

Nova Notes

The Newsletter of the Halifax Centre of the Royal Astronomical Society of Canada



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From the Editor —

The end of the year is upon us, and for me 2019 was a good one. I got to do a good amount of outreach out on the road. Each time I went out with my telescope and setup in front of the hotel we were staying at, I would get between 5-15 people an evening.

There were also some great centre events like the incredibly successful Nova East this year. I would like to thank Judy, and the rest of the Nova East Planning Committee for knocking it out of the park again this past year.

Another great thing was all the RASC Observing certificates that were awarded. It's great to see that Centre members are getting out and doing some great and valuable observing. Between images and sketches, these programs are a great way to learn the night sky. I know that when I joined, I knew very little of where things were above my head. So, I would really recommend, for those who have recently joined or even those who are observing veterans, adding Explore the Universe to your 2020 observing list. It's good to get a handle on finding and recording lots of different objects above our heads.

For me, it showed that I prefer planetary observing, to say double stars. I'm not saying I don't aim around and try and find some of them, but the majority of my observing time is spent looking at planets and mainly things in our own solar system. So, I got to learn how to visually find them, but gave me good starting experience to sketching and collecting data.

So in 2020, as the new decade looms, I want to see our Centre get a lot of new recipients of the observing certificates! You won't be disappointed in getting out and making a logbook.

- Charles

Nova Notes: The Newsletter of the Halifax Centre of the RASC

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Nova Notes is published five times a year, in February, April, June/July, September/October and December.

The deadline for the next edition is 22 February 2020.

The opinions expressed herein are not necessarily those of the Halifax Centre.

Articles on any aspect of astronomy and related activities will be considered for publication.

St. Croix Observatory

Part of your membership in the Halifax RASC includes access to our observatory, located in the community of St. Croix, NS. The site has expanded over the last few years and includes a roll-off roof observatory with electrical outlets, a warm-room, and washroom facilities. We welcome you to bring your own equipment or to use the Centre's 400-mm Dobsonian telescope, 100-mm binoculars, and the recently acquired SCT and gear for astro-imaging.

Enjoy dark pristine skies far away from city lights and the company of like-minded observers searching out those faint "fuzzies" in the night. Most clear Moon-free nights, you will find our keen observers out there! Announcements of members visiting SCO are made on the Centre's Discussion List. If you are not a key holder and would like to become one or need more information, please contact the SCO Manager, John Liddard.

Meetings usually begin at 1:00 p.m. at Saint Mary's University in Room 101 of the Atrium Building (AT).

All meeting locations and presentations subject to change

Meeting Dates for 2020

1 February
7 March

Halifax RASC Board of Directors, 2020:

Honorary President : Mary Lou Whitehorne	(Appointed)
President: Judy Black	(Elected)
Vice-President: Paul Gray	(Elected)
Secretary: Peter Hurley	(Elected)
Treasurer: Gregg Dill	(Elected)
National Council Rep: Pat Kelly	(Appointed)
Director: Pat Kelly	(Elected)
Director: Mathew Dyer	(Elected)
Director: Paul Heath	(Elected)
Director: Wayne Harasimovitch	(Elected)
Director: Tom Crosman	(Elected)
Director: David Hoskin	(Elected)
Librarian: Wayne Harasimovitch	(Appointed)
SCO Manager: John Liddard	(Appointed)
Observing Chair: Dave Chapman	(Appointed)
Outreach Chair: Paul Heath	(Appointed)
DSP Committee: Dave Chapman (interim)	(Appointed)
Nova Notes Editor : Charles White	(Appointed)

Cover photo

Sea of Moisture

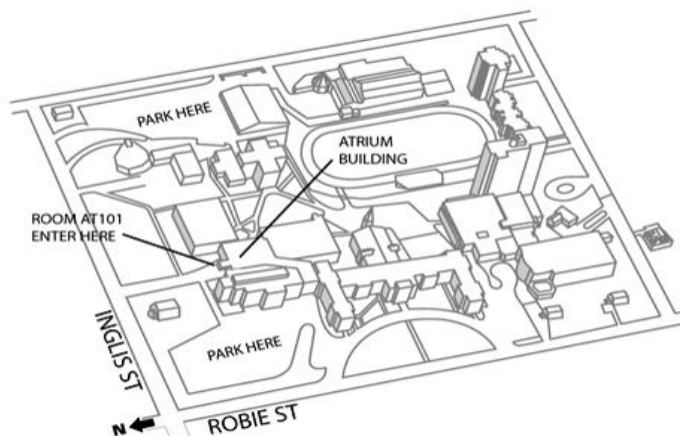
By David Hoskin

Meeting Location:

Saint Mary's University

Atrium Building (AT) Room AT 101

The Atrium is located in front of the Patrick Power Library, between the Burke Building and Science Building.



Meetings are usually held on the first Saturday of the month, except for the months of July and August.

Board meetings begin at 11 a.m., usually in room AT306, and all members are welcome.

2019 Annual General Meeting

Welcome and Opening Remarks

Paul Gray welcomed the 30 members and 6 guests to the meeting and thanked them for coming. He then provided opening remarks

Approval of 2019 Agenda

191207AGM-Mot01:

It was moved by Paul Heath and seconded by Tom Crosman to approve the 2019 AGM agenda as circulated.
CARRIED.

Approval of 2018 AGM Minutes

The minutes of the 2018 AGM had been circulated to members.

191207AGM-Mot02:

It was moved by Patrick Kelly and seconded by Paul Heath to approve the minutes of the 2018 AGM as circulated.
CARRIED.

Appointment of a New Auditor

Paul Gray stated that Jim Millar could not reoffer to stand as auditor for 2019-2020. He asked for volunteers or nominations from the floor.

191207AGM -Mot03:

It was moved by Gregg Dill and seconded by Dave Chapman to appoint Ian Anderson as Auditor for 2019- 2020.
CARRIED.

Ian accepted the nomination and will stand as the Auditor for 2019-2020.

Board Executive Reports

Vice-President's Report

Paul Gray presented the report on behalf of Charles White who, because of a vacancy in the President position, also acted in that capacity. He stated the year had seen a lot of great and exciting events take place from January to December and it is hard to believe that it's already the end of 2019. One of the biggest changes has been the adjustment of the monthly meetings from Friday evenings to Saturday afternoons. The format change made it easier to get into the city.

He thanked the Board for trying out the new day and time. Charles really enjoyed the new segments and the flow of the meetings now, too. Hats off to all those who make it happen each month.

Another new change has been the *Astronomy Nova Scotia* website. If you've not checked it out, he would encourage you to do so. Halifax Centre posts the Centre's meeting information on the site and other astronomy related events happening.

Charles had the privilege to award some observing certificates this past Nova East. Congratulations again to the recipients but also to the Nova East Planning Committee for putting on another great year! They even managed to schedule in some good evenings for observing and the public crowd was a pretty good size, too. Nice to see all the interest from both telescope users and the public! A hearty thanks to our sponsors at Atlantic Photo Supply again this year.

With that, he wished everyone a happy 2020, and hope that the new Board of 2020 has a great year.

Secretary's Report

Judy Black stated there were 7 Board of Directors meetings and 8 Members' meetings in 2018-2019, including the informal members' BBQ at SCO. Two board meetings had been cancelled due to storms. Reinstated this year were presentations of sections of the Observer's Handbook. In the past year, Pat Kelly, John Read and Judy Black made presentations. Motions were made with a quorum of the Board of Directors to provide direction on policy, activities, support of the observatory at St. Croix, our budget, and definition of any spending not covered in the budget. She noted that all Halifax Centre policies, position descriptions and Bylaw #1 were on the website. She noted the Centre, as of September 30/18 had 170 members (up 2 from last year). She thanked the Centre and fellow Board members for the support she received in the past 4 years she has served as Secretary.

Auditor's Report

Paul Gray read the Auditor's letter as Jim Millar could not attend the meeting. There were two recommendations:

- 1) That a physical inventory of merchandise for sale be carried out as part of the year end procedure.
- 2) That a physical inventory of capital equipment be carried out at least every five years.

Treasurer's Report

Gregg Dill provided highlights of the Treasurer's report. Revenue was \$5,177.48 with expenses at \$6,810.72. This meant a deficit of \$1,833.24 for the year, but the Centre continues to be successful and solvent.

He then explained the assets of \$31,205.66, the liabilities of \$609.93, and a slight decrease in capital.

He noted that one GIC had been collapsed to \$2000.00 from \$4000.00 to improve the cash flow. Members suggested there be an adjustment for the donated telescope and that a revised report then be circulated to members.

191207AGM-Mot04:

It was moved by Dave Lane and seconded by Tony Schellinck to approve the Financial Report as presented with the caveat to revise statements to reflect the telescope donation by March 31, 2020.
CARRIED.

Appointed Position & Committee Reports

(Note: These reports in their entirety will be in the Jan/ Feb edition of Nova Notes.)

Members agreed to approve all reports at the end of the reports in lieu of approving each individually. Time was allotted after each report for questions and clarifications.

National Council Representative Report

Pat Kelly reported the National Council met six times in 2019, two at the GA and four on-line. The new process of having a number of Centres report on their recent events has provided interchange of ideas between the Centres. A manual for GLP use at star parties and other education and outreach events has been developed. It is a self-guiding course for RASC membership only; he noted you do require your membership card to use you GLP, or be a spotter. The role of the National Council is also being reviewed and could potentially be the primary source for the revisions to the Centre Manual, and perhaps have responsibility for some Committees such as the Awards Committee.

Observing Chair Report

Sean Dzafovic stated that only one member received RASC observing certificates in the past year for Explore the Universe – Liz Greenough.

St. Croix Observatory (SCO) Report

Judy Black presented the report prepared by John McPhee. St. Croix Observatory (SCO) continued as a centerpiece of observing activity for the Centre. A number of targeted events were held such as the annual work party on Sept 13 and the Annual BBQ on September 20 (not in the traditional month of June). A 465-litre propane tank now fuels the Warm Room space heater and a new thermostat was installed. A new door was installed in the observatory roll-off and other minor repairs after a break-in sometime in January.

An EDGEHD 8, 203 mm, f/10 telescope with Starbright XLT coatings on an Advanced CX mount - as well as an

ATIK 428EX CCD camera and laptop for astrophotography programs plus other accessories - were generously donated to the society by Jane and Alf Howard. Dave Chapman, Chris Young and Jerry Black performed a much-needed maintenance on the mirrors of the 16" SkyWatcher in September.

Nova Notes Report

Paul Gray reported on behalf of Charles White. Five editions of Nova Notes were published, starting with his inaugural 2018 AGM reports. He thanked Paul Heath (*Food for the Soul*) and other regular contributors for their recurring articles. Thank you as well for contributors to the cover photos. An average of 17 copies per issue were mailed. Charles also has a "From the Editor" section where he shares his views. Thank you, Charles, for a job well done.

Nova East Report

Judy Black, as Chair of the 33rd Nova East, reported another successful event thanks to the work of her team members – Melody Hamilton, Chris Young, Gregg Dill, Liz Greenough, and Dave Chapman, and consultants Mary Lou Whitehorne, Jerry Black, John Read, Paul Gray, and Pat Kelly. She gave a brief presentation about *Nova East, the Star Party Between Two Storms*. A revised Nova East Task Chart with revised tasks and timelines required for planning Nova East has been prepared for the 2020 NE Team.

She also noted that Melody Hamilton, Registrar for the past 4 years, has retired the position; Pat Kelly has agreed to assume the role.

Librarian Report

Judy Black reported on behalf of John Read who had recently stepped down as Librarian. She noted that repairs had been made to the cart. John had provided recommendations regarding the content of the library and replacement of the cart. Wayne Harasimovitch has taken over responsibility for the Library.

Outreach Report

Paul Heath provided an overview of his report. He thanked everyone who helped throughout the year. He cited various events such as Kejimikujik Dark-Sky weekend, Nova East, INOMN, and Saltscapes that provided visibility for RASC and Halifax Centre.

191207AGM-Mot05:

It was moved by Blair MacDonald and seconded by Keegan Oickle to accept the Reports as presented.
CARRIED.

Call for Nominations and Election of 2019 Board of Directors

Paul Gray explained that according to Bylaw #1 (2017) now enacted, there could be no less than five and no more than 10 on the Board. He noted that Sean Dzafovic and John Read were stepping down from the Board. There was a brief discussion about a youth member (18 years of age or older) on the Board.

There was a call for nominations from the floor for the 2020 Board of Directors. The slate of nominees for the 2020 Board of Directors was then presented as follows and included three new members (*):

Executive Committee

President – Judy Black
Vice-President – Paul Gray
Recording Secretary – Peter Hurley
Treasurer – Gregg Dill agreed to re-offer as Treasurer

Directors

Pat Kelly
Paul Heath
Tom Crosman
Matthew Dyer*
Wayne Harasimovitch*
David Hoskin*

071218AGM-Mot06:

It was moved by Tony Schellinck and seconded by Blair MacDonald to close nominations.

CARRIED.

There being no further nominations, the 2020 Board of Directors positions were approved by acclamation.

Mary Lou Whitehorne continues to be the Honorary President until 2024. The list of individuals who were appointed earlier today at the Board of Directors Meeting was also noted:

National Council Rep - Patrick Kelly
DSP Committee - Dave Chapman (interim)
Observing Chair - Dave Chapman
NE Planning Committee - Judy Black
Outreach Chair - Paul Heath
SCO Manager - John Liddard
Librarian - Wayne Harasimovitch
Editor, Nova Notes - Charles White
Nominating Committee - TBD

Adjournment

071218AGM-Mot07

It was moved by Pat Kelly to adjourn the AGM. Members were invited to socialize and enjoy the

Christmas treats provided.

Notes of Members' Meeting (November 2, 2019)

Paul Gray, emcee and member of the Board of Directors, welcomed 48 members to the meeting at 1 PM.

Paul Heath, as Outreach Chair, stated that because of Remembrance Day services taking place during the transit of Mercury, there would no official RASC event. However, members were welcome to do so. He noted upcoming events taking place in 2020 – Saltscapes in April and International Observe the Moon in October.

He explained that he is a member of the RASC Diversity & Inclusivity Committee; one of the topics under discussion is how RASC members present and how others may perceive that presentation, especially in light of the changing demographics.

Paul then read his Food for the Soul poem that related to this.

Paul Gray then promoted the RASC Observing Calendar and the Explore the Universe (ETU) Guide. They were available at the meeting for purchase.

Dave Chapman provided a brief history of the Mi'kmaq Moons project and provided information on how to find the videos on YouTube (<https://www.youtube.com/c/Mi'kmaqMoons>), and played the video for Rivers Freezing Over Moon. Dave gave the highlights of the Dark-Sky Weekend at Kejimikujik National Park and National Historic Site and showed a video he produced. He noted there would not be a dark-sky weekend in 2020; the main campgrounds are closed due to major renovations. However, the event should resume in 2021 once renovations are complete.

As Chair of our Centre's Dark-Sky Preserve (DSP) Committee, he noted that we are close to an agreement with Parks Canada. Nova Scotia is the first Centre to have such an agreement and it would probably be used as a template by other Centres. He promised to keep members apprised of the progress.

Pat Kelly recently travelled to Quito, Ecuador where he visited the Quito Astronomical Observatory that has existed since 1875. It was built for the purpose of conducting transit surveys of southern hemisphere objects as well as gauging precise latitude measurements. Pat showed a photo of the 180 degree transit slit cut into one of the domes. He provided a brief geography lesson regarding Quito's location before describing the beautifully designed buildings of the observatory.

There was an obelisk at the entrance topped with a condor and a globe with the zodiacal signs on its equator. The observatory still has most of its original equipment and instruments and, because they pre-dated electricity, the telescopes were mechanically moved within the dome. A Merz brass refractor with a 7 1/2" objective and a German Equatorial mount were housed in the main dome. Although the mount had been upgraded, Pat showed the hand cranks used to rotate the dome. One item that impressed him was the two-sided sundial (because it was located just 12 minutes south of the equator) that had markings for every 15 minutes. There were self-guided tours of the museum that included a sidereal clock.

Judy Black, due to technical difficulties, presented news from the Board. She noted that a new email address had been implemented for the Centre's discussion list. She also thanked John McPhee for his service as SCO Manager for the past year. John is stepping down and a newly appointed John Liddard is assuming the role. She also noted that the Centre is revising its website. She asked that members contact her if they would like to share their astro-photo galleries and/or astro-sketches on the new site.

The Annual General Meeting (AGM) is December 7th and nominations for all elected and appointed positions were open. Blair MacDonald then presented David Hoskin with his second RASC Astro-imaging Award for Wide-Field. Congratulations, David! Blair explained the emphasis of this award is on wide-field pictures that capture an astronomical object in the evening, dawn or nighttime sky that also include the landscape in the frame.

Right: David Hoskin is presented his Wide-Field Astro-Imaging Award.



Paul Gray gave a presentation of his family trip to Starmus V in Zurich, Switzerland. They spent the first part of their trip as tourists, visiting several towns via train.

Some of the highlights of the trip included:

- hiking to the summit of mountains near the town they visited.
- visiting museums of interest. One included a glass marble run that children would slide down an adjacent slide in time to watch their marble come down the run.
- Detailed sculpture of a lion.
- Hiking next to mountain waterfalls and in the Zurich area.
- Ziplining down a 1.8 km alpine forest with a top speed of 50 km per hour.

Paul then gave his highlights of Starmus. To begin, there was a mix-up with the name tags, but on Day 2 they were given artist conference badges that provided them access to all areas of the festival, including access to the speakers' area. The festival started with a 3-hour concert with Hans Zimmer and special guests Brian May (Queen), Rick Wakeman, Kip Thorne, and others. Chris Hadfield and Rick Wakeman did an interpretation of "Space Oddity". Paul noted that seeing the Apollo astronauts on stage together was quite moving.

All of the sessions were of great interest. Paul was impressed with a presentation by Long Xiao, a planetary geologist, who presented current and future lunar explorations of China.



Above: Paul Gray shares an image of his trip to Starmus.

He found the forum discussing the questions relating to whether or not there was life out there in the Universe, whether we would have an answer in 30-40 years from now, and what form that life would take, thought-provoking. On the last day, there was a concert-lecture with May-Britt Moser featuring the Trondheim Soloists (a string chamber group) and Steve Vai entitled Deep-dive in the Brain: Space, Time and Memory.

Blair MacDonald then gave his presentation, Urban Imaging: Who Says You Need Dark Skies? He stated this was not a pretty picture talk but rather how to take photos in an urban environment. He had three goals:

- Convince the audience that urban imaging or imaging when the Moon was up is worth doing,
- Show how to take the exposure setting out of the I think this will work category to being able to measure the exposure required, and
- Show a processing workflow that works well on urban images and spectacularly well on dark sky shots.

He emphasized that you can image from city skies – you don't have to go to dark sky sites to get good images, and you don't need expensive light filters, long exposure times or expensive CCD cameras. He then showed us the multiple light sources on his street where he takes most of his photos.

He then explained imaging theory and the SNR equation (using math!), how to calculate exposure time, then how to calculate the minimum number of sub-exposure time. He proceeded to show the effects of increasing the number of exposures and showed how there was very little change going from 25 to 100 exposures.

He provided an urban exposure guide. Blair then explained the processing workflow that included the use of masks during stretches and in handling the background. He showed his light shield that prevented light from houses or streetlights from reflecting on his telescope and its dew shield; this prevented light pollution gradients in photos taken. He then explained the effects of various filters. And, when all else fails, there's always the moon and planets to photograph.

He concluded with these statements:

- Understand the SNR equation. It is your friend when figuring out exposures.
- While longer exposures can make processing easier, hours and hours are not necessary for bright targets.
- Light shields are very useful in dealing with light pollution gradients caused by stray light.
- Proper processing techniques are essential in getting the best results.

Members will be provided with the link to his presentation.

Paul Gray thanked everyone for attending and took a head count for those coming out for dinner. Meeting closed at 4:15 PM.

Respectfully submitted,
Judy Black

December Members Meeting **(December 7, 2019)**

Welcome & Introductions

Paul Gray welcomed everyone. He noted that due to lack of time the astrophoto showcase was not available. He then promoted the RASC 2020 calendars and ETU Guides. Dave Chapman also promoted John Read's autographed book about *50 Things to See on the Moon*.

Certificate Presentation

Sean Dzafovic presented Liz Greenough with her Explore the Universe certificate and pin. Congratulations, Liz!



Above: Liz Greenough receives her Explore the Universe certificate and pin.

Outreach & Food for the Soul

Paul Heath noted there were no new outreach opportunities in January so far. He then read his poem *Winged Feet*.

News from the Board

Judy Black presented an update from the Board regarding newly appointed positions and changes to the position description of appointed positions regarding requirement to attend meetings. She also noted that the newly revised website was now live, thanks to the work of Jerry Black (lead), Dave Lane, Dave Chapman and Pat Kelly. Jerry Black then provided an overview of the new features on the site.

What's Up in December?

Paul Gray provided the *What's up?* using the presentation prepared by Judy Black.

Transit of Mercury

Tony Schellinck presented a short video he took in Port Mouton of the November 11, 2019 transit of Mercury that included a brief segment of complete cloud cover.

Observer's Handbook Presentation: The Messier Catalogue

Judy Black gave a brief presentation on the 3-page chapter regarding the Messier Catalogue origins and the RASC Certificate program.

Presentation: *Telescope tales: 11 40 Telescopes, 6 Decades*

Dave Chapman provided an overview of the telescopes he was given or purchased over the past 6 decades and where he used them.

1963 (at age 10): Tasco 5VTE, 60 mm – Although Tasco telescopes later earned a reputation for poor quality, Dave felt it was the right telescope for his introduction to astronomy.

He made a 4.25" reflector telescope but sold it before mounting it.

1983: Celestron C90 astro, 90 mm f/11 Maksutov

1997: TeleVue Ranger 70 mm f/6.8 achromatic – Dave brought this scope to the 1998 solar eclipse in Curacao, saw the Lunar X in 2004, brought it to Kejimikujik in 2018 and 2019, and the 2012 Transit of Venus.

2003: Discovery 8" f/6 Dobsonian – He felt it had the best view of Mars, several comets, and completed the Isabel Williamson Lunar Observing Program (IWLOP) in a few months.

SkyWatcher 100 mm f/9 achromatic refractor bought from Paul Gray – just because he could. He has used it for outreach on numerous occasions. It's a classic scope that performs well.

He obtained several Galileoscopes in 2009 but he didn't number this as he gave several away following 2 school outreach events in Cuba.

2012: SkyWatcher 300 mm f/5, SynScan go-to – This was his first go-to scope. Because of his familiarity with this scope he could easily use the 250 mm scope at Kejimikujik National Park and 400 mm scope at SCO.

2015: He won a SkyWatcher Virtuoso at the 2015 RASC GA. This is a Newtonian 114 mm f/4.4 with a go-to capability. He used this at a star party in Costa Rica and for two transits of Mercury (May 2016, November 2019).

2016: Coronado 40 mm f/10, H-Alpha filter (solar) that he used at the 2017 solar eclipse in Nebraska.

2019: Celestron First Scope 76, f/4 spherical mirror. This had many issues including the mirror that should have be parabolic, not spherical. He would not recommend it.

2019: ~ 1965 Tasco 12TE 60 mm f/15. It had excellent optics, a solid mount, and was good at slow motion. For Dave, this scope confirmed that Tasco at one point did make good scopes.

Dave closed with the comment that every telescope tells a story.



Above: Dave Chapman talks about the various telescopes he's had throughout the years.

Adjournment at 4:17 PM.

Food for the Soul

Winged Feet

He rushes, rapid into the pre-dawn sky,
Weaving the brambled tangle of horizons.
In chase of his brothers and sister
Up he climbs, rushing before the glowing orb.

Yet his speed, his leap, his hopes decries.
Falling, the weaving brambled tangle reclaims.

He rushes, to catch the dropping orb,
Weaving the brambled tangle of horizons.
To join his brothers and sister
Up he leaps, rushing the glowing orb after.

Yet his speed, his leap, his hopes decries.
Falling, the weaving brambled tangle reclaims.

Each seasons passing, his rushing leap repeats
Upthrown on Winged Feet, higher he reaches
Above the brambled tangle of horizons
In chase, his brothers and sister before the
glowing orb.

Yet his speed, his leap, his hopes decries
Falling, the weaving brambled tangle reclaims.

Each season passing, his rushing leap repeats
Upthrown on Winged Feet, higher he reaches
Above the brambled tangle of horizons
With his brothers and sister, the glowing orb
does chase.

Yet his speed, his leap, his hopes decries
Falling, the weaving brambled tangle reclaims.

And then the Season comes, his rushing leap
Far above the brambled tangled horizon
His Winged Feet does lift
Onto the seething orb he breaches.

His speed, at last his rushing leap
Upon the seething orb, his Winged Feet has
placed him
To beat his sister to their goal.

Squeezed as a seed he pushes onto the seething orb
His Winged Feet out stretching, he rushes
Upon the glowing maelstrom of the orb,
As a shadow solidified, across its face he paces.

Yet too swift, his Winged Feet
His long pursued prize, so brief in his rushing.

In pride his solidified shadow paces swift
Across the wide maelstrom of the seething orb.
But from afar his victory a mere mote appears
Floating swift across immensity.

With his last push of Winged Feet
He leaps off the glowing orb he'd sought,
Falling again into seasons rushing,
The weaving brambled tangled horizons have reclaimed.

By *Paul Heath*

Stephen Payne showed up and we discussed the weather and either send a "NO go" emails to those who were going to come, but held off a bit. As we looked at the visible images it caught my eye, a possible break in the clouds coming at us, we figured it would arrive, hopefully in 3 hours, so decided to set up the tables outside and have things ready in case.

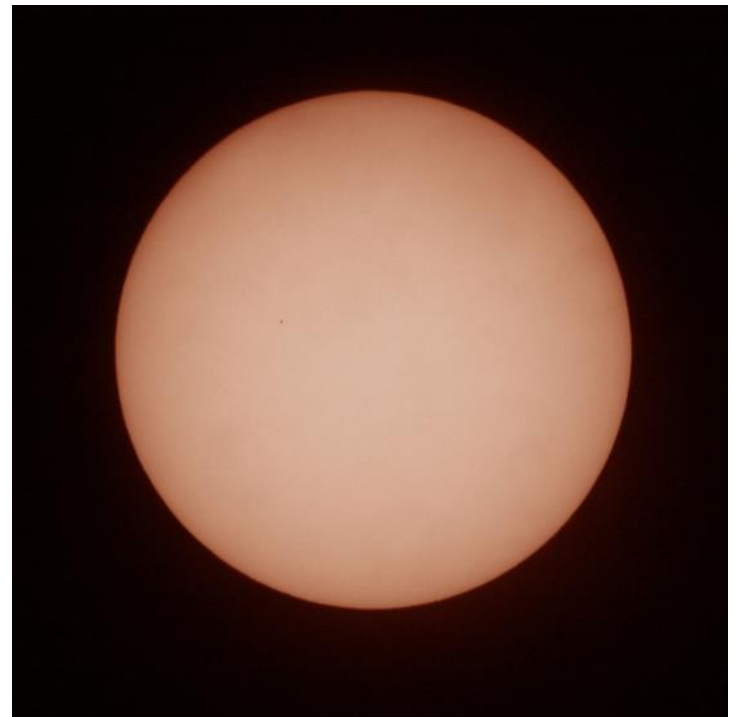
By 10am the clearing cloud hole was now over parts of South Nova Scotia and we were starting to see sunshine and we could see that in another 30 minutes it would be starting to clear somewhat. We did see some cirrus also on the images but just set up.

By about 10:45am I saw the Sun now and then though small gaps... I grabbed my scope and set it up outside and got to see the solar disk with clouds passing over it but there it was Mercury for a

Transit of Mercury

I awoke at 3am that morning and was greeted to overcast skies, then thinking, may as well go back to bed. But I could not so did my morning routine being old and just creaking along and shaved, ate light, logged on and looked at the 5am forecast - Mainly cloudy, what does that mean really? I then looked at the European model and they had us sunny by noon time.

I said "...ehh..." my scope, camera, and accessories were already in my backpack, so I decided to bike over to Dal University about 7am. It was a fun ride, my breathing problem and somewhat heavy backpack made me stop now and then. I got to Dal and logged on, looking at the IR and Visible satellite images, looping them over and over. Not looking good.



Above: Transit of Mercury. 11 November 2019

fleeting second.

I put the cardboard shade I made over the front of the scope to give me shade to see it better though the 32mm plossell (40x) eyepiece. Then started taking a few photos but the clouds were still not cooperating with me.

By then Stephen had set up the Questar, and a 4 1/2 inch reflector, both of course had solar filters, also he set the PST up to view it in Hydrogen Alpha. By 11am onwards the clouds broke enough for us to see the solar disk and Mercury dark dot.

Of course, it was Remembrance Day so we took the time to take a minute silence.

We had some 7-8 students and couple Dal Security stop by to look at the transit. There were questions of course which Stephen answered. I was just watching and taking images, plus anyone who wanted to view the transit I let them take a look. We had other people show up to take a look and it was not bad, the temperature did rise some



Above: A group of Dalhousie students stop to observe the transit.

and made it a bit pleasant and mild.

The only unfortunate thing was I could not get timings of the beginning and end of the transit. Just as Mercury was nearing the west limb, massive clouds came over and well, that destroyed it all,

but the rest of the sky overhead and more northly was blue with faint cirrus!

In all, it was an interesting and great time we all had observing this transit.. Mercury was the only spot on the solar disk. I should say most people that did see it were amazed at how dark it was and round.

Now, next one in 2049... unless science technology is far ahead for long life.. "I'll be back!"

Clear skies

Mike Boschat

Halifax Centre Showcase

Thanks as always to those who submitted to the showcase for this edition of Nova Notes.

Mercury Transit - Michael Boschat
Sea of Moisture - David Hoskin
Little Scorpion Cluster - David Hoskin
Iris Nebula - David Hoskin



