

AURORA

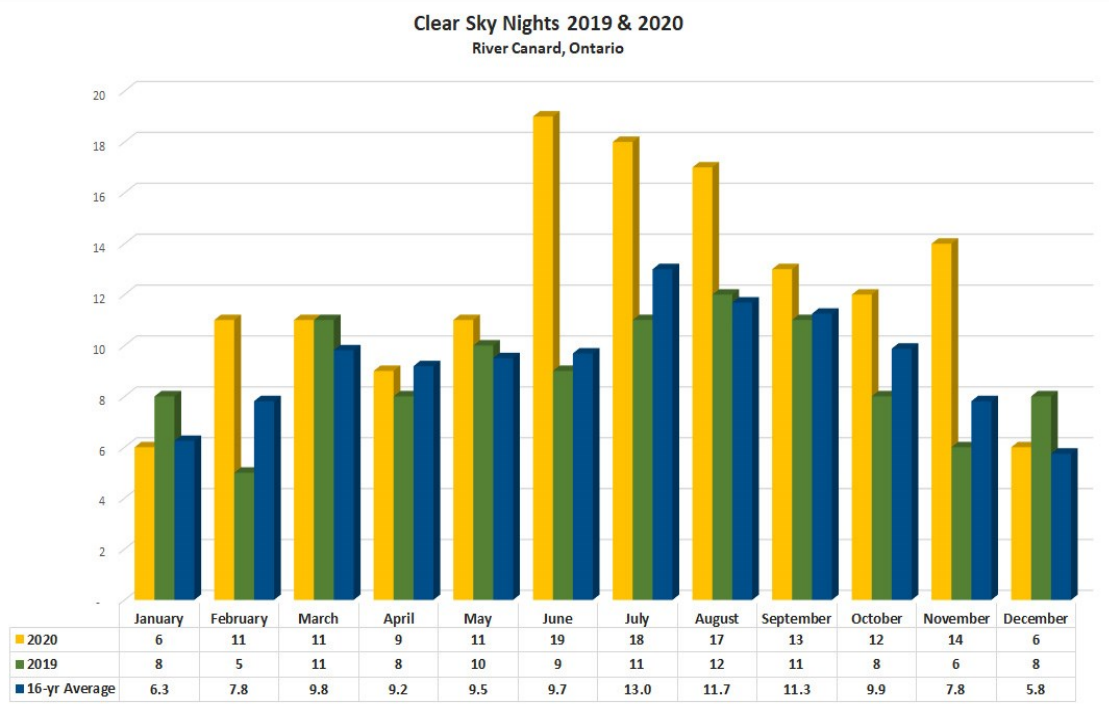


Volume 46, No. 3

The Royal Astronomical Society of Canada - Windsor Centre

January 2021

2020 Clear Sky Nights by Art Rae



Here is my tally of clear night skies for 2020 (green bars) from my location near River Canard, Ontario. In addition I have included the 2019 (blue) and a 16-year average (yellow) counts for reference.

This is an unofficial "look out the window" count of all the nights I saw what I considered a "clear sky". Seeing doesn't enter into it. But it gives an idea of what kind of observing year we had this past year. 2020 brought 147 clear nights which is about 40% of the nights for the year which is way above the 16 year average for my records of 112 nights or 31% of the nights. This is a new record year up significantly from the old record of 126 clear nights or about 35% in 2016 and also up from the 107 (29%) last year. The pattern that was developing in 2016, 2017 and 2018 of having a lot of clear skies in the May through July period disappeared last year and once again we appear to be back to the long term norm of July through September being our clearest months. October is often thought to be one of the better months for observing and with the cooler temperatures and fewer mosquitos it is definitely more pleasant but the data shows it really is not much better than the Spring months of March through June. It is no surprise that the period from November through February is the worst time to observe in our area however November 2020 had 14 clear nights the highest in my records and well above the long term average of 7.8 nights. Since I have been keeping records we've experienced a high of 126 clear nights (2016) and as low as 85 (2008).

Here is hoping that 2021 will have a good run of clear nights in August for the annual Perseid meteor shower which peaks just after the New Moon so we will have a favourable view.

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Calendar of Events

Our next meeting...

February 16, 2021
at

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

Main Speaker...

To Be Determined

Topic...

To Be Announced

Director of Observing Report
by Steve Mastellotto

Activities...

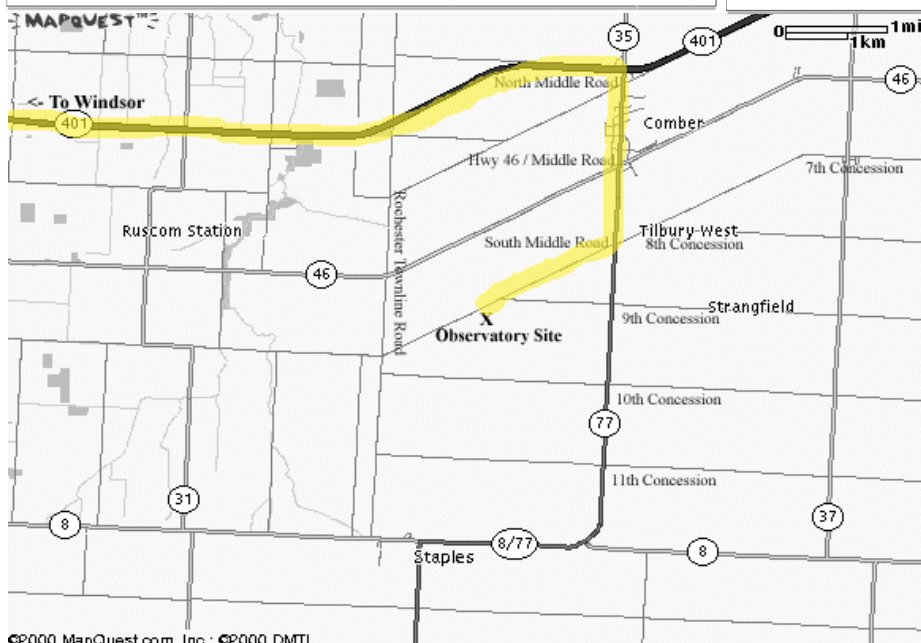
Mars and Uranus: On January 21 and 22 Mars and Uranus are 1.7 degrees apart and on the 21st the Moon is 5 degrees away.

Mercury: Will be at greatest elongation east on Saturday January 23rd and visible in the evening sky.

Saturn and Jupiter: Are in conjunction with the Sun on January 23rd and 28th respectively and no longer visible.

Council Meeting: The RASC Windsor Centre Council will be meeting on Tuesday February 9th via Zoom Meeting.

Saturn, Jupiter and Venus: As Venus heads for superior conjunction on March 26th Saturn and then Jupiter pass close by as they climb out of the morning glare. On February 6th Saturn is 0.4 degrees north of Venus and on February 11th Jupiter will also be 0.4 degrees north of Venus. Both of these events are close to the Sun and best observed with a telescope in the early morning after the sun rises.



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.

November 2020 Meeting Minutes by Sandy van Gaalen

The Annual General Meeting was held on **November 17, 2020 at 7:30 p.m. EST via Zoom** online meeting and hosted by **RASC Windsor Centre President - Randy Groundwater**. There were 29 participants and 1 visitor (one of Steve Pellarin's student).

Randy welcomed everyone to the Zoom meeting.

As **Past-President, Mike Mastronardi** oversaw the election process and presented the proposed slate of Executives and Councilor positions for 2021. Appointed Officer positions are filled by the new council during the February meeting and were not voted on by the membership. There were no names received, volunteers or self nominations for the President or Secretary positions. The Council will have to propose names to fill those positions at later date. All current Council agreed to stay on for the coming year.

Randy Drumm and Brian Simpson stepped forward to be new members of Council. You must be a member for a year and in good standing to become a member of Council.

A copy of the Proposed 2021 Slate was printed in the October Aurora Newsletter and presented by Mike during the meeting. **Mike made a motion** for the slate of Executives and Councilors be accepted with no objections as stated. It was **seconded by Steve Pellarin. Motion Carried.**

Randy encouraged everyone to come forward to fill the **President and Secretary role**, indicating that many are willing to help them along the way.

[Editor's Note] A special meeting of council took place on **November 24, 2021** via Zoom where **Mahayarrahh-Starr Livingstone was elected President and Nancy Ng was elected Secretary**. See page 5 of this newsletter for the **final list of Executive and Council for 2021**.

Treasurer, Greg Mockler - Greg reviewed the **Financial Statement** included in the Newsletter and presented during the meeting. The next year will be a tight year with no meetings and an expected drop in observatory fees but this will be partially offset by no meeting location expenses. Considering the observatory cost for the next year, **we should break even**. Expenses are up this year because of the observatory - the projector needed to be replaced with a **large screen and a new roof** had to be put on the warm room. A **refund of our fees** for the **ArtSpeak** event will be used towards next year. We are also planning to set up at the **Art centre** in Leamington next year.

Randy thanked those that donated towards the roof. He also thanked **Greg for being the treasurer for the last 10+ years**.

Public Education and Light Pollution Abatement, Mahayarrahh-Starr Livingstone - All the library tours and public events **have been cancelled due to COVID-19**. We still have Hallam visits, minimum of \$40 and a maximum of four people per visit. A group of students from Walpole Island will be staying at Point Pelee and have requested a visit from RASC.

Light Pollution has had lots of activity in **Kingsville and Leamington**. Starr did a presentation to both, one in person and one via Zoom. They are asking for 100% coverage on the roof and walls after dark and \$50,000 per day fine for industry / corpora-

tions. Leamington is a little different and giving 6 months for sidewalls and a year for the roof curtains.

Tom Sobocan did a talk on the **French radio station**.

The town of **Essex wants to pass a greenhouse lighting By-law as do the town of Tecumseh and Lakeshore** want to get on board with this.

Joady Ulrich's name was missing from the slate of Councilors. **Mike Mastronardi made a motion** to amend the list of Councilors to include Joady, it was **seconded by Sandy van Gaalen**. The amended slate of Councilors for 2021 now includes Joady Ulrich.

Director of Observing, Juliana Grigorescu - the sky was beautiful in March with the Winter Hexagon. **Juliana showed a picture of Capella, Rigel, heads of Gemini and Betelgeuse**. Juliana showed pictures taken by our members:

- Randy Drumm – Rosetta nebula
- Brian Simpson – Wizard nebula
- Nancy Ng - Christmas tree Pleiades
- Brian Simpson – The Sun with Sunspots
- Pete Barbaro's – Mars

November/December – not too many events happening...

- Conjunction with the Moon, Venus, Spica and Mercury just below them
- November 16, 17 Leonids meteor showers
- November 30 is a partial Lunar Eclipse. Penumbral 2:32 a.m., maximum eclipse 4:43 a.m. ends 6:53 a.m.
- In December, Algol changes its' brightness because it is an eclipsing binary star
- December 21st, Crescent moon with Jupiter and Saturn, all three together, will make a great photographic opportunity. They will be low in the west sky only 6 arcminutes apart. This is the closest they have been since 1623
- Winter solstice when we will have 15 hours of night
- Geminid meteor shower December 13 and 14th

Special Thanks to **Steve Mastellotto for the recent Aurora newsletters and Website updates**. He compiles all the information and does a great job. Special thanks to **Sandy van Gaalen for taking care of the minutes** for the meetings. A thanks to **Paul Preney for hosting the meeting**.

Steve Pellarin welcomes our guest to the meeting, "Nupur", a graduate student taking on the lead role at the astronomy club at the University of Windsor.

We need to discuss Zoom meetings going into the new year. Randy is requesting any feedback. Possible Zoom Council meeting before the end of the year.

Motion to close the meeting made by Mahayarrahh-Starr Livingstone and **seconded by Susan Sawyer-Beaulieu**.

Meeting at **adjourned 8:53 p.m.**

At The Eyepiece: For All Mankind by Mike Ethier

It was way back in 1968 when I first got interested in astronomy. I began with binocular observations of the moon in early November. In December, Apollo 8 and 3 astronauts successfully orbited the moon and returned safely. The next craft to go that way would be Apollo 11 half a year later, followed by Apollo 12-17. Those of us lucky to be alive during those heady days all have our own special memories, and we continue to treasure them. Sometime in the late 1980s I got interested in Brian Eno's ambient music, including one of my favourite albums, called *Apollo*. The music is all instrumental, quiet and gentle for the most part, and was used as background for a film of the same name. The original film, which I was never able to track down, had no speaking, just images and music.

That film was re-imagined, reworked, and renamed *For All Mankind* in the late 1980s. This time dialogue was added to the images, but only the voices of Apollo astronauts, mission control, and John F. Kennedy were used. Al Reinert, the director, got cooperation from NASA, and Criterion bought the rights to the film. I didn't even realize the film was showing on the Criterion Channel until I bought an updated and expanded version (2 CDs) of the album by Eno. The CD notes talked a lot about the movie, and lo and behold, I instantly put it into my queue and it has now been watched, enjoyed, and loved. There have been many documentary specials about Apollo, most of them featuring narration, talking heads, and Walter Cronkite. This one is different.

What Reinert did was assemble NASA footage from the archives (a story in itself, told in one of the extra features), much of it never seen before, and compact the lunar missions into one big mission, showing scenes from all the lunar flights, and even from an earlier Gemini flight. It becomes one brilliant and focused film, and instead of dwelling entirely on science, it lets the astronauts, in their own words during the missions, describe their feelings and responses to what they were doing, with Houston mission control listening in. Thus we get a totally different take on Apollo, much more human and aesthetic than the science ones we were given back in the day. We see candid moments aboard the spacecraft never seen before, and we follow along from the Earth to the Moon on a voyage of discovery that has yet to be surpassed in human history.

Along with the feature comes 4 extras, filling in information that the movie could not show. For example, the movie has no talking heads, but the extra features do contain interviews with many of the astronauts years later. One short feature talks exclusively with the late Alan Bean, who became an amazing artist upon his return (he died in 2018). Another short extra feature talks about the lengths to which the director went to assemble the footage he uses in the film. Yet another one interviews 15 of the Apollo astronauts. The whole collection is available for purchase on

DVD, and looks like something I will purchase if it leaves Criterion Channel before I can watch it again a few more times. If you do not subscribe to Criterion Channel this is only one reason out of about 2,000 to do so. And if the Apollo lunar missions seemed a bit dated and unexciting to you, or you don't really know that much about them, or you would just enjoy a new perspective, then you need to watch this film. It may even be something the club might consider showing at a future meeting.

Messier of the Month: Messier 42

It's finally time to tackle Messier 42! Last year I talked about its little brother or sister (I can never tell which), Messier 43. They both appear in the same field of view, but are distinct from one another. M 42 is one of those objects that consistently improves with increased aperture and magnification. But it's always best to begin with the naked eye view, followed by binoculars. My first view was with 6 x 30 binoculars, beneath a street light in front of my home in Sudbury, back in the winter of 1969. My first telescopic view was a month or so later, with a red and blue toy 3" reflector, a plastic model of the 100" Mt. Wilson scope, with a terrible mirror and a plastic eyepiece giving about 25x. Even that view blew my teenage mind! More recent views with my vastly superior 2" refractor confirm this as a public showpiece in even the smallest instrument.



Messier 42 photo by Randy Drumm

In March 1974 I observed the nebula from Sudbury with my 4.5" Tasco Lunagrosso reflector. Viewing it at 22x I wrote at the time, "The whole scene had a three-dimensional atmosphere to it, and one could imagine oneself peering into the swirling depths of the universe." In the 12" from Hallam (January 2019) I wrote "Visually, I find the nebula much more satisfying than any photo of it I have ever seen. I would much rather view it in a telescope than look at a photo." Parts of the nebula resemble the giant wings of a bird, wings extended. A large dark lane appears in the south. The blown out area around the quadruple star has a distinct 3D appearance, and seems long and cylindrical, like a giant wave about to crash. At 12" there is simply too much detail for the eye to perceive, and as magnification is increased (up to 250x) the nebula becomes mottled, with many variations of grey, white, and black, as well as many shades of brightness. Following along the extensions, it takes a long journey before it fades away into the background sky. The cluster involved with M 42 contains about 20 stars, with Theta 1 and 2 being the main highlights. The Trapezium (quadruple star, also Theta 1 Orionis) is seen well at 84x and 136x, along with 2 other fainter stars north, embedded in the nebula. This object is required viewing for all amateur astronomers.

Messier 42 - oc 1976: Cluster size 47', a sparse group
- gn 1977: 20'x10', emission and reflection nebula, associated with the cluster

President's Message by Mahayarrahh-Starr Livingstone

I am looking forward to the New Year as President for the RASC - Windsor Centre. I am pleased to be of service and being new to the position I ask for your patience as I learn the ropes.

I trust that you are staying safe and healthy during these unusual times. I am sure you have noticed that there have been a few changes. Due to our COVID-19 workplace safety plan our monthly meetings will be scheduled Zoom meetings January through June and will be at our usual meeting time of 7:30 p.m. on the third Tuesday of the month. I am hoping that as many of you as possible will be able to participate in these meetings. There will be the usual reading and approval of the last meeting minutes, the Director of Observing Reports and some open discussion time. For future meetings we are hoping to arrange special presentations with guest speakers. You will be able to invite guests to the meetings where they can become familiar with our RASC family. I believe it is important to increase our membership and to continue to share our passion in astronomy and hear fresh ideas. I encourage you to invite your friends and family as guests to the Zoom meeting. Interest in astronomy has grown worldwide and now is a good opportunity for our Centre to expand our membership. What other hobby, except for ice fishing, can you sit around outside in the dark with your friends in freezing cold for hours on end hoping to catch a few elusive photons?

We have a few new positions for 2021. Our new Observatory Director is Randy Drumm who has replaced John Marn. He will be responsible for the maintenance and smooth operation of Hallam Observatory. We also have several new 'keyholders' that now have the use of our wonderful Observatory facility.

Nancy Ng will be our new Secretary taking over from Sandy van Gaalen.

When I look back at 2020 I recall the THREE amazing comets of the year. First was C/2019 Y4 (ATLAS) and it was photographically visible but disappointing in that it broke apart in March. Then another cosmic visitor, comet C/2020 F8 (SWAN) headed in our direction. I spent many hours trying to capture it to no avail as it faded quickly. Then the comet which was discovered in March of last year, C/2020 F3 (NEOWISE) came into view from 2 astronomical units away. At first it was hard to get excited about it but soon we were amazed at its brightness and naked eye visibility. There were a few members that made the early morning 4 a.m. trips to Lakewood Park and we were not disappointed. Then came the evening views from Lighthouse Cove in late July. Simply stunning.

The other highlight for myself and others in our group were the Perseids meteor shower where we witnessed a brilliant fireball that left a ghostly long vapor trail.

Finally, we enjoyed the Great Jupiter/Saturn conjunction. Watching the slow nightly alignment of these two solar system giants was a welcome distraction at the end of 2020.

Overall an interesting year.

I look forward to connecting with you at our future Zoom meetings.

2021 Council of the RASC - Windsor Centre

Executive

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

Councilors

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

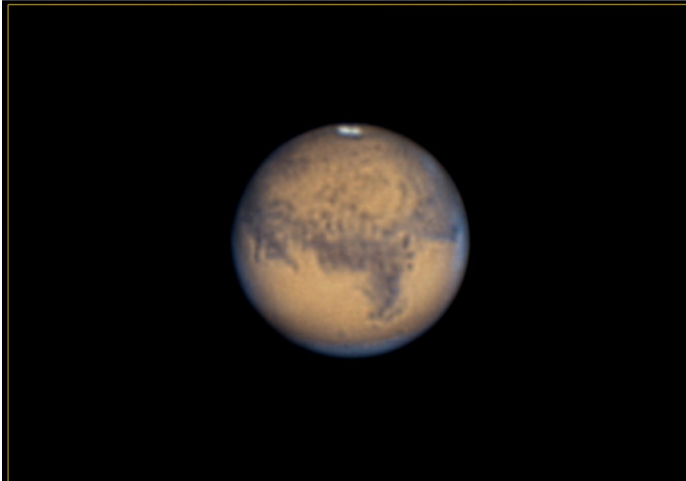
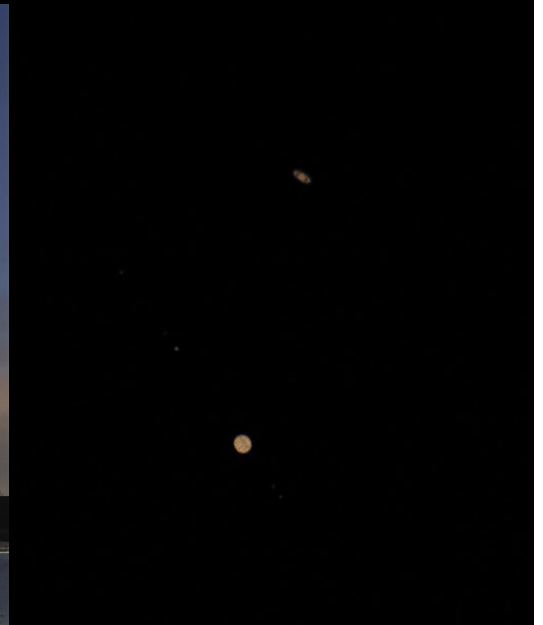
Appointed Officers

Honorary President	Dr. William Baylis
Past-President	Randy Groundwater
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	Juliana Grigorescu
	Steve Mastellotto
	Nancy Ng
	Jessie Passa
	Dr. Susan Sawyer-Beaulieu
Light Pollution Abatement	Mahayarrahh-Starr Livingstone
Hallam Observatory Director	Randy Drumm
Aurora Editor	Steve Mastellotto
Web Master	Steve Mastellotto/Jack Zhu

Fundraiser Reminder

A reminder that our Holiday fundraiser is still active! Thank-you to Sandy van Gaalen's daughter, Felicia, for offering this Holiday fundraiser for our Centre via her online business, "Scentsy". Orders can be placed until the end of January. All proceeds go to the RASC Windsor Centre. All orders are placed online and delivered to your door anywhere in Canada. Available to all friends and family of members. Just [Click here](#) to use our custom link and start shopping!

Member Astrophotos



Top Left: Jupiter and Saturn on the evening of December 18th by Nancy Ng. **Top Right:** Close-up view of Jupiter and Saturn from December 20th by Brian Simpson is a blend of stacked images at different exposures to bring out details in both planets. **Middle Left:** Pete Barbaro captured this view of Mars featuring Syrtis Major on October 9th and is a derotated stack of 5 images each using 900 frames using his C8 @ f/20 with an ASI224 video camera with IR blocking filter. **Middle Right:** Mahayarrahh-Starr captured M42 on January 9th from Hallam Observatory. **Bottom Left:** Randy Drumm captured the Heart Nebula (Melotte 15) over 4 nights in November 2020. The final image is a combination of 309 x 3 minute (15.45 hours) subframes with a Canon 77D, ISO 1600 using an Optolong L-enhance filter and processed with PixInsight and Photoshop.