

AURORA



Volume 46, No. 2

The Royal Astronomical Society of Canada - Windsor Centre

October 2020

President's Message by Randy Groundwater

Thanksgiving is now a memory and before you know it, Hallowe'en will be behind us. After that, it will be time to turn our attention towards the Holiday Season and the close of another year. Many of us might feel that the end of this COVID-19 year, not to mention the ceaseless stream of vitriol and political intrigue flowing daily from our neighbours to the south, can't come soon enough! But we should hesitate in the sentiment of wishing time away for it is the one commodity that cannot be recovered, once spent. As astronomers, we are probably more acutely aware, than most, of that fact.

After all, 2020 has not been without some very remarkable sky-sights. Late last winter and spring, the planet, Venus, had an unusually excellent apparition, high in the northwestern evening sky. In July, C/2020 F3, otherwise known as NEOWISE, put on the finest show in both predawn and evening sky that any comet has given us in a generation. An astronomical gift from the depths of space, its timing couldn't have been better; shaking all of us out of our COVID-19 doldrums. Despite their low positions in the evening sky, mighty Jupiter and elegant Saturn have been a striking planetary pair and will appear to draw closer to one-another in the coming weeks – a rare sight, indeed, given their long orbital periods. And of course, Mars, just past an extremely favourable opposition for northern hemisphere observers, remains a brilliant ochre jewel in the night sky from dusk to dawn and will remain so for a few weeks, yet.

As you may know, our Hallam Observatory has seen some needed renovations to its roof and dome this year. A special thanks to all of those who helped out with a donation towards the cost for the shingling job on the warm room – the first since the observatory was built, nearly two decades ago – and to Mahayarrahh-Starr Livingstone, who re-painted the dome, making it look good as new. It has also been great to see so many members using the observatory location through the summer and fall for their personal viewing of the night sky. Starr, who is our Public Education Director, has even managed to host a few visitors at the observatory, taking care to follow the recommended safety guidelines. Hallam Observatory continues to be used well even in this COVID-19 world and despite the obvious challenges of light pollution from new greenhouses that continue to sprout, near Leamington.

Our Centre Treasurer, Greg Mockler, along with 1st Vice President and Membership Chairman, Rick Marion, keep up on membership renewals each month. We have all felt the pain as we have watched this virus in 2020 effectively eliminate our regular membership meetings. Disappointingly, we also had to cancel or postpone many special events that had been planned for this, our 75th Anniversary as a Centre. Perhaps understandably it has become a bit more challenging to avoid a slight drop in renewals we have been noticing, recently. We do hope that this is a temporary situation and meantime should your membership renewal come due (as my own has just now) please do so if possible as soon as you can.

As noted elsewhere in this issue of *Aurora*, our annual General Meeting will be held online via "Zoom" on Tuesday, November 17 beginning at 7:30 p.m. This is, of course, our Annual Meeting, where we will be taking care of the very important task of electing the Windsor Centre Executive and Council for 2021. Please mark your calendars and plan to join in, that evening! I will be sending out reminders and further details and information in the days ahead of our meeting, so stay tuned.

On a related note, your Council held its third and final meeting for 2020 via Zoom on October 13th. Immediate Past President, Mike Mastronardi, introduced a tentative slate of officers and council for 2021 that appears, elsewhere, in this issue of *Aurora*. Noteworthy and, frankly, somewhat concerning as you will see while reviewing it, is that some key positions at the moment remain without volunteers to fill them. The RASC Windsor Centre is no different from so many other organizations that depend on the time, effort and enthusiasm of volunteers to make them thrive. Many, if not most of those names you see listed on that tentative slate have been volunteering on council for many years now and in some cases, for decades. They want, and need your help!

If there is one thing that your Council wants to believe, it is that there is a lot of untapped enthusiasm and talent amongst our membership and that is why a very special appeal is being made this year to please, *please* consider expressing your interest and enthusiasm for astronomy by volunteering for one of these available positions. Age is no barrier. We need you, your thoughts, ideas and energy like never before, as we plan new events, activities and the path ahead for the RASC Windsor Centre.

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Calendar of Events

Our next meeting...

November 17, 2020

at

Online Zoom Meeting begins at 7:30 p.m.

[Click Here to Join the Meeting](#)

Main Speaker...

Annual General Meeting

Topic...

2021 Elections

Director of Observing Report

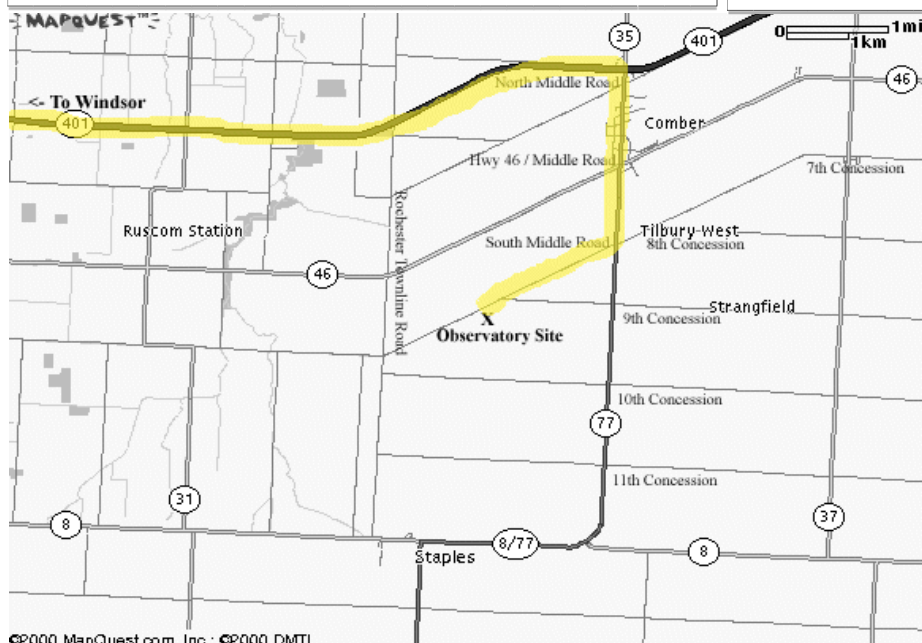
Activities...

Orionid Meteor Shower: Peaks on **Wednesday, October 21st**. Best views will be from the Midnight until Dawn when you can expect to see between 20 - 40 meteors per hour. The moon is just 5 days past new and sets by 10:30 p.m. EDT.

Saturday, October 31: Halloween Night - Uranus is at opposition, Second **Full Moon** of the month (**Blue Moon**), **Daylight Savings Time** ends (technically at 2:00 a.m. on November 1st).

Moon and Messier 35: On **Wednesday November 4th** as the Moon rises it will be about 1/4 of a degree from the open cluster M 35 in Gemini.

Leonid Meteor Shower: Peaks in the early morning hours of **Tuesday, November 17th** in a moonless sky. You may see from 10 - 15 meteors per hour. The next expected storm from this shower is not expected until 2030.



Hallam Observatory Site

Directions: The map at left shows the Comber area and it includes the major highways (401, 77, 8 and 46) that are in the area of the observatory.

The most direct route from Windsor is "highlighted" on the map which is to take Highway 401 East to Highway 77 South to South Middle Road. Turn right onto South Middle Road and go about 1 kilometer and just after the point where Concession 9 joins it (it is hard to see this intersection) you will find the observatory site on the South side (left) of the road. 3989 South Middle Road.

If you hit the Rochester Townline Road (you come to a stop sign) you have gone too far.

Submissions

Aurora is published monthly except for July, August and December. The September, October, January, March and May issues are full newsletters (usually 6 pages) with a number of member submitted articles. The November, February, April and June issues are short flyers (2 pages).

Submitted articles can be of any length from a paragraph to multiple pages. I can scan pictures and/or diagrams (both prints and film) to support your article and the originals will be returned to you.

Submission deadline is the 1st of the month.

Editor: Steve Mastellotto Email: mmastellotto@cogeco.ca

Membership

The Windsor Centre of The Royal Astronomical Society of Canada meets on the 3rd Tuesday of every month (except July and August) at the Ojibway Park Nature Centre. In addition to regular meetings the centre hosts a number of observing nights, a picnic and a December social. Members receive a copy of the Observer's Handbook, a subscription to SkyNews magazine and access to the Centre's library and telescopes. Optionally the RASC Journal is available in print form—online version free.

Annual Membership Fees: Please see the RASC website at www.rasc.ca for current rates.

Contact Greg Mockler (greg.mockler@live.com) or visit our website at: <http://www.rascwindsor.com> for more information.

Director of Observing Report by Nancy Ng

This year we have been introduced into a world that is unusual, unstable and erratic. It's become difficult to predict anything for certain. However the movements playing out deep in the night sky can be counted on with mathematical precision. When you read that the first quarter moon will pass by Jupiter and then Saturn, on Oct. 22nd and 23rd you can go outside, look up and they'll be there. On Oct. 29th the moon and Mars will both rise in the east by 6:15 pm with the moon sitting precisely 2 degrees and 58 arcminutes to the south of Mars. If there is a clear sky I can guarantee you that you can watch them cross it right through to 6:30 am when they will both sink beneath the western horizon. And if that isn't enough you can be certain the moon will pass by Jupiter and Saturn again on Nov. 19th and once more rest below Mars on the 25th. I have always experienced a deep calm while being under a starry sky, in fact that is what drew me into this hobby and now more than ever I seek solace there.

There was a Mars Party at Hallam observatory on Oct. 9th. Mars was at opposition on Oct. 13th and was visible through clouds for most of our gathering. Uranus will be at opposition as it travels through Aries constellation on Oct. 31st and reaching perigee the same night at 18.79 AU from Earth. Mercury reaches inferior solar conjunction on Oct. 25th and this marks the end of its evening apparition as it transits into a morning object. The planet will reach its peak altitude of 17 degrees on Nov. 10th however it won't stretch far enough away from the sun to offer much of a view in the early mornings. Venus is rising before the Sun after 5:00 am and stays visible at 25 degrees in the south east until 7:30 am. She will continue to be our morning 'star' into the new year.

The Orionid meteor shower will occur between Oct. 2nd and

Nov. 7th, I guarantee it! How many meteors will you see as you look toward the radiant located at the raised right arm of Orion? That is uncertain but your chances increase on the peak night of Oct. 21st and the later past midnight that you're able to stay out to view them. This shower occurs as the Earth's orbital path sends us through the debris left behind in the wake of comet 1P/Halley. The Leonis Minorid, a less prolific meteor shower, will peak on Oct. 24th with the radiant in Leo Minor constellation. There was a full moon on Oct. 1st and I'm pretty certain there will be another one on Halloween Oct. 31st. A second moon rising in the same month is sometimes known as a Blue Moon.

This moon will rise at 6:30 pm with few trick-or-treaters to guide through the night. First and last quarter will be on Oct. 23rd and Nov. 8th with the new moon will be hiding out on Nov. 15th.



By the end of October the three bright stars of Orion's belt will rise above the eastern horizon by 10:30 pm. Sagittarius and Scorpius are leaving the night sky and taking Jupiter and Saturn with them. As November closes out Ophiuchus and Bootes will leave the stage with Hercules following shortly after. The summer triangle will oddly hang around for a while still. However

short it seems to feel, the winter sky is on the way. The glorious stars Sirius, Capella, Aldebaran, Betelgeuse and Rigel. The Pleiades, one of the best objects to view with binoculars will be with us as well. It's challenging to set up a telescope in the snow but we're compensated with many of the first magnitude stars to keep us company on crisp winter walks.

Looking ahead to 2021 still seems murky and uncertain so I hope you enjoy the everchanging and yet totally predictable, amazing and majestic cosmos!

IMPORTANT: We Need Your Help

The currently stable financial condition of the Windsor Centre is in jeopardy. We have lost our anticipated sources of revenue this year – calendars, the art show and our meetings! We are asking our members to look at making a charitable donation. If most members contributed a few dollars (even \$25 or \$50) we would raise the funds needed to cover our cancelled events. Any donations made before the end of the year will be eligible for a charitable donation receipt which can be used with your 2020 tax return. You can make a contribution by Interac email transfer or by cheque payable to **RASC, Windsor Centre**. Details are:

Email for Interac transfer: rasc_windsor@outlook.com

Mailing address:

RASC, Windsor
c/o Greg Mockler
1508 Greenwood Ave
Kingsville, ON
N9Y 2V7

If you have any questions, please contact Greg Mockler, your earnest treasurer.

Hallam Observatory Fee

A reminder that the Hallam Observatory annual access/key fee of \$60 is due October 1st. If you no longer wish to have your own access to the observatory please contact Steve Mastellotto (Steve.Mastellotto@gmail.com) to arrange to turn in your key.

Key access to Hallam Observatory is available to all RASC Windsor Centre members in good standing who have been members for at least 1 year and complete a training session on the observatory equipment. Note that an additional \$10 key cutting fee applies.

You can make your payment (renewal - \$60 and new - \$70) via Interac email transfer or by cheque payable to **RASC, Windsor Centre**. Details are:

Email for Interac transfer: rasc_windsor@outlook.com

Mailing address:

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c/o Greg Mockler
1508 Greenwood Ave
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At The Eyepiece: Planet and Planetary Viewing by Mike Ethier

My idea of what constitutes a great night of observing varies with the seasons, and which projects are on my clipboard for the next clear night. Sometimes it might be a long list of double stars, and sometimes a clump of NGC objects. Usually I prefer to work in detail in one area of the sky at one time, so I will have a list for early night and a list for later in the night. For a few nights recently, and lasting throughout October, I have a suggestion for viewers who can access a dark sky sight, preferably near the lake to get good southern sky exposure.

There are currently five outer planets available to viewers this month, with Mars being the main attraction. I have enjoyed several superb views of its surface in October with the 12" Dob, the best I have ever seen, including my first opposition experience in 1971. I like to use a red filter at 166x, which really brings out the dark areas strongly, and then switch to a yellow filter at 231x, which makes the detail stand out clearer and brighter. Since Mars is currently best observed after 11 PM, I have been starting with Jupiter and Saturn lately. Again I prefer a yellow filter with both planets, which are really too bright in my 12" mirror otherwise. Over the summer I have kept a steady watch and have enjoyed many clear and incredible views of both planets and their moons.

Uranus and Neptune are visible, too. Neptune is easy to find after 9 PM, nestled into an area near 96 Aquarii. I have been watching its slow progress through the sky over several nights recently, and on my last visit (October 14th) I was able to easily see

Triton, the first time I have had such luck. The moon is about mag. 13.5, moving between 12" and 17" of arc from the planet. Deborah and I both saw it clearly, and it was quite a thrill to do so at the eyepiece (231x). I find that the chart in the Astronomical handbook is next to useless to finding Neptune, so I went on-line and found a better one. It isn't far from eg 7585, a prominent galaxy in Aquarius, and is an easy star hop from there.

Uranus is best seen later, after around 11 pm. It is in Aries, in the middle of nowhere. The Handbook chart is helpful, and I was able to plot the planet on Uranometria beforehand. It is much brighter than Neptune (which is bluish-green and pretty bright in the 12" scope), and stands out as the brightest object in its area of sky. It appears blue in colour. At 231x it does show a tiny disc, but on the night I found it the seeing was quite bad, and the planet shimmered away. I will return on a better night. Over the course of one evening we were able to observe Saturn, Jupiter, Neptune, Mars, and Uranus, in that order, with Deb's 6" scope and my 12". It was a fun way to spend an evening. But wait, there's more!

Aquarius is home to two very different planetary nebula, both well known to amateurs. One of these objects resembles a planet closely enough to deserve the name planetary nebula. NGC 7009

is called the Saturn Nebula. It is mag. 8, being 35" in size, and has a bright central star. It has a remarkable colour, a very strong blue that is fun to compare with that of Neptune and Uranus. This nebula takes magnification well, and I enjoyed good views at 333x. No filter is required to see this object at its best. At first its two extremities, or ansae, appear as tiny dots, or stars, preceding and following the object. After a few moments, and at reasonably high magnifications, they appear attached to the main body. These can be seen in an 8", with patience. The overall impression of NGC 7009 is of a cartoon drawing of Saturn. At high power with 12" it also appears to have a fuzzy or mottled texture, as of many fine lines engraved across its surface.

Not too far away is another showpiece planetary nebula, The Helix (NGC 7293). This very large and faint nebula sits at 21 degrees of declination. From Hallam this is in a very poor area of the southern sky. Ideally, Point Pelee would serve well, or a dark place along the lake. The visual magnitude of the overall object is a bright 7.3. However, due to its enormous size (1054"), expect a shock when you see it for the first time, especially in a

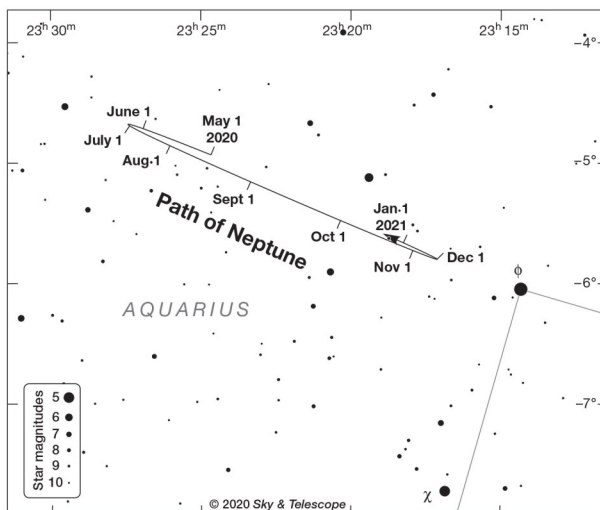
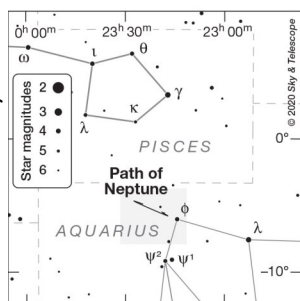
smaller scope. It might appear very faint and ghostly. Under good conditions and with the right equipment, this is one of the major wonders of the heavens. I like to observe the nebula at low to medium magnifications, starting at 86x, then moving up to 107x and finally 120x. Without a filter there is a veritable open cluster of stars to be seen through the haze, but finding the central star, mag. 13.5, is not difficult.

I really like the view using my old Orion Skyglow filter. The nebula brightens a lot, and areas of varying brightness can be easily distinguished, especially towards the edges. However, the OIII filter (Celestron), while giving darker views, also provides a more 3D immersive experience, showing plenty of detail and giving the impression of great turbulence and churning. I pushed as high as 166x, filling my eyepiece with this amazing object, using the Skyglow filter. As far as seeing detail goes, this object rates as highly as Jupiter, Saturn, or Mars at opposition. It is a mini-universe unto itself!

Clear skies.

Messier of the Month

Since we are already in the area of Aquarius, I will now discuss two of its Messier objects, one of which is almost a showpiece, and one of which is certainly a dud. Let's begin with the showpiece. My first official logging of Messier 72, or [gc 6981](#), was the night of July 28th, 1994, using my Edmund 8" reflector. While located easily at 59x, and observed up to 200x, it was basically a round ball of light, not that bright, and showing no resolution worth mentioning. Switch to September 18th of 2020, when I first came after M 72 with the 12". Looking much like a comet at 86x, the cluster is unresolved. Lying at -12.5 degrees south, it



Planet and Planetary Viewing (continued)

was in a good enough sky from my Kent County location. At 120x it takes on a granular quality. Finally, at 166x, the globular cluster begins to resolve into very tiny stars, all across the bright central area. 231X achieves fair resolution, with tiny pinpricks of light dancing across the background haze of unresolved stars. 333X provides decent resolution for well seasoned eyes, though M 72 is far from a showpiece cluster for untrained eyes. It does provide a good challenge for a 12" scope from our latitude and sky conditions. The outer, much fainter haze surrounding the central area is not very large.

While M 72 was claimed by Mechain, and does resemble a comet-like object, Messier himself must shoulder the blame for M 73. I remember being quite disgusted and disappointed the first time I saw it, and wondering how such a sight had ever made it to the list. Messier used a 3.5" refractor, yet he still added this to his list of objects that could be mistaken for a comet. Perhaps his lens was fogged. But all there is to see is a 4-star asterism of mag. 9 stars. Nothing else. I'm not the only person who finds it odd that M 73 and M 72 (which Messier does not mention) are at roughly the same declination, and separated by 1 hour of right ascension. Was there a mix up of some kind, and he really meant to log M 72? We'll never know, but after seeing how many such mistakes were made in the original NGC catalogue, it is not an impossible thing to imagine.

Messier 72 (NGC 6981): Size 6'.6; Vis. Mag. 9.2; Brightest star mag. 14.2.

Messier 73 (NGC 6994): Size 1'.4; 4 stars; Vis. mag. 8.9.

Call for Nominations

As published for the first time in the September issue of Aurora and now published for the second time, as the RASC Windsor Centre's immediate Past President, I am also the Nominations Committee Chair, entrusted to establish the proposed slate of Council Members and Officers for 2021 (see proposed slate at right). Through this message, I am once again calling for nominations from any member of the General Membership in good standing (current in their Annual Dues) who wishes to stand for election to Council or for one of the Executive Positions for 2021 at the November General Meeting. If so inclined, contact me by phone at: 519-965-1705 or by email: michael.mastronardi@stantec.com before November 15th to let me know. Please, self-nominations only this year.

As stated in the first publication, I have now contacted all current Council Members and Executives to ask of their intentions to stay on Council and/or in their Executive positions. And to date there has not been any response from the General Membership. Please note that names can still be added to the proposed slate (see above) based on nominations that I receive from the General Membership before November 15th. The Proposed Slate of Council Members and Officers for 2021 (updated as/if necessary) will then be presented for acceptance at the November 17th Virtual General Membership / Annual General Meeting (AGM) of the RASC - Windsor Centre. If more than one person is standing for any Executive position, there will be a platform for voting for a particular person for the position. The details as to how the virtual meeting will be conducted, still have to be worked out and the membership informed, but it will in all likelihood be a Virtual **Zoom Meeting**. Because of the situation this year, "Nominations from the Floor", will not be able to be entertained at the Virtual AGM.

Please further note that on the current Proposed Slate for 2021, that the Executive positions of **President**, **2nd Vice President** and **Secretary** are Open Positions and need to be filled. Further note, that the Appointed Positions as indicated on the Proposed Slate, which largely mirrors the current Appointed Positions are not voted on but are ultimately determined and set by the new incoming Council and Executive at the first Council Meeting in 2021 (usually in February) and may be filled by a Member who is not on the new Council or in one of the Executive positions. We are always looking for volunteers and this is a good way to get involved.

Thank you,
Michael Mastronardi
Past President – RASC Windsor Centre / Nominations Committee Chair

Proposed 2021 Council of the RASC - Windsor Centre

Executive

President	<i>Open Position</i>
1st Vice-President	Rick Marion
2nd Vice-President	<i>Open Position</i>
Secretary	<i>Open Position</i>
Treasurer	Greg Mockler
National Council Rep.	Tom Sobocan

Councilors

Randy Groundwater	Mahayarrahh-Starr Livingstone
Steve Mastellotto	Mike Mastronardi
Nancy Ng	Steve Pellarin
Paul Preney	C. Joady Ulrich

Appointed Officers

Honorary President	Dr. William Baylis
Past-President	Randy Groundwater
Alt. National Council Rep	<i>Open Position</i>
Librarian	<i>Open Position</i>
Recording Secretary	<i>Open Position</i>
Public Education Director	Mahayarrahh-Starr Livingstone
Public Relations Director	Nancy Ng/Tom Sobocan
Directors of Observing	Juliana Grigorescu
	Steve Mastellotto
	Nancy Ng
	Jessie Passa
	Dr. Susan Sawyer-Beaulieu
Light Pollution Abatement	Mahayarrahh-Starr Livingstone
Hallam Observatory Director	<i>Open Position</i>
Aurora Editor	Steve Mastellotto
Web Master	Steve Mastellotto/Jack Zhu

**RASC
Windsor Centre**

**Financial Statement
for year ending September 30, 2020**

	Current	Last Year	Difference
Balance Sheet			
Assets			
Cash	9,661.16	9,250.32	410.84
Building & equipment	80,000.00	80,000.00	-
	<u>89,661.16</u>	<u>89,250.32</u>	410.84
Liabilities	-	-	
Accumulated surplus, open	89,250.32	87,944.56	1,305.76
Earnings (loss)	410.84	1,305.76	- 894.92
Accumulated surplus, close	<u>89,661.16</u>	<u>89,250.32</u>	410.84
Statement of Revenue & Expenses			
Revenue			
Revenue - Donations - receipted	1,620.00	495.00	1,125.00
Revenue - Donations - not receipted	450.00	600.00	- 150.00
Revenue - Sale of property or goods and services - scopes	300.00	-	300.00
Revenue - Membership fees - National	2,356.01	2,601.17	- 245.16
Revenue - Membership fees - Obs fee	970.00	916.00	54.00
Revenue - Fundraising - meetings	82.70	234.65	- 151.95
Revenue - Fundraising - 50/50 draws	100.00	253.90	- 153.90
Revenue - Fundraising - special events	280.00	250.00	30.00
Revenue - Fundraising - pubs	1,880.00	2,060.00	- 180.00
Total revenue	<u>8,038.71</u>	<u>7,410.72</u>	627.99
Expenses			
Expenses - Office supplies and expenses	84.74	121.45	- 36.71
Expenses - Occupancy costs - mtg rental	478.16	817.50	- 339.34
Expenses - Occupancy costs - obs rent	500.00	500.00	-
Expenses - Occupancy costs - obs utilities	480.00	480.00	-
Expenses - Occupancy costs - obs other	3,396.89	1,357.59	2,039.30
Expenses - Adv & promo	384.20	389.83	- 5.63
Expenses - Fundraising expenses - meetings	353.47	483.44	- 129.97
Expenses - Fundraising expenses - pubs	1,697.41	1,800.15	- 102.74
Expenses - Fundraising expenses - special events	190.00	-	190.00
Expenses - Travel and vehicle	-	-	-
Expenses - Social	-	-	-
Expenses - Honoraria	63.00	155.00	- 92.00
Expenses - programs	-	-	-
Total expenses	<u>7,627.87</u>	<u>6,104.96</u>	1,522.91
Net Earnings	<u>410.84</u>	<u>1,305.76</u>	- 894.92

Notes to Financial Statement for year ending September 30, 2020

- Net Earnings for the year approx. \$400; compared to earnings of about \$1,300 the previous year
 - Revenue was up about \$625 compared to the previous year (receipted donations up by \$1,125 due primarily to the Art Centre display and sales; calendar sales down by \$180, membership fees down about \$245; meeting and 50/50 revenue down over \$300 due to cancellation of meetings from March)
 - Expenses were up about \$1,500 primarily because observatory roof, other maintenance expenses and TV purchase were over \$2,000 (costs for meetings were down by about \$470)
- We remain in stable financial shape largely because of many donations following the art show and sale; however there will not be a show this year and we need to solicit donations for the new fiscal year otherwise we face the likelihood of a loss. Paring all but essential expenses (mainly the observatory) means we need to have revenue of about \$3,000. RASC memberships will probably bring in about \$2,000 so we need to generate about \$1,000 to break even. Although much of that can be covered by observatory fees, we need additional funds to allow growth in the future.

If you have any questions, please contact Greg Mockler, your earnest treasurer.