of astronomy is using our knowledge of what is near to help us understand what is far. For me, my training as a geologist gives me a fair amount of knowledge concerning how the earth works and this informs my way at looking at astronomical objects. In my Astro Café presentations, I try to help the rest of you to see my perspective on various astronomical topics.

Everybody in the Victoria Centre has something important to contribute. You all have your personal interests and experiences, which informs what you see and understand in our common interest of astronomy. It would be wonderful to hear more of you at the Astro Café. I am quite sure our wonderful *SkyNews* editor would love to receive more articles for this newsletter! Presentations do not have to be polished, nor original. Your perspective is what we value. In my experience, I see that we are a particularly patient and accepting audience.

So, put on some *Enkin glasses*. Take joy in what you see and share it with our community. We will all learn to see your subject with a new perspective, and we will gain a better appreciation of each other.

Thank you all for accepting and supporting me through my first year as President of the Victoria Centre. It is an honour to be part of this long-running institution. I look forward to year two, with lots more activities – sometimes even in person! I look forward to getting to know more of you and sharing our mutual appreciation of the wonders of the sky.

Look Up,

Randy Enkin, President@Victoria.RASC.ca



Astro Café: Continues Online



The weekly social gathering of amateur astronomers on Monday nights, known as Astro Café, has been continuing online. As with many groups, we're trying to find ways to still function as an astronomy society, 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 Astro Café of the year Randy Enkin lunar sketching and movie review; Dave Robinson showed some images from RASC Edmonton; Alex Schmid talked about Sunspots and recent University of Victoria construction; and Reg Dunkley gave a

Technical Committee update on the upgrades being made at the Victoria Centre Observatory Upgrade.

On January 17th, Marji Welchframe A Woman of Astronomy; Early computer memories; Lunar Puzzles - Randy Enkin; Reports from Lauri Roche; and Chris Gainor gave an update on the James Web Space Telescope.

The third Astro Café of the month began with Chris Gainor gave another JWST report and later talked about the *mystery of the missing 2022 RASC calendars*. John McDonald showed some black and white photography; David Lee led a discussion on astronomy sketching; and Brock Johnston presented his image of the Orion Nebula. There was a discussion about recent and future astronomy presentations; Les Welch talked briefly about the Chinese Giant Solar Telescope (CGST); Lauri gave a report on the FDAO; and Bill Weir gave a report on Pearson College and their observatory.

The last Astro Café of the month kicked off with Lauri Roche and Chris Gainor giving an update on the delivery of calendars and observers handbooks, and Chris later gave another update on the James Web Space Telescope. Nathan Hellner-Mestelman gave an art presentation of his pastel paintings of the planets; Randy Enkin showed some sketches and images, while talking about some lunar features (Cordillera Mountains and Mare Oriental), and reminded everyone about the upcoming RASC Victoria annual general meeting; Reg revisited his 2017 presentation: *A Lunar Alpine Quest*; Dave Robinson showed some more RASC Edmonton astrophotography; and David talked about upcoming SIG meetings.

Bruce Lane

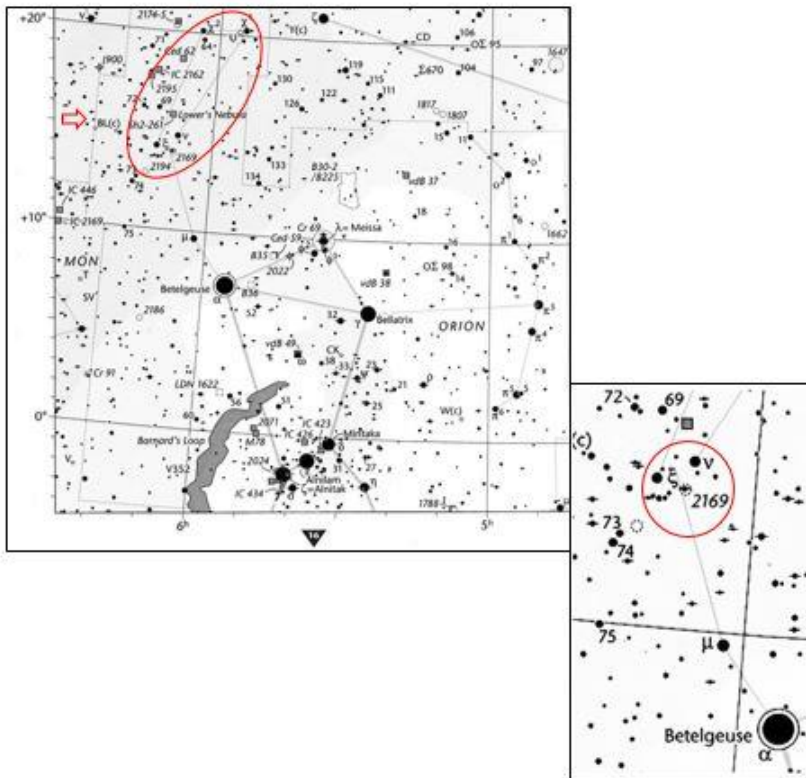


Horsehead Nebula- 7nm Ha, January 23rd, 2022; by Dan Posey

Star Hop: *Prime Number* embedded in Orion's Club and a nearby Carbon Star

After admiring the biggest and brightest open star clusters (Pleiades, Hyades, and Beehive), and checking off those in the *Messier Catalogue of Nebulae and Star Clusters*, amateur astronomers often turn their instruments toward other types of deep sky objects: globular clusters, nebulae, galaxies, and planetary nebulae. If they do, they are depriving themselves of the visual delights offered by OCs (open star clusters), which most sky charts appropriately show as open circles. Appropriate because the star pattern each displays is individually unique and, moreover, may even vary from night to night as a function of star magnitudes and sky conditions. Hunting down deep-sky objects by star hopping, rather than relying on a Go-To mount to find them, offers the added fun of exploring the star fields along the way and deepening one's appreciation of the starry backdrop against which your brighter target will be set off when you find it. You may even come upon an unexpected '*object*' that isn't what you think your target should look like! Oops. Have I strayed off course? If so, should I start the star-hop over again or can I figure out where I am and continue navigating to my destination, following star patterns on my sky chart?

Fig 1: p 14 of *Sky & Telescope's Pocket Sky Atlas*. Left: Orion's club outlined by red oval. Red arrow - BL Orionis. Right: NGC 2169 forms the apex of a triangle with stars Xi (ξ) and Nu (ν) as base.



The prime number in Orion's club resides in NGC 2169, a modest OC of magnitude 5.9, comprising some 30 stars within a radius of 6.0'. The seven brightest stars, with magnitudes between 6.9 and 8.2, are all much brighter than the surrounding stars. This makes the cluster easily spotted, even with moderate light pollution. The stars Xi (ξ) and Nu (ν) *Orionis* (respectively magnitudes 4.5 and 4.4) and NGC 2169 form a compact triangle, which offers a choice of routes to the cluster (**Fig 1**). Centre either Xi (ξ) or Nu (ν) in your finder scope and you are ready to hop, having of course first made sure that the optical axes of your finder scope and telescope are perfectly aligned with each other*. NGC 2169 is 53' southwest of Xi and approximately 50' south and slightly east of Nu, across an expanse of uniformly faint stars, so you need to keep compass directions in mind. The smaller your eyepiece's field of view, the greater the accuracy in compass reading is required**.

From Xi, the most direct route is to push your telescope almost a degree west and south along a route with no prominent 'guide-post' stars along the way (**Fig 2**). An alternate and more interesting, albeit longer, route is to head straight south approximately half a degree to a shallow arc of brighter stars, which point northwestward toward the cluster. Starting from Nu, two southward heading strings of faint stars offer alternate paths. The more westerly is a bit longer and hooks east toward the cluster. Check out the density of faint stars visible in this small patch of sky for a sense of the *sky quality* on different nights. On a good night, the prime number looks better in an eyepiece than in the photograph (**Fig 2**).

Record your star hop routes and the appearance of the cluster itself in sketches

– both for your own observing log and to check your accuracy by comparing your opus with sky charts. And, if you have an idea or suggestion as to the significance of the prime number 37, embedded in the club of Orion, please send it to the editor of *SkyNews*.

Fig 2. Finder charts for NGC 2169: Left: field = 1.25 degrees; stars to mag 10). Right: ~ 2x magnification of left chart; stars to mag 11. (Megastar software, Willmann-Bell, available from the American Astronomical Society)

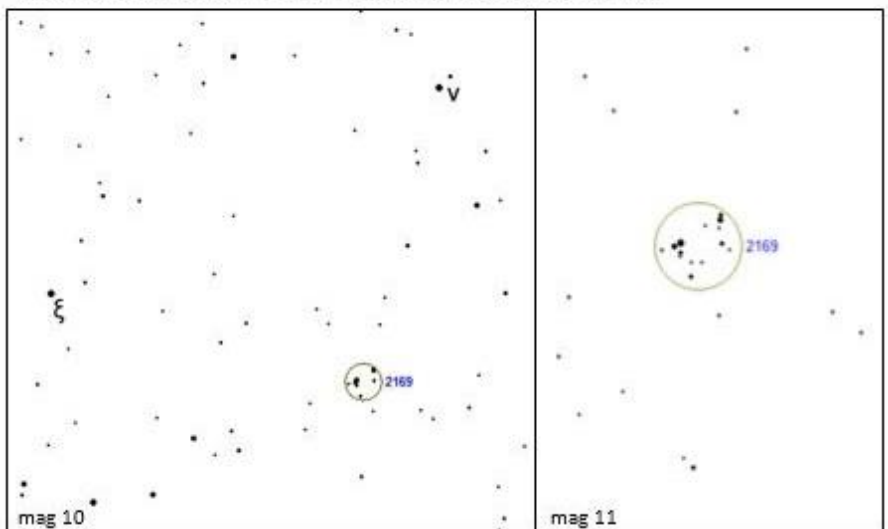
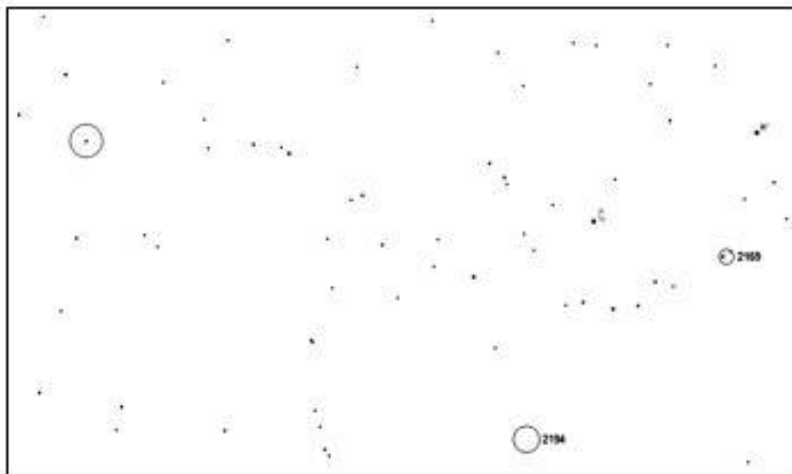


Fig 3. Top. Finder chart for *BL Orionis* – star in 13 arcminute circle. Bottom. *BL Orionis* centered in R/B colour composite image from the second Digital Sky Survey (DSS2). See [BL-Ori \(Star\) - In-The-Sky.org](http://BL-Ori (Star) - In-The-Sky.org) for current information about observing this Carbon star.



Now, to add some colour to your night's observing. Return to Xi and go south to the shallow arc of brighter field stars that you followed northwestward to find NGC 2169, but this time turn east and hop along the northward trending string of five stars ending with a beautiful red star: *BL Orionis* (**Figs 1, 3**). This carbon star (spectral type C511), lies about 65 000 ly from the Sun, as recalculated from the Hipparcos mission data from 2007. With an apparent magnitude of 6.3, it is bright enough to be visible in a dark sky without using binoculars or a telescope, a rarity among C-stars. Its radius is estimated to be almost 22 000 times that of the Sun and its surface temperature a cool 3500K, versus the Sun's 5778 K. The colour image in **Fig 3** is no substitute for the experience of finding *BL Orionis* yourself at the end of your star hop. How would you describe its colour? Since the star colours we see differ under

different sky conditions, observe them from as dark a site as possible to fully appreciate this carbon gem (1).

Dorothy Paul

Note: Finder charts in Figs 2 & 3 made with *Megastar* software, Willmann-Bell, available from the *American Astronomical Society*.

1. *Treasure hunting for carbon stars, the rubies of the night sky*. Bob King, Dec 2014. [Carbon Stars Will Make You See Red - Sky & Telescope - Sky & Telescope \(sky-andtelescope.org\)](http://Carbon Stars Will Make You See Red - Sky & Telescope - Sky & Telescope (sky-andtelescope.org))

* To align the finder scope and telescope axes, centre Polaris in your finder, then check that it is also centered in your eyepiece's field of view. If not, move the telescope until it is, then adjust the finder appropriately to re-center it.

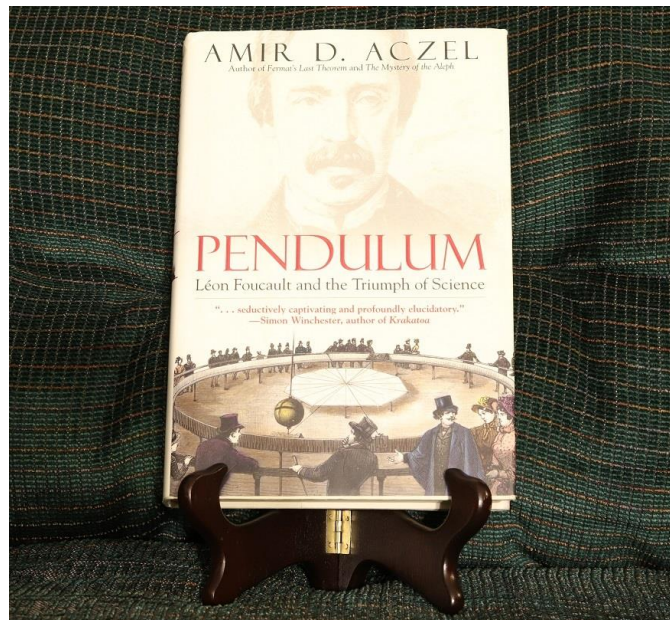
** The sky drifts west, left on conventional sky charts with north at the top. The drift is 4 minutes/1 degree, its apparent direction across the field dependent on your telescope and eyepiece diagonal.



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 and to make a book delivery request, please contact Alex Schmidt at: 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 *Pendulum: Leon Foucault and the Triumph of Science*, by Amir D. Aczel. The author passed away in 2015, but not before a lengthy academic career, published in numerous periodicals, and writing seventeen books on about humanity's historic struggles with the problems of science, mathematics, and navigation. Better known among these volumes are *Fermat's Last Theorem*, *The Artist and the Mathematician*, *The Riddle of the Compass*, and *Finding Zero* (this book published in the last year of his battle with cancer). Amir Aczel is primarily a mathematician and statistician, who also taught history of science.

Pendulum is a biography of Leon Foucault focused primarily on *the Beautiful Experiment* that happened 171 years ago, on February 3rd, 1851 in the Meridian Hall of the Observatory of Paris. A lay scientist and engineer, Foucault was often at odds with the academic establishment, who generally snubbed him for making them feel stupid. His elegant experiment and mathematical proof for the rotation of the Earth on its axis were ground breaking. His other scientific accomplishments were almost as big. He paired up with physicist Hippolyte Fizeau to make the first daguerreotypy image of the Sun; built a machine to measure the speed of light; and invented the gyroscope to enable him to prove the rotation of the Earth in another experiment. Foucault is one of my favourite overlooked scientists, who fought against the scientific dogma of his time, and one I featured in the February, 2019 issue of *SkyNews* as part of my series of *Underdogs of Science*. *Pendulum* is great read and it's available by order from your local bookstore.

Bruce Lane



The Orion Nebula (M42) January 20th, 2022; by Brock Johnston

Hill and Dale (Observing on the Island)

We started off the new year with some heavy snow. As always, our heavy snow is heavier almost everywhere else, with short and long term power outages along the coast. For some communities on the northwest coast of Vancouver Island, restoring power to remote communities like Zeballos and Tahsis resembled more of a rescue mission than a post storm cleanup. Once we got past the snow, rain, clouds, and more rain, and more clouds, the skies of January offered a bit of an improvement over December and we have the astrophotography to prove it (*seen above and throughout this issue*). We're also just a couple years away from the beginning of the solar maximum (2024-26), so we're starting to see more activity on the surface of the Sun and with it more solar astrophotography, like the one recently taken by John McDonald (*seen following page*).

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. 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 and we'll see you up there on the Hill one of these nights.

Bruce Lane



Sunspot group, January 9th, 2022; by John McDonald

Astronomical Term of the Month: Carbon Stars

Carbon stars are bright red stars, with atmospheres having more carbon than oxygen, in a stage of stellar evolution after their main sequence as a star that converts hydrogen into helium. They are usually red giant stars, although some carbon dwarf stars have been observed. They also tend to be variable stars, meaning that their brightness and appearance will vary over time. When viewed through a telescope, they can have a *dusty* gemlike appearance, reminding observers of a garnet or ruby. Probably the most famous carbon star is Mu Cephei, sometimes referred to as *Herschel's Garnet Star*, because of the time spent by William Herschel study of this hypergiant red star.

One of the peculiar results of observing red stars is how we perceive the colour red. According to the Purkinje effect, when we observe red objects and the light levels are lowered, our perception of the object is that it becomes a darker hue of red. For astronomers this effect results difficulties visually gauging the magnitude of a red star, which become brighter to the observer over a period of time observing it in the darkness. Of course, what makes carbon stars appealing to visual observers is that they represent a rare colour deep space target, in an otherwise black and white universe, given the limits of the optics provided to us through biological evolution.

Bruce Lane

In Closing



The Roaring Twenties haven't been roaring for the right reasons this century. There's been no shortage of pandemic pandemonium and social unrest, but none of the madcap dancing and jazz club scenes we associate with our romantic visions of the 1920s. The jarring break from traditional values that defined the *Flappers* is here, but without any of the fun. We've had belligerent anti-science protesters, demanding the overthrow of our elected government, camped out in the nation's capital and blocking our border trade routes for weeks, bringing back memories of the scenes south of the border, during the storming of the Capitol, with many of the same Americans supporting that movement then financing protesters here and now.

Covid-19 is indirectly genetically descended from the influenza of a century ago that attacked our own genetic ancestors. A century ago, in some ways things weren't that different. People quickly grew weary of government health restrictions; churches and entertainment venues demanded to return things to normal so they could get back to gathering in large groups and making money; a lot of people refused to wear masks, citing inconvenience or their rights to do whatever they want; and government officials had a hard time figuring out if children were safer at home or in school. We have better science now, when it's actually listened to and not muzzled, but also a much bigger tourism lobby that wants to open things up and bring us even more virus variants from faraway lands than they already do. We also have social media platforms that seem to be a lot better suited for spreading misinformation and organizing people who believe in conspiracy theories, than they are at keeping people informed. Based on the pattern of previous pandemics we should be nearing the last year(s) of this mess we've found ourselves in, but it's still difficult to say when exactly that will be due to the self-destructive factors of poor leadership, excessive unnecessary travel, as well as organized and well-funded anti-public health movements fighting undermining the efforts of the people who are actually fighting this pandemic. The genetic descendant of influenza is a very different animal than its ancestor, even if we're not all that different from our own often illogical ancestors, other than our ever-present technologies. The one certainty is that we're still a long way away from *building it back better*.

The RASC Victoria Centre's Annual General Meeting is only a day away! It's happening at 7:00pm on Monday, February 21st and it's happening online via Zoom. It's also on Family Day, so in case you didn't know it, *we're your family now*. If you're a member of RASC Victoria you should have received one or two emails about this event already. Doug Welch (McMaster University) is our guest speaker. As far as I know, at this time we are still looking for a couple *someones* to fill the vacancies on council in the positions of secretary and first vice president.

Bruce Lane: SkyNews Editor

Photography Credits

Cover: Dolphin Head Nebula Jan 27, 29, and 31, 2022; by Lucky Budd. Imaged from back yard using an Alt-AZ mount. Taken over three nights, between the clouds: 5.5 hours of 25 second exposures.

Page 2: Monkey Head Nebula on Jan 20, 2022 by Lucky Budd, using Hyperstar 4

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

Page 4: Apollo 16 training, John Young practices with the thumper while a tech handles his cooling water and air supplies. Feb 29, 1972. Scan by J.L. Pickering. Courtesy of NASA.

Page 5: Horsehead Nebula - 7nm Ha, Jan 23, 2022; by Dan Posey. This is 15x5minutes of exposures from downtown on the Horsehead Nebula (B33). These frames were shot with an uncalibrated SBIG 8300m at -20C through an Askar FRA600 at f3.85.

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

Page 9: The Orion Nebula (M42), Jan 20, 2022; by Brock Johnston. This image was captured using an Askar FRA 400 telescope, ASI 2600MC Pro using a IDAS NBZ filter, and 2:54 total exposure time at gain 0, with 58 x 180s subs. It was processed in Siril & GIMP.

Page 10: Sunspot group, Jan 9, 2022; by John McDonald. Taken from Victoria downtown rooftop patio. ZWO ASI120MM-S camera to produce a 3,000 light frame video clip. Stacked the best 1500 frames in Astrostakkert. Sharpened the result in Registax, with some enhancements done in PhotoShop.

Page 11: Blizzard the Speckled Sussex Hen, Feb 13, 2022; by Bruce Lane

Page 13: Apollo 16 training, Charlie and Dotty with sons Tom (with Charlie) and Charles (with Dotty) in the White Room at the pad with Guenter Wendt. Feb 9, 1972. Scan by J.L. Pickering. Courtesy of NASA.

Call for Article and Photo Submissions for the March Issue

SkyNews is looking for submissions of astronomy photos and articles for the March issue of our Victoria Centre's magazine. Send your submissions to editor@victoria.rasc.ca

RASC Victoria Centre Council 2022

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FDAO Liaison	Laurie Roche	
Members at Large	Jim Hesser	David Lee
	Chris Gainor	John McDonald

