Newsletter of the Royal Astronomical Society of Canada Winnipeg Centre January / February 2022

Winnicentrics

The Royal Astronomical Society of Canada - Winnipeg Centre

Upcoming Events

RASC Winnipeg Centre Monthly Meetings (via Zoom)

January 14, 2022
February 11, 2022

Members' Observing Nights

January 15, 2022
February 12, 2022

Oak Hammock Marsh Astronomy Night

Cancelled for telescopes

Regular meetings of the Winnipeg Centre are normally held in the Robert B. Schultz Lecture Theatre in St. John's College at the University of Manitoba, 92 Dysart Road. Free parking is available in the lot across the street. The theatre is on the lower (basement) floor of the College. Meetings are usually held on the second Friday of each month from 7 p.m. to 10 p.m. After the meetings, members who wish to do so usually retire for pizza and more conversation about astronomical subjects.

However, due to the current restrictions imposed by Manitoba Health for the COVID-19 Pandemic all meetings are being held via Zoom at 7:30 PM on regular meeting nights as above. Regular meetings will resume once restrictions are eliminated and our members can meet in safety. We miss you!

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YouTube https://bit.ly/2FrcZJZ

https://bit.ly/3iSmFed

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Gord Tulloch
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Winnicentrics is published six times or more each year by the Winnipeg Centre, RASC. Winnicentrics is produced by and for the members of the Winnipeg Centre.
Any opinions expressed are those of the author. Any questions or comments please email:
newsletter@winnipeg.rasc.ca
Or contact one of your Councillors above

Quick Notes

The Glenlea Observatory LX200 / Dome is OPEN. Please contact **observatory@winnipeg.rasc.ca** for current info, assistance, or to request training on the telescope and dome. Glenlea Warm Room and Pad are OPEN but please observe any Public Health requirements in effect.

Members Observing Nights are held the Saturday night after the Monthly meeting (weather permitting) at the observatory.

Member Meetings continue to be virtual due to COVID restrictions, please see your email or the RASC Winnipeg Forums for Zoom information.

Boston Pizza after-meeting social events continue to be virtual due to COVID restrictions, please see your email or the RASC Winnipeg Forums for Zoom information.

Visit our web site at:
www.winnipeg.rasc.ca
Visit our Facebook group at:
www.facebook.com/groups/rascwinnipeg

Editor's Message

By Gord Tulloch, RASC Winnipeg Centre

Once again the deep freeze is on and an amateur astronomer's thoughts trend towards planning for the spring versus getting outside with the telescope. Although some hardy adventurers do venture out in the cold, I'm afraid I'm made of weaker stuff.

As such it's a great time to plan for the Spring Star Party At St. Malo! The call for volunteers in November was very successful and we will have a great team of people ramping up to get going on this event in January. Keep an eye out for more information in the next newsletter!

Many many thanks to everyone involved in the Telescopes for Kids initiative! This year we ended up with 6 telescopes (a 102mm refractor donated by Paul Paradis, a 6" dob and a 70mm refractor donated by Michelle Paquin, a couple of 4.5" Starblast telescopes purchased with funds derived from a selling off some odds and ends donated by Kevin Kleiwer, and a 3" tabletop dob donated by yours truly locally used. After some great publicity from CTV and Global TV we got a total of 21 entries, many of them of excellent quality. The Judging Committee consisted of myself, Marie Tulloch, Judy Anderson, Russell Brown, Mark Irvine, and Ed Wright. After scoring the entries using a standard score sheet the winning entries were chosen. These entries will be posted to our web site on the Telescopes for Kids pad (winnipeg.rasc.ca/telescopes4kids) in early January and a newsletter article for the March / April issue. Well done Winnipeg Centre!

Here's hoping for clear skies and an early Spring!

GLP-TRAINED USERS AND SPOTTERS

The following Members have received training in the proper use of Green Laser Pointers and may apply to receive a permit to conduct an astronomy outreach session in accordance with applicable law and RASC policies respecting green laser pointers.

6 February 2021 (expires 5 February 2024)

Paul Paradis

9 August 2019 (Expires 8 August 2022)

Abdul al Manni	Patrick Curry	Kaeren Anderson	Kevin Davis	Ed Rajfur
SHR Bannister	Michael Fry	Michelle Boyce	Darren Hennig	Stan Runge
Sean Ceaser	LLoyel Hull	Ralph A. Croning	Paul Karlowsky	Bryan Stach
Clifford Levi	Dennis Lyons	Alan Macklem	Jim Mcdowal	Gordon Sharr
Krzysztof Keller	Daemon Nightshade	Gail Wise	Brian Renaud	Ed Wright

11 August 2019 (Expires 10 August 2022)

Jay Anderson	Judy Anderson

13 December 2019 (Expires 12 December 2022)

Trevor Bryant	Stephen Altstadt	Ed Johnson	Robin Clarke
Adelle Kennedy	Lucille Eustache	Timothy Kennedy	William McDonald
Kevin McGregor	Michelle Paquette		

In Memoriam: William Allan McDonald (Bill)

By Gord Tulloch, RASC Winnipeg Centre

It is with great sadness we recognize the passing of long time Centre member Bill McDonald. Bill was one of those members whose face you'd recognize at meetings and pass some time discussing Astronomy with without really realizing how central a role the Centre played in his life. One of the unfortunate things about this miserable pandemic is missing these conversations and making these human connections with wonderful people like Bill.

My wife Marie and I always admired his pretty Subaru we always managed to park beside at in-person meetings. During the 2020 RASC BBQ at St.Vital Park he said he missed the in person meetings at the U of M and seeing everyone. We were looking for him again at this year at the Glenlea BBQ but sadly he was not there.

Stan Runge contributes "Once I saw his picture I easily remembered him from seeing him at our club meetings. I do believe he attended our meetings quite regularly and can remember him slowly moving up and down the stairs in the auditorium. He was not active on Council, nor did he give any lectures. But rather was one of our regular members who enjoyed the fascinating, ever changing understanding of the cosmos. Basically like myself, came to the meetings to appreciate and share our awe of all that surrounds us. Thank you Bill for considering us as an extension of your family and generously donating to our Centre."

Silvia Graca remembers "Bill was a delight to talk with, he was very enthusiastic about astronomy and attended many monthly meetings, even during cold winter storms, he would walk in with his cane, didn't look easy but always a smile on his face and it was a delight to have a chat and catch up over coffee break. Bill was a part of our RASC family and will be greatly missed."

"The news of Bill is indeed sad. He and I shared a few conversations at the meeting breaks over the state of modern science and the more general subject of promoting science. It would usually end with both of us lamenting the state of things, but he inevitably would conclude on a happy and optimistic note. That was a little surprising, but over time it became clear that that was just his way of approaching things. He was concerned with the big picture and yet approached it with a calculating perspective. It's not that common these days, but good to see. We could use more of it." Says Gerry Smerchanski.

Past-President Brenden Petracek remembers "Bill was warm, friendly and amazingly pleasant to chat with. Quite often after a presentation I had given, he would come over to discuss it. And we're not talking pleasantries or even just asking questions. It was real, meaningful, and thoughtful conversation that would often have me reflecting on the subject in a way I hadn't originally. As Gerry said, he did indeed have a rare big picture view of things, which certainly had an impact on me and how I present astronomy material to others now. In retrospect, I think that may have actually been intentional on his part. He'll be missed."

From Bill's obituary in the Free Press:

Bill was born July 10, 1943, in Winnipeg, MB. He is survived by his brother James (Greta), nephew Colin (Lauren), niece Danica (David), and their families in Illinois, USA. Bill was a learned and compassionate brother, cousin, uncle, and friend, who throughout his adult life, maintained both an industrious career and affinity for exploration. He earned his B.Sc. from the University of Manitoba in 1969. Bill worked from 1969 to 2002 at Great-West Life Assurance Company and LGM Graphics, where he estimated costs, oversaw financial processes, and expanded his education. In retirement, he kept active, in all senses of the word, taking daily walks, no matter how cold, in various parks around Winnipeg; morning swims from late spring through summer; and exercising body and mind with such frequent visits to the library that he joked about being barred for over-borrowing. Beyond his love of reading, Bill was an avid astronomer, as conversant in the novels of Virginia Woolf as the history of nuclear physics and celestial events. He was a proud member of the Royal Astronomical Society of Canada and enjoyed participating in educational outreach programs, helping to make STEM subjects more widely accessible. He served more than 13 years on his condominium's Board of Directors, putting his financial acumen to especially good use as Board Treasurer. Though Bill often included awe-inspiring quotes from literary, philosophical, and even anthropological luminaries in his correspondence, his own insights and spirit of discovery will most assuredly live on in the hearts of many. As Bill once said, "Find someone to encourage. It will lift you up as well."

Rest in Peace, Bill, we miss you!

Figure 1 - Bryan Stach - Thanks for everyone who came out on Member's Observing Night on Saturday December 11, 2021. It was nice to meet two new members Chris and Jennifer. Here is the picture of that night.

Winnipeg Centre Member Jay Anderson has an Asteroid Named in his Honour

By Gord Tulloch, RASC Winnipeg Centre

On December 20, 2021, new asteroid names were announced In the International Astronomical Union (IAU) Working Group for Small Body Nomenclature (WGSBN) (link) which included the following entry:

> *(10083) Gordonanderson[1] = 1990 QE2*
>
> *Discovery: 1990-08-22 / H. E. Holt / Palomar / 675*
>
> *Gordon "Jay" Anderson (b. 1947) is a former meteorologist and an eclipsophile. He investigates weather prospects for total solar eclipses, authored books on meteorology and astronomy, and served as Editor of the Journal of the Royal Astronomical Society of Canada for 10 years. He chaired the host committee of three RASC General Assembly events.*

Note that it is based on his actual given name of Gordon, because there already was an asteroid named Jayanderson.

10083 1990 QE2 is a large rock that orbits the Sun mainly between the orbits of Mars and Jupiter. Its name and number is allocated to it by the Minor Planet Center (MPC), part of the Smithsonian Astrophysical Observatory. The absolute magnitude of the object is 14.12 The Longitude of Ascending Node of the object is 335.16906 degrees. The mean anomoly is 20.91156, is the angular distance of the planet from the perihelion or aphelion. The orbital inclination, the angle at which 1990 QE2 orbits in relation to the orbital plane is 5.01737 degrees. The orbital eccentricity is 0.1599369, it is the degree at which 1990 QE2 orbits close to a circular (0) orbit as opposed to an elliptical (1) orbit.

Other Winnipeg Centre connected asteroid names are as follows (list provided by Scott Young):

414026 Bochonko (former U of M astronomy prof Richard Bochonko)
12423 Slotin (Winnipeg-born physicist on the Manhattan project)
5953 Shelton (Ian Shelton, discoverer of SN1987A)
14937 Thirsk (Canadian Astronaut Bob Thirsk went to high school in Winnipeg)
18242 Peebles (Winnipeg-born Nobel Prize recipient Jim Peebles)
22475 Stanrunge (long time and current Winnipeg Centre member)
30840 Jackalice (for Jack and Alice Newton, who were a big part of Winnipeg Centre in the 1960s and 1970s)
73704 Hladiuk (Don Hladiuk, former Winnipeg Centre member)
78434 Dyer (Alan Dyer, former Manitoba Planetarium staff member)

[1] Note that it is based on his actual given name of Gordon, because there already was an asteroid named Jayanderson.

Telescopes For Kids 2021 Wrap-Up

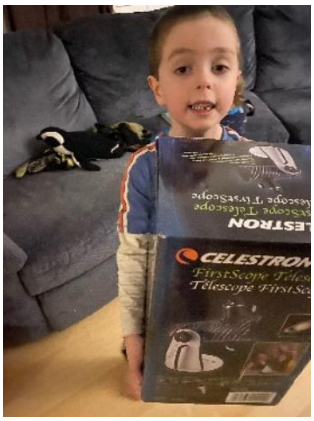
By Gord Tulloch, RASC Winnipeg Centre

Once again Telescopes for Kids has wrapped up for another year, awarding 6 telescopes after receiving 21 entries, double the responses of last year and triple the number of telescopes given away.

Thanks to Judy Anderson, Russell, Mark Irvine, Marie Tulloch and Ed Wright for participating in he Judging Committee and particularly Judy, Jay, Mark, and Stan Runge for helping to deliver telescopes.

Where possible telescopes were accompanied by books and accessories donated by RASC members. All recipients will also get RASC Youth Memberships to Winnipeg Centre.

Winning entries were:



Xander Kennedy (6) won a 3" Celestron Firstscope through a submission by his Mom. While this is normally not a valid entry the Judging Committee judged that as a young man with Autism who show an amazing affinity for astronomy we were happy to give him a small telescope like the Celestron to foster his interest. His entry will be posted on the web site on the Telescopes4Kids page after Christmas. When Gord delivered the telescope Xander was super excited and wanted to take it outside right away (sadly, cloudy and cold) but he's rarin' to go!

Luxton Galbraith (10) won a 4.5" StarBlast, a Peterson's Field Guide and a Celestron Zoom eyepiece for his video entry describing his love for astronomy but his frustration at trying to maneuver his Dad's (Centre member Kyle) 10" telescope. You can view his entry at:

https://youtu.be/0QTKW58X1YU

Sameeha Ansari (12) won a 4.5" StarBlast and a Celestron Zoom eyepiece for her video entry on "Why I Love Astronomy and Would Like to Have a Telescope". You can view her entry at:

https://youtu.be/5GvcRhSmMrQ

Telescopes For Kids 2021 Wrap-Up (cont.)

Lenore Williams (8) won a Meade 50mm refractor for her video describing her love for astronomy and how she would use a telescope.

https://youtu.be/pIpO4jVPVEc

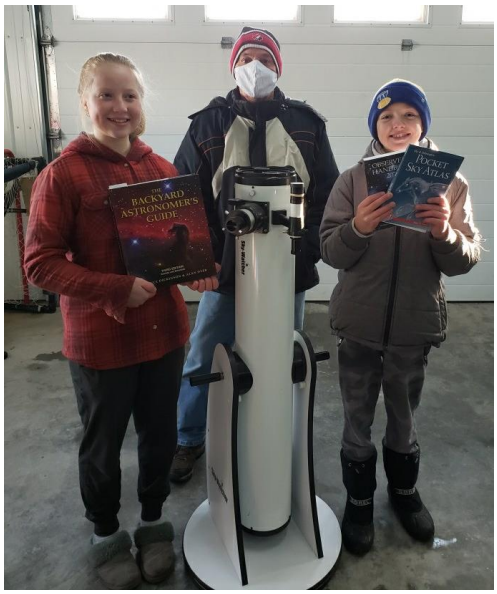
Judy described delivery of the scope "A delightful visit to some who wants to be an astronomer! The whole family was there for the delivery, and Lenore was surprised to bring speechless! She has long since stopped wearing pink and laying with dolls (her younger sister's preferences), and was very keen to try out the scope on the moon."

Mugisha Mhamaba (12) won a Celestron 102mm refractor on an altaz mount for his rap song recording that included the lyrics:

Isn't it wonderful to look up at the sky
On a clear night where the moon
And the stars shining bright
Meteor, galaxy, shooting firefly
I see it all, I see it all
From a distance I observe
Everything is preserved
I could move with the zoom
When I move with the swag
All that I'm missing is a telescope!

Pictured is Dad Radja receiving the telescope and books for Christmas morning!

Sarah (14) and Sam Tyluk (12) won a Skywatcher 6" Dobsonian and Celestron Zoom eyepiece for her essay about her brother Sam's struggles with his health, his love for Astronomy, and what they would do with a telescope, accompanied by a drawing by Sam (Picture not available)



Many thanks to our donors for donating not only telescopes (Paul Paradis, Michelle Paquette, Gord Tulloch) but also donations of items for sale (Kevin Kleiwer) as well as financial donations on our GoFundMe web site. Thanks for all your support, we look forward to next year! Start looking for those telescopes to donate!

An Eclipse Adventure, December 4, 2021

By Judy & Jay Anderson, RASC Winnipeg Centre

Jay watching the ice of Antarctica, and an iceberg

After months of wondering if COVID would prevent our trip, the paperwork was finished, two tests were negative, and we were finally inside a "bubble" of travelers heading to board the National Geographic Lindblad ship, *Endurance* for Antarctica! Getting to the ship was a bit of a challenge: Winnipeg to Ushuaia via Toronto, Miami, and Santiago. The diversion to Santiago for crew change meant we were able to view the lunar eclipse, as out track took us into more westerly longitudes.

Once onboard, after exploring the ship and getting the safety briefing with lifejackets, we met our fellow travelers for dinner, and then let waves rock us to sleep as we headed out into the Drake Passage on the way to Antarctica. That one night was the most turbulent at sea of the whole trip; unstowed objects woke us up a few times as they slid off the desk onto the floor. For a day or two, the swell and waves made walking interesting until we got "sea legs." Jay was the expedition meteorologist and eclipse expert for a small group of 16 people travelling with TravelQuestTours, among the 101 passengers.

After *Endurance* crossed the Passage, we were greeted by the landscapes of the Antarctic Peninsula dominated by snow and ice; the ship navigated around snow-capped islands and mountain ranges and into fjords that just ended where massive glaciers abutted the ocean. After a day at sea, mainland Antarctica greeted us with somber gray skies and brooding coastal mountains. Suddenly, the day turned sunny, a harbinger of the next three weeks of our travels. Right through the whole trip, the weather was

better than usual according to the crew of seasoned experts onboard: ship's officers, naturalists, geologists, birders, marine biologists, and National Geographic photographers.

An Eclipse Adventure (cont.)

A full roster of lectures gave terrific opportunities to learn about regional plate tectonics, wildlife of all types (birds, mammals including whales, penguins (special birds), krill) and the sealing, whaling, and fishing industries that have used them to advantage. With multiple stops, we met Chinstrap and Gentoo penguins right away, first visible by the brown deposits of you-know-what on the snow, as they set up nesting colonies, bred, and waited for eggs to hatch. Basking seals intermixed with huge vertebrae of long-ago whales scattered about the landscape; often it was hard to stay the proscribed 5-metre distance from wildlife. Penguins and especially the territorial Antarctic fur seals definitely had the right of way as we hiked and reveled in spectacular vistas of pancake ice, glaciers tumbling to the sea, colossal icebergs, and misty mountaintops. At our second landing, brilliant sunshine, a broad hole in the ozone layer, and the pure white landscape gave us a brutal lesson in the need to apply a generous dose of sunscreen!

King penguins and the Endurance

Six days into the voyage, we reached Point Wild on Elephant Island, the location where Shackleton's crew camped under two lifeboats while he and five others sailed in a third life boat of the original *Endurance* that had been stuck in the ice over winter and smashed to kindling. The third life boat with Shackleton himself, famously reached South Georgia, hiked overland, and organized a rescue mission for the rest of his crew. Our experience was a far cry from Shackleton's, as we sailed safely down the

An Eclipse Adventure (cont.)

eastern side of the Antarctic peninsula toward the Weddell Sea: a fascinating display of icebergs got more and more fantastical, from huge flat-topped, tabular, ice islands to craggy carved formations of that spanned the palette of translucent blues. As we reached the Weddell ice sheet, the ship carved a berth right into the ice and we got out for a hike and photos that featured Adélie penguins "skating" on their bellies across the landscape, and huge Crabeater seals lolling in the sunshine. A lone Emperor penguin on the ice edge bid us farewell and slipped into the sea as the ship headed northeast toward the South Orkney Islands and then the South Georgia Islands.

Fur seals including newborn pups on the beach at Stromness, South Georgia Island

South Georgia is a place we'd not even envisioned, let alone developed any expectations of what might be there. After 13 different expeditions onto land via Zodiac transfer and a few Zodiac tours at the water's edge, we recommend that island on its own, as a destination! We saw not hundreds of penguins, but *hundreds of thousands*! Youngsters and adult penguins, and thousands of Antarctic Fur and Elephant seals, were present in massive colonies on the flat gravel beaches where glaciers had left sloping valleys, and on steep cliff faces (where Macaroni and Rockhopper penguins choose to roost). Old whaling settlements at Grytviken (population 8) and Stromness (where Shackleton found rescue; seal population 8000), provided a touch of "civilization" marked by abandoned, rusting machinery and buildings that sprawled along the beach. We mailed a few postcards from Grytviken that are still in transit as of Dec 23. There were beautiful, huge albatrosses (four kinds!) and other birds, often in huge colonies, nesting on high outcrops and in the tussac grass that grows in huge tussocks that challenge walking (especially dangling cameras). The very few photos shown here represent a very large

An Eclipse Adventure (cont.)

accumulation (sorry Jay) of digital images. In warmer areas, nesting had proceeded further: eggs were incubating on King penguin feet or hatchlings were keeping warm under Gentoo and Rockhopper parents and peeking out for meals in really cute stretches up to feed from a parent's gullet. Later, on the Falklands, there were also Magellanic penguins that nest in burrows, and spectacular fire-engine red Military meadowlarks. Okay, too much bird stuff for RASC! Now to the astronomy part of this story.

After leaving South Georgia, we headed toward the Falkland Islands—with one stop along the way: a solar eclipse. Jay had been following satellite images daily, doing some "ground proofing" to compare what he saw outside with images in each bandwidth. The eclipse was to occur right after sunrise, so only the infrared images would be available in the nighttime hours beforehand. After his presentation, and a few discussions on the bridge with the captain and expedition leader, Jay suggested that the ship divert a little farther north to stay well north of a storm system passing to the south. On the day before the eclipse, we distributed filter material to our shipmates and generally helped people plan photography or observations. There were a lot of questions and considerable learning on the fly, as many had not known there would be an eclipse until they came onboard.

Crescent with pixelated upper limb and a "foot" mirage on the horizon

Then, it was December 4th—the 4 am wake-up call was a relief as we had been awake since 2! As we opened the curtains, it was clear—phew!! Once on deck, we set up on the port side pointing toward a brightening horizon, but there was a cloud bank brewing. As we waited for sunrise, the clouds dropped even toward the horizon; the ship was sailing into a looming weather disturbance. At the last moment, Jay insisted that the ship to be turned around 180˚, so we might outrun the impending overcast sky. And it was so!

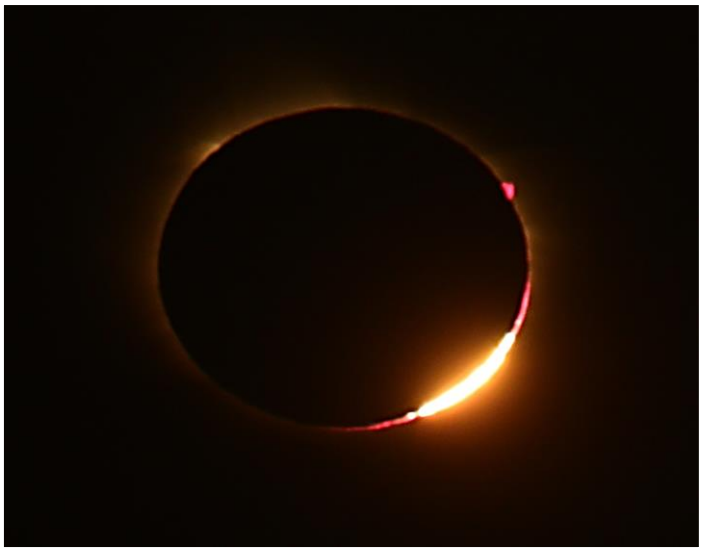
A rapid move by onlookers over to the opposite (starboard) side was not too disruptive, given that shipboard observing pretty much precluded using tripods, and no-one had brought a telescope. People were spread over three decks and all gazed southeast toward the sunrise. And there it was, a little ahead of the anticipated time of sunrise; refraction does some fascinating things to the timing of sunrise!! An impossibly bright spot emerged out of the sea and elongated oddly into a thin crescent—maybe 85% of the Sun was covered. We saw a green flash and a pixelated upper rim, as the crescent pulled up from the horizon, and right at the bottom of the arc, showed a "lazy foot" seemingly resting on the ocean. With the sea haze and low sun angle, eclipse filters were too dark to see anything—something that never happens with a higher sun unless there is a cloud layer for protection.

An Eclipse Adventure (cont.)

Thinning crescent near 2nd contact, 1 solar diameter above horizon

The crescent rapidly thinned toward second contact, with a corona already visible through the 600mm lens while there was still a thin, bright arc. One person reported a brief few seconds of shadow bands but we didn't see them. Then the diamond ring and a few Baily's beads appeared along with two bright scarlet prominences, the chromosphere, and a spectacular orange corona. It was deep orangey red, not the usual opalescent white we've seen in previous eclipses, and the typical long plumes were essentially missing with so much attenuation of light near the horizon.

About 10 seconds later, two more prominences appeared on the other side of the corona, so they were at 10:30 and 2, and 7:30 and 4:30 on the "clock". The corona stayed dark orange (brighter toward the limb of the Moon) with a tinge of green between 10 and 12 on the clock appearing in the camera, and short polar brushes top and bottom. All too quickly, only 1 minute and 19 seconds later, the third-contact diamond came into view, again with a few beads (one somewhat green) and flanking bright areas of deep red chromosphere. We weren't on the eclipse centre line, so the diamonds weren't quite opposite one another. After third contact, the Sun was finally too bright to view by eye, so Judy put the eclipse filter on the camera. She has a few images of a thin crescent, but amazingly, it was rapidly swallowed by the lowering clouds. This was a short eclipse to start with, and it was further truncated by the Sun's position between the sea and the clouds — an opening only three solar diameters wide. We were very lucky to see it, and fortunate to have benefit of Jay's expertise with satellite imagery and eclipse climatology. The *Endurance* was one of seven cruises in the area for the eclipse; more than one had been cancelled, even last minute, due to COVID. And we were the only ship to see the eclipse. Other successes were had by those on Union Glacier in Antarctica itself, and in two planes chartered to chase down the path. Luck and planning made a lovely view of this early morning eclipse!



Oval Sun with diamond, chromosphere, corona and prominences at 2nd contact

An Eclipse Adventure (cont.)

Eclipse photography was tricky: a moving ship, waves, and hopes of imaging chromosphere, diamonds, and both inner and outer corona pushed Judy to select a 7-exposure train from 1/6th to 1/8000th of a second with both jpg and RAW imaging. She used 800 ISO and feels she should have made it faster, but in the end, she got a good selection of exposures.

Inner corona, prominences & chromosphere

None were able to capture any long coronal streamers (it was too dark and orange, too). However, you can make out the beginnings of two "helmet plumes" close to the Sun on the north side and one on the south side of the sun (at 10 and 8 o'clock, and 3 o'clock, respectively) where the inner corona loops around the prominences and starts to extend outward. Usually on land with the Sun higher in the sky, the plume-like streamers of corona are visible 2-4 solar diameters or more, outward, so it was definitely a "cropped" corona in the images.

Diamond at 3rd contact, just below the clouds

Final crescent

Many people got fabulous shots with cell phones, alone (Jay wants a new one); a few photographers also captured good images, especially with fast ISO settings, but no-one had anticipated such a dark corona and the crazy range of light levels. Happily, we both took time to really watch the spectacle as it unfolded — it was beautiful and so fleeting!

This eclipse was unique in our experience, now 23 totals over 42 years. The Sun had appeared like an eye in the sky this time: an oblong orange-coronal iris with a central black pupil—the new Moon. That narrow gap between wide spans of cloud and horizon — like upper and lower eyelids, soon to close — made the view more remarkable, even without the added compression of the Sun from refraction. Jay had wanted to see a sunrise eclipse for years, and the experience we had in the open sea, was marvellous!

When you see us outside this winter, Judy will be wearing her bright orange Antarctic jacket, and remembering the orange solar corona we saw on our 2021 eclipse adventure. We won't forget this one!

Call for Volunteers – Meetings Coordinator, Volunteer Coordinator, and Webmaster

Our organization exists to give amateur astronomers a place to share learning, expertise, and enjoyment of astronomy, and to give the public a better appreciation and understanding of astronomy. The strategic planning process in early 2021 identified three key roles that are important to help our organization mature and better satisfy these needs – **Meetings Coordinator**, **Volunteer Coordinator** and **Webmaster**.

We are seeking interested members to volunteer for these three roles. Each position is described below. We encourage you to apply if you are interested in helping support the growth of our organization and feel that you have some of the appropriate knowledge and skills. Volunteers will be given time to grow into these positions with help from council. The application questionnaire is here for you >> https://forms.gle/WBfq9fDNZagyJb71A

Meetings Coordinator

The Meetings Coordinator will be an important component of our goal to expand programming and attract more remote users (non-members). Specific responsibilities for this role include:

- Plan, prepare, and coordinate presenters for our monthly member meetings including presenters for our standard agenda items – "What's Up", "What's New", and the main presentation. (All Council members are engaged to attract and enlist main presenters for our meetings.)
- Finalize the agenda for each monthly meeting.
- Track our progress in planning the agenda of regular meetings.
- Facilitate our return to in-person meetings at the U of M campus while maintaining the technology to access remote speakers with Zoom/FB/YouTube streaming in real time.
- Plan the ongoing meeting content strategy to continuously improve the value provided by our monthly meetings including the mix of topics and modes of presentation (e.g., pre-meeting workshops when in-person).

Volunteer Coordinator

The Volunteer Coordinator will facilitate the recognition and rewarding of volunteers thereby improving the recruitment and retention of our base of volunteers. Specific responsibilities for this role include:

- Organize and track planned requirements and recruitment of volunteers
- Consult with Council to design a volunteer award-recognition program
- Track the activities of the members who volunteer
- Organize recognition awards for volunteers
- Communicate to members about the state of membership engagement in volunteering
- With help from council, develop a management tool that will facilitate recruitment of volunteers
- Manage a database of volunteers

Recruiting [cont.]

Webmaster

The Webmaster will facilitate the ongoing management and expansion of our website (based on WordPress) in coordination with Council, Committees, and the Membership Coordinator. As much of the website has been built, this role has primarily become one where content is updated rather than requiring the webmaster to have extensive technical expertise. Specific responsibilities for this role include:

- Add and update content on the web site as requested by Council and Committees
- Consult with Council to expand or improve various aspects of the website
- Assist the Membership Coordinator in adding and removing users from the website
- Keep track of annual software renewal requirements and inform Council when they are coming up
- Moderate the website Forums

RASC Winnipeg Centre Certificate Recipients

The Royal Astronomical Society has many observing programs for which you can receive a certificate and, in some cases, a commemorative pin! Check out the programs at:

https://www.rasc.ca/certificate-programs

Explore the Universe

Gail Wise, Mike Stephens, Janet Pollock, Janice Low, F. Lindsay Price, Ralph Croning, Terra Jentsch, Corey LeBerge, Corrine Robinson, Kevin Dromereski, Robin Clarke

Explore the Moon - Telescopic

Corrine Robinson, Kevin Dromereski, Margaret Childs

Messier Catalogue

Grant Gussie, Kevin Black, Richard Turenne, John Smith, Alan Sherlock, Timothy Zacharias, Gail Wise, Raymond Andrejowich, Stan Runge, Bernie Plett, Michael Karakas, Sean Ceaser, Gilbert Raineault

Finest NGC

Kevin Black, Gail Wise, Stan Runge, Mike Stephens, Gilbert Raineault, Sean Ceaser

Isabel Williamson Lunar

Mike Stephens

Herschel 400

Gilbert Raineault, Mike Stephens

Astroimaging - Deep Sky

Sheila Wiwchar

Astroimaging - Wide Field

Sheila Wiwchar

Dr. Tapping's Corner:

By Ken Tapping, NRC-CNRC

What Happened To Uranus?

12th January, 2021

Photograph of Uranus in true colour (by Voyager 2 in 1986) (source: Wikipedia

A good analogy for the Solar System is several marbles rolling in concentric circles around a plate, with the Sun in the centre. A better analogy is several spinning tops moving in concentric circles around the plate, with their individual spinning axes a little bit off vertical. For example, the Earth is spinning with its axis about 23 degrees off vertical. All this fits our theories as to how the Solar System and the planets formed, with one very conspicuous exception, Uranus. That planet is leaning at an angle of 98 degrees, almost lying on its side, so that it is "rolling around on the plate". How did that happen?

Uranus is the 7th planet out from the Sun, after Mercury, Venus, Earth, Mars, Jupiter and Saturn. Along with Jupiter, Saturn and Neptune, Uranus planet is a "gas giant", meaning it consists of a small rocky or icy core surrounded by an extremely thick atmosphere. Its mean density is about is around 1.27 grams per cubic centimetre, compared with our Earth's 5.5 grams per cubic centimetre. Uranus has to be mostly gas. Being further from the Sun, Uranus and Neptune are significantly colder than Jupiter and Saturn, and because of the relatively high concentrations of methane in their atmospheres, the planets look blue. This sets them apart from Jupiter and Saturn, which appear tan-coloured, and they are often referred to as ice giants, as opposed to gas giants.

Uranus was discovered by William Herschel in 1781, although it turns out others had seen it earlier, but had not taken particular note of it. The planet orbits the Sun at 19.2 times the distance between the Earth and Sun, and takes 84 years to complete a single trip around the Sun. Uranus has a diameter of about 50,000 km, which is about four times the diameter of our world. A "day" on Uranus is about 17 hours. Since the world is larger than ours, a point on its equator would be moving with the planet's rotation at a speed of around 9,000 km/h, compared with about 1600 km/h for a point on our planet's surface. Uranus formed around 4.5 billion years ago, along with all the other bodies in the Solar System, so how could it have come to be so different. In addition, what ever did happen to it left it in a nice tidy orbit between Saturn and Neptune, moving in the same plane as the other planets. A widely shared theory is that during its youth, when all the planets were forming, it was involved in a serious collision.

The formation of the planets involved the collisions and sticking together of lots of bits of grit, dust and ice in a collapsing cosmic cloud. However, according to all the computer simulations and observational evidence, the cloud formed into a disc, and then big lumps formed, moving in almost circular paths in the disc, and sweeping up any material that got too close. However, the big guys generally kept to their lanes and did not get too close to one another. However, it looks as though on at least two occasions in the early youth of the

Dr. Tapping's Corner (Cont.)

Solar System, big lumps of material did collide. One of the collisions involved an object the size of Mars hitting what would become the Earth. A great cloud of debris was blasted off, and eventually settled down to form the Moon. This left an unusual situation in the Solar System, where a planet has a Moon a good fraction of the size of the planet it orbits. The other collision was something about the size of Earth hitting Neptune.

In the case of the Earth, we wound up lucky, with our planet still spinning almost perpendicular to its orbit plane, which left us with sensible seasons. Uranus got knocked right over onto its side. The result is really crazy seasons where one end of the planet does not see the Sun at all for decades. It seems that so far our planet has been lucky. In fact, having a nice large moon has been a benefit!

Creation By Catastrophe

19th January, 2021

"Collision of the Galaxies" sounds like a good title for a spectacular disaster movie. Actually, a lot of things in the universe depend on things smashing together, including galaxies. The above object Arp 299, is actually two galaxies in collision. The two, designated NGC 3690 and IC 694, lying about 134 million light years away from us, have been in the process of collision for around 700 million years.

Dr. Tapping's Corner (Cont.)

The Hubble Space Telescope image can be found at https://en.wikipedia.org/wiki/Arp_299. The image is dotted with many bright, blue stars. This is interesting because there are only two types of bright, blue star. One kind are young stars that will dim down a bit as they settle down. The other kind are stars that collected an exceptionally large amount of hydrogen when they formed. These stars shine extremely brightly, run out of fuel soon, collapse and then explode. These explosions are called supernovae. In either case, these blue stars cannot be very old. This relates to another interesting aspect of this pair of galaxies: the oddly large number of supernova explosions. What has produced these unusual circumstances?

If you look at a nearby spiral galaxy, such as our close neighbour, the Andromeda Galaxy, you will see the spiral arms glowing with little knots of pink, and sparkling with young stars. If we could go a couple of million light years off into space, our galaxy, the Milky Way, would look much the same. The reason is that the spiral arms of galaxies are loaded with hydrogen gas, the primary ingredient for making stars. If we look closer, we will see that these clouds are not uniform; some regions are much denser than others. On occasion something triggers one of these denser regions to collapse, forming one or more stars. These youngsters are hot and blue, and their high output of ultraviolet radiation makes the surrounding clouds glow pink.

This pink, a characteristic of hydrogen, is known as hydrogen-alpha emission. Therefore, when we look at a distant galaxy, those pink glows mean two things: there is hydrogen to glow, and hot, blue stars to make it glow. However, the jewel-box of bright, blue stars we see in the Arp 299 pair of galaxies is really unusual. Some major event caused massive collapses of hydrogen clouds, forming showers of new stars. We are pretty sure this outburst of star formation was caused by the two galaxies colliding. Paradoxically, collisions between galaxies are not totally catastrophic; they trigger the formation of new stars and planets.

When we look at the computer simulations of collisions between galaxies (there are many on the web), they look pretty catastrophic. One can imagine stars and planets being annihilated on a huge scale. The youtube on the link below https://www.youtube.com/watch?v=J_UwUuJFT3Q is a good example of what we believe a collision between two galaxies would look like. However, the situation is nothing like as bad as it looks.

The nearest star to us, after the Sun, lies about four light years away. This distance is fairly typical of the average distance between stars. So the chance of stars in two colliding galaxies passing close by one another is tiny. Even as fragments fly around and the galaxies combine, all the inhabitants of worlds in those galaxies will see is their equivalent of the Milky Way changing shape over millions of years. However, for the gas clouds between the stars it's a different matter. These will collide and collapse, forming lots of new stars.

We will get a chance to experience this first hand. The Milky Way and the Andromeda Galaxy are racing towards each other at 110 km/s, and will collide in about four billion years. There are computer simulations of this collision on the web:

https://www.britannica.com/video/186502/overview-collision-galaxies-Milky-Way-Andromeda.

Ken Tapping is an astronomer with the National Research Council's Dominion Radio Astrophysical Observatory, Penticton, BC, V2A 6J9.

DIY Field batteries for Astronomy, camping, ice fishing

By Mark Irvine, RASC Winnipeg Centre

My interest in building a DIY field battery was initially triggered by a casual comment from my brother-in-law when he told me he was able to replace the battery in his old portable battery booster "easily" and it worked as good as new. I considered this to be a challenge. "If he could do it, I could". Then I set to work taking apart my old dead power booster, formerly used to power my EQG mount, camera, and peripherals. It was one of the standard boosters purchased from a local retailer with the 12 volt circular outlet, "**400 watts of boosting power**". It was probably older than 10 years. "***It should be easy, so I thought"***

I found the process of dismantling the case to replace the batteries, not to be an intended solution from the manufacturer.

After some surgery on the case to pry it apart and digging out the batteries, I thought there had to be a better way. Particularly after I got the case apart and saw how the booster was built. Then there was the fact that the dissection left the old booster in no shape to reassemble. **Score: *-brother-in law 1 Mark -0***.

Then as I usually do, I hit the Internet to see what others had done for portable power in the outdoors. I found everything from gas generators to solar arrays.

I came across a few spots where folks were building battery cases with AA lithium batteries constructed in series, building up to 12 volts, 1.5 volts at a time. This seemed initially promising, however, the work of soldering 1.5-volt lithium batteries in series and batches, didn't appeal to me. I kept looking. Then I found a fellow in Minnesota or Wisconsin, building Kayak batteries for trolling motors and fish finders, using single deep cycle batteries.

The batteries were also easy to swap out, - perfect!.

The trolling motor / fish finder battery box solution looked elegant.

The 12/ 18 AMP hour version has an excellent step by step Youtube video here, https://www.youtube.com/watch?v=torSEtjPZ2I&t=1551s

After watching the video, this battery box seemed to have a better likelihood of success than my prior upgrade adventurer. I Commenced picking up the parts, at the typical location's, Princess Auto, Cargo East Marine Supply, Canadian Tire and Amazon, wherever I could find the items cheaply or on sale.

After a few months of gathering parts, I proceeded to build.

The approach in the video is quite flexible. The first battery I built was the 12 AMP hour version identical to the one in the Youtube video. This one ran the EQG and camera for about 3 hours. My mount and camera together however draw a lot of amps for a typical imaging session of 6 – 8 hours in the field, so this battery box proved to be a bit small, but for smaller mounts or shorter times it would be fine, just not what I really wanted.

The 2nd version with the 50 AMP hour battery, was robust. I tested it and it ran my EQG mount, cameras, peripherals for longer than 8 hours.

DIY Field batteries (cont.)

Both solutions have fuses to prevent inadvertent impacts to sensitive equipment. The cases are watertight which makes them great for field use.

I also wired in a battery charger so it can be plugged in and charged wherever there is an AC outlet.

When my family saw these boxes, they were somewhat alarmed at their appearance. I must admit that at first glance they could appear somewhat nefarious, but of course they are totally innocent and quite functional.

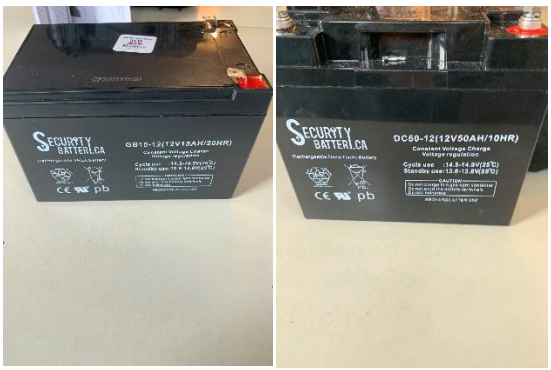
The process of building them was satisfying, as opposed to the refurbishing effort spent on my old booster.

Anyway, here are some pictures of the finished products as well as other select shots of the batteries I used and the interior of each battery case.

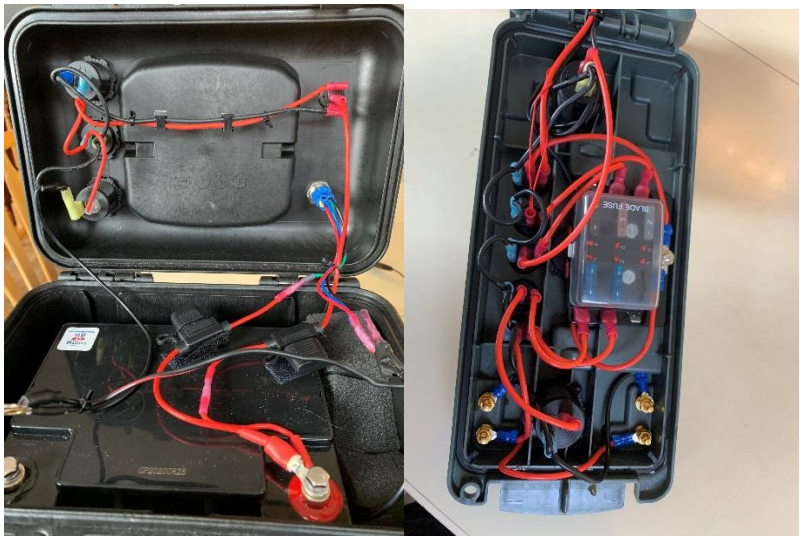
The two field power boxes, 12 Amp hour and 50 Amp hour are left and right respectively below.

DIY Field batteries (cont.)

Batteries used, in each box respectively are here:



Internal appearance of each power box.



I won't prolong this article since the Youtube video takes you through the process of building the 12 Amp hour battery box step by step. The video can also be used to guide the build of the larger box as well. A few of these battery boxes in various shapes and forms, have popped up on social media sites if you're more interested in purchasing one than building it. I've also seen cordless tool battery adapters used for portable power in the field, if you happen to have these batteries anyway. This would be cheaper than either box, if you have these batteries lying around, particularly the 60 volt variety

The build parts for these boxes are now reaching the $75-$100 range for the 50Ah and $60-$80 for the 12/18Ah, plus the cost of the battery. Part prices have increased a bit in the last year, but so have the prices of the battery boosters, inflation in general, alas.

I picked up reasonably priced batteries for the cases at Manitoba Battery on Logan.
https://manitobabattery.com/

DIY Field batteries (cont.)

When you purchase a battery, watch the battery dimensions, since they need to fit the boxes with the lids down. Then you have a choice of Lithium, GEL or AGM.

I found it helpful to take the empty case along to the battery store to ensure the battery fit properly, there are a variety of sizes, voltages and amperages to select from. Lithium batteries are lighter and have less issues with battery memory but are also substantially more expensive than GEM or AGM.

Clear skies and happy DIY-ing

Here is a parts list from Amazon for ease of searching, the Youtube video also has a parts list.

https://www.amazon.ca/gp/product/B07RTVP2DM/ref=ppx_yo_dt_b_asin_title_o02_s01?ie=UTF8&psc=1
https://www.amazon.ca/gp/product/B00SKCO920/ref=ppx_yo_dt_b_asin_title_o02_s00?ie=UTF8&psc=1
https://www.amazon.ca/gp/product/B07931LDLH/ref=ppx_yo_dt_b_asin_title_o02_s02?ie=UTF8&psc=1
https://www.amazon.ca/gp/product/B07QN7S4B3/ref=ppx_yo_dt_b_asin_title_o02_s02?ie=UTF8&psc=1
https://www.canadiantire.ca/en/pdp/plano-rifle-ammunition-field-box-0752472p.html#srp
https://www.amazon.ca/gp/product/B086J4V2SW/ref=ppx_yo_dt_b_asin_title_o06_s00?ie=UTF8&psc=1
https://www.amazon.ca/gp/product/B007ZIWFBC/ref=ppx_yo_dt_b_asin_title_o05_s00?ie=UTF8&psc=1
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https://www.amazon.ca/gp/product/B06ZXZXDBC/ref=ppx_yo_dt_b_asin_title_o06_s00?ie=UTF8&psc=1
https://www.amazon.ca/gp/product/B01BXTX11Q/ref=ppx_yo_dt_b_asin_title_o06_s01?ie=UTF8&psc=1
https://www.amazon.ca/gp/product/B07KF88D3D/ref=ppx_yo_dt_b_asin_title_o06_s00?ie=UTF8&psc=1

Parts pictures:

Welcome New Members!

Thomas Kucera	Steve Hudley	Jennifer Zacharias	Carissa Tan
Austin Chapdelaine	John Van Dixhoorn	Christopher Niabalka	Kailey Edwards
Graham Dowdell	William Harrison	Robert (Bob) Beaudry	Todd Ewach
Mandy Wood	Olivia Wood	Xander Kennedy	Luxton Galbriath
Sameeha Ansari	Lenore Williams	Mugisha Mhamaba	Sarah Tyluk

Membership Benefits: • National Membership in the RASC • Membership Association with the Winnipeg Centre of the RASC • Subscription to the national publication, the "eJournal" (the printed Journal is optional) • Subscription to the national publication, the "eBulletin" • The national annual publication, the "Observers Handbook" (300+ pages) • Subscription to the Winnipeg Centre newsletter, "Winnicentrics" • Members will also receive a free subscription to "SkyNews", the Canadian astronomy magazine. Join at www.rasc.ca.

Building a RoboScope

By Gord Tulloch, RASC Winnipeg

Since the last newsletter the Winter has descended on us and my thoughts turn to staying indoors! So yet again I haven't had a chance to put together a good analysis of using my C8 and ES102 scopes for EAA, but I managed to distract myself with something a little more in keeping with my objective to stay indoors – a new telescope to "robotify". My particular objective is to take some nice pictures of the wintertime sky, particularly Orion. And stay indoors while doing so!

Figure 2 - Skywatcher 250P on NEQ6 Pro

I was fortunate enough in November to happen upon a fantastic deal on a used 10" F/4.7 (254mm/1200mm) reflector on a Skywatcher NEQ6 Pro mount (see at left). This scope needs some changes to lighten the load– beefy as this mount is, as is the steel optical tube assembly (OTA) and accessories are probably a bit over the capacity limit of the mount for astrophotography, 18kg.

The tube itself is nearly 15kg so the additional long focus refractor guide scope, dovetail and rings push the OTA weight over the limit. As well the nice 60mm finder scope can go, to be replaced by an autoguider. The anticipated imager for this scope, a Canon 60Da (755g) and focus motor (about 500g) will teeter on the limit, as will a mono camera setup with a cooled Orion Starshoot Deep Space Imager II (that came with the scope) and ZWO filter wheel. However, word is that the NEQ6Pro is capable of good tracking even a bit over the limit. After market mods are available as well to improve the mount, but most people seem to be happy with the base mount.

One note for anyone looking at used telescopes – bring your own 12v battery! The folks who were selling this unit (sadly as an estate sale) weren't having much luck getting the mount going as they were trying to run it with a 500mA power supply. Telescope mounts need a lot of power, so I brought along my 12A Nautilus power bank (also in the picture above) which had the mount happily slewing the scope at it's rated 3.4°/sec – you're going to want to duck if this thing is headed your way!

As always, the telescope needs to be set up with my normal toolset, which is a Raspberry Pi 4 with the Stellarmate (Linux) operating system (OS). Stellarmate takes a bunch of open-source software written for the LINUX/Raspberry Pi platform and integrates it nicely, as well as providing updates automatically. The product ($65USD) is very similar to the ASI Air, except it supports a vastly wider range of hardware.

So, what does a Roboscope provide? A completely computer-controlled scope that self-aligns (requiring GPS and plate solving), autofocuses (requiring a motor driven focuser), autoguides (requiring a guide scope and camera) and can be programmed easily to perform a set of operations set by the user autonomously. Obviously, a lot of this is about software, but since the Stellarmate OS includes the INDI server along with KStars/EKOS, that's more than covered.

Building a RoboScope (cont.)

To control the mount one more item was required – an EQMOD cable that replaces the normal Skywatcher Synscan handpad. This kind of setup is much more reliable than connecting to the handpad directly, and works well on my HEQ5 mount in the observatory so I ordered one from Amazon ($39.99).

Figure 3 - EQMOD cable for EQ6

I installed a brand-new version of Stellarmate OS 2.4.2 onto a 250GB solid state drive using the Raspberry Pi imaging software on a Windows computer – this basically copies a disk image downloaded from Stellarmate.com onto a large capacity, superfast, but tiny hard disk. You can then tell your Raspberry Pi to boot from this drive, avoiding the normal microSD cards that have proven to be unreliable. I've lost entire weekends of observing to bad cards so I'm happy with this kind of installation – much, much faster as well as more reliable with lots of capacity to store images.

GPS is provided by a cheap USB GPS "dongle" that magnetically attaches to the tube of the telescope. It not only provides accurate location information to the Raspberry Pi but sets the time properly too. I did have to modify a file in Stellarmate to support the particular model I have, but most GPS dongles are supported right out of the box.

Also installed on my iPad was the Stellarmate App, which has developed very quickly over the last few years to become a really nice alternative to using Stellarmate as a remote desktop application or by connecting from a Windows computer. It supports live stacking for EAA as well. However, to use the full capabilities of KStars/EKOS, particularly to queue observations up for the Roboscope to execute, you need to connect to the Raspberry Pi via remote desktop. Fortunately, the app also does that!

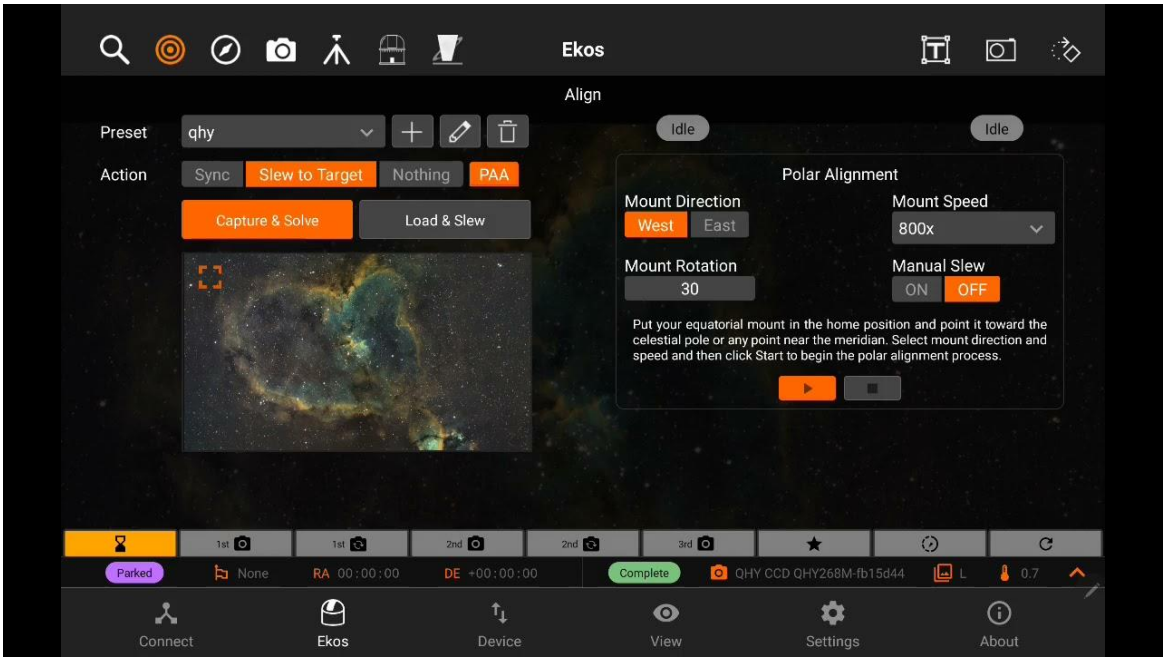


Figure 4 - Stellarmate App screen

Building a RoboScope (cont.)

Since I really didn't want to stand outside in the back yard within wireless range of the RPi in sub-zero weather, I cheated a bit and connected the setup to my home network using an AC extension cord and a Powerline Ethernet box, which hard cables the Raspberry Pi to my home network so I can sit inside and control the telescope. In the field I will connect my tablet or laptop to the wireless network the Stellarmate produces to start everything up and power it with my big Nautilus power bank.

The mount configuration is set to connect to the mount via the EQMOD cable and run a Shoestring Astronomy FSUSB focus motor controller – the actual motor is an Orion Accufocus ($130US) which I had on my 16" scope that wasn't needed for the moment. The AccuFocus included a shaft coupler and bracket that seemed to be made specifically for the 250P single speed focuser, as connecting it required no adaptation at all, just some longer bolts to bolt the adapter plate to the focuser. This motor spins the focuser knobs under computer control but still has enough "slip" that the user can also focus manually. Generally I've found that autofocus doesn't work well unless the telescope is pretty close to focus already so I look through the camera viewfinder to do a rough focus with the knobs and the computer can take over from there. The pictured handpad is replaced with the Shoestring FCUSB.

Figure 5- Orion Accufocus installed (handpad for testing)

Figure 6 - Raspberry Pi (lower) with SSD drive and USB hub (top)

Mounting the Raspberry Pi and SSD drive to the mount was a matter of some judicious application of velcro. The SSD drive is similarly velcroed to the top of the RPi and it's USB3 cable connected to the RPi. Also connected to the second USB3 port on the RPi is a 10 port USB hub that not only connects devices to the RPi but also provides power through the two black "charging" ports at the top of the unit. Normally a USB port provides 500mA of current but for the RPi, SSD, and especially the focus motor system that won't cut it, and might crash everything while the focus motor is activated. The charging ports provide 2.4A which should be enough.

Building a RoboScope (cont.)

Sometimes I feel like the NASA engineers working the recovery of the Apollo 13 command module by accounting for every amp of juice being consumed by the lunar module for startup – in this case figuring out what the telescope mount needs to make sure it's not underpowered, which would cause the mount to track poorly or causing the computer to crash.

Figure 7 - Starfield 60mm F/3.6 Guide Scope

For autoguiding I pulled the 60mm Starfield guide scope and rings from my 102mm refractor in the observatory and attached an Orion Starshoot Auto Guider (SSAG) to the OTA to replace the stock finder scope. This guide scope has a wide field of view but with a 216mm focal length this scope is within the 10:1 rule of thumb as relates to the ratio between the focal length of the guide scope versus the main scope. A wide field of view makes it easy for the autoguiding software to select a start to guide on, but not so wide that the star can move enough before a correction occurs to be visible in the main telescope camera. With plate solving there's no need for a finder of any kind (more on this later) although I can swap the finder back in since the OTA has a quick connect shoe that fits either device. The camera and guide scope hang down below the OTA for everything to balance properly.

Figure 8- Roboscope ready for action!

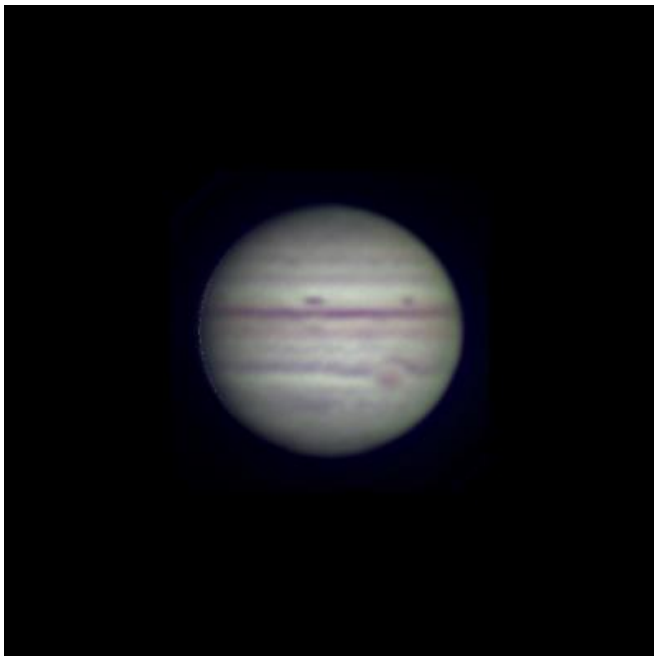
So, here's the result, with a bit of cable management done to make sure nothing wraps around the mount as it moves. I still need to get some shorter cables to eliminate the "rats nest" in the back and enclose everything in cable sleeves to avoid the possibility of cables snagging during unattended operation.

As you can see I also attached a Polar Alignment Camera to the mount so I can polar align it using the QHY software on the RPi. You can find my review (unpublished for several years for some reason) of this camera in the next issue.

With everything ready to go, I'm ready to run a cable out to the other side of my fence, drop the unit in the snow, quickly polar align using the iPad, and head indoors. Now for some clear skies!

First up – a mosaic of the Pleiades and M42. I will try to live-stream imaging session on Youtube so the process is a little easier to see. Next time we'll see the results!

Members Image Gallery



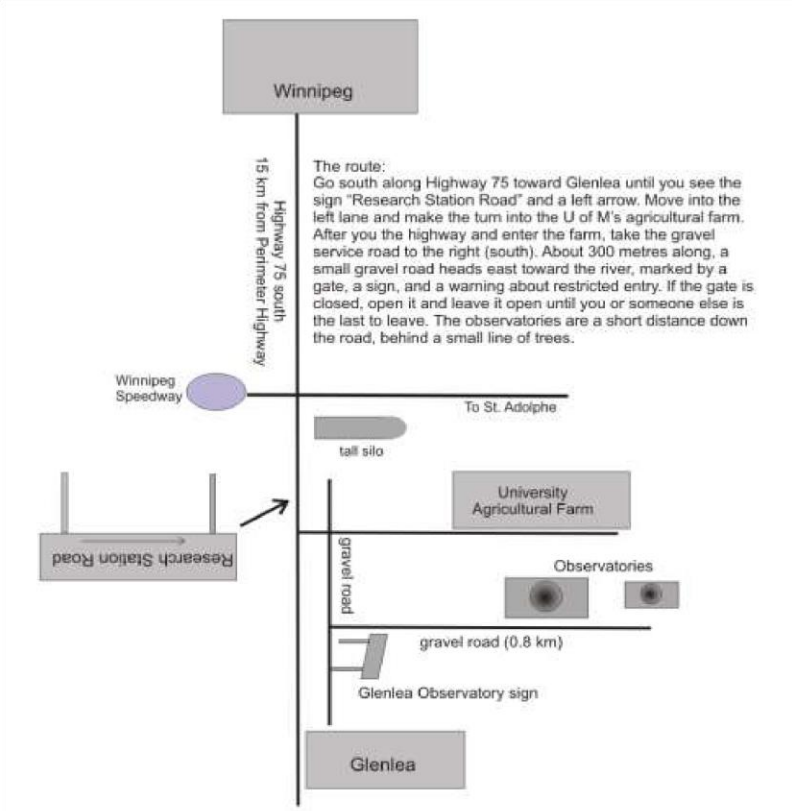
Scott Young - this is the best image of Jupiter I managed this season. Everything was shot through an Antares 127mm refractor that I bought used for $300, with a QHY5III224C CMOS camera I bought on sale for $200. Shot with a 3x Barlow, capturing about 5,000 frames per image and then using the best 10%, processed using free software (PIPP, AstroStakkert, and Registax) . I took 7 sets of images and then used more free software (WinJUPOS) to stitch them all together into a single image. Pretty happy with it, and I'm glad it all came together on a night when the Great Red Soot was visible.

Ian Dixon - M101 - data gathered April 4, 2021 Sandilands provincial park - This is a reprocess of some data that I collected last spring (about 2 hours of integration). I reprocessed because a new technique for masking was made available to me by Kevin Galka (thanks). M101 is a relative accessible (and beautiful) face-on spiral galaxy in Ursa Major. I used a C8 edge with a reducer for a focal length of 1422 mm.

Members Image Gallery (cont).

Kevin Galka - Took advantage of the clear skies last night to try imaging a few targets from my balcony. First off I decided to try and get some RBG for the Ha data I had... unfortunately I'm getting some internal reflection from one of the belt stars, but it was still fun to see what could be done from within the city. Then I grabbed some Ha on … (the) Rosette.

Glenlea Observatory Information



The Winnipeg Centre maintains a working observatory, pad, and warm room at the University of Manitoba's Research Farm. The observatory contains a 30 cm Meade LX200 telescope on a fork mounting. Members of the Centre may sign up to use this telescope by emailing: observatory@winnipeg.rasc.ca

provided they have first taken a short instruction course on its use.

The Meade provides outstanding views of the night sky. Its large aperture collects more than 1800 times as much light as the human eye. It is capable of magnifying more than 500 times under favourable conditions.

The warm room also provides a convenient place for members to take refuge from winter temperatures and summer mosquitoes, or to wait out a passing cloud. The building also provides desk space and lighting for planning a night's observing session. A concrete pad in front of the warm room and observatory provides a convenient space to place members' telescopes while conducting personal observing programs. A computer is available as well.

Etiquette requires that you approach the observing site with your headlights off if that's possible on your model of car. Headlights should remain off, but you can still use your parking lights to drive. Proceed slowly, and be careful about parked cars along the road, or people walking. If you cannot turn off your headlights, make a cardboard or garbage bag mask to dim the lights or, raise the parking brake lever one click-stop. This usually turns the headlights off on most, if not all, cars. You might wish to turn around at the end of the road so that you are facing the direction back toward the highway at the end of the evening.

Remember to turn off all lights, make sure doors are locked, and close the gate if you are the last one to leave!