NGC 6992, The Network Nebula

I was trying to get data for NGC 2264 the Cone Nebula, but it was out of view for the first couple hours of the night. Not wanting to waste a clear dark sky, I quickly chose a visible target. The Network Nebula is a region of the Eastern Veil Nebula, in the Cygnus Loop. This is a rapidly expanding super nova remnant. It's expanding at 1.5 million km per hour, so fast that the Hubble Space Telescope has observed its noticeable growth between 1997 and 2015. I love the filamentary textures in this region, dominated by hydrogen alpha and oxygen iii emissions.

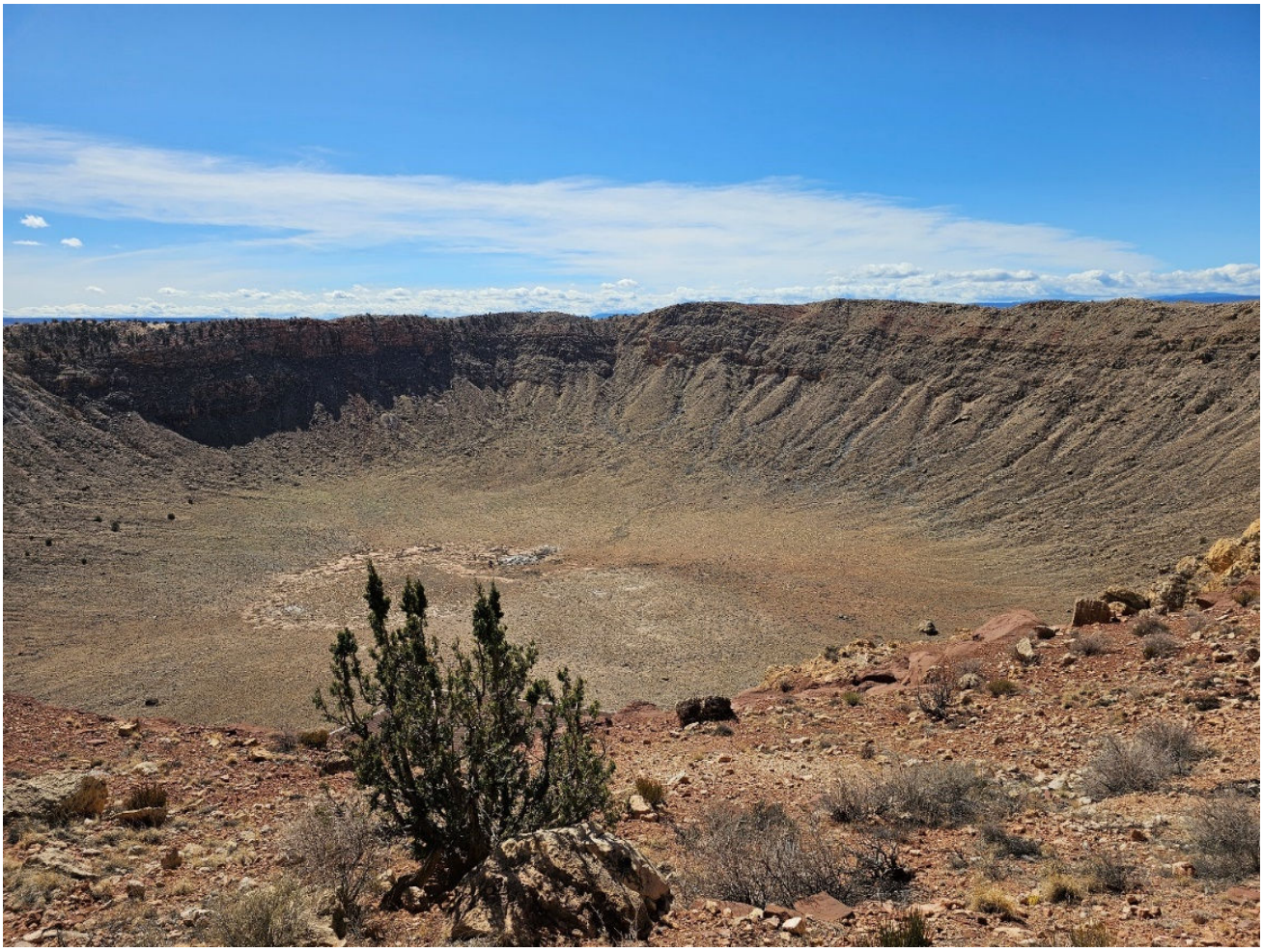
I used a Celestron Edge HD 925 with a 0.7 reducer, an ASI 2600MC Pro, and NBZ filter. I managed to get 4 hrs 10 minutes total exposure time, with 25 x 600s subs. I processed it in SiriL, Starnet, GIMP & G'MIC.

Taken January 22, 2024 *Brock Johnston*

Astro-Tourism Gems in Northern Arizona

By Dave Payne

Over the last several years my wife and I have increasingly included astro-tourism in our travel destinations and agenda selections and indeed it figured strongly in our choice of 2-week getaway to Northern Arizona – a state that I had never visited before. Ranking high were two sites that ended up greatly exceeding our expectations - the awe-inspiring Meteor (Barringer) Crater about one hour east of Flagstaff, and the impressive Lowell Observatory, about a 20 minute walk from downtown Flagstaff itself.



The actual Meteor Crater is hidden from view as you approach it by the rim which rises 150 feet about the desert plain. Only when you reach the rim through the visitor's center are you rewarded with the breathtaking view of the nearly 1-mile-wide crater that is 560 feet deep. The crater is billed as the best-preserved meteor crater on earth, due to both its young age (50,000 years) and the current desert environment. The current dry conditions weren't always the case though, and the realization that the crater is currently half-filled with erosional debris and even the rim has been lowered considerably by erosion during a warmer, wetter, greener past. Still, the crater presents an awesome sight that is difficult to reconcile even with one's imagination.

The visitor's center (privately owned, along with the crater itself) provides a fantastic overview of the history of scientific discovery and debate associated with the crater. It has now been conclusively demonstrated via mineralogy that the crater was created by a 10 megaton of TNT equivalent explosion from a 160 foot diameter nickel/iron meteor colliding with the earth. Most of the meteor was vapourized immediately upon impact, showering the area with tiny fragments of conductive material explaining why the original visitor's center was destroyed via a lightning strike. A geologist might note that the rim is composed largely by a stratigraphic inversion (oldest rocks on top) of the same rocks in the wall of the creator. Larger portions of the meteor are also on display to see and touch, the largest of which is about the size of an end table. The disentanglement of what went on with the crater makes for a fascinating read, involving the conflicting view of a volcanic origin, and the futile search for the immensely valuable prospect of finding a 160 foot diameter source of unoxidized iron and nickel.

Additional fragments of the meteor can be seen at the Lowell Observatory where my adventure in astro-tourism was going from strength to strength. For those interested in astronomy, this single attraction can occupy many days of interest – from historical to research to observing activities.

Percival Lowell, a wealthy businessman, employed his capital in the creation of an observatory to chase down two obsessions – his desire to map the canals on Mars – related to the concept that there was intelligent life there, and to discover Planet X – the thought that there may be an additional planet beyond Uranus. Based on his research and observations he settled near Flagstaff in what is now the state of Arizona, to build his observatory to house his commissioned 12 inch f14.7 refractor! telescope in 1894. (more than 20 years before the DAO). This observatory and telescope has been maintained and updated and continues to be in service today - overwhelming visitors with both its view on the planets as well as the craftmanship that went into both the telescope and the wooden dome that houses it.

The Lowell Observatory contains many, many displays both of a historical and modern research interest that can occupy one's interest for multiple days at least. For example, the original telescope built at home by the then 23 year old Clyde Tombaugh in 1928. This, his third telescope, was composed from a grain auger, a cream separator, soup and soda

cans, an automobile axle, and a flywheel and used to create sketches from his observations. These quality of these sketches convinced the observatory to hire the young improvisor, where ultimately he did discover the elusive Planet X, what we now call Pluto, using the telescope and "blink comparator" also on display. The sheer volume of domes and telescopes and other equipment exhibited is overwhelming.

If you are more interested in actually observing the night sky, Lowell has a facility available to visitors at night too. The Giovale open deck observatory contains an array of high end telescopes and mounts that is open nightly to visitors in a large roll off building. Volunteers set the telescopes to view anything of interest from the solar system to deep sky. It is the proverbial kid in a candy store.

Unfortunately, we had just preceded the opening of Lowell's new giant visitor centre in November 2024, but I hope I have given you a taste of what you can see. While you could argue that the Grand Canyon, and the hikes around Sedona are also great Northern Arizona attractions, astro-tourism is also a major draw for us to return soon. I highly recommend spending several days in the area to catch all that the area offers (not including golf!). If you are travelling elsewhere, also be sure to check out local astro-tourism sites.

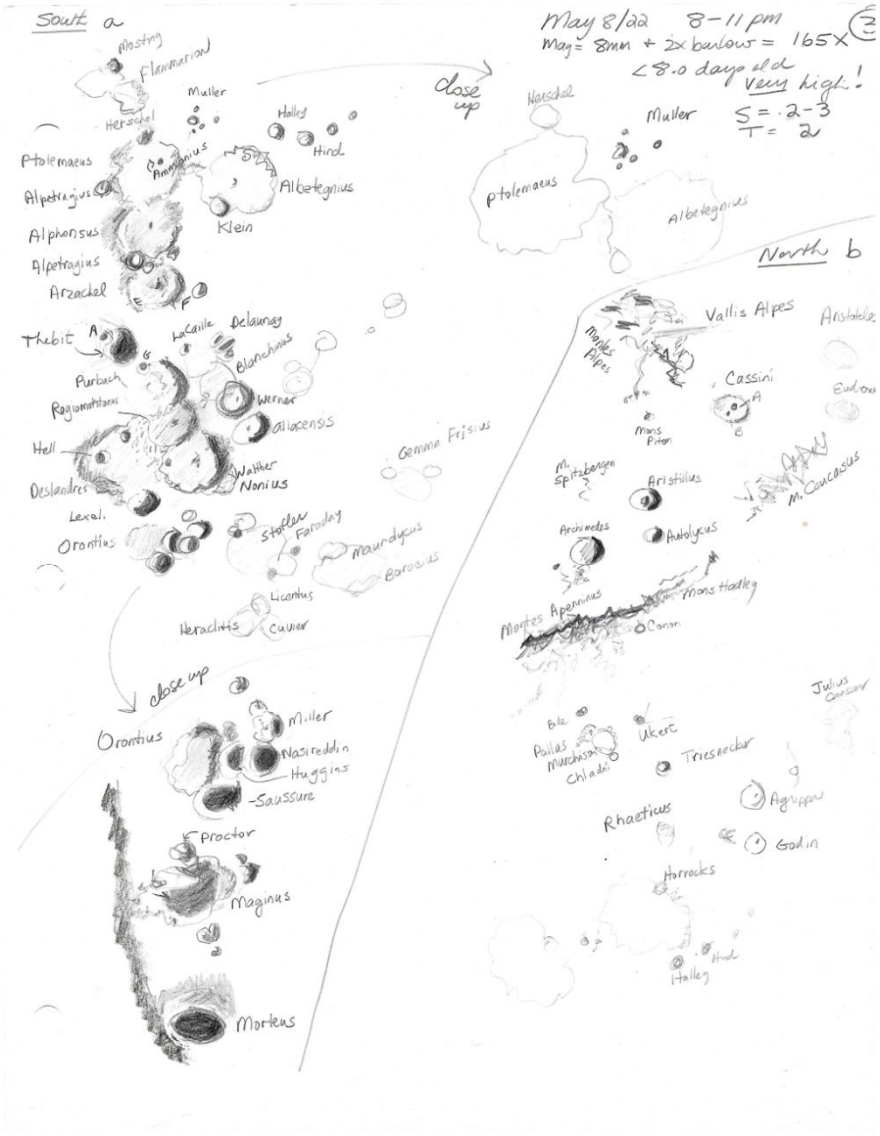
Member Profile of the Month – Jill Sinkwich

Jill needed a science credit during the first year of her Music program in 1973, so she took Introductory Astronomy. She liked the course so much that she kept her notes, and from then on she enjoyed sky-gazing and recognizing the constellations. Jump a few decades to when we became locked down with the pandemic, and she acquired image-stabilized binoculars and a 4-inch refractor telescope. The telescope has a "push-to" system controlled be a cell phone; but she never uses it – Jill's greatest pleasure is star-jumping to locate her target in the sky. "Finding the object is joyful!"

Jill likes working through observation lists – both from the Royal Astronomical Society of Canada (https://www.rasc.ca/certificate-programs), and the Astronomical League (https://www.astroleague.org/observing-program-division/), and she now has 7 pins to show for it.

RASC Victoria social dinner and awards, Four Mile Pub, 2024-02-26. Photo: David Lee

In order to see all the tiny details on the moon specified by the Isabel Williamson Lunar Observing Program, Jill borrowed a 6-inch Dobsonian reflector telescope from the Victoria Centre. She put her sketchbook on a music stand, going back and forth to the eye-piece and adjusting every time.



From Jill Sinkwich's Isabel Williamson Lunar Observing Program dossier

Jill is a member of our Getting Started in Astronomy Special Interest Group, and she was particularly keen that the group incorporates actual observing. After a successful evening at Cattle Point observing the dimming of Algol led by David Lee, Jill helped start a series of evenings at Cattle Point to help people work through the RASC Explore-the-Universe observing program. I went to one, and I was impressed at how she led everybody by memory through all the observation items to locate around the constellation Leo. What she wants most is for more people to work through the Explore-the-Universe program. "It's enlightening and empowering!"

We are very thankful to Jill for guiding the Victoria Centre through the modernization of our Constitution and Bylaws during her tenure as Council Secretary. For example, now we can legally announce and hold our meetings online. Her experience and knowledge of the process helped us avoid all manner of unpleasant unintended consequences.

Jill is off to Niagara-on-the Lake to watch the eclipse. We wish you clear skies!

Randy Enkin

President's Message

Usually Victoria Centre Presidents serve two years and then move on to something else. Right now, things are a little different. Randy Enkin has just wrapped up three years as President and shifted to other jobs in the centre, including editing SkyNews.

When I agreed to return to the Centre President's job after having served in that position from 2002 to 2004, I reflected on what has changed and not changed since those days when we managed to get by without smartphones and social media. Many members from that time are still active, some have left us, and at least one prominent member of today wasn't even born yet.

In 2002 I succeeded David Lee as President and two years later handed off to Scott Mair. Scott had come to Victoria in 2001 to open up the Centre of the Universe at the Dominion Astrophysical Observatory, which during those years operated under the wing of the National Research Council.

Two decades ago, we had our monthly meetings in the basement of the Elliott Building at UVic, but we adjourned to the lounge on the fourth floor for our library, and coffee and cookies, as we still do. Astro Cafes took place at Sandy Barta's place on Fridays and later in Bruno Quenneville's basement. Sid Sidhu hosted beginning observers at his home in Highlands, and Bill Almond led astro imaging meetings at his observatory in Colwood.

Our Star Parties took place at the Victoria Fish and Game Association just off the Malahat. Our annual banquets happened in November at the Gorge Vale Golf Club. Astronomy Days took place at the Royal BC Museum. Many Victoria Centre members attended the 2003 RASC General Assembly in Vancouver.

Mars made its closest passage to Earth in our lifetimes in August 2003. We drew big crowds to Cattle Point for viewing the Red Planet that week. Blaire Pellatt brought sidewalk astronomy to the streets of Victoria. We lost Ernie Pffanenschmidt and John Howell in 2003.

Our Centre celebrated its 90th birthday in 2004 with a cake that was cut by myself and two Honorary Presidents who have since left us, George Ball and Prof. John Climenhaga. A big centre project that year was relocating George's telescope dome and his equipment. Our Centre website had migrated the year before to a private ISP after having been hosted on the Victoria Freenet. Joe Carr succeeded David Lee as Webmaster.

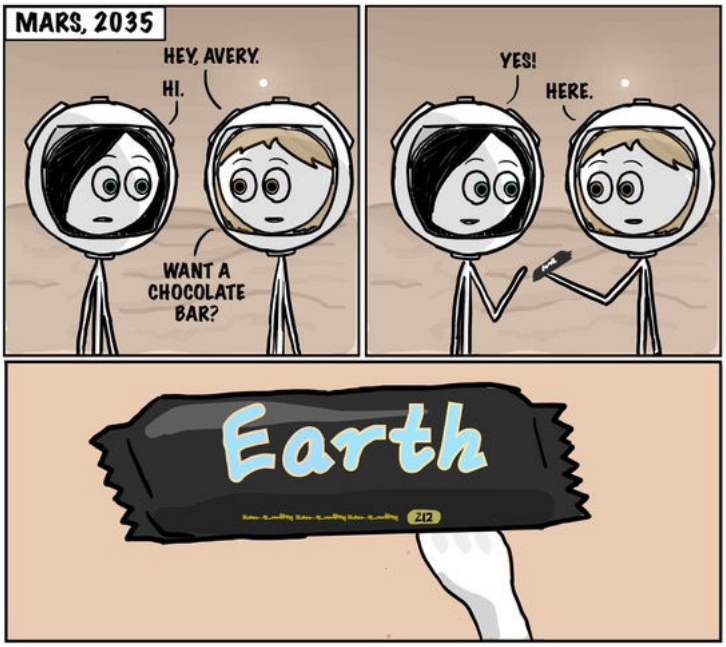
In those years, the most popular discussion topic in the Victoria Centre was our desire to build a centre observatory in a time when real estate was already pricey. Early in 2004, talk turned to action when our centre formed an Observing Site Committee chaired by Dave Bennett, along with Bruno Quenneville, David Lee, Sandy Barta, and myself as members.

Four years later, the efforts of our members, including many not on the original committee, bore fruit when the Victoria Centre Observatory opened -- with a big assist from the NRC – on Little Saanich Mountain near the DAO and the Centre of the Universe.

In a future message, I will discuss my involvement in the RASC in the two decades between 2004 and this spring, our Centre's 110 th anniversary. But in the meantime, my attention is shifting to a major celestial event that will take place on April 8.

Chris Gainor, President@Victoria.RASC.ca

George Ball, Prof. John Climenhaga, and Chris Gainor on the occasion of the 90th anniversary of the founding of the Victoria Centre, April 3, 2004.



Nathan Hellner-Mestelman

April Astro-Events (PDT)

Mon. Apr. 1	Last Quarter Moon NO ASTROCAFÉ for Easter Monday Statutory Holiday
Tue. Apr. 2	Fizeau and Foucault take the first photograph of the sun, 1845
Wed. Apr. 3	Happy Birthday RASC Victoria Centre!!! 110 Years since founding
Thu. Apr. 4	Apollo 6, 1968
Fri. Apr. 5	Mars 2.0° N of Moon
Sat. Apr. 6	Saturn 1.2° N of Moon
Sun. Apr. 7	Venus 0.4° S of Moon
Mon. Apr. 8	SOLAR ECLIPSE!!! Astrocafé, 19:00. Remote logins from Total Solar Eclipse viewers welcome!
Wed. Apr. 10	Before sunrise: Mars 0.4°S of Saturn (rising 13° South of East at 05:44) After sunset: Pleiades, crescent moon, Uranus, Jupiter, and Comet Pons-Brooks in a line
Thu. Apr. 11	Pleiades 0.4°N of Moon Apollo 13 liftoff, 1970
Fri. Apr. 12	Yuri Gagarin, first human in space, 1961
Sun. Apr. 14	Christiaan Huygens, 1629 Apollo 13 pericynthion, 1970
Mon. Apr. 15	First Quarter Moon. Astrocafé, 19:00
Tue. Apr. 16	Apollo 16 liftoff, 1972
Wed. Apr. 17	Apollo 13 splashdown, 1970
Sat. Apr. 20	Surveyor 3 lands on Moon, 1967
Sun. Apr. 21	Apollo 16, Orion, lands on the Moon, 1972
Mon. Apr. 22	Astrocafé, 19:00
Tue. Apr. 23	Full Moon, RASC-VC Council Meeting, 19:30
Wed. Apr. 24	Hubble Space Telescope launched, 1990
Thu. Apr. 25	Jim Peebles, 1935
Fri. Apr. 26	Shapley-Curtis debate on the nature of the “spiral nebulae”, 1920
Sat. Apr. 27	Karl Jansky first public announcement of discovery of radio waves from the center of our galaxy, starting the field of radio astronomy, 1930 Apollo 16, splashdown, 1972
Sun. Apr. 28	Jan Oort, 1900 Eugene Shoemaker, 1928
Mon. Apr. 29	Mars 0.04°S of Neptune Astrocafe, 19:00

Important Upcoming Events

Mon. Apr. 8	Total Eclipse of the Sun, across most of North America. Just a little 15% bite out of the sun visible in Victoria.
Sat. May 18	International Astronomy Day. 10:00 – 15:00 at the Royal BC Museum 19:30 – 23:00 at the Centre of the Universe
Fri. Aug. 9 to Sun. Aug. 11	Vancouver Island Star Party St. Stephen's Church, Saanichton
Sat.Aug.31 to Mon. Sep. 2	Saanich Fair

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1st Vice President	Dan Posey	vp@victoria.rasc.ca
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Treasurer	Doug Hardy	treasurer@victoria.rasc.ca
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