



RASC
SUDBURY
CENTRE

Up Above, The Heavens Await



RASC SUDBURY CENTRE NEWSLETTER | Friday June 4th, 2021

www.sudburyastronomyclub.com

Facebook: www.facebook.com/groups/RASCsudbury/

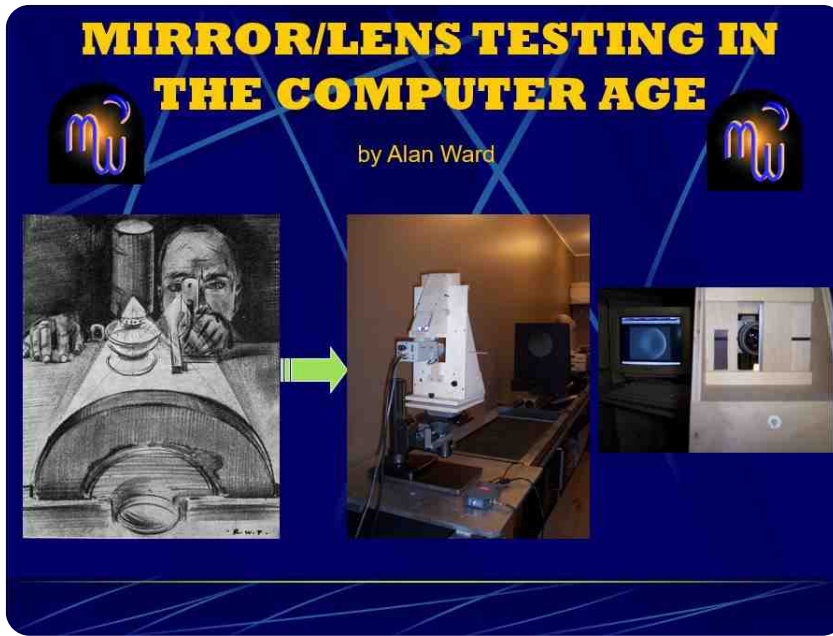


Meeting Agenda, 7:00PM

1. Sudbury RASC President Address – Alan Ward
2. “LIVE” Testing of Astronomical Optics in the Computer Age – Alan Ward (40min) - Description on the page below.
3. Show & Tell
4. Break (10min)
5. From the Archives
6. What's Up Doc?
7. Gearing Up for Solar Maximum: Part 1 – About H-Alpha Telescopes – Alan Ward (10min)
8. Closing Comments/News/Open Forum/Starlight Lounge

Featured Presentation - Alan Ward

"LIVE" Testing of Astronomical Optics in the Computer Age



For over 100 years amateur & professional telescope makers have relied on a simple but very effective Foucault Tester for evaluating the surface quality of lenses and mirrors. Although highly accurate in its ability to reveal minute imperfections, the Foucault Test requires the user be highly skilled in his/her ability to properly interpret the characteristic 'shadows' it produces. This has always posed a problem in that readings taken by the human eye are subjective and prone to misinterpretation. Due to these misinterpretations, the test has

been limited in its ability to produce repetitive measurements necessary for the production of high quality large aperture mirrors. Alan Ward will present "LIVE" the workings and advantages of his video / computerized testing system which produces consistent readings regardless of who is conducting the test.

Live Foucault Testing!
See it happen,
Friday June 4th @ 7PM

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

Centre News

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

Outreach still going well amid Pandemic

The world over has seen a growing interest in astronomy during Covid times, and it is a great activity suited well to the stay-at-home order. Just you and a telescope, and the eyes will travel.

On Friday May 14th, Linda Pulliah and Pauline Gordon put together an hour-long virtual presentation for a conference of Ontario Librarians. It was well-received with an attendance of more than 30 people.

And in Eclipse news: In addition to live stream coverage of the eclipse to timeanddate.com, we have recently been approached by a team of folk from NASA's Goddard Space Centre. They also want a live stream. Plans to provide them images are in the works, but not yet verified.

Solar System Walk Update by Norm Hey

The Solar System Walk Project is now in the hands of Science North. The Appropriate City of Greater Sudbury Departments have been consulted and are on-board with the project going ahead through the Bell Park Steering Committee. Support is also coming from Science North's Indigenous Advisory Committee.

Editor's Note: The Solar System Walk Project has been featured in the May/June issue of Skynews, with mentions of Alan Ward, Norm Hey and Rhett Mackend (of KW RASC). The Projects seems to have garnered quite a bit of support and interest! So, if you don't live in either Greater Sudbury or Kitchener, it may still grace your city soon.

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.

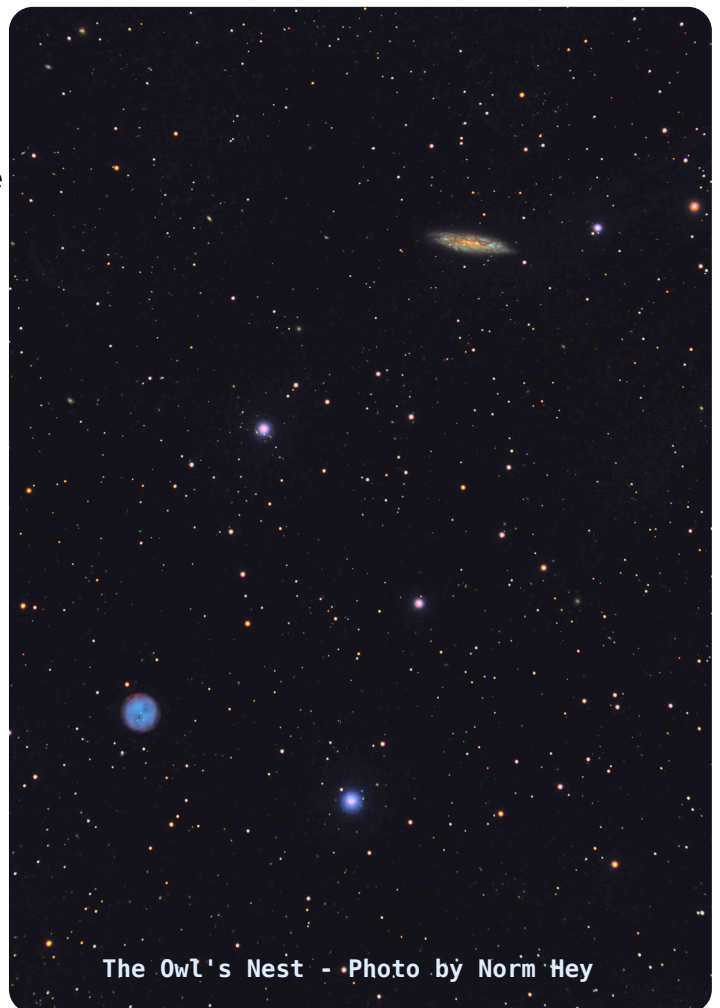
Community Content

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.

The Owl's Nest

By Norm Hey

I love images where there is such contrast. M97, the Owl, is a beautiful planetary nebula. It is about a light year in diameter and has three shells; the innermost one is tilted to our line of sight so it appears barrel-like and gives rise to the two "eyes" that gave the Earl of Rosse the impression of an owl, hence the name. The white dwarf at its centre is down to about half the mass of our Sun, having shed about 10 % of its mass in the nebular debris, which is expanding at about 40 km/sec. M108 on the other hand is a nearly edge-on barred spiral galaxy that is a bit further away--like 42 M light years further away and you'd better head out now because it is going away from us at 700 km/sec. It also has a supermassive black hole at its centre, like most galaxies; this one is 24 million solar masses. And then there are the dozens of really tiny, faint smudges that show up when you use PixInsight's AnnotateImage script--I love that sense of depth that I feel when I see that! The image is comprised of subframes taken over two nights to a total of 6 hours of exposure with just broadband imaging, no added OIII or H-Alpha.



Community Content Cont'd

Auroras

by Linda Pulliah

A question that frequently comes through our club website is, "Where and when can I see the Northern Lights?"

One simple answer is to suggest driving north until the bear all are white. But it's not that easy. So here's some info on where and when to witness aurora.

Solar activity has an effect on the Earth's atmosphere, and certain types of activity can excite ions of gases high in our sky, causing them to glow. The explanation is really far more complicated, but we'll keep it very simple for this posting. The sun's activity is monitored and there are ways to predict a stronger likelihood of aurora. When the Kp index is high, odds are somewhere aurora will be seen. They are most likely to be witnessed along or within the auroral circle, towards the north or south polar regions of the planet. A good place to learn about the auroral circle and the Kp index is www.spaceweather.com. There are other helpful sites; consider the free app 'astrospheric'.



There is no real season specific to aurora, though they seem to be somewhat more common around the time of the spring and autumn equinox. Mid-fall through to mid-spring the hours of darkness are greater than in the summer (for the northern hemisphere), whereas summer nights are short and only offer brief periods of real darkness.

In this part of Northern Ontario we do see aurora borealis. Most often they appear as dull grey or very pale greenish portions of the northern sky, frequently mistaken for light clouds. The display may last a few minutes, may last hours, and may be intermittent. When that pale green/grey hue is visible, mount your camera on a steady tripod and start photographing. The camera is capable of picking up colours not seen by the naked eye. There are a variety of types of aurora: picket fences, curtains, dancing waves, a brief dull glow, or magnificent with motion and colour, and more.

Where can they be seen? Go to a place with dark skies, outside of your city or town. The night sky will be darkest when the moon is not visible; check moon rise and set time: www.timeanddate.com. Look toward the north. No equipment is required, though a camera will 'see' the show better than your plain eyes. This is one circumstance where astronomers will put down their binoculars or walk away from their telescopes.

To witness a display of aurora is a gift, not witnessed by all people. I wish you good luck in pursuing them. Please share your experience with us, and include your photos.

RASC Education, Public Outreach & Observing News

STAR-PARTY	LOCATION	DATES	STATUS
Frozen Banana Star-Party	Mew Lake	May 6-9	Cancelled
New Moon in June	Grundy Lake PP/ Burwash	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**

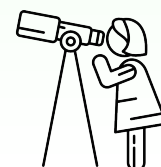
***Save the Date | ** Open to Astronomers Only, No Public Sessions**

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.

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.

WHEW...! - Disaster Postponed!

You've probably heard sometime in the past few years that the Andromeda Galaxy (M31) was predicted to crash into our own home Milky Way Galaxy in Four Billion Years! It now appears that we are "off the hook" - It won't happen until 5 ½ Billion Years from now!

The earlier prediction failed to take into account the influence of the major satellite galaxy in the neighborhood, the Large Magellanic Cloud!

(LMC). Astronomers can track the motions of the LMC and other features of the Milky Way's neighborhood by using distant quasars as a frame of reference. These other neighborhood features include the "Magellanic Stream" of stars pulled from the Small Magellanic Cloud by the LMC. The Large Magellanic Cloud stands revealed as a highly influential member of the 'Hood, "throwing its weight around" with consequences!

In fact the LMC will slow down and deflect the approach of Andromeda, so that the Milky Way will suffer a glancing blow a Billion and a half years farther into the future than originally predicted!

This was the conclusion of an article in June Sky and Telescope, pages 20 - 27.



Andromeda (M31) - Photo by Norm Hey

Timeout for a Joke!

Q: How many absolute relativists does it take to change a light bulb?

A: Two. One to hold the bulb and the other to rotate the universe.

Looking Up: June 2021

By Stargazer Steve/Steve Dodson

On June 10 at 5:29 AM the **Sun** will rise with a big bite of it blocked by the invisible **Moon!** The Event will be broadcast to the World by our own friends, astronomers from North Bay, Sudbury, and Science North! Their live feeds will be shown to all on the website < timeanddate.com > .

An hour earlier the **southeastern** Sky was dominated by the Gas Giants **Jupiter** and **Saturn**. See (May 31) below about how to use the Moon to confirm Saturn)

But the "Sky This Month" about is the Evening Sky too. That's where pleasant spring evenings will reveal three planets, the **Moon**, and an **Asteroid!** Below are details about **Mercury**, **Venus**, **Mars**, and the **Asteroid Vesta**. **Mercury**, however, is nightly descending further into the Sunset glow beneath **Venus** in the Northwest (use Binoculars 30 minutes after Sunset).

Magnitude 7 **Vesta** will be within a moon diameter, the **Galaxy M65** on the evening of **June 10**, and **M66** on **June 11!** On **June 17** it will appear 1.3 degrees above the 4th magnitude star **Iota Leonis**.

Other sky events will be detailed on < sudburyastronomyclub.com > the same day. Check frequently, or subscribe to alerts on Twitter (@stargazersteveD).

A few of the events are:

Morning of June 2: The Last Quarter Moon forms an arc with Jupiter and Saturn.

Evening of June 13: Mars is 3 degrees below the Crescent Moon (West), and the Beehive Cluster is 4 deg. to Moon`s upper left.

Evening of June 23: Mars is in the Beehive Cluster (M44)

Evening of June 29: Venus is in line with Castor and Pollux!



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.

Who is Norm Hey?

by Norm Hey

Newly married, Mandy and I were on our way from Kingston to our new home in Sudbury in late August, 1986. Driving up Highway 69, we tuned in the local CBC station and heard an announcement about a Star Party at Science North being held that night! We arrived at our apartment (an apartment on a lake, with a sauna and a dock!) and got a few things settled, but the movers weren't arriving with our big stuff until the next day. So we went to the Star Party!

There we met a few folks; two who would stay in my mind were Alan Ward and Steve Dodson. I remember having conversations with both of them, relating my interest in astronomy and finding out that Burwash was the local "hotspot dark spot" and being invited to join the Sudbury Astronomy Club.

Of course, life happened and like so many things, astronomy related pursuits and plans usually had to take a back seat to other obligations or plans. I think I may have attended one meeting of the club in the ensuing years, but I did continue to get out when I could to observe. We had a pair of 11x80 binoculars on a tripod and a very nice 8 inch Meade Schmidt-Cassegrain scope. Mandy always reminds me that it was paid for with her first cheque from OHIP! (We are both physicians, now retired; Mandy was a general practitioner involved primarily with Cancer Care Ontario's screening programs and a local aboriginal health centre and I practiced anesthesia and helped establish our Critical Care Medicine program.) Burwash indeed was about the only place I got out under the stars, as my logbook records attest. But one of the casualties of life was finding time to attend the SAC meetings.



Forward to 2021: since retiring a couple of years ago, I am now only at the mercy of the weather gods and my wife's plans as to whether or not I can use my expanded stable of instruments. I finally joined the Sudbury Astronomy Club, just in time to vote in favor of joining with RASC. Making a commitment to try to be more involved, I am currently the Secretary of our Centre.

I had been a member of RASC as a high school student, growing up in St Catharines and attending the Niagara Centre's occasional meetings and star parties. My high school had a

Member Spotlight Cont'd

telescope that no one ever seems to have used and I was allowed to bring it home and use it on occasion—a Criterion 4 1/4 inch reflector on a motorized equatorial mount—pretty sophisticated for the early 70s. I was learning about photography at the same time and still have my first attempts at star trails and afocal images of Saturn that I now call fuzzographs, as opposed to photographs! Self-taught on finding my way around the sky, I was fortunate to be mentored by Hugh Maclean, a very kind, gentle and soft-spoken man who had made his own 8 inch Newtonian and equatorial mount and who was generous in inviting me, a gangly teenager, to his backyard to spend some time seeing things with his scope. No go-to's or cell phone apps or even zero-power finders like Telrads or laser pointers—star hopping everywhere. He was a master. Before I moved on from St. Catharines, he moved but stayed in St Catharines; curiously, one of the most popular astronomers on YouTube now lives only a few hundred meters from Hugh's new address.

Since the beginning, I have been interested in adding astrophotography to my nighttime activity as well as visual observing. I did try film photography a few times, mostly unsuccessfully. Now, with digital technology as advanced as it is today, in the words of a very accomplished film astroimager, Pat Bedard, "it's so easy, everyone can do it!" And he's right—if I can do it, anyone can!

Having said that, you do have to put in some work, and maybe some money. How much of each is up to you, but you can get beautiful and pleasing images very easily and without spending thousands or even hundreds of dollars and a post-graduate education. I have been fortunate to be able to spend both time and money to pursue my interests in both visual and photographic astronomy.

I currently have a really nice 130 mm refractor, purchased in 1996. It replaced my 8 inch Meade (which is still in town but likely not used very much). Over 10 years ago, the Chinese-made reflectors brought big-aperture prices 'way down, and I bought a 12 inch Meade Dobsonian reflector. It was less than a third the cost of our original 8 inch! It really only gets used on dark-sky excursions, which unfortunately still remain relatively infrequent events, even since retirement, but it does give fantastic views of the sky. I splurged and bought an equatorial table for it, the Dobsonian equivalent of an equatorial mount. Instead of constantly nudging the scope to keep following, say, the Veil Nebula, I can just find it, with my Telrad (and not often needing a finder scope—thanks, Hugh!) and turn on the table and have it track it for up to an hour before having to reset. Of course, I don't look at one object for that long, but it is a marvelous thing to be able to find some splendid object at relatively low power, look at it, show it off to those around, then switch to another eyepiece for a better or different view and still have the jewel in the field of



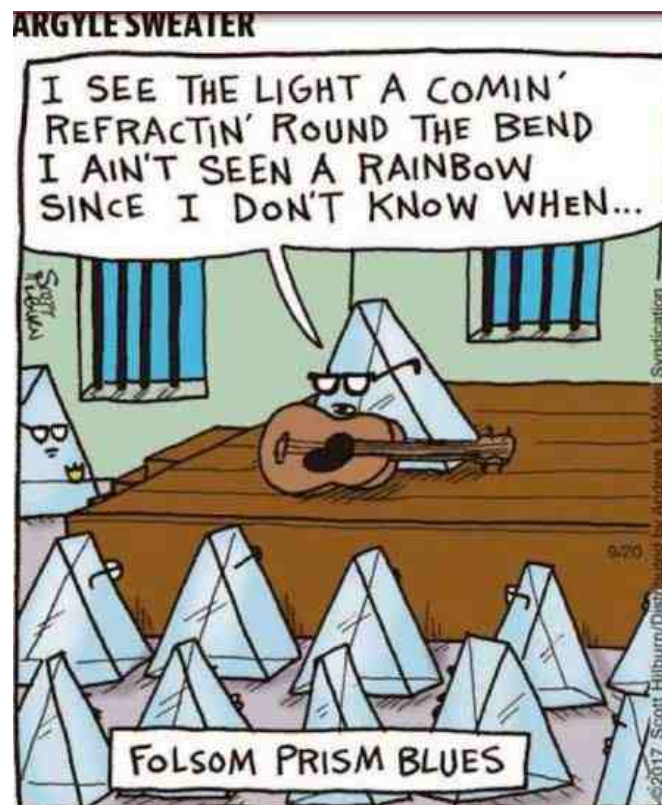
Member Spotlight Cont'd

view after the switch. Absolutely great for star parties, where "newbies" can see something beautiful and I don't have to worry about their losing it from the field of view in mere seconds.

I treated myself to a computerized go-to mount for my sixtieth birthday and embarked on a more serious attempt to get better at astroimaging. Two years ago, I was given a generous retirement gift fund from my medical colleagues, which I promptly put into a dedicated astrocamera. And now my latest acquisition, I'll call it my 65th birthday present to myself, is a 10 inch f/3.9 reflector that I found for sale by a Winnipegger who is going even bigger. It is a great deal and should be here by the time this newsletter gets out. Stay tuned for updates.

I hope that in a post-pandemic world, we will be able to enjoy gathering and sharing our love of the sky and our knowledge of things astronomical. I am hoping to keep learning even more about imaging and to share that with others who are interested, whether they are total novices or other experienced imagers. I jokingly use this as a signature line:

Top of the Bucket List: seeing a supernova in our galaxy. (I have already seen the Leafs win the Cup--not giving up on the supernova)



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

