SKYNEWS

2022 Island Star Party, August 27th, 2022; by Cameron Burton.

Summer Star Parties

Wow – where did the summer of 2022 go? After cloudy and cold spring, my wife Lisa and I had lost our star gazing momentum as August rolled around. Luckily for us, a preplanned visit to a central rendezvous point and an old family vacation site, with her family in Maple Creek Saskatchewan, turned that around.

Fortuitously, our travels plans changed just before we left, creating an overlap on our last day in the area that allowed us to attend the annual Saskatchewan Summer Star Party (SSSP), which takes place each summer at a dark sky site in Cypress Hills Interprovincial Park, a star party Lisa remembers attending with her dad: Steve Meister (1959-2018). On the night of August 23rd, the opening night, we drove into the hills of southwest Saskatchewan (yes there are hills) to the campsite reserved for the SSSP. We parked just outside of the gate, avoiding the mandatory 'red tape' on our headlights, and walked into the site towards the red-lit host tent, looking for Rick.

Lisa had contacted Rick Huziak earlier in the summer, once we realized we would be in the area at the time of the SSSP, and said that we would like to attend as fellow members of RASC. In their emails they exchanged past memories of star gazing at Cypress Hills, where Lisa attended with her dad. Lisa even remembers being there with her dad when Vance Petriew discovered his comet.

We found Rick and he generously spent a few hours with us, while the sky opened up. It was dark. Very dark. Only a few times have I seen a sky where the familiar celestial landmarks are washed into the background, making star hopping a challenge. We knew we were in for something special when Rick started using parts of the Milky Way as landmarks for us "*you see that just to the right of the spike in the Milky Way?*" A different navigational language is required at a true dark sky site. We used Rick's homemade, 10" Dob and two sets of binoculars to dance around the big sky. Rick has an interest in variable stars and much of our time was spent talking about them, the science taking place around them, and him showing them to us. Fascinating!

We left the party around 1am, as we were travelling the next day. We said our good-byes and walked out. With skies like this, we will return again to camp and take in the whole week.

The following weekend and closer to home, we were able to attend the 2nd night of the 2022 Island Star Party at Bright Angel Park. After a 45-minute drive, we arrived around 5pm on August 27th and picked a spot to set up. It's a nice open field with good views in all directions. Efforts had been made to reduce light pollution, including a red lit path through the woods to the washrooms. Once our two Dobs, tent, and table were ready, the evening's guest speakers were about to start at the host tent. Dr. Deborah Lokhorst, from the NRC, kicked off the night and spoke on the '*Dragonfly Array*'. Christopher Willott, also from the NRC, gave us an update and insights into James Webb's current status and the years ahead. At 9pm, the '*Astronomy 101*' star tour took place. Afterwards, with holes in the sky allowing for some viewing, we were able to take in Jupiter, Saturn, and several of the Messier favorites and crowd pleasers. The sky started to really close up just after midnight and we called it a night.

Camp broke quickly the following morning, with lots of help from everyone. Although it was a short trip for us, it was well worth it and we look forward to future star parties at this site.

Although it was a slow start to the summer, not the most '*astronomy filled*' as some in the past, and despite both visits being brief, we really enjoyed being able to attend each of these star parties. We highly recommend them to others no matter their skill, equipment, or level of interest. There's something there for everyone and as always, it's the people there that make these events so special.

Cameron Burton and Lisa Meister

Saturn and moons, August 4th, 2022; by Lucky Budd

Editorial Remarks

Our first full collaboration with the Cowichan Starfinders to host the Island Star Party is in the books. While most of those in attendance were members of the public checking it out, despite the weather, there were at least a dozen members of RASC Victoria that made the drive over the Malahat to take part. This year's Saanich Fair included the return of RASC Victoria, with the usual tent and tables, along with some solar telescopes set up for the public. The raffle draw for a refractor telescope had over a thousand entries! The summer of big astronomy events is winding down, but the Fall Fairfield event on September 25th and continued participation of volunteers at the Saturday night public outreach on Observatory Hill will continue for a little while longer, before shifting to monthly sessions. Meanwhile, for the hard working volunteers of our school program and Astro Café, things are just getting started up again.

While the James Webb Space Telescopes continues to amaze and educate us with the data it collects, it's been a tough time lately for most rocket based missions. The Artemis 1 launch didn't quite go as planned. They're now stalled on the ground, in a vicious cycle of fixing and testing leaky hydrogen pipes, to prepare for another attempt as early as September 27th. If these delays keep up, the crash test dummies strapped into the crew seats will be putting in for their leave. After littering orbit with 34 new SkyLink satellites on September 10th, the latest SpaceX mission has had two of their launch attempts cancelled, both due to the weather. Firefly Aerospace also had a couple of launches scrubbed in California. Blue Origin suffered a booster failure, which gave them a chance to do an unexpected test of their capsule escape system. It was a cargo mission, so no crew was on board, but the capsule still managed to parachute safely back to the ground. It's all a reminder that *space is hard*.

In this issue of *SkyNews*, we have an article about observing targets around the Pegasus constellation by Dorothy Paul, more recaps from our Centre's activities, a story about the 60th anniversary of Alouette 1, as well as all the astrophotography and articles you've come to expect from the *Victoria Centre SkyNews*.

Bruce Lane: SkyNews Editor

Special Interest Groups

Getting Started in Astronomy

The beginners group is taking advantage of the wonderful streak of clear weather. A number of us witnessed the minima of the variable star Algol, an eclipsing binary. We observed the surrounding area, eg. Mirfak and Almach, noting their brightness compared to Algol along with the quad of Gorgonea stars the night before minima.

On the night of the August 22nd, we observed an obvious dimming of Algol. For comparison, the following night Algol returned to its original magnitude. For more information on this group, please contact David Lee at *david@victoria.rasc.ca*

Astrophotography

During the summer there was a never ending stream of images coming from members of this SIG. There were also images from the Plaskett, captured by Dan Posey, which are still being worked on. There were remarkable results from some of the beginners in the group, like Ron Fisher and Ken McGill. For more information about this group, please contact David Payne at *vp@victoria.rasc.ca*.

Electronically Assisted Astronomy

The EAA SIG continues to meet on equipment and software related to the topic. For more information on this group, please contact David Lee at *david@victoria.rasc.ca*

Makers

The Makers SIG is open for business to discuss member projects, as well as answer questions associated with repair and development of astronomical equipment. For more information about this group, please contact Jim Cliffe at *jim@victora.rasc.ca*.

David Lee

M31 (Andromeda Galaxy), imaged on August 1-6th, 2022; by Scott Garrod

Ornaments on the Harness of Pegasus

I discovered my first ornament on the breast plate of Pegasus by accident. While waiting for my planned observing targets to rise higher above the horizon, my eye fell on a lone deep sky object below the neck of the *Flying Horse* (rolling on his back for northerners). It's located on p74 of *Sky & Telescope's Pocket Sky Atlas* – NGC 7448 (Fig 1A), northwest of Markab (*Alpha Pegasi*). Overly confident that I would land on it by simply slewing my scope from Markab and having first determined west by sky drift through the eyepiece, I set off to explore. The field was sparsely strewn with quite uniformly faint stars that were well below the *Sky Atlas*' 7.6 magnitude cut-off. Whoa -slow down! What is this? At what seemed like the right distance from Markab, centered in the 42' eyepiece field, were two dim, closely spaced smudges, clearly fainter than the *Pocket Sky Atlas*' 11.5 magnitude limit for galaxies! Nudging the telescope westward brought a larger, much brighter galaxy into the edge of the field (Figs 1B, 2).

Fig 1 Left. *Pocket Sky Atlas* Chart of the Pegasus Square; arrows mark areas of deep-sky targets discussed. **Right**. Megastar chart of sky northwest and southwest of Markab with 42 arcmin eye-piece field encompassing NGC 7448 & 7465/63 (see Fig 2) and 68 arcmin field centered on UGC12281 (see Figs 3, 4). Stars to mag 11; deep sky objects to mag 14.

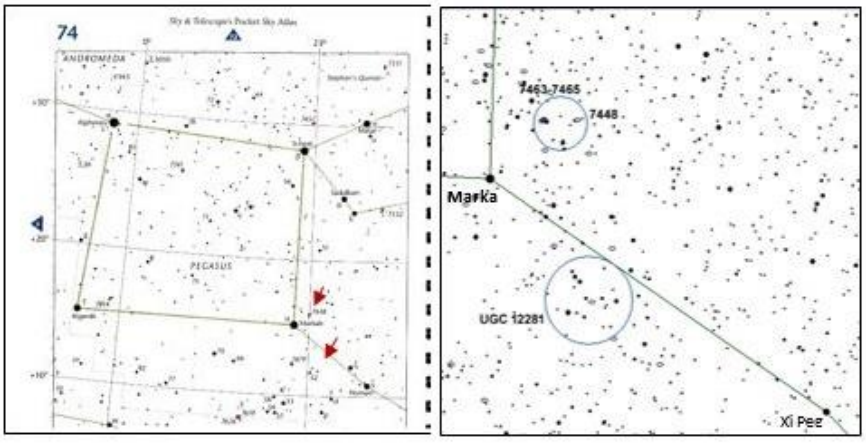
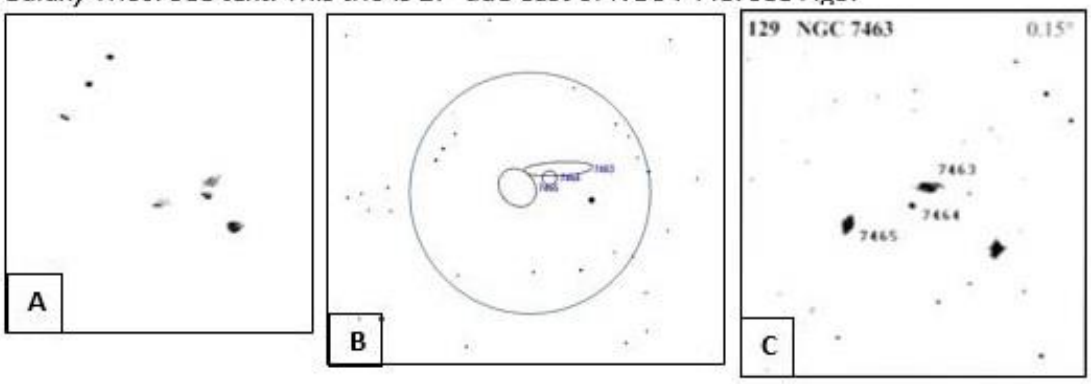


Fig 2 A. Quickly sketched view of NGC 7463 (right) and 7465 (left) as smudges above a magnitude 8 star, with line of faint stars to northeast, first spotted in 42 arcmin field at 142 magnification. **B.** Megastar chart showing size and shape of each galaxy in the trio. Circle 13.3'; star magnitudes to 14. **C.** SDS image of #129 in the *Atlas of Galaxy Trios*. See text. This trio is 27' due east of NGC 7448: see Fig3.



To make a short story shorter, I had obviously erred in estimating either the position angle of NGC7 7448 (re Markab) or the angle I was pushing the telescope. Lesson: get your directions straight before starting to explore. Whether you have a local nature reserve or the deep sky over head - don't panic if you get lost in either milieu - you might come across something new. Later, I learned that my pair of dim smudges were merely the bright cores of the two large members of a tight galaxy trio, # 129 in the *Atlas of Compact Galaxy Trios* (1). Its smaller member, NGC 7464, was nestled against the south-east side of 7463. This could have contributed to what I took to be a star against an expansion of the south-east edge of 7463 and was included in my quick sketch at the eyepiece (Fig 2). This trio, along with two others, turns out to belong to a larger group of galaxies to which NGC 7448 gives its name (2).

I had consulted with *Uranometria 2000.0 Deep Sky Atlas*, our all-sky reference in the field, to originally identify my faint smudges as belonging to a trio of galaxies due east of my intended destination: NGC 7448. At the time I noticed how the relatively blank sky around Markab, shown in the *Pocket Sky Atlas* (Fig 1A), is in reality littered with deep sky objects (Fig 3). The same is true for the sky southwest of Scheat (beta Pegasi), where *Uranometria* shows a swath of galaxies along the upper left foreleg of Pegasus from Scheat, his shoulder, to Sadalbari (*Mu Pegasi*). This led me to imagine these deep sky objects as ornaments dangling from the harness of the *Flying Horse*. From Markab, strung out along the neck of Pegasus, toward Homam (*Zeta Pegasi*), are scores of galaxies. Many of them are in tight groups, suggesting gravitational interactions between them, hence the interesting shapes – if they could be resolved (Fig 3). One in particular, UGC 12281, caught my eye because it appeared to be conveniently framed by two nested triangles of relatively bright stars. I decided to start with it in the coming night's explorations. Two paths through the sky look promising (Fig 3).

Fig 3. Section of *Uranometria 2000.0 Deep Sky Atlas*, p82 including region northwest and southwest from Markab to Homam. Star magnitudes to 9.7. Red arrows to NGC 7448 and UGC 12281.

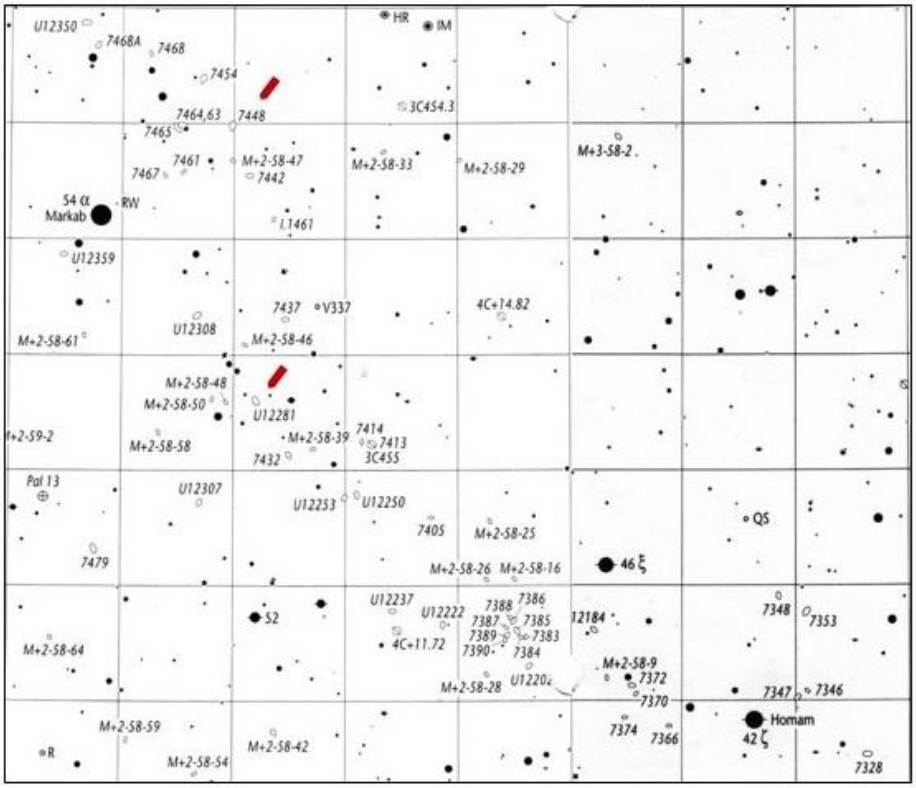
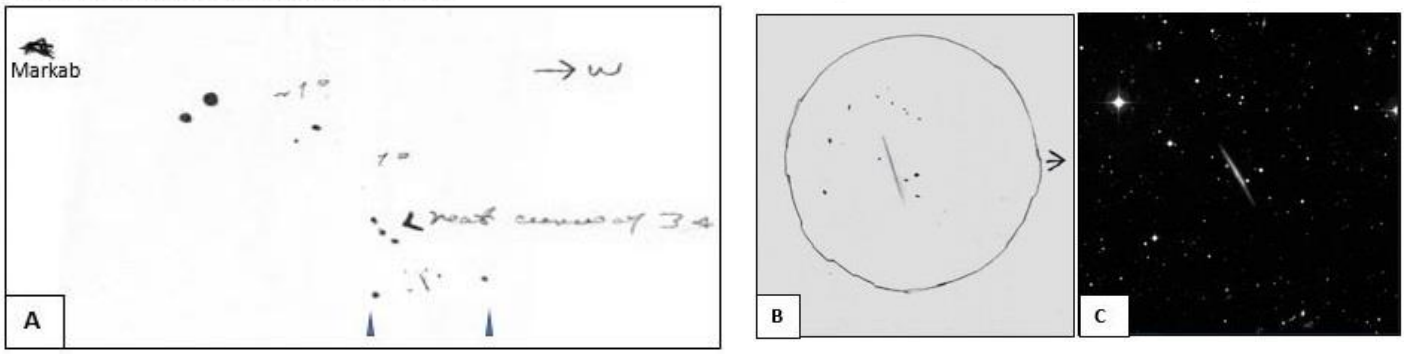


Fig 4 A. From Markab southwest to UGC 12281: In three star hops, using low-power 68' field eyepiece, one lands on a gently curving line of 3 stars pointing directly to UGC 12281. The galaxy appeared as a minute streak (contrast enhanced in Photoshop for printing) centered between 2 bright stars (arrow heads) at the edge of the 68' field; 88x magnification (compare star pattern in Fig 3). At 142 x magnification, the triangle of faint stars and at least 2 other fainter ones closer to the north end of the galaxy could be resolved. **B.** UGC 12281 sketched at 230 x magnification within the 26' eyepiece field. The long silver streak glimmered along with fainter, magnitude 15 stars; averted vision helped to bring out details. **C.** SDSS image of UGC 12281, 15' field.



Head southwest from Markab, along the line toward Xi Pegasi and Homam, veering ever-so-slightly east about one-third of the way, and there should be the triangles of stars. That or locate star *52 peg* in the *Pocket Sky Atlas* (Fig 1A) south-southwest of Markab and head straight north about 2 degrees. I practiced both routes several times successfully to admire the scenery, before switching eyepieces to more closely savor the silver sliver that is UGC 12281 (Fig 4). This low brightness, super-thin galaxy, with no central bulge, is observed exactly edge-on. This galaxy has active star formation, probably caused by a close satellite galaxy, along with other features of interest to professional astronomers (4). For amateur astronomers it is a beautiful object set in an attractive field of delicate foreground stars. My sketch (Fig 4B) was through my Obsession 15" f/4.2 UC telescope, at a magnification of 230x. I look forward to returning to it, along with Miles' 20" f/3.3 Star Master, at the next opportunity; as well as rambling along both familiar and unexplored routes leading perhaps to new discoveries.

1. *Atlas of Compact Galaxy Trios*. 137 Galaxy Trios: Data and images compiled by Miles Paul. Published by the Webb Society, 2001. *Webb Deep-Sky Society: Download deep-sky observing guides for free* (*webbdeepsky.com*)
2. *D. Makarov and I*. Karachentsev. Galaxy groups and clouds in the local (z ~ 0.01) Universe. Mon. Not. R. Astron. Soc. 412, 2498–2520 (2011). doi:10.1111/j.1365-2966.2010.18071.x
3. *Uranometria 2000.0 Deep Sky Atlas All Sky Edition*
4. P. Gunter and D. J. Bomans. *On the nature of the peculiar super thin LSB galaxy UGC 12281.* *Proceedings of the International Astronomical Union*, January 2012. DOI: 10.1017/S1743921312008927

NGC 7448 is a spiral galaxy located in the constellation Pegasus. It is located at a distance of circa 80 million light years from Earth, which, given its apparent dimensions, means that NGC 7448 is about 60 000 light years across. It was discovered by William Herschel on October 16, 1784. [2] It is included in the *Atlas of Peculiar Galaxies* in the category galaxies with detached segments.

NGC 7448 features an inner disk region of tightly wound spiral fragments with high surface brightness. At the edge of this region, the surface brightness decreases abruptly. At the outer part of the disk, individual arm segments and dust lanes can be discerned. The outer arms feature HII regions. [3] One HII region complex, located at the northwest portion of the disk, is as bright as the bulge. [4] Two supernovae have been observed in NGC 7448: SN 1980L (mag 13.5), and SN 1997dt (type Ia, mag 15.3). [5]

NGC 7448 belongs to a galaxy group known as the NGC 7448 group. Other members of the group are the galaxies: NGC 7437, NGC 7454, NGC 7463, NGC 7464, and NGC 7465. [6] The last three form a compact subgroup and there is evidence that NGC 7464 and NGC 7465 are in the process of merging. NGC 7479 lies a bit further to the south and may be part of the group. There is a tail of HI gas, extending from NGC 7448, and a stream of gas extending from NGC 7464/65 to NGC 7448. [7]

Dorothy Paul

M101, the Pinwheel Galaxy, August 16-17th, 2022, by John McDonald.

A 60 Year Anniversary in Canadian Innovation!

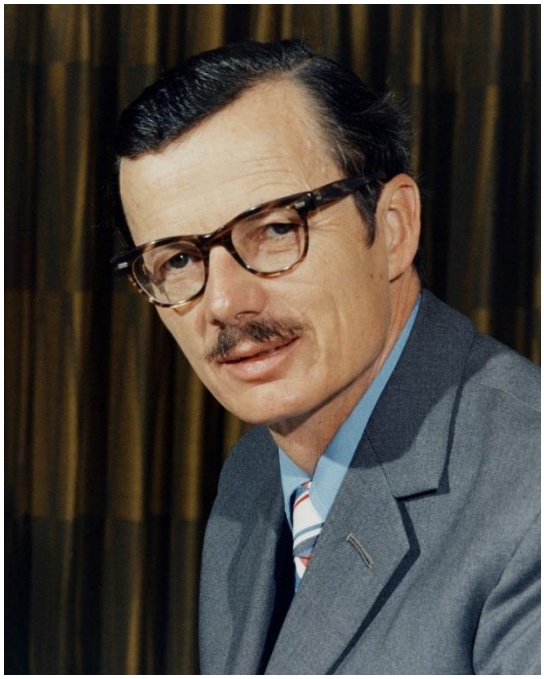
To say that 1962 was a transformative year would be an understatement. The Cuban Missile Crisis came very close to transforming the human race into extinction. At the time, the American nuclear launch code was "*00000000*", to make it easier to remember, for faster and less problematic launches. What's more astounding is that this code was not changed until 1977. The same president who nearly started World War III, also gave his famous *Rice speech* in the same year: "*We choose to go to the Moon in this decade and do the other things, not because they are easy, but because they are hard*." It was also the year that John F. Kennedy enacted the embargo on Cuba, but not before buying twelve hundred Cuban cigars for himself, just hours before he made that announcement.

Lawrence of Arabia and Doctor No were playing at the movie theatres that year, and the Beatles released their first single: *Love, Love Me Do*. *Spacewar!* the first interactive computer game, was created at MIT (Massachusetts Institute of Technology). 1962 saw the invention of the audio cassette by Philips and at General Electric, Nick Holonyak made the first light-emitting diode (LED). Of course both of those inventions pale in their scope compared to the invention by Sam Panopoulos, the Canadian restaurateur who made the first Hawaiian pizza, combining the toppings of ham and pineapple.

In space exploration, John Glenn orbited the Earth three times in his Mercury capsule: *Friendship 7*. The uncrewed *Ranger 4* space craft became the first American spacecraft to reach the Moon. The Soviet *Luna 2* had already completed an impactor mission in 1959. *Ranger 4* was designed to collect data, including images of the Moon's surface, before crashing to gather yet more seismic data upon impact. Unfortunately, due to a computer failure, it crashed on the far side of the Moon without sending any data. The first successful US lunar impactor mission would be *Ranger 7*, in 1964. The Mariner Program, focusing on sending probes to other planetary systems, launched two missions in 1962. *Mariner 1* had

to be commanded to self-destruct, due to a guidance error after launch that was caused by a coding mistake. NASA was really taking the words of the president to heart, when he was talking about space exploration being hard. *Mariner 2* went a lot smoother, with a successful flyby of Venus and returned significant data from its mission. This data included measuring the solar wind, something which had already been done years earlier by *Luna 2*, but it least it confirmed the Soviet findings.

While everyone was gazing at the Moon and Venus, Canadian engineers and scientists had their eyes a bit closer to home. The words of Marshall McLuhan best sum up the early focus of Canada in space: *the message is the medium*. Let the US build rockets. John H Chapman decided that for Canada to take part in the new frontier of space it needed to change their focus from pure research to creating applied satellite technology and he managed to convince the government he was working for that he was right. John Chapman led a team from the National Research Council and the Defence Research Telecommunications Establishment to do just that. While the US and USSR were launching satellites with short lifespans, Canada would build something that would last. Canada's big moment in space that year would be the launch of *Alouette 1* aboard an American Thor Agena B rocket. *Alouette 1* would study the ionosphere, as well as detecting cosmic noise from both our own Sun and from beyond our solar system. *Alouette 1* was eventually switched off on September 30th, 1972. It still remains in orbit around the Earth and can be found using numerous space object tracking aps and sites (including *heavens-above.com*). *Alouette 1* has a maximum magnitude of 6.1 at perigee.



John Chapman (*seen right*) died in 1979, at the age of only 58. It was just three years after he witnessed the launch of the SPAR Aerospace Hermes Satellite, the project he'd worked so hard to see completed. Hermes was not only a technological marvel, it was another in a series of space diplomatic feats, with Chapman getting a lot of involvement from NASA and ESA, something of a pattern for him. Hermes was a communications satellite built to improve communications in the Canadian Arctic and in remote northern communities. Located in geosynchronous orbit that covered forty percent of Earth's surface, Hermes could broadcast coast to coast to coast. The SPAR Aerospace Hermes Satellite also made the first ever direct to home TV broadcast by a satellite, earning an Emmy for transmitting a Stanley Cup playoffs game for some Canadian diplomats in Peru to watch. John H Chapman was awarded numerous honours for his ground breaking work in communications and aerospace, and the headquarters of the Canadian Space Agency is named after him. The building where the contractor who made the antennae for the satellite (de Havilland Canada) later became the site of the Canadian Air and Space Museum, until they moved to a new home in 2012. The *John H Chapman Award for Excellence* was created by the Canadian Space Agency in 2000, as a lifetime achievement award for work in the field of space science and applied technologies. John Chapman also wrote the *Chapman Report*, which served as the blueprint for the Canadian aerospace industry and what later became the Canadian Space Agency.

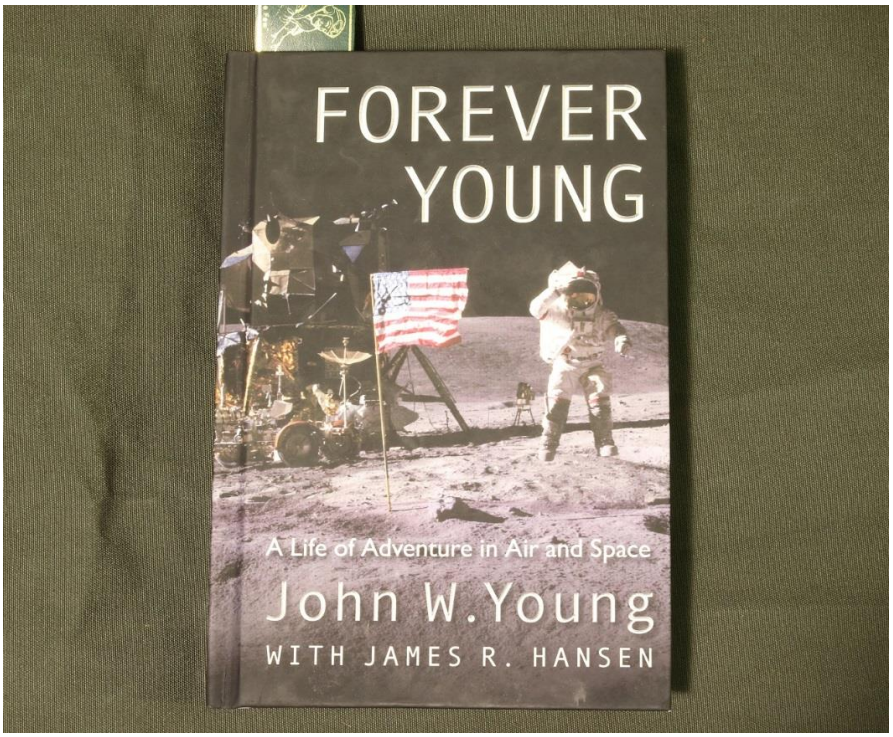
Earlier in 1962, NASA launched *Telstar 1*, a communications satellite capable of transmitting television signals between the US and Europe. It worked just fine, until the US decided it would also be interesting to do a series of nuclear test explosions in space. The resulting EMP (electromagnetic pulse) from the first and biggest nuclear test in space, knocked out *Telstar 1* and numerous other US satellites and damaged the lone UK satellite (*Ariel 1*), that the Americans had recently built and launched for them. Engineers on the ground managed to momentarily coax *Telstar 1* back to life a few months later, but the damage was too extensive and it was shut down early the next year. The EMP detonation, 400km above the Pacific Ocean, also disabled street lights and alarms across the island of Waikiki. Despite being listed among the damaged and destroyed satellites, *Alouette 1* was barely affected by the EMP blast.

Bruce Lane

From the Library

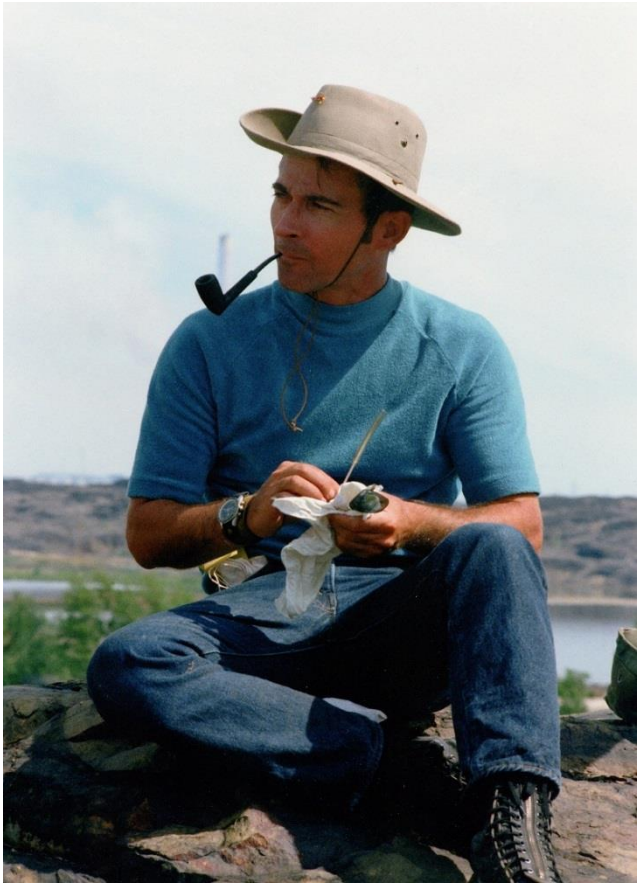
The RASC Victoria Centre Library is housed in the Astronomy Department's faculty lounge, located on the 4th floor of the Elliott Building, at the University of Victoria. It contains over 500 titles, curated by Alex Schmid, our RASC Victoria Centre Librarian. Alex is currently running our library in the 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 *Forever Young*, by John W. Young and James R Hansen. Hansen is an award winning author, who has written a number of other acclaimed books on aerospace and NASA, including the only authorized biography of Neil Armstrong. He also wrote a book about the game of golf, which given the affinity for golfing on US Air Force Bases, it's really a more of complimentary subject for someone writing about pilots than something completely different.

John W. Young is one of the most accomplished aerospace pilots and someone who could well be described as a NASA *lifer*. Like many astronauts, he was a naval aviator, before being selected by NASA. He was a member of the *New Nine* (NASA Astronaut Group 2): the test pilots chosen by NASA to add to the *Mercury Seven* astronauts for the Gemini Program. There were a few times when he wondered if he was ever even going to be a jet pilot. Despite graduating second in his class in aeronautic engineering at Georgia Tech, he watched all his NROTC classmates being sent to pilot training after passing their flight physicals. Young passed his flight physical, but was still assigned as a gunnery officer aboard a destroyer, leaving him to wonder just who he'd pissed off to get sent to that posting. There he was, a naval gunnery officer in the Korean War, while nearby other future astronauts were flying jets off the decks of aircraft carriers.



John Young was beginning to have early doubts that he'd ever shed his black dress shoes for the brown shoes of a naval aviator. Even after getting his wish to become a pilot and qualifying as a carrier pilot, things took a turn for the strange. Instead of joining a squadron aboard a carrier, immediately after getting his wings he was reassigned to helicopter pilot training. Young found himself snatched up by a new program to determine the difficulties of retraining jet pilots as helicopter pilots. He was very nearly killed, when a member of the ground crew carelessly left a comic book behind in the engine and it was sucked into the air intake of his helicopter's carbonator. Afterwards, he finally got tasked to the USS *Coral Sea*, as a naval aviator flying the new F9F-6 Cougars. He spent a tour in the Mediterranean, at high alert during the Suez Crisis and Soviet invasion of Hungary, but his squadron flew no combat missions. His squadron was transferred to the USS Forrestal, after trading in their Cougars for supersonic F8U-1 Crusaders, and he did another tour of the Mediterranean under more peaceful conditions. Young was the safety officer of his squadron, which because of the incredibly high accident rate during carrier operations in the early jet era, meant he was always busy filing reports. The accident rate for jets, flying from the decks aircraft carriers in the late 1950s, was over thirty times what it is now.

Then came the day John Young was offered a dream opportunity at the US Naval Test Pilot School. He finished second in his training course at the Test Pilot School and put in a request for Flight Division. He even made a proposal to work on fixing the air turbulence problem from the large deck structure on carriers that created havoc for pilots. His request was denied and Young ended up being assigned to the Armament Division, the absolute last place in the program he wanted to be. It must have seemed like they were making him a gunnery officer on a destroyer all over again. He found himself working under Jim Lovell, testing the new F-4 Phantom. While an amazing jet, it also came with an amazing amount of defects that resulted in four hundred reports of things that immediately needed fixing, especially with poorly installed wiring. Lovell was reassigned, leaving Young to finish and hand in the final report on the F-4 to some people who were less than happy with all the problems they were told about. Afterwards, John Young was chosen to conduct high altitude speed climbs with the F-4, setting two records in the process; something which he believed was what finally brought him to the attention of NASA.

Given that in addition to being great pilots the astronauts also had degrees in science and engineering, they were a lot more involved in the development of the space programs and the spaceships they flew in. It would have been like being assigned to the crew of a sailing ship, as something nobody had done before, but you're also involved in developing the onboard systems and figuring out ways to make sails work more efficiently. You'd end up being part sailor and part inventor along the way. The fact that most of the astronauts were test pilots meant that they were already used to working closely with engineers in the development of new flight designs. During the Gemini Program, John Young was tasked with working on the ECS (environmental control system). His *special* assignment was to help design the collector for urine and fecal matter. He made a lot of other changes to other systems too, in the lead up for the first manned Gemini mission with Gus Grissom. Young was concerned about how the single locking joints on the spacesuits could be accidentally disconnected if they bumped into things and got them to install double locking joints, to decrease the chance of a fatal depressurization in the vacuum of space. He also had the engineers install an improved hatch handle, so the ship commander could actually close it, after space walks. Young meticulously poured over the data from the unmanned launches, to see what could be improved.

A big concern for the astronauts, Young included, were the ejection seats. If the seat ejector charges blew before the hatch blew off, things would go poorly for whoever was strapped into that seat. Worse, if one seat fired before the other one, the second astronaut would be cooked by the fire ignited in the 100% oxygen atmosphere inside the capsule. There were many concerns about the danger of a fire in the pressurized capsule filled with pure oxygen. Another issue Young had was how last minute so much of the work was on the spacecraft. The last ejection seat test was done only a week before they launched and a new urine collector box was added just hours before the launch. NASA balked at Grissom naming their Gemini spacecraft *Molly Brown* (after the musical *The Unsinkable Molly Brown*) and demanded that he choose a different name. Gus still had a chip on his shoulder about the sinking of his Mercury capsule and suggested instead calling it the *Titanic*. The mission aboard the *Molly Brown* was a success. John Young and Gus Grissom were also both the first to wear the new NASA issue Omega Speedmaster chronograph watches. Young's second Gemini mission was with Michael Collins, where they competed a double docking: first with their docking target and then with the Agena Target Vehicle from Neil Armstrong's nearly disastrous Gemini 8 mission. Worries about being in a pressurized capsule filled with pure oxygen were later confirmed when fire claimed the lives of Grissom, White, and Chaffee. Astronauts had expressed their concerns, but felt they would be fired from the program if they objected too strongly. That fatal ground test would go on to be named Apollo 1, in memorial to the astronauts who lost their lives, and changes were finally made to lower the percentage of oxygen in the capsule until after the launch phase of the mission.

During Apollo 10, Young piloted the command and service module on its trip around the Moon and back. He noted that piloting the CSM meant not feeling any frustrations about piloting the landing module and running it through its paces without actually landing on the nearby Moon. The LM wasn't even capable of making a landing, given that it didn't have the fuel or even landing struts. The landing struts had to be removed to cut down weight, as the contractor was still trying to get the design right for Apollo 11's Moon landing. John Young finally got his own chance to land on the Moon, despite an inordinate amount of system failures, during the Apollo 16 mission. Unlike many other Apollo astronauts, after the moon landings were over, John Young stayed on with NASA. Young was a pilot for the first orbital shuttle mission and then for the first shuttle mission to deploy a *Skylab* into orbit. After his second shuttle mission he was put in charge of NASA's Astronaut Office. He was scheduled to pilot a third shuttle mission, to deploy the Hubble Space Telescope, but the loss of the *Challenger* shuttle cancelled his mission.

James Young finally retired in 2004, after 42 years of service at NASA, logging a staggering 835 flight hours during his six missions into space. He was the first astronaut to complete five missions into space, before becoming the first to do six! Young was also the only astronaut to ever pilot the following four spacecraft of his era: the Gemini spacecraft, Apollo CSM, Apollo LM, and the Space Shuttle. After his retirement, he became an active science advocate and public speaker. John W. Young died in 2018 at the age of 87. Asteroid 5362 Johnyoung is named in his honour. John Young's biography, *Forever Young,* should be on the reading list of anyone interested in pilot biographies or the history of space exploration, and it's available by order from your local bookstore.

Bruce Lane

Hill and Dale
(Observing on the Island)

The August skies were for the most part favourable, resulting in a flurry of imaging and observing. There were a couple clear nights around the new moon, but then it started clouding up for a few days around the time of the Island Star Party.

Bill Weir started the month off on August 3rd, observing a significant prominence. Bill later played host for two days, at the Pearson College Observatory, for class reunions, and then for a regular observing session at Pearson on the 31st. He was joined by a Jim Cox for one of the class reunion evenings. Nathan Hellner-Mestelman was out observing on August 4th and shared a five year compilation of his I-phone images of Saturn, in the form of an animated gif. David Lee was out doing late night and early morning observing and imaging, sometimes from the end of his own driveway and another time with the Beginners Special Interest Group at Cattle Point on August 22nd, with the group's focus on observing the Algol minima. John McDonald was imaging M13 and M101 from the Victoria Centre Observatory on the 16th and 17th of August. Dan Posey combined image data taken with the Plaskett Telescope with data gathered from his own gear to create an image of IC 1396, the Elephant's Trunk Nebula (*seen left*). Lucky Budd was primarily focused on imaging Saturn, Neptune, and the Andromeda Galaxy.

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

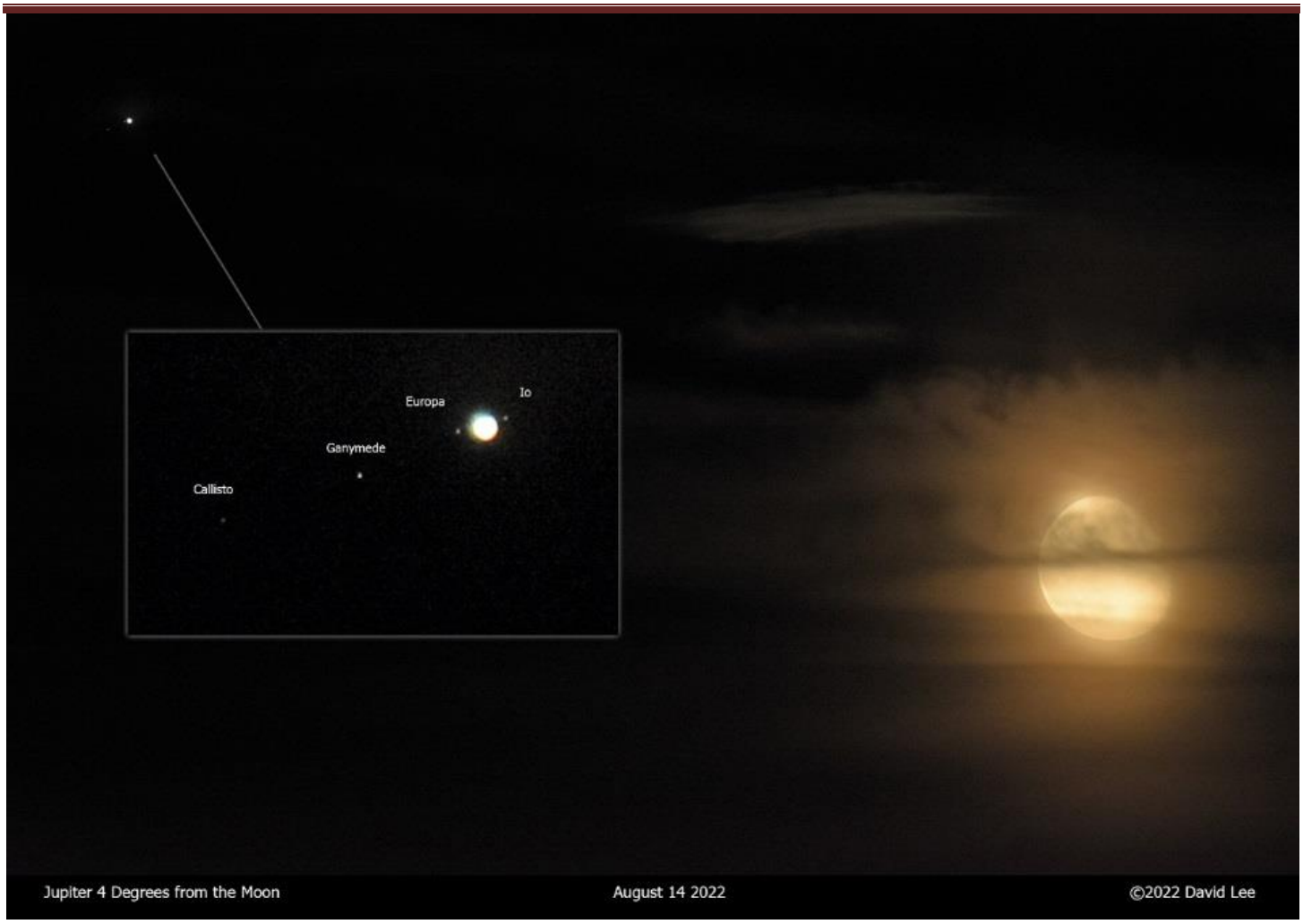
Research Council property. This means that all visitors to our observatory must be on our observer list and registered with the NRC. To get on the list, just contact Chris Purse (Membership Coordinator) at *membership@rasc.victoria.ca* and we'll see you up there on the Hill one of these nights.

Bruce Lane

Bill Almond (1933-2022)

Bill Almond passed away this summer, just shy of his 89th birthday. Bill was active in all facets of the RASC Victoria Centre, from astrophotography, to public outreach and mentoring, to being an active member of the Council. During his time on Council, Bill Almond held the positions of national council representative, treasurer, secretary, vice-president, and president, as well as later being a *member at large*. For a couple of years he even simultaneously held the positions of vice-president, treasurer, and secretary. During his tenure as President, RASC Victoria organized and hosted the 1998 RASC National Assembly at Pearson College. 1998 was also the year that saw the creation of Astro Cafe. After Jack and Alice Newton left Victoria, Bill Almond hosted the CCD Observers Group at his home and observatory, where centre members could share their knowledge about emerging field of amateur CCD astrophotography.

For many of the current senior members of RASC Victoria, Bill set a standard for mentoring and excellence as an amateur astronomer. I'm personally thankful of the detailed, hundred year history of the RASC Victoria Centre that he wrote. As *SkyNews* editor I've found it a valuable reference resource over the last four years. Bill Almond's well-loved observatory lives on, after being recently relocated to the home of Cameron Burton and Lisa Meister.



In Closing

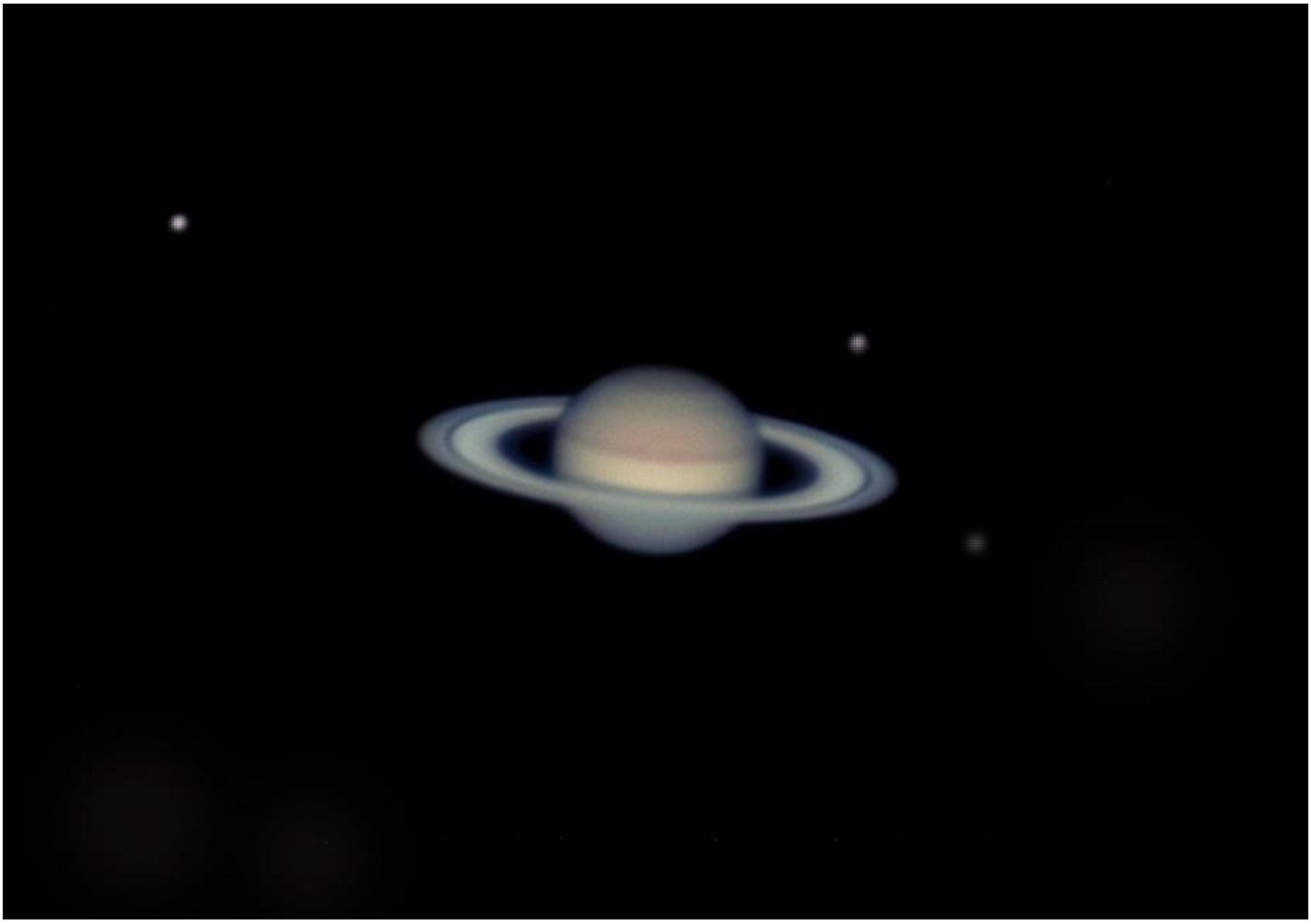
It's getting a lot cooler at night, but other than some late summer wildfire smoke, we've had a lot of good evenings for astronomical pursuits. Even the wildfire smoke we had was mild, compared to what we've gone through in previous years when the province is on fire and especially compared to what others in the province have had to deal with. When it's a little smoky here, it means it's very smoky in most other places. Summer is now over and we're getting earlier views of the autumn night sky. This summer was also when a lot of people starting poking their heads up more, despite the continuing global pandemic, with numerous music festivals and even the odd star party available for people who felt like being in a crowd again.

September is at the tail end of the traditional flurry of public outreach events in the summer. After RASC's involvement at the Saanich Fair, the next big event is the Fall Fairfield. RASC Victoria Centre volunteers will be setting up a tent and tables, as well as some solar telescopes if the weather cooperates, on the field behind the Fairfield Community Centre.

September also means the return of Astro Café, on Monday nights at 7:30pm, with both in person and virtual attendance available thanks to our hybrid meeting set-up.

Summer Saturdays are winding down at the Centre of the Universe and Plaskett Telescope on Observatory Hill, with the next event on September 24th. This will be the last biweekly or fortnightly event, after which they'll be switching to monthly events for the off-season. 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 will be once again hosting their weekly Wednesday open house at the Bob Wright Centre Observatory, starting on September 21st (8-10pm). The Nanaimo Astronomy Society are resuming their monthly meetings on September 22nd, which are also going to be hybrid events, with both in person and online attendance via ZOOM. After their summer break, the Comox Valley Astronomy Club has returned to having their monthly meetings at Courtney Public Library.

Bruce Lane: SkyNews Editor



Saturn with Rhea, Thetys, and Enceladus, August 17th, 2022; by Lucky Budd

Photography Credits

Cover: 2022 Island Star Party, Aug 27, 2022; by Cameron Burton.

Page 2: Saturn and moons, Aug 4, 2022; by Lucky Budd. From left to right moons Rhea, Enceladus, Thetys, Dione, and Titan at the top)

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

Page 3: Apollo 17 training: *Jack Schmitt collecting a sample while Gene Cernan readies a sample bag.* Sep 13, 1972. Scan by Kipp Teague. Courtesy of NASA.

Page 4: Apollo 17 training: *Jack Schmitt opening a packed rock box during a training exercise on the one-sixth-g aircraft at Patrick Air Force Base. Having opened the lid, he is now unfolding a Beta Cloth seal protector which will cover the sealing mechanism on the edge of the lid and the body.* Sep 19, 1972. Scan by Ed Hengeveld. Courtesy of NASA.

Page 5: M31 (Andromeda Galaxy), imaged on Aug 1, 2, 3, 4, and 6, 2022; by Scott Garrod. Askar 230/ ZWO asi2600MC Pro/ iOptrom CEM70, 105 x 300s 35 x 180s: 10 hours 30 minutes

Page 8: M101, the Pinwheel Galaxy 2022-08-16 and 17, by John McDonald. 2.5" OGS scope on Paramount ME mount. QHY 600ph camera with Optical flattener. QHY guide camera. Exposures - 240s for 8 L, 9 G, 6 B and 7 R subs. Dark, flat and bias frames for calibration. Processing in PixInsite and Photoshop.

Page 9: John H. Chapman, image created from files 2008. Courtesy of Canadian Space Agency.

Page 10: Posed Book, "*Forever Young*", taken in Editor's home on Sep 21, 2022, by Bruce Lane

Page 11: Apollo 16 training, John Young during a geology field trip at Sudbury, Canada. Jul 7-9, 1971. Research by J.L. Pickering. Courtesy of NASA.

Page 12: Apollo 16 training, John Young enters CM in the altitude chamber, aided by Guenter Wendt. Oct 20, 1971. Scan by J.L. Pickering. Courtesy of NASA.

Page 13: IC 1396 - the Elephant's Trunk Nebula, by Dan Posey. 22.5 minutes of data with the 1.8m Plaskett telescope on July 30, 2022. This was split across 10x45s of each GPrime, RPrime and IPrime SDSS filters.

I integrated each of these channels into a master luminance and then colourized the image with 16h40m of colour data taken with my Canon Ra and Askar FRA 108/Canon 100-400mkii and Canon 6D I captured on July 31 and August 1, 2022.

Page 14: Bill Almond, June 29, 2014 at RASC National AGM by James Edgar (cropped by editor with permission of photographer).

Page 15: Jupiter 4 Degrees from the Moon, Aug 14, 2022 by David Lee. Camera: Nikon D7200 with Nikkor 300/4 AFS lens. ISO: 1600 Exposure: 1/50 at f/5.6. Processed with Adobe Photoshop CC 2022.

Page 15: "Goose" Ameraucana chicken, Aug 31, 2022, by Bruce Lane

Page 16: Saturn with Rhea, Thetys and Enceladus on Aug 17, 2022; by Lucky Budd.

Page 18: Apollo 17 training, *Jack Schmitt (left) and Gene Cernan on the 1-g trainer in an EVA training area that includes basalt boulders.* Sep 1972. Scan by Ed Hengeveld. Courtesy of NASA.

Call for Article and Photo Submissions for the October Issue

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

RASC Victoria Centre Council 2022

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1st Vice President	David Payne	vp@victoria.rasc.ca
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