

AUTORA



Volume 47, No. 2

The Royal Astronomical Society of Canada - Windsor Centre

October 2021

Saturn Scene: A Nostalgic View by C. Joady Ulrich

"The work needs a telescope of at least 8 inches aperture, Saturn is a convenient object inasmuch as it will usually stand a comparatively high magnification... It is unique in its glory, and it is a sight never to be forgotten." Patrick Moore, *The Amateur Astronomer*, 1968, pgs. 128, 129.

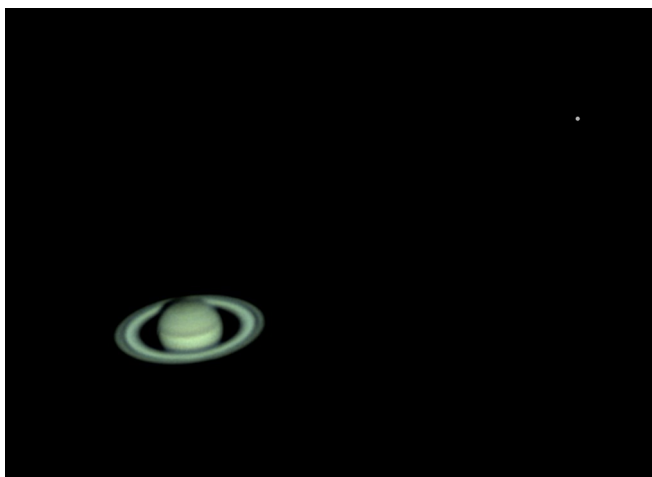
When a person thinks about the planet Saturn that individual is reminded of a directly unique and obviously beautiful object bright in a dark sky. Observing this impressive planet even only once through a telescope can make for a lasting memory. Patrick Moore in the above given quote, was correct that this impressionable planet "is unique in its glory, and it is a sight never to be forgotten." (Moore, 1968, pg. 129.) The planet's brightest and largest moon Titan also helps to present a truly memorable scene.

My Mother and Me Look at Saturn

In 1980, I was living near the corner of Riverside Drive and Lauzon Road in Windsor, Ontario. My 8-inch f/7 Newtonian reflector, then on a German equatorial mount, was placed on the south shore of the Detroit River. From time to time, I shared my night sky observations made from that telescope with other interested individuals.

One of those interested individuals was of course, my grand and good mother. Yvonne Ulrich as an amateur artist, painting beautiful pictures of landscapes and flowers, developed a deeper perception of the beauty that she found around her in the world. This enhanced ability of observation enabled her to better enjoy nature in general, including Saturn, probably her favourite planet as seen in a telescope.

I warmly remember on a few occasions looking through my telescope at Saturn with Mother. On at least one of them, after Mother and I had watched the *Tonight Show*, then hosted by Johnny Carson, we went outside, following her request, to see that planet. I would get the telescope ready, get Saturn in the field of view and magnify it with an ocular eyepiece of 4mm. I would make it was at the upper piece's viewing area could see that object time available as the moved that image area. Mother would look at this beautiful Mother and me it was experience to view and bright globe and split by the black Cassini's Division. Titan gle star with no disk peering on the right. It was all a view of ty which became a that Mother and me



old 4mm ortho-0.965 inch diameter that the plan-area of the eye-so that Mother in the maximum Earth's rotation across that visual then take a good ringed world. For an encouraging the planet's white encircling rings, round line of Cassini's Division looked like a sin-noticeable, ap-side of the planet. wonder and beau-treasured memory still remember.

How the Picture of Saturn and Titan was Made

Mahayarrahh-Starr Livingstone or Starr as he likes to be called, is a member of the RASC-Windsor Centre and its current President. I was impressed when I saw a few of his good quality astrophotographs that he had taken and so had confidence that he could make for me a fine photograph of Saturn and Titan. Therefore, three

(Continued on page 3)

In This Issue

Saturn Scene: A Nostalgic View	Cover and Page 3
Events / Housekeeping Items	Page 2
Meeting Minutes: September 21, 2021	Page 3
At the Eyepiece: Changing of the Seasons	Page 4
Call for Nominations / 2022 Proposed Council / Fees	Page 5
2021 RASC Windsor Centre Financial Statement	Page 6

Calendar of Events

Our next meeting...

November 16, 2021
at
Online Zoom Meeting begins at 7:30 p.m.

Main Speaker...

Annual General Meeting

Topic...

2022 Elections

Director of Observing Report

Activities...

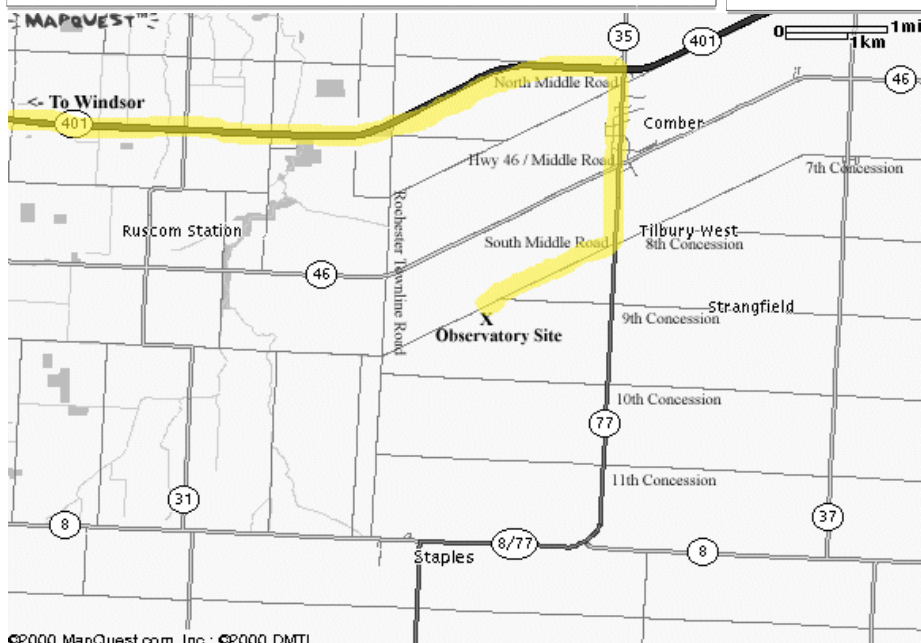
Orionid Meteor Shower: Peaks on **Thursday, October 21st at 8 a.m.** Best views will be from the Midnight until Dawn when you can expect to see between 20 - 40 meteors per hour. The moon is just past Full and obstructs the view most of the night.

Mercury and Venus: Are at greatest elongation west and east on **October 25th and 29th** respectively.

Mercury: On **Wednesday November 3rd** is 1.2 degrees South of the Moon at Dawn and a **daytime occultation** occurs from **3:36 - 4:32 p.m. EDT**.

Uranus: On **Thursday November 4th** is at opposition in the constellation Aries.

Daylight Savings Time: Ends at 2:00 a.m. on Sunday November 7th.



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.

September 2021 Meeting Minutes by Nancy Ng

The monthly meeting of the **Royal Astronomical Society of Canada – Windsor Centre** was held via Zoom Online meeting on **Tuesday September 21, 2021**.

Windsor Centre President, Mahayarrahh-Starr Livingstone chaired the meeting. Starr called the meeting to order at 7:30 p.m. and welcomed the members and our guest speaker **Dr. Christa Van Laerhoven, RASC-Yukon Centre** to the online meeting.

Starr invited members to review the **minutes of the June 15, 2021 general meeting** which were printed in the Aurora newsletter. A **motion to accept the minutes** was made by Tom Sobocan and seconded by Susan Sawyer-Beaulieu. **MOTION CARRIED.**

Director of Observing Report, Nancy Ng: Nancy began by noting that there have been two evening 'stars' in the night sky for most of the summer. **Jupiter** is visible at sunset in the SE at 13.3 degrees and **Venus** at 14 degrees is following the sun into the WSW horizon. Venus will soon reach its highest altitude at sunset on December 5th of 19 degrees. **Mercury** and **Mars** are travelling between the setting sun and Venus at 4 degrees and ½ degree respectively at sunset rendering them un-viewable. Tonight, **Jupiter and Saturn** are ~17 degrees apart in Capricornus constellation. They have both reached over 17 degrees at sunset and are visible until after 3 a.m. **Neptune and Uranus** can be found in Aquarius and Aries respectively and may be viewed all night long as they sail from east to west across the night sky.

The phases of the **moon for September and October** were displayed on screen. The **Harvest Moon** is the closest full moon to the **Autumnal Equinox** and often occurs a few weeks before or after that date. Nancy noted that this year's Harvest Moon is only separated from the equinox by two days. Because of the shallow angle of the ecliptic at this time for the next few nights the moon will rise **23 minutes later each night**.

Each night the **summer constellations** are slowly finding their way to the western horizon. For the next month you will get your last views of **Bootes, Ophiuchus, Scorpius and Sagittarius**. However if you find a dark SE horizon after 2 a.m. you will be rewarded with a preview of the winter sky as **Auriga, Taurus, Gemini and Orion** show us their first magnitude stars.

Out at Point Pelee on August 16th Starr Livingstone, assisted by Laura Burgess, hosted eleven young adults from the **Walpole First Nations**. Nancy, Mike Mastronardi and Laura were able to find views between the clouds for **visitors at Hallam** on September 3rd. Laura shared here image of the **Andromeda Galaxy** which she created using her camera attached to the telescope at **Hallam Observatory**. Laura also presented her 4 a.m. 15 second photograph of Orion, Taurus and the Pleiades beside the glow of the moon. **Starr** travelled to Fernie, BC where he found a **Bortle 2** dark sky for his imaging. He shared a majestic **Milky Way** rising into a dark sky sprinkled with stars that reached all the way down to the horizon. **Nancy** captured some dramatic **lunar crepuscular rays** stretching out from a large thick cloud above the field at **Hallam**.

Main Presentation

Planet Migration: Dr. Christa Van Laerhoven, RASC-Yukon Centre PhD Planetary Sciences, BEd Secondary: Physics and Math

Dr. Van Laerhoven introduced us to the intriguing proposition that many years ago perhaps the location of the **planets Uranus and Neptune were reversed from where they are today**. Christa gave a short summary on the formation of planets from tiny particles that surrounded the Sun. A process known as **heat acceleration occurred** when particles would collide together and stick repeatedly

to form planets. The intense heat around the Sun only allowed for **rocky materials** to survive there while **ice, water ice, methane ice** and more could be found in the much further colder regions. The main **asteroid belt** is located between Mars and Jupiter where two main types of asteroids are found. There are **water poor S-type** objects located close to the sun and **water rich C-type** objects located at the outer areas of the asteroid belt. There is also an area near the center of the belt where these two types are mixed together. Christa presented an idea known as the **Grand Tack** which attempts to explain this scenario. She also noted that this is an ongoing area of active research. Graphs were used to demonstrate the effects of different sizes of planetary discs which could justify the mixing of asteroid types instead of having them arranged in a continuum.

Christa explained another area under active research which dealt with the **placement of Uranus and Neptune** in the solar system. These two large planets could have interacted with trans-Neptunian objects also known as the **Kuiper belt** in such a way as to move their orbits. In trying to explain these forces she drew an analogy of throwing objects as you wear skates on an ice rink. **With every throw of a small object you would also slide back a little yourself.** After throwing a million objects you would move much more. In this way, as Neptune interacted with object from the Kuiper belt it's possible that the planet would move enough to become much closer to the sun and **change position with Uranus**.

Another scenario for the evolution of the Solar System was presented using the **Nice Model** developed in 2005 Nice, France. The complicated propositions from this model challenges the present knowledge on planetary migration, formation of the Oort Cloud, lunar cataclysm and much more.

Dr. Van Laerhoven also took us on an interesting journey of scientific research that struggles to connect our solar system formation with new configurations found among many new **exoplanets** and their stars. She also posited scenarios which may have created the mystery that is **Mercury** with its thin crust, small size and large iron core. She clearly demonstrated to us the everchanging face of astronomical research and encouraged our curiosity for the future.

Meeting adjourned 9:32 p.m..

Saturn (continued from page 1)

years ago I asked him to do so and he agreed.

Starr took the needed digital images and did the processing to create the final photograph during July 2018. He attached his camera to the 14-inch Henry Lee Telescope at the Windsor Centre's Hallam Observatory and took about 4,500 original video frames of Saturn. Another picture of Saturn was taken and over exposed to easily show Titan. Three computer processing programs were used, including Photoshop, to help bring about the completed picture. Starr then stacked or combined about 120 of the best focused images that had been selected from among the original ones to form a single image of the planet. He then took this new image and combined it with the picture of Titan. The finished photograph reveals a view of these two objects that quite clearly shows all of their details that I observed in my telescope decades ago. I'm grateful to Starr for all of the fine work that he did to create this picture for me.

This very well-crafted photograph, shown on page 1, is an excellent portrayal of the sixth planet from the Sun and its largest moon. It is a truly wonderful reminder of my mother and me having enjoyed and been encouraged from observing that obviously impressive scene over forty years ago, on quiet nights, on a bank of the Detroit River.

At The Eyepiece: Changing of the Seasons by Mike Ethier

Many of us enjoy day trips, being easy-to-arrange travel getting us there and back in the same day. Nearby Ontario places like Point Pelee, the city of London, Sarnia, and smaller centres and parks in between, offer good options for a quick and easy mini-vacation. When the U.S. border is open, Detroit offers a virtual Milky Way of day trip options, from concerts, sporting events, and art galleries, to shopping, dining, and whatever else one might wish to do in a large city. Ann Arbor, Toledo, and many interesting suburbs offer the day visitor many more options. Windsor and Essex County citizens are fortunate to have so much on offer so near to home.

Now imagine if our local environment changed gradually over the year. Slowly, Chicago emerges across the river instead of Detroit, and next season it's New York. Point Pelee then changes to a mountainous national park for totally different experiences for the hiker, photographer, and nature lover. The following year Detroit is back, and so the cycle of seasons go. Imagine all that there would be to do for the day tripper if such things really happened.

Well, it sort of does happen, only at night, and in the sky. As the seasons change, so does our view looking outwards from Earth. A day trip becomes a night trip, and while some sights can be viewed well from city and suburban yards, to get the full spectrum of what is on offer, it is best to take a little drive into the country, where skies are darker and more welcoming to the amateur astronomer. While we might think nothing of driving two hours to a daytime destination for a pleasure outing once in a while, why not consider doing the same for astronomy's sake? I would love to find a usable dark sky sites beyond Essex County, but not too far away. A once per month small group outing for a long observing session might be just the ticket to refresh ourselves. While Point Pelee is a valid option, it has to happen on a certain night, and if that night is cloudy, all bets are off for another month. A bit more flexibility is needed, with the weather conditions we have to live with here. Hallam has improved a lot with the gradual dimming of greenhouse lights, but the south sky is still a mess, and of course the northwest and west is worse.

Here are some celestial places where I have spent fun times so far in 2021. In late winter I observed in Canis Major and Orion. In the early spring I spent time visiting and observing objects in Sextans and Coma Berenices, as well as Serpens Caput. Later in the spring and into early summer I visited Ophiuchus, Sagitta, and Hercules. In late summer and early autumn (so far) I have been to Cassiopeia and Aquarius. While I haven't travelled much

on day trips during the pandemic, I have managed quite a few excursions into the night sky. There is so much to see, and so little time.

Messier of the Month: M 15 in Pegasus

I first made the acquaintance of this fine globular star cluster in mid-August, 1977. I was using my Tasco 4.5" reflector, and this marked my 51st Messier object at that time. At 72x I was able to resolve 4 or 5 stars on the outer limits of the central mass. I mentioned at the time the beauty of the bright white centre against a perfectly black sky background. That observation was made at the family camp on Lake Penage, west of Sudbury.



M15 by Steve Mastellotto: LRGB image - two sets of Lum frames 9 x 15 min and 8 x 5 min subs for HDR processing, and RGB 8 x 5 min subs each. Total exposure is 295 minutes. All image calibration and processing was done in PixInsight.

Jump ahead to November 8th, 1991, and to my backyard in old Anderton Township. This was my first view of it using the Edmund 8" reflector. My view was hampered that night by a brilliant display of aurora. Many members will remember that night, as red aurora flooded Essex County skies. Check back into your observing notes. In Sudbury, aurora were frequent and mostly annoying, but have proved to be quite rare in Essex County. This was a major display.

The following night I was able to resume normal observations. Stars were resolving nicely at 112x, which was not possible the previous night. 169x gave the best view, with stars resolving all across the cluster. Higher powers were applied, but focusing became quite tricky.

Now jump to October 25th, 2014. From Hallam Observatory I was able to view M 15 with my newly acquired 12"

reflector. Here are some quotes from my notes from that night: "A 12" scope is a most useful tool when it comes to resolving globular star clusters. [M 15] was observed tonight at all magnifications, from 43x through 250x. Each step up is an adventure, and one worth repeating... It begins to resolve at 60x, and at 100x stars are resolving to near the core... At 187x a notable clump is north preceding the bright core. 250X breaks up the core, with dark areas just south. The centre blazes and is still very dense..."

M15 is easily viewed in October skies, seen well ahead of the Great Square.

Messier 15, or gc 7078: 18'; visual mag. 6.3; Brightest stars mag. 12.6. It was discovered in 1746, and lies about 34,00 light years away. There are about 100,000 stars in this densely packed group. In small telescopes (my 2" Space Eye refractor, for example), it could easily be mistaken for a comet.

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: *RASC, Windsor*
5505 Rhodes Dr., Box 317
Windsor, ON
N8N 2M1

Calendars

The RASC - Windsor Centre has once again produced a calendar featuring the astrophotography of Windsor Centre members. If you would like to secure a copy of the calendar please prepay using the Interac instructions below and we will arrange delivery. If any copies are remaining after this initial offering they will be made available for cash purchase. The price is \$15 per calendar or 3 for \$40 which includes all postage, handling and taxes.

Interac email transfer details: rasc_windsor@outlook.com

For more information contact Steve Pellarin (pellarins@yahoo.com).

Proposed 2022 Council of the

Executive

President	Mahayarrahh-Starr Livingstone
1st Vice-President	<i>Open Position</i>
2nd Vice-President	<i>Open Position</i>
Secretary	Nancy Ng
Treasurer	Laura Burgess
National Council Rep.	Tom Sobocan

Councilors

Steve Mastellotto	Mike Mastronardi
Steve Pellarin	Paul Preney
Brian Simpson	C. Joady Ulrich
Sandy van Gaalen	

Appointed Officers

Honorary President	Dr. William Baylis
Past-President	Mike Mastronardi
Alt. National Council Rep	<i>Open Position</i>
Librarian	<i>Open Position</i>
Recording Secretary	Nancy Ng
Public Education Director	Mahayarrahh-Starr Livingstone
Public Relations Director	Nancy Ng / Tom Sobocan
Directors of Observing	<i>Open Position(s)</i>
Light Pollution Abatement	Mahayarrahh-Starr Livingstone
Hallam Observatory Director	<i>Open Position</i>
Aurora Editor	Paul Preney
Web Master	Jack Zhu / Paul Preney

Call for Nominations

As published in this issue of Aurora, 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 2022 (see proposed slate at above right). Through this message, I am 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 2022 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.

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 2022 (updated as/if necessary) will then be presented for acceptance at the November 16th 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. Similar to last 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 2022, that the Executive positions of **1st and 2nd Vice President** and volunteers to provide the **Director of Observing reports** 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 2022 (usually in February) and may be filled by a Member in good standing. 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

**RASC
Windsor Centre**

**Financial Statement
for year ending September 30, 2021**

	Current	Last Year	Difference
Balance Sheet			
Assets			
Cash	13,965.32	9,661.16	4,304.16
Building & equipment	80,000.00	80,000.00	-
	<u>93,965.32</u>	<u>89,661.16</u>	4,304.16
Liabilities			
	-	-	
Accumulated surplus, open	89,661.16	89,250.32	410.84
Earnings (loss)	4,304.16	410.84	3,893.32
Accumulated surplus, close	<u>93,965.32</u>	<u>89,661.16</u>	4,304.16
Statement of Revenue & Expenses			
Revenue			
Revenue - Donations - receipted	2,820.08	1,620.00	1,200.08
Revenue - Donations - not receipted	864.00	450.00	414.00
Revenue - Sale of property or goods and services - scopes	-	300.00	- 300.00
Revenue - Membership fees - National	2,637.16	2,356.01	281.15
Revenue - Membership fees - Obs fee	1,240.00	970.00	270.00
Revenue - Fundraising - meetings	-	82.70	- 82.70
Revenue - Fundraising - 50/50 draws	-	100.00	- 100.00
Revenue - Fundraising - special events	-	280.00	- 280.00
Revenue - Fundraising - pubs	-	1,880.00	- 1,880.00
Total revenue	<u>7,561.24</u>	<u>8,038.71</u>	- 477.47
Expenses			
Expenses - Office supplies and expenses	341.60	84.74	256.86
Expenses - Occupancy costs - mtg rental	-	478.16	- 478.16
Expenses - Occupancy costs - obs rent	500.00	500.00	-
Expenses - Occupancy costs - obs utilities	480.00	480.00	-
Expenses - Occupancy costs - obs other	1,409.88	3,396.89	- 1,987.01
Expenses - Adv & promo	179.36	384.20	- 204.84
Expenses - Fundraising expenses - meetings	-	353.47	- 353.47
Expenses - Fundraising expenses - pubs	84.74	1,697.41	- 1,612.67
Expenses - Fundraising expenses - special events	(77.50)	190.00	- 267.50
Expenses - Travel and vehicle	-	-	-
Expenses - Social	-	-	-
Expenses - Honoraria	339.00	63.00	276.00
Expenses - programs	-	-	-
Total expenses	<u>3,257.08</u>	<u>7,627.87</u>	- 4,370.79
Net Earnings			
	<u>4,304.16</u>	<u>410.84</u>	3,893.32

Notes to Financial Statement for year ending September 30, 2021

- Net Earnings for the year approx. \$4,300; compared to earnings of about \$410 the previous year
 - Revenue was down about \$477 compared to the previous year (receipted donations up by \$1,200 due to donations received in memory of Rick Marion; non-receipted donations were also up - about \$414; membership fees and observatory fees were up approx. \$280 and \$270 respectively; there was no revenue from calendar sales; meetings, etc.)
 - Expenses were down significantly, about \$4,370 primarily because of expenses related to the observatory (other expenses were impacted by COVID - no calendars, no meetings)
- We remain in stable financial shape largely because of many donations, continued strong membership and reduction in expenses.

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