



# RASC SUDBURY CENTRE

*Up Above, The Heavens Await*



## **RASC SUDBURY CENTRE NEWSLETTER | Friday May 7th, 2021**

[www.sudburyastronomyclub.com](http://www.sudburyastronomyclub.com)

Facebook: [www.facebook.com/groups/RASCsudbury/](https://www.facebook.com/groups/RASCsudbury/)



### **Meeting Agenda, 7:00PM**

- 1. President's Address/Welcome - Alan Ward**
- 2. Sudbury RASC Newsletter Rejuvenated - Patrick Dodson**
- 3. Featured Presentation: Trevor Chandler (KW RASC) - The physiographic and paleo fluvial and lacustrine environments near the Perseverance Landing Site**
- 4. Break (10min)**
- 5. Alan Ward: What is the best telescope optical design which provides the sharpest star and planetary images possible that is both practical and economical to build?**
- 6. What's Up Doc?**
- 7. New Product Reviews**
- 8. Closing Comments/Open Discussion**

## Editor's Voice

Hi Everyone. This is Patrick. I've been tasked with taking over the Newsletter from Pete Marshall who has done a great job for many years, as well as being the outgoing Vice-President.

Being that it will be my job for the next few months, I've decided to give the newsletter a fresh new look, one that I hope you'll enjoy.

- Patrick Dodson

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## Centre News

This Space reserved for news directly impacting the Sudbury Centre, whether it be membership renewal notices.

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Understandably, the question on everyone's mind at this time is the future of the club, Doran Planetarium and its meetings, due to the situation of Laurentian's finances. You know doubt know by now that the University has cut a majority of its departments, including the Physics Department which the Doran Planetarium is part of. This has thrown a whole lot of questions into the equation. Number one being, will we still have access to the Planetarium when we emerge from the Pandemic and are able to have our meetings in public once again? This at the moment, we don't know. Paul-Emile Legault in talks with the office of the Dean of Science tells us that nothing has been decided for the planetarium program, which generates benefits to the University and the Community at little cost.

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In other news, some of our Members will remember the presentation by Randall Rosenfeld in 2019 about the Dorner Telescope Museum, launched through the generosity of Rudolph Dorner. A year ago, the Museum acquired a beautiful brass Reflecting Telescope that once belonged to amateur astronomer and medical pioneer Sir Frederick Banting! Unfortunately, the 6-inch objective mirror had been lost.

A team consisting of Peter Pekurar, Alan Ward, Patrick Dodson, and Steve Dodson have been working on two replacement mirrors, which we have polished and soon will be ready. One mirror will go into the scope, and one will serve as a replica for display.

**Note: You must be on the mailing list to receive the Zoom meeting invitation. The meeting links will not be posted in the newsletter. This is for security purposes. To request being on the mailing list, please contact us via our website.**

# Community Content

This space reserved for content sent in by members. It can be photos they've taken that they want featured, or articles they've written for the newsletter.

## Markarian's Chain

By Norm Hey

Spring is commonly referred to as Galaxy Season in astronomy circles, and for very good reason. Our spring sky in the northern hemisphere reveals an incredible number of galaxies of all shapes and sizes, visible because of their orientation in our sky away from the plane of the Milky Way, our own galaxy, and because many of them are part of the Virgo Supercluster. This is the area of the universe we live in, so even though it is incredibly distant, it is still our "neighborhood" so to speak.

Ok, so our Milky Way, the Andromeda galaxy and others such as M33 form the Local Group—think of it as "our street". The Local Group, though is only part of the Virgo Supercluster—more like "our city". Even more distant are other groups, further away and even larger in numbers—our province or even our continent, only part of the entire visible universe. Think "Hubble Deep Field" view.



This picture of the core area of the Virgo Supercluster features a visually interesting group of galaxies known as Markarian's Chain, named after an Austrian astronomer who first proposed in the '60s that they are physically associated. This image is about 2 degrees on a side, made as a mosaic of two adjacent frames stitched together. Each frame is the result of about 2 hours' exposure, so not particularly "deep" but enough to get reasonable detail and noise suppression. The Virgo Supercluster contains roughly 2000 galaxies. The annotated version of the image shows over 100 of them, but not all! Try counting them!

The chain runs from M84 and M86, surrounded by several other smaller galaxies, up through a number of galaxies of various types and sizes, highlighted by a pair of spirals known as "The Eyes", pretty well in the middle of the chain. I included the gigantic elliptical galaxy M87 in the lower left corner. M87 is home to a supermassive black hole at its core, the first black hole to be imaged. Associated with the SMBH is an immense and powerful jet projecting outward hundreds of lightyears and moving at relativistic speeds.

The brightest members of the Chain, M84, M86 and M87 are easily visible in binoculars in a dark sky. The rest of the Chain members can be readily seen in instruments 80mm or more in diameter from similar skies, with improved views at about 80-100x magnification for most viewers. It is fairly easy to find the central actors, M84 and M86, as they are at the midpoint of a visual line between Denebola, the Lion's tail and epsilon Virginis, the topmost star of the eastern "arm" of Virgo.

## RASC Education, Public Outreach & Observing News

<u>STAR-PARTY</u>	<u>LOCATION</u>	<u>DATES</u>	<u>STATUS</u>
Frozen Banana Star-Party	Mew Lake	May 6-9	Cancelled
New Moon in June		June 10-13	Cancelled*
Gateway to the Universe	Chapman's Field	July 8-11	Go-Ahead**
August Star-Party	Chapman's Field	Aug 5-8	Go-Ahead**
Half the Night	Halfway Lake Provincial Park	Aug 26-29	Tentatively On If Provincial Parks Open
Last Chance	Chapman's Field	Sept 2-5	Go-Ahead**

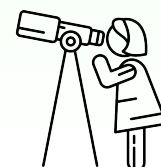
**\*Save the Date | \*\* Open to Astronomers Only, No Public Sessions**

### Updates

Regrettably, all star-parties are cancelled up til August due to COVID regulations, with a tentative Halfway Lake Starparty to happen, if the Provincial Parks are open by then. We ask you to Save the Date for New Moon in June, in the event that a small gathering happens at Burwash. Anyone wishing to participate in the Events at Chapman's Field **must** contact Bob & Lil Chapman ahead of time to insure that officially allowed numbers are not exceeded: **bobandlil14@gmail.com or 705-386-7087**

In other Star Party News, Science North would like to announce a series of Virtual Star-Parties. These Starparties will be held virtually on Facebook and Youtube, and will be held every Saturday until it is safe to meet in person. These are open to all members of the public, start at 7pm, do no exceed 1 hour, and the Science North staff welcome participation from club members to answer questions in the chat.

Visit <https://www.sciencenorth.ca/planetarium#starparties> for more information.



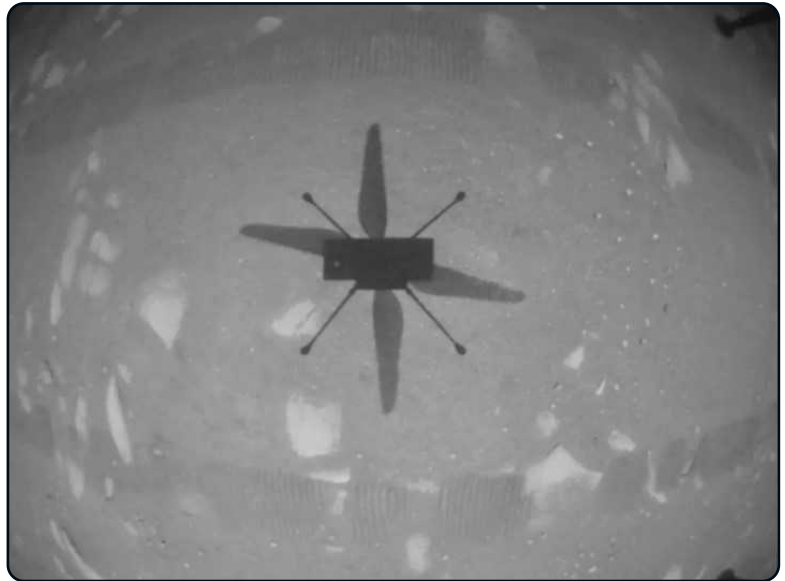
## Astronomy & Space News

News from around the Galaxy, such as new discoveries, and the latest news about Mars's rovers.

### Perseverance & Ingenuity

February 18th of this year marked another exciting milestone in the history of Mars Rovers, with Perseverance's successful landing. As **Dr. Raymond Francis** explained to us at our December meeting, there are many exciting technological and engineering advances that he's been proud to be part of. One of these was Perseverance's little buddy, Ingenuity, essentially a helicopter on Mars.

Understandably, many have been very excited because of the huge engineering implications of attempting flight in an alien atmosphere! It has been compared to the Wright Brother's flight attempts. The original date of testing came and went, and finally, on April 19th, to much celebrated success, Ingenuity flew, and armed



with a camera, it saw its shadow. Ingenuity flew on an alien planet and that is nothing short of remarkable. While rovers have crawled around, Ingenuity will give us a unique perspective, and we look forward to what it can teach us about the Red Planet.

And here's a fun fact: Ingenuity had to spin its rotor blades at very high speeds to take off, because the atmosphere at the surface of Mars is as thin as the atmosphere 20 miles up in Earth's Stratosphere, three times higher than commercial jets fly.

A future version of Ingenuity will explore Saturn's Moon Titan by air. Titan's Atmosphere is denser than Earth's, so the future aircraft's rotors will turn slowly!

### Timeout for a Joke!

Copernicus' parents might deserve some of the credit for his great discovery. Apparently at the age of twelve they said to him: "COPERNICUS, YOUNG MAN, WHEN ARE YOU GOING TO REALIZE THAT THE WORLD DOES NOT REVOLVE AROUND YOU."

# What's Up, Doc?

## Busy May Sky

By Steve Dodson

Even if you left your Telescope in the closet for the Month of May, you could still have a very busy month of Stargazing with no optical aid, or with Binoculars. That is because the Solar System is now arranging eye-catching Sky events almost every day!

**Mercury** is putting on its best evening performance of 2021 in May, and it is joined by the dazzling **Venus**, which came from around behind the **Sun** a month ago to lurk low on the western horizon. The **Crescent Moon** passes close to **Mercury** on the evening of **May 3**, and near **Mars** on **May 15**.

The Reddish **Mars** is still well up in the western sky in Gemini during late twilight all month.

The other ``Stars`` of last Summer`s ``Planet Show``, **Jupiter** and **Saturn**, rise in the early morning. If you are up before the **Sun** look Southeast.

It is also fascinating on warm, early Spring evenings to see the Winter Stars arrayed above the western horizon, and sinking out of sight, **Rigel** first!

You will hear about a **lunar eclipse** on the early morning of **May 26**: But don`t let it spoil your sleep - It is best in the Middle of the Pacific Ocean!  
(and not bad on the West Coast)



To see more, visit the club website or follow Steve on Twitter at **@StargazerSteveD** for daily updates.

# Member Spotlight

Who now? That's you! That's right. You might be featured in this spot some day. This spot will be for featuring Members.

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## Who is Stargazer Steve?

by Steve Dodson

A long time ago in far away classroom an alert grade 2 teacher ignited a lifetime passion by giving me a colourful booklet. It showed now iconic deep-sky scenes like the Pleiades, and the Orion Nebula. A fuse was lit in my mind! "Wow", I thought, "Everybody needs to SEE this and discover what's out there!"... So began a lifetime of sharing the joy of discovering the Universe under the then pristine Starry Skies over my own backyard.

5 years later I was into carborundum and making pitch laps on my mother's stove to fashion my own Telescope Mirror. My Six-inch Telescope saw first light months before Russia launched the Space Age with "Sputnik".

After earning Physics Degrees at the University of Ottawa, I taught high school Physics, Chemistry, Math, and Biology in Timmins, North Bay, and Sudbury. While in North Bay I founded an high school Astronomy Club whose member-students helped me build a planetarium, roof-top observatory, and a holographic lab. In an un-used classroom and the school shops, I built what was then the largest Mobile Telescope in Canada. I set up this 14-foot long Scope for observing at many locations around Ontario and New England, including Sudbury. The first public viewing of the inbound Halley's Comet in 1985 was through that Telescope at the Lake Laurentian Conservation Area!

When the "Sudbury Science Centre Study Team" was funded by INCO in 1980, I advocated for the inclusion of Astronomy, and proposed a comprehensive Solar Observatory Project to be achieved through the skills and energy coming together with the founding of the Sudbury Astronomy Club. Members like Ken Odaiskey and Alan Ward logged more than 2000 hours of effort, resulting in three spectacular live indoor displays of Solar Phenomena.



## Member Spotlight Cont'd

Other highlights of the collaboration between the Club and Science North which I led included regular Star Parties, Telescope-Making opportunities, and the "Search For Halley's Comet Flight" (More about this in a later Newsletter).

Countless conversations at Science North revealed how often parents had bad experiences buying inexpensive Telescopes for their children. They were frustrated by the difficulties of actually seeing anything with them! ( Good Scopes were too expensive - The excellent "Dobs" of today were still a dozen years off).

I realized I could solve that problem by making inexpensive Telescopes that really worked for families and beginners. I launched my telescope business in 1994. Some 2000 Scopes later there are "Stargazer Steve" Telescopes on every continent except Antarctica! They were even purchased by Observatories, Planetariums, and people in the de-facto Telescope Capital of the World - California!

But, I soon realized, there was an even better way to promote enjoyment and understanding of Telescopes. Provide opportunities for people to make their own! But too many people already had their telescope dreams de-railed by the time-consuming demands of mirror-making! I could change this by empowering anyone to open a Single Box, Build with the all-inclusive Kit in a day, and Enjoy using the Telescope the same night! The Deluxe Reflector Kit was born!


Alan Ward and Eldon Phillips have made many hundreds of finished mirrors for these Telescopes, so these Telescopes and Kits are truly Sudbury-Made. Though the Pandemic is imposing constraints, reading, observing, outreach, and star parties keep my days and nights full of Astronomy! In recent years there is a new focus for Alan and myself: The Dornier Telescope Museum, tasked with telling the many stories of Telescope-Making in Canada!





# Sponsors



 Please visit our friends of the North Bay Astronomy Club at <http://www.gatewaytotheuniverse.org/>

