

Skyward



July - August 2025 Edition



In This Issue:

- Explore the Universe
- Summer's Globular Clusters
- Smartphone and Binocular observing
- AAR
- Minerva, Rubáiyát and Messier 40
- Dumbbell Nebula, the details

In this Issue

Note from the Editor.....	3
Word from the President	4
Letter to the Editor	6
Public Events, Outreach, Inreach.....	7
New Members.....	10
Explore the Universe: Fall Deep Sky Objects	13
Exploring Summer's Globular Clusters.....	16
Smartphone and Binocular Stargazing	23
Of Minerva, the Rubáiyát and Messier 40	27
How Much of the Dumbbell Nebula can we See?	30
Adirondack Astronomy Retreat.....	36

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Cover Image: By Russell Fralich. August 17. Sagittarius and the Milky Way at the Woolly Woods observing site last night. A perfect evening talking, imaging and observing with friends! OM-5 with 17mm f/1.8 lens at ISO 1600 on a static tripod. 54 x 13s exposures. Stacked with Starry Landscape Stacker.

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Note from the Editor



Hi fellow RASCals.

I'm so excited. I received a letter to the editor! Only my second in five years! (I don't count the flattery bestowed by fellow Board Members. I know they just don't want the job.) Greg McMillan heads up a small unaffiliated astronomy club in Simcoe Ontario. It just so happens that he is also a RASC member and he reads our newsletter from the link provided by National in the Monthly Bulletin. He appreciates our Skyward so much that he would like to share it with his members. I'm happy to say that in response to his request, the Board took the decision that when a new Skyward is published to members we will make the previous issue freely available on our website. So go ahead and share our website address so your friends can read Skyward.

As Karim Jaffer reminds us, our Townsend Lecture is coming up next month. This is our annual showcase of cutting edge astronomy and this year will be no exception with Dr. Lisa Dang from the University of Waterloo as our guest lecturer. Make it a point to come out to this event.

There are plenty of other activities planned over the next two months. Since the winds have turned favourable and are keeping the wildfire smoke at bay, this is your chance to get out and do some observing. Woolly Woods and Thompson Park outings have been scheduled. Or just come out to an Arbo Clubhouse and chat and maybe take a look through the Observatory telescope.

Did you enjoy this issue? Our contributors appreciate feedback at editor@rascmontreal.org.

Ed. 

Word from the President



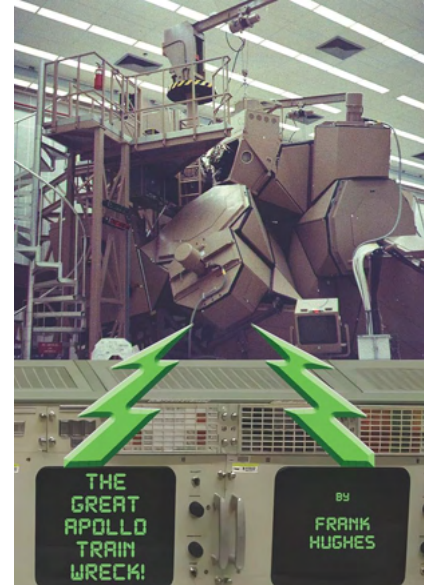
By Morrie Portnoff, photos by Terry Ladd.

Greetings fellow RASCals,

Today as I write this message of astronomical observation hope, I was lucky to receive what, I believe, is our first GO e-mail for an observing event this year. To say that the weather or at least the observing conditions have been “challenging” is an understatement, at least for the dates of our scheduled events. Let’s hope that prime nights of cooler weather, less or no pesky mosquitoes and earlier sunsets will be better for the remainder of the summer and fall.

I have some great news in that Tim Bird has decided to join the Board of the Montreal Centre to help with the club houses and other events. This takes the pressure off the members of the Board who were carrying the bulk of the work. Tim brings his enthusiasm to these events as you probably noticed at the past few club houses. Say “Hi” to Tim at the next event and perhaps offer to lend a hand with setting up the room or the clean up. This will allow us to bring back regular Wednesday night club houses at the Arbo. These will be posted on our calendar and in the usual member emails. All club houses are a go! We will be looking for members that want to give a short (or long) presentation on a project or some aspect of astronomy to the members. The first was Andrew who gave a wonderful presentation on his moon photos and his journey to master his craft. We have another in the scheduling stage on a member’s travels to Argentina and his observing and contact experiences with the local amateur astronomers. So don’t be shy. This is great way to try some public speaking with no pressure.

Of course, a major milestone event was the official opening of our new library location in the Anne Marie Edward Building (Room AME-120) on June 9th with an amazing presentation by Frank Hughes, retired NASA Chief of Space Flight Training during the Apollo era. The evening was an informal presentation of behind the scene support of the Apollo era missions with some of the more mundane tasks or concerns highlighted (those that were present will know what I am referring to) as well as those “nail biters” that you were just holding your breath while they solved the issues or rather “challenges”. These are all highlighted in Frank’s book, *The Great Apollo Train Wreck*”.



As always, keep an eye out for more announcements of upcoming events over the next weeks and months. I hope to see you at these events. Feel free to introduce yourself if you are new to the Centre. Don’t be shy and you will quickly find out that we are a very welcoming group of friends.

For any member that wishes to help the Board or Executive without the “commitment” you can choose a specific project or event and simply help with one. We always need volunteers for events and special

projects. **WARNING:** Volunteering and helping can become habit forming that brings you new friendships and skills. There is no known cure for this ailment.

If anyone has ideas or comments, I am always available. Just send me an email at president@rascmontreal.org or approach me at an event.

Clear Skies as always,



Frank receiving the "official" RASC Montreal Centre coffee mug as a token of appreciation



L-R David Shuman, Frank Hughes, Morrie Portnoff and Karim Jaffer

(I will never wash that sweater, Apollo "Royalty" touched it!)



Letter to the Editor

To the Editor of Skyward newsletter:

As a member of the RASC I appreciate receiving a link as supplied in the RASC Monthly Bulletin to the RASC Montreal Centre Skyward newsletter. I find it a very well written publication and the member articles are interesting and quite comprehensive. Thanks for allowing the RASC to share it with its national membership.

I would like your permission to share the PDF of the Skyward newsletter to our club members. Please let me know if this is acceptable to you.

The North Shore Erie Amateur Astronomers is a small club of lifelong amateur astronomers located in Norfolk County in southern Ontario that has existed since 1997. The club meets in Simcoe once a month except in the summer.

We have an extensive website, www.nseaa.ca and an active Facebook page (<https://www.facebook.com/groups/201484796674189>). We publish a quarterly newsletter, **The Stargazer** and a monthly Facebook piece called, **Astronomy News**. Our publications are freely available to any website visitor.

Weather permitting we hold public observing sessions and we presently are working with the Norfolk County Public Library system to deliver a presentation called, **Exploring the Night Sky: A Beginner's Guide**.

Please have a look at our online offerings and if you feel your members might be interested please inform them of the links to our website and Facebook page.

Clear skies and regards,

Greg McMillan, President
North Shore Erie Amateur Astronomers
Royal Astronomical Society of Canada - Member
American Astronomical Society - Affiliate Member



Public Events, Outreach, Inreach



Karim Jaffer, Coordinator - Public Events

Nader Daou, Director of Outreach

Current Events

To enjoy the 2025 Perseids our RASC Montreal team had planned back-to-back Outreach & Public Events with promising night sky forecasts.

On **Aug 11th** our RASC Montreal society hosted the **MDA Space community** and their families for a night sky event near the peak of this year's shower featuring three presentations by recent JAC Astro Alumni – Lily Donnelly, Eveline Liu and Mya Sa Maré.

On **Aug 12th** RASC Montreal held the **2025 Papacosmas Perseids Meteor shower Event**. After a 7:30pm presentation in the Conservation Centre by Willow Taiger to cover the science, history and viewing of this annual night sky event (recording found on our YouTube channel), our public audience was to be hosted on the field by members of the RASC Montreal Outreach team, including open doors for the Bellevue Observatory. If the crowd was large a second presentation was planned for 8:15pm as well.

A poster for the RASC Montreal 2025 Papacosmas Perseids Event. It features a dark blue background with a starry sky and a bright meteor streak. The text includes: "RASC Montreal presents the 2025 Papacosmas Perseids Event", "Join us on Aug 12th for the peak of the annual Perseids Meteor Shower.", "7:30pm EDT – Presentation to learn about meteor showers, the history of the Perseids and more... in the Conservation Centre.", "Weather permitting we will enjoy Nature's Fireworks in Montreal's darkest skies beside the Bellevue Observatory. Sunset is at 8:06pm & the gibbous Moon rises at 9:36pm. Bring a comfortable chair/ blanket and maybe insect repellent.", "Tues Aug 12th Doors open at 7:15 pm Morgan Arboretum Sainte-Anne-de-Bellevue", "This is a FREE PUBLIC EVENT. Donations help fund Outreach Activities.", and "Background Photo Credit: NASA/ESA/ESA/Hubble".

Upcoming Public Events

On **Sat, Sept 27th** RASC Montreal will hold our annual Keynote Public Talk: **the 2025 Townsend Lecture**. This year's speaker is **Dr. Lisa Dang** from the University of Waterloo - a JWST exoplanet research scientist. In the last few decades, astronomers have discovered a rich diversity of planets vastly different from those residing in our Solar System. Among them a particularly intriguing type of planets discovered are lava worlds - scorching hot rocky planets but unlike the Earth these exoplanets are orbiting extremely close to their parent star and are blasted with irradiation levels that could sustain a magma ocean at the surface.

A poster for the RASC Montreal 2025 Townsend Public Lecture. It features a large, fiery orange and red planet (a lava world) against a dark background. The text includes: "RASC Montreal presents the 2025 Townsend Public Lecture HELLISH WORLDS by Dr. Lisa Dang, UWaterloo", "Sat Sept 27th 7:30pm EDT Speaker's Reception at 6pm", "Join Us for our Annual Keynote Public Lecture, In-Person or Online Penfield P-204, John Abbott College 21275 Lakeshore Rd Sainte-Anne-de-Bellevue", "RASC Montreal Members & JAC Community: Reserve Your Spot Now! https://bit.ly/Townsend2025", "HELLISH Worlds The Science of Lava Planets", "This is a Free Public Outreach Event. Observing after the event depends on weather https://rascmontreal.org", and "Images courtesy of UWaterloo".

Dr. Dang will share how we find these searing hot worlds, how we can study them and what you could experience if you were to visit a lava world.

The Townsend Event will be held on **Sat, Sept 27th at John Abbott College in Penfield P-204** starting at **7:30pm EDT** with the talk offered co-modally via the internet. RASC Montreal members are invited to join our Board of Directors and Townsend Speaker for a reception before the Townsend Event, starting at 6pm EDT.

Register in advance for the Reception and talk: <https://bit.ly/Townsend2025>

On **Saturday, Oct 4th** RASC Montreal will hold a Public Event as part of the **International Observe the Moon night**. Join us at the Morgan Arboretum beginning at 7pm EDT for a presentation on Lunar Observing by RASC Board member Nicole Laporte followed by a unique experience featuring the Dark Sky Preserve project beginning with a presentation on the inspirations for art from the night sky and true dark sky experiences. In addition to live music and poetry, the project team will provide recorded music on the observing field (weather permitting) and students will assist in a cultural mediation activity. To learn more about the project, visit: <https://ianandlouise.bandcamp.com/album/dark-sky-preserve>



This year's **Spooky Nights** event will be hosted by the JAC Space Club with our RASC Montreal Centre outreach team, and will be on **Wednesday, Oct 29th** from 6pm – 8pm. Young aliens, astronauts, goblins and monsters are invited for a Spooky & Starry Haunted Evening: design your own planet, explore night sky constellation stories, create a Moon lander... These, and many more wonders are in store for the kids in your family. Sweet treats await as they pass through these Astronomy activities in the early evening during this free event. Please share this invite to interested families!



RASC Montreal Public Events is proud to be part of the **Global Star Parties** (GSPs), hosted by Explore Scientific – and with the additional position as Chair of the RASC National Education & Public Outreach Committee we (RASC) are now an official co-host of the GSPs!

GSPs are simulcast to Facebook, YouTube, Twitch, and Twitter social media sites and the live audience can chat with the broadcaster from Explore Alliance, who will relay your questions and comments to the presenters. You can also watch the live presentation on the CloudyNights.com forum and at <https://ExploreScientific.com/live>.

You can view previous Global Star Parties at: <https://www.explorescientific.com/pages/explore-alliance-live-global-star-party>.

RASC Montreal is looking for Public Events volunteers to help coordinate events and identify future speakers and topics.

If you're interested, please email: publicevents@rascmontreal.org or outreach@rascmontreal.org.

Consult the website at <https://rascmontreal.org/our-calendar/> and watch your email for the following events. Some may be weather dependant.

- Wednesday **August 20th**, RASC Montreal Arbo Member's Clubhouse - Special Event: Come hear Thomas Bracken talk about astronomy in Argentina during his recent trip.
- Saturday **August 23rd**, Members Observing at Wooly Woods. Watch for the Go/NoGo.
- Wednesday **August 27th**, Explore the Universe from the Arbo - The September Sky with Nicole Laporte.
- Saturday **August 30th**, Members Observing at Thompson Park/ Zoom Clubhouse if NoGo.
- Wednesday **September 3rd**, RASC Montreal Informal Members' Clubhouse at the Arbo.
- Saturday **September 6th**, RASC Montreal 2025 Townsend Lecture. To be confirmed.
- Wednesday **September 10th**, RASC Montreal Informal Members' Clubhouse at the Arbo.
- Saturday **September 13th**, RASC Montreal Informal Members' Clubhouse at the Arbo.
- Wednesday **September 17th**, RASC Montreal Informal Members' Clubhouse at the Arbo.
- Saturday **September 20th**, Members Observing at Wooly Woods. Watch for the Go/NoGo.
- Wednesday **September 24th**, RASC Montreal Informal Members' Clubhouse at the Arbo.
- Saturday **September 27th**, Members Observing at Thompson Park/ Zoom Clubhouse if NoGo.
- Wednesday **October 1st**, RASC Montreal Informal Members' Clubhouse at the Arbo.
- Saturday **October 4th**, CAFTA Astronomy Competition and Showcase.
- Wednesday **October 8th**, RASC Montreal Informal Members' Clubhouse at the Arbo.
- Wednesday **October 15th**, RASC Montreal Informal Members' Clubhouse at the Arbo.
- Saturday **October 18th**, Members Observing at Wooly Woods. Watch for the Go/NoGo.
- Wednesday **October 22nd**, RASC Montreal Informal Members' Clubhouse at the Arbo.
- Saturday **October 25th**, Members Observing at Thompson Park/ Zoom Clubhouse if NoGo.



By Frank Tomaras. A beautiful triangle just before sunrise - Bright Venus on top, Jupiter bottom left and Betelgeuse bottom right.

Taken from Methoni Greece
July 17 5:50am.

New Members

Please join us in welcoming these new members:

Leonid Cechmistro

Elizabeth Billyard

Ray Paradis

Darryl Rideout

Cindy Wright

Brenda Rose Novak

Santiago Gomez

Next Issue

Got something to publish in the next issue of Skyward? We welcome contributions from Montreal Centre members. Send them to editor@rascmontreal.org before October 1st. A reminder will be mailed September 20th. Publication will be in the last week of October.

We are always looking for:

- Articles
- Pictures of recent events
- Reviews of Books, equipment, videos, etc.
- Astro-images or drawings
- Observation logs
- Items for sale/wanted

Guidelines:

- Text should preferably be in Word with images shown where they go. However, send separate copies of images since Word tends to reduce resolution.
- Aim for image resolution of at least 300dpi at the size the image will be used on the letter sized page.
- Send a head shot to include with your article.
- Original work only. Do not infringe copyrights.
- If you include images that are freely usable, such as SkySafari or NASA, cite the references.
- Unless you instruct me otherwise, I will use images posted on our Facebook Group.
- Be aware that if you send a PDF I will not have your fonts.



By Daniel Biron. IC 5146 (the Cocoon Nebula) and Barnard 168 (a dark nebula, looking like a dark trail going up) in Cygnus;
 Seestar S30 in altaz mode;
 105 minutes integration (630*10s);
 Bortle 7.1 location and 0% Moon;
 2025.06.30;
 Image enhancement done with the Seestar app.



By Khoa Tran. It's been a fairly quiet 2025 for me so far, with many weather and equipment challenges. Here's hoping things improve!

The Rho Oph and Antares nebula region never gets up very high in the sky at my latitude, and smoke from some very active wildfires this season have made imaging a challenge (and, also, consequently, given this a bit more of an orange tint than usual).

I'm still not in love with the Askar FMA180, but the Baader Semi-APO filter and Borg helical focuser I've added seems to have made it behave acceptably this time around!

120x60s @ISO 800 (unguided)
 Camera: Olympus Pen-F Digital
 Telescope: Askar FMA180
 Filter: Baader Semi-APO
 Mount: Vixen AP with WL unit
 Imaged at a private Bortle 4 site in Eastern ON.
 Stacked and processed in Siril. Additional processing with GraXpert, Starnet V2, and GIMP.

Explore the Universe: Fall Deep Sky Objects



By Nicole Laporte, Director membership liaison

The fall season is ideal for stargazers; as the humidity decreases, the sun sets earlier, and the mosquitoes disappear.

The constellation Cassiopeia provides a guidepost in the fall sky for star hopping. The bright “W” rises high in the eastern evening sky and is even visible in light polluted urban skies.

Bright deep sky objects that are visible with binoculars in the fall and part of the [RASC Explore the Universe Observing Program](#) target consists of:

- Andromeda Galaxy
- Perseus Double Cluster
- Alpha Persei Group



Explore the Universe Fall Deep Sky Objects
Image source: *Stellarium-web.org*



Cassiopeia Constellation
Image source: *Stellarium-web.org*

Star Hopping with Cassiopeia

Cassiopeia is visible in the sky all year as it is one of the circumpolar constellations. Fall is the best season to view Cassiopeia, because it is high in the evening sky compared to other seasons.

The stars Caph, Shedar, Gamma Cassiopeia (informally known as Navi), Ruchbah, and Segin form a giant “W” in the northeastern evening sky. These bright stars are good signposts in the sky to star hop toward deep sky objects

Andromeda Galaxy

The Andromeda Galaxy is approximately 2 500 000 light years (23 651 826 181 452 000 000 km) away from Earth, but is as wide as six full moons or 3° in dark skies.

The Andromeda Galaxy is also known as M31 and has a magnitude of 3.4 in the central part, with the outlying regions being much dimmer. The visible size of the galaxy is affected by the darkness of the sky. Therefore from suburban skies or when the Moon is bright, it appears much smaller.



Star hopping to the Andromeda Galaxy
Image source: *Stellarium-web.org*

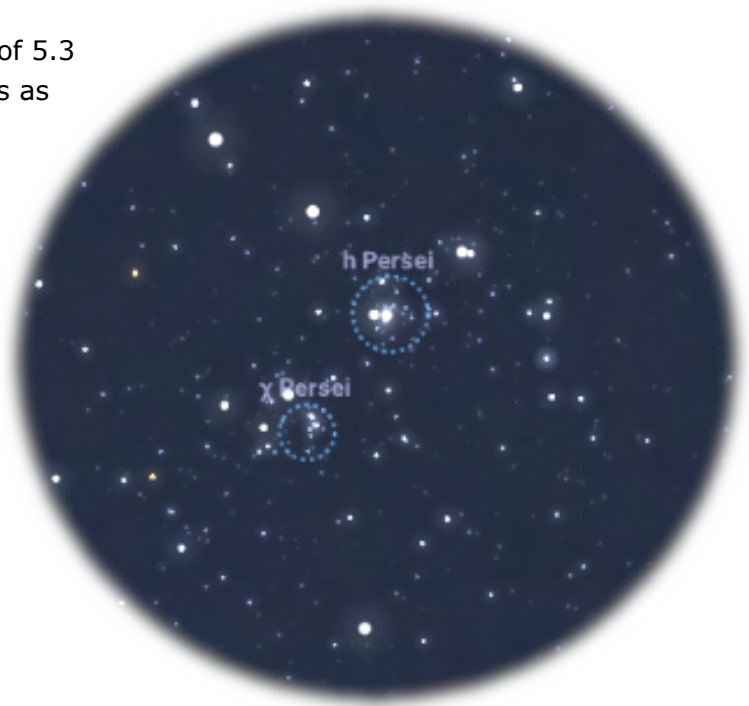
Andromeda is a very colourful in photos, however through binoculars or a telescope it has a beautiful ethereal and wispy grey appearance. Find the Andromeda Galaxy by using the stars in Cassiopeia to guide the way. Start by making a triangle with the stars Caph, Gamma Cassiopeiae and Shedar. The tip of the triangle with the star Shedar points to the galaxy. The distance between the base of the triangle and Shedar is 1/4 of the distance between Shedar and the galaxy.

Perseus Double Cluster

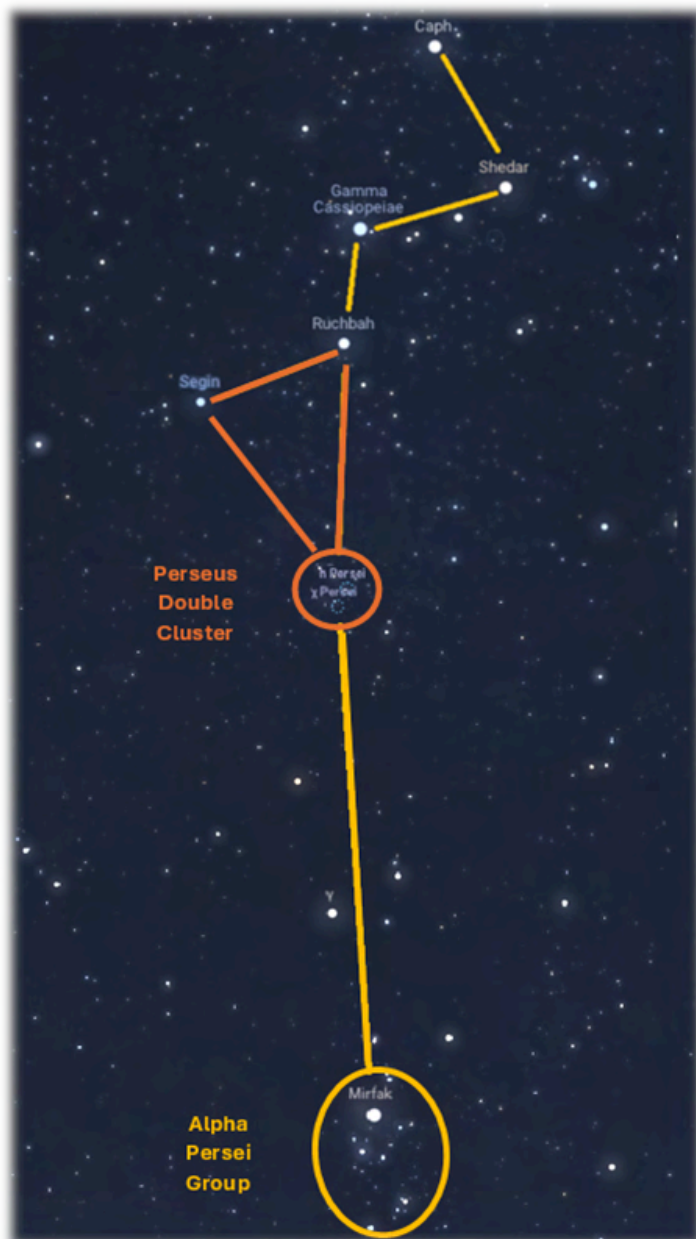
The Perseus double cluster has a magnitude of 5.3 and is visible to the unaided eye in rural skies as a fuzzy patch. With binoculars, two distinct open star clusters appear.

Observing the cluster with a telescope at 20x magnification or greater helps more details emerge. The clusters become more colourful with subtle red giant stars visible.

The double cluster also known as x Persei (NGC 884) and h Persei (NGC 869) can be located by making a triangle with the stars Ruchbah and Segin in Cassiopeia heading toward Mirfak in Perseus.



Open Star Clusters Persei and h Persei
Image source: *Stellarium-web.org*



Alpha Persei Group

The brightest star in Perseus is Mirfak, also known as Alpha Persei; it has a magnitude of 1.8 and is visible to the unaided eye even in light polluted urban settings. There are many stars surrounding Mirfak and this group of stars form the Alpha Persei Group, also known as Melotte 20.

The Alpha Persei Group has a magnitude of 1.2 and stands out in the fall sky. Binoculars reveal an S shaped group of stars and many other stars in the background.

The Group is over 3° wide, therefore a pair of binoculars is a good choice for viewing. Telescopes at low magnification of 20x or less are another option, such as a short focal length refractor with a 25 mm or more eyepiece.

Observation Notes

When planning an evening of stargazing, you may want to consider recording observations which helps stargazers become more attentive. Take note of details, such as time, place, conditions and instruments, either by sketching or verbally recording your observations.

As the evenings begin to cool down and the leaves begin to turn colours, look up to the big W in the sky to guide you toward bright celestial wonders above.

Star hopping to the Perseus Double Cluster (orange) and the Alpha Persei Group (yellow)
 Image source: Stellarium-web.org



Explore the Universe is open to all. See the program at <https://www.rasc.ca/explore-universe>

Exploring Summer's Globular Clusters



By: Marc Ricard

To many deep-sky observers, summer is synonymous with globular clusters. Over a hundred of these celestial showpieces are visible in an 8-inch telescope during the warm summer months. Two dozen of which can be seen in a pair of 10x50mm binoculars. Some are bright, some are small, visually each one is different. Here are some of my favourites and some that are often overlooked. Take a few minutes to enjoy each one and discover what makes it unique.



M5 finder chart courtesy of Sky Safari Pro.

You'll find M5 approximately 8 degrees south-west of the 2nd magnitude star α (alpha) Serpens. Gottfried Kirch and his wife, Maria Margarethe discovered it in 1702 while they were observing a comet and described it as a nebulous star. Which is what it looks like through my 10x50mm. From Pointe-Claire, my 6-inch Newtonian revealed a large diffuse sphere at 120x, followed by a faint smattering of stars.



LRGB Image of M5 captured with my RC-8 and QSI 683 camera from Pointe-Claire. The top is north, the right is east.

From my home in the Laurentians, the edges of its core are resolved in my 6-inch at 50x, and stars are strewn all over the field when I increase the magnification to 120x. My 15-inch displays a dense ball of stars at 70x entwined with a long chain of 12th magnitude stars that curves eastward and southward around the cluster's halo. At 128x, the core is boxy and nearby 5 Serpentis is easily split, revealing its 10th magnitude, peach coloured secondary. At 217x, the cluster fills half the 32' field of my eyepiece, and the stars are too numerous to count.

Located only 1° west of Antares (α Scorpii) and shining at magnitude 5.4, M4 should be easy to spot. However, this large, poorly concentrated globular is a challenging object under light-polluted skies. From Pointe-Claire, M4 was as large as M5 in my mounted 16x70mm binoculars, but much fainter. Only its elongated, north-south row of seven 11th magnitude stars was visible in my 6-inch. When viewed under darker skies, M4 is a surprisingly large but dim patch west of Antares in my 10x50mm. In my 15-inch, I count over two dozen outliers enveloped in a hazy glow, filling a little over a quarter of the 54' field of my eyepiece. To me, it resembles an open cluster lying in front of a galaxy.

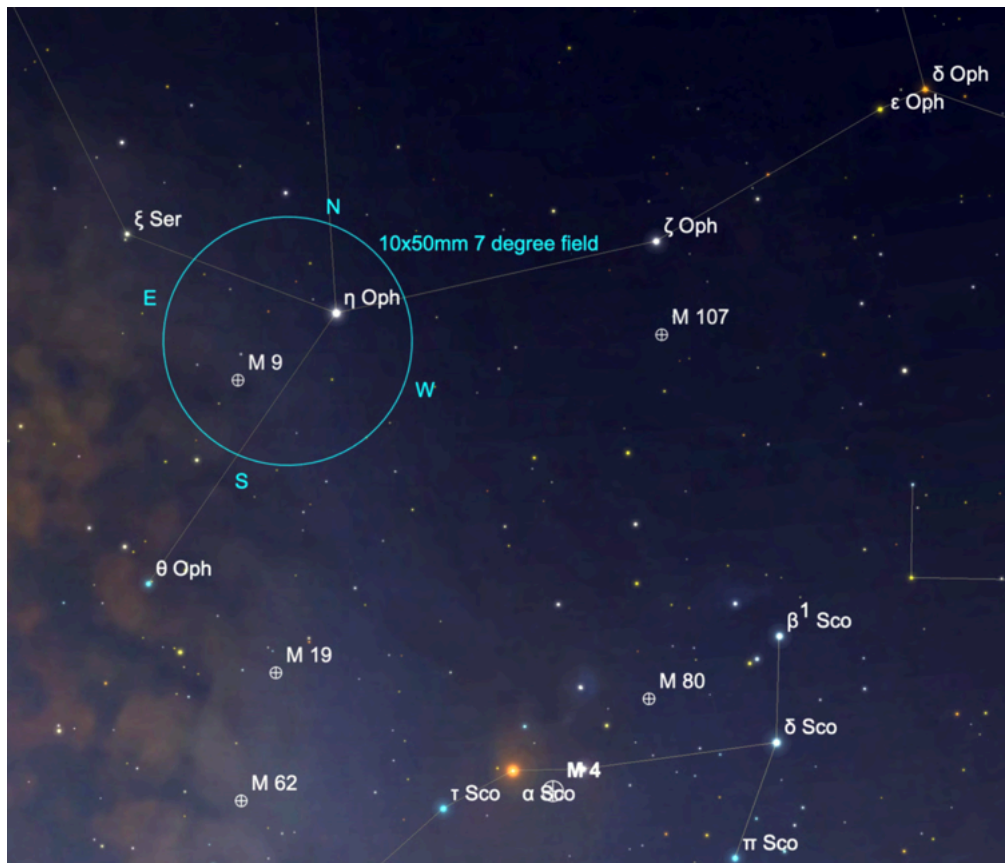


M4, M80, M62, M19 finder chart courtesy of Sky Safari Pro.

To locate M80, extend an imaginary line northward from Antares past Omicron Scorpii. The little globular resembles a faint, unresolved star in my 10x50mm, sandwiched between a north-south pair of 8th magnitude stars. Its extremely condensed core appears stellar in my 15-inch at 128x. At 217x, the edges are smooth yet irregular and surrounded by 13th magnitude outliers. Harlow Shapley and Helen B. Sawyer classified M80 as a class II globular, and M4 as a class IX in their system, where class I represents the highest central concentration and class XII the least. Compare the two and you'll see that the difference is striking.

Now centre Antares once more and then slowly sweep 8 degrees eastward until M62 comes into view. It's only a faint glow in my 10x50mm, but in my 15-inch, its halo of faint stars reminds me of fine, white beach sand at 128x. At 363x, its bright, very condensed core measures half the size of its halo.

Four degrees north of M62 lies M19. It's bordered by three pairs of 6th magnitude stars resembling hoof prints in my 10x50mm. At 128x, it is granular and gradually brightens toward the middle. Its halo measures 12 arcminutes, the distance separating a line of three 11th magnitude stars along its western side. Curiously, it stretches outward along its southeast side. According to the NASA web page, this might be due to tidal forces from the strong gravity of the centre of our galaxy.



M9 and M107 finder chart courtesy of Sky Safari Pro.

From M19 slew 8° north, and you'll come to M9. The cluster is both smaller and dimmer than its neighbour in my 10x50mm. Stars surround the halo and fill most of the field, including two attractive pairs along its southern edge at 128x. However, M9 lies on the edge of the dark nebula Barnard B64, which leaves the southwest side of the field devoid of stars.

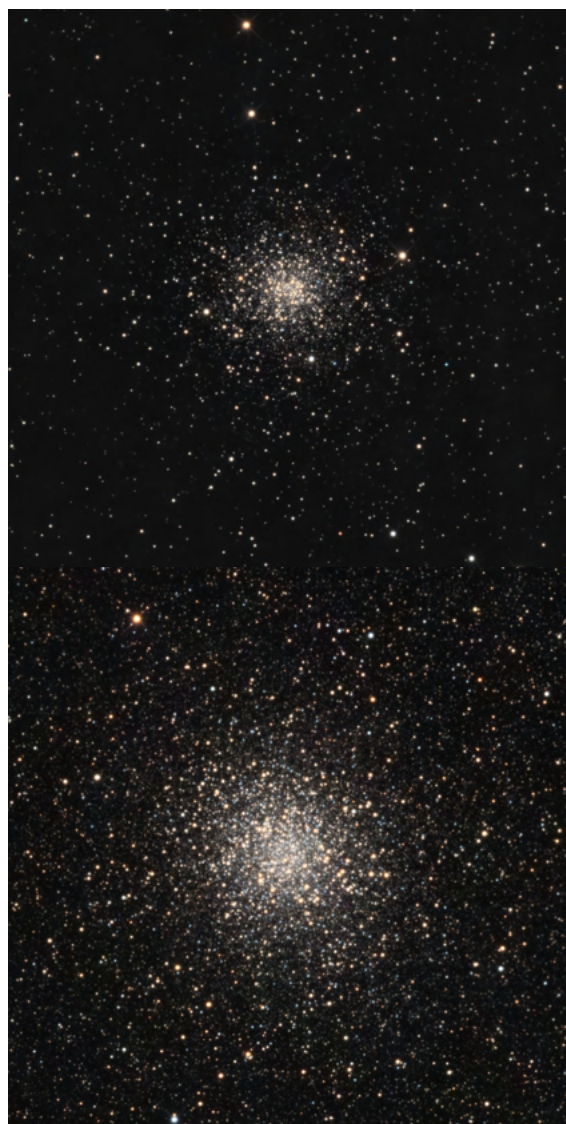
While sweeping this region with his 18.7-inch reflector, William Herschel discovered a globular cluster one degree east of M9 on June 18th, 1784. He described it as *"A large, bright, round, easily resolvable nebula, brightest in the middle & the brightness diminishing gradually. It is a miniature of M9, and I suppose if I had looked long enough, I might have perceived some of the stars that compose it"*. Author Wolfgang Steinicke in his book: **William Herschel Discoverer of the Deep Sky** adds that *"due to its compactness, it was not resolved and was classified as a "bright nebula" by Herschel"*. It was later catalogued as the 6356th entry in J. L.E. Dreyer's: **New General Catalogue of Nebulae and Clusters of Stars**. Through my 15-inch, the edges of NGC 6356's halo are well defined with faint hints of granularity at 217x. It brightens gradually to a core that's roughly half the size of the halo. At 363x, stars on the threshold of visibility pop in and out of view near its southwest edge. Sometimes a little patience and some extra magnification is all it takes.

Herschel discovered NGC 6342, M9's second neighbour, nearly two years later. He described the 11th magnitude globular as: "*considerably bright, pretty small, little extended, easily resolvable.*" As recounted by Roger W. Sinnott in: **NGC 2000.0**: "*Dreyer stressed that "resolvable" did not mean "resolved", only that the object seemed mottled or gave signs of being composed of stars.*"

In my 15-inch, the little globular is a faint, unresolved glow at 217x resembling an elliptical galaxy. No granularity is detected at 363x, but two threshold stars, one northeast and the other southwest of the halo, are seen with averted vision.



NGC 6356, M9 and NGC 6342 finder chart courtesy of Sky Safari Pro.



LRGB Images of M107 top and M22 bottom were captured with my RC-8 and QSI 683 camera from Pointe-Claire. Top is north, right is east.

From M9, let's sweep 12 degrees westward to find M107. Look for it 3 degrees south of ζ (zeta) Ophiuchi. From Pointe-Claire, the cluster was too dim for my 16x70mm. But I suspect my 6-inch would have been up to the challenge. From the Laurentians, it's a faint glow in my 10x50mm. At 128x, it's framed by a cross of four 10-11th mag stars in the inverted field of my 15-inch telescope. At 217x, the core of this class X cluster is partially resolved into several thick sprinklings of stars, giving the cluster a loose, triangular appearance. On a June night of above-average seeing in 2022, the stars became too numerous to count when I increased the magnification to 363x. M107 was discovered by Pierre Méchain in April 1782. It was added to the Messier Catalogue by Helen Sawyer Hogg in 1947 together with M105 and M106. You can read about it in her RASC Journal article, **Out of Old Books** in volume 41, p.265 published in September 1947.

Shining at magnitude 5.2, M22 is the brightest globular visible from our skies. It's located 2½° east of Lambda Sagittarii, the star at the top of the teapot's lid. Both fit easily in the wide 7-degree field of my 10x50mm with a martini glass shaped asterism of four stars lying in between. This is a big globular; about the same size as M4 but much brighter with irregular edges in my 16x70mm binoculars. Faint chains of stars extending from the southeast edge of the core are visible in an 8-inch. The 15-inch resolves it to the core at 217x, yet a faint central haze remains. It was discovered by Johann Abraham Ihle, a German amateur astronomer, who found it while observing Saturn in Sagittarius in 1665.



Sagittarius finder chart courtesy of Sky Safari Pro.

Located a degree north-west of λ (lambda) Sagittarii, M28 is half the size of M22 and much fainter too. I had to scan the field for over a minute before I could identify it in my 10x50mm. My C8 revealed some granularity in M28's core and resolved a few stars along the edges on a comfortable July evening back in 1992 from the Montreal centre's old observing site south of Ormstown.

The little magnitude 9.7 globular lying 40 arcminutes east of λ (lambda) Sagittarii is another William Herschel discovery. NGC 6638 is detached from the busy starfield and measures roughly 2 arcminutes, the distance separating a nearby pair of 12th magnitude stars. It brightens to a compressed core at 70x, and I discern hints of granularity along the southwestern edge of its halo at 217x.

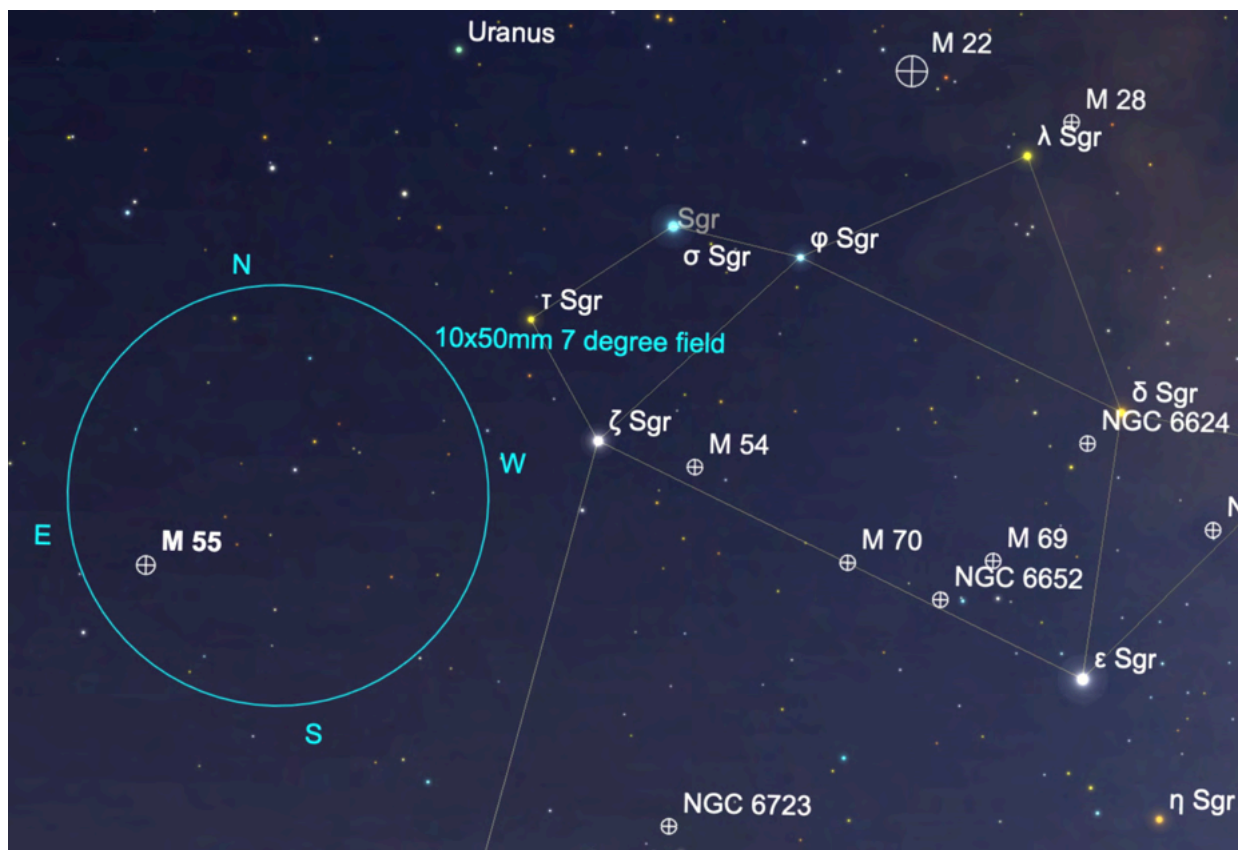
Located $\frac{3}{4}^\circ$ southeast of δ (delta) Sagittarii, NGC 6624 is a minuscule globular that's well detached from its rich surroundings and remarkably bright compared to the other NGC globulars that I've observed in this region. At 217x, its halo is twice the size of its bright core. It's an attractive cluster that I would like to revisit from a more southern latitude someday. William Herschel discovered it from Bath, England, while it was only 9° above the horizon on the night of June 24th 1784.

Located $2\frac{1}{2}^\circ$ northeast of ϵ Sagittarii, near the SW edge of the teapot, M69 is so close to the horizon that I have to crouch to reach the eyepiece of my 15-inch. At 217x, stars are scattered all around its bright core, particularly along its southeast edge. I wrote in my observing log of July 7th, 1992, that it was smaller and dimmer than M62 in my C8, and that I couldn't see it in my binoculars.

From M69 slew $2\frac{1}{2}^\circ$ east to locate M70. Even though it's only 11 degrees above the horizon, I can resolve a few 10-11th mag stars along the northeast edge of the halo and a 10th magnitude one along its southern edge at 217x. Its core is large and very concentrated. M70 resembled M69 in my C8 but displayed a more condensed core.

Messier discovered these two globulars on the night of August 31st 1780, while he was searching for a nebulous object catalogued by Nicholas Louis de Lacaille in 1751-52. According to the SEDS Messier page, Messier thought he had recovered Lacaille's object, but this was probably a misidentification, since M69 is considerably fainter than any other of Lacaille's objects and could probably not be seen in Lacaille's 0.5-inch telescope.

Slewing 3° east from M70 brings M54 into view. Its small halo and very concentrated core make it the brightest of the three Messier globulars located within the Sagittarius teapot. Yet, unlike its two neighbours, it's unresolved at 217x. It was just visible in the 8x50mm finder of my C8 on that same July night in 1992. M54 lies twice as far as M69 and M70, and according to Wikipedia appears to reside at the core of the Sagittarius dwarf Spheroidal Galaxy, which is being torn apart by immense tidal forces as it orbits around the Milky Way.



M55 finder chart courtesy of Sky Safari Pro.

M55 lies 8° east-southeast of ζ Sagittarii, the star at the bottom of the teapot's handle.

"It's in the middle of nowhere, but visible as a big blob in the binoculars" is what I wrote in my observing log on that productive July night in 1992. It's larger than the other 3 Messier globulars in the

Object	Right Ascension	Declination	Constellation	Diameter arcmin	Magnitude	Magnitude Brightest*	Class	Distance pc
M5	15 ^h 19 ^m	02° 05'	Serpens	16	6	12.2	V	7,600
M4	16 ^h 24 ^m	-26° 32'	Scorpius	14	5	10.8	IX	2,000
M80	16 ^h 17 ^m	-22° 59'	Scorpius	8	7	12.5	II	8,400
M62	17 ^h 01 ^m	-30° 07'	Ophiuchus	7	6	13.2	IV	5,500
M19	17 ^h 03 ^m	-26° 16'	Ophiuchus	12	7	14	VIII	10,800
M9	17 ^h 19 ^m	-18° 31'	Ophiuchus	7	8	13.5	VIII	7,500
NGC 6356	17 ^h 24 ^m	-17° 49'	Ophiuchus	7	8	15.1	II	16,700
NGC 6342	17 ^h 21 ^m	-19° 35'	Ophiuchus	4	10	15	IV	12,00
M107	16 ^h 33 ^m	-13° 03'	Ophiuchus	7	8	13	X	6,400
M22	18 ^h 36 ^m	-23° 54'	Sagittarius	9	5	10.7	VIII	3,000
M28	18 ^h 25 ^m	-24° 52'	Sagittarius	5	7	12	IX	5,900
NGC 6638	18 ^h 31 ^m	-25° 30'	Sagittarius	2	9	14.2	VI	8,500
NGC 6624	18 ^h 25 ^m	-30° 21'	Sagittarius	2	8	14	VI	8,100
M69	18 ^h 31 ^m	-32° 20'	Sagittarius	4	8	13.7	V	10,100
M70	18 ^h 43 ^m	-32° 18'	Sagittarius	3	7.8	13	V	9,200
M54	18 ^h 55 ^m	-30° 29'	Sagittarius	2	7.7	15.2	III	21,200
M55	19 ^h 40 ^m	-30° 58'	Sagittarius	4	6.3	11.2	XI	4,800

Sagittarius teapot (M54, M69, M70). It's also very concentrated, gradually brighter to the middle and partially resolved at 217x. It was discovered by Nicolas Louis de Lacaille in 1752, as Messier wrote in his **Catalogue des Nébuleuses et des Amas d'Étoiles**:

Nébuleuse qui est une tache blanchâtre, de 6 minutes environ d'étendue, sa lumière est égale & n'a paru contenir aucune étoile. Sa position a été déterminée par ζ du Sagittaire, au moyen d'une étoile intermédiaire de 7^{ème} grandeur. Cette nébuleuse a été découverte par M. l'abbé de la Caille. Mém. Acad. 1755, p.194, M. Messier l'a cherchée inutilement le 29 juillet, 1764, comme il le rapporte dans son Mémoire.

Go outside and enjoy the night,

Right Ascension and Declination coordinates are epoch 2000.

Diameters are my visual estimates, since size estimates vary enormously from one source to the next.

Magnitude, Magnitude of the brightest star and distance are from the book: **Star Clusters** by Brent A. Archinal & Steven J. Hynes.

The Shapley–Sawyer classification is from the **Harvard College Observatory Bulletin No. 849**.



(712499) Alexstefanescu = 2014 US₄₈

Discovery: 2014-09-22 / EURONEAR / Roque de los Muchachos / 950

Alex Stefanescu (b. 1955) is a retired Romanian-Canadian electrical engineer and amateur astronomer. A former director of the Bellevue Observatory, he participated in instrument maintenance, astronomy camps, stargazing, public talks and astrophotography, attending three total solar eclipses.

An asteroid named in recognition of Alex Stefanescu.

Smartphone and Binocular Stargazing



By Nader Daou, Director of Outreach.

Astronomy for Everyone

The Canadian night sky during August brings a special kind of comfort. For centuries, stargazing was the exclusive province of those with hefty telescopes and bundles of complicated charts. The practice of observing the universe through smartphone and binocular viewing has reached new heights of accessibility because these instruments are now available to everyone. The message is clear: astronomy truly is for everyone.

Why Binoculars and Smartphones?

Your financial budget remains safe while you maintain portability with your equipment. A quality set of binoculars (think 7x50mm or 10x50mm) or even just your smartphone can open up an enormous swath of celestial wonders. These observing tools provide excellent portability along with powerful observation capabilities to both urban observers and casual skywatchers in light-polluted areas or those travelling to cottage country.

The Power of Binoculars

The simple binocular instrument provides sky illumination which surpasses the capabilities of small telescopes. Through their expansive viewing angle these instruments let users locate star clusters together with nebulae and lunar surface features. A steady chair or a car hood will enable you to see Jupiter's four largest moons as tiny jewels which appear around the planet while also revealing the golden appearance of Saturn. The Pleiades (Seven Sisters) transform into an actual cluster that replaces their blurry appearance while the Andromeda Galaxy develops shape and dimension. During meteor showers including the Perseids the observation becomes better through binoculars because these instruments allow users to focus on the prolonged paths of brighter meteors.





The phone in your pocket serves as a smart astronomical device.

Smartphones have evolved into virtual astronomical laboratories. Beginners can practise real astronomy through their smartphone sensors combined with their powerful cameras and smart software applications.

The application suites, SkySafari and Stellarium and Star Walk and additional programs, convert your smartphone into an interactive planetarium that uses GPS and magnetic guidance. A phone pointed at the night sky will automatically detect the positions of constellations together with planets and satellites. Users who observe from light-polluted areas or urban Montreal can use these applications to determine what celestial objects they might be able to see that evening.

The evolution of smartphone cameras has transformed night sky photography into an entirely new field. Through "Night mode" and manual camera settings you can achieve high-quality Moon images while photographing planetary pairings and tracing the path of the International Space Station. The combination of a free time-lapse application with a tripod allows you to transform meteor showers and satellite trails into artistic creations.

Astronomical Highlights for Minimalists (August 2025)

- During the month of August (Aug 10) the Six-Planet Parade will be visible in the pre-dawn hours. The naked eye can easily spot Venus and Jupiter but Uranus and Neptune become visible through binoculars. Your phone's position-finding technology will show you the precise locations of celestial objects during the soft-coloured morning sky.
- The two brightest planets Venus and Jupiter will create a close celestial encounter throughout this month. A smartphone can take this picture pair with the help of manual camera options and proper device stabilizing and timer setting.

- The Perseid Meteor Shower reaches its peak activity on August 12 while the conditions for viewing are favourable. Relax while your eyes adapt to the darkness and use your phone's wide-angle lens to take extended photos of the sky.
- Beehive Cluster with the Moon (Aug 21): Early risers can catch the Moon nestled near M44, the Beehive Cluster. Binoculars show the Beehive Cluster's sparkling appearance and your application will guide you to its location.



Perseid Meteor

Pro Tips for Getting the Most from Simple Gear

- Steady Scores Success: Use a tripod for your phone or brace your binoculars for sharper views.



Beehive Cluster: CC license wikipedia

- Night Vision: Avoid white light from your screen—most sky apps offer a red-light mode to protect your darkness-adapted eyes.
- App Tutorials: Spend a few minutes with your chosen app before heading outside so you'll know how to adjust settings on the go.
- Community: Don't go it alone! Share what you're doing with the RASC Montreal Centre. There's a growing global network of "citizen astronomers" making discoveries with only phones or binoculars.

The Democratization of Astronomy

All astronomy enthusiasts can access space exploration because it offers opportunities at every level of experience and financial ability. You can experience the excitement of seeing Saturn's rings stretch as a star-like object or the Andromeda Galaxy 2.5 million lightyears away by simply being outdoors in your

backyard, deck or park. People can participate in the ancient astronomical tradition of star observation through smartphone and binocular technology.

Take your phone and clean your binoculars before stepping outside during August. The universe awaits your gaze while you take pictures and observe constellations before sharing your findings. The Skyward spirit consists of three essential elements: curiosity, community and night sky appreciation accessible to all individuals worldwide.



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Copernicus Crater by Andrew Maenz. July 17.

Of Minerva, the Rubáiyát and Messier 40



By David H. Levy, photo by David Levy.

*Of Minerva the telescope, Edward Fitzgerald's translation of **The Rubáiyát of Omar Khayyám of Naishápúr**, and Messier 40*

Last month I sent some of you a photograph of Eureka, the 12-inch Dobsonian reflector that I claimed I now use for most of my comet hunting. That statement, I am afraid, is not entirely true. Since May 18, 1967, the day after I very nearly got expelled from the Royal Astronomical Society of Canada for arguing with Miss Isabel Williamson, its Director of Observational Activities, I have enjoyed and loved this little 6-inch f/4 reflector for more than 58 years. Even though I have not found a comet with it, I have used it to sight many known comets, and I must say that I use it for at least half of my comet hunting. I was using it while I was a student at Acadia University in Nova Scotia, where, in Dr. Roger Lewis's Victorian Literature class, where I was introduced to The Rubáiyát of Omar Khayyám. Omar was a resident, probably the most famous resident, of Nishapur, a city in northeastern Iran, and there exists a beautiful mausoleum in his memory there. I concentrated on the first stanza only, and it was well worth my trouble, and I add to it the penultimate 100th stanza:

Wake! For the Sun, who scatter'd into flight
The stars before him from the Field of Night,
Drives Night along with them from Heav'n, and strikes
The Sultán's Turret with a Shaft of Light.

Yon rising Moon that looks for us again—
How oft hereafter will she wax and wane;
How oft hereafter will she look for us
Through this same Garden—and for one in vain!

At the time this poem's translation appeared, interest in science was at a height, especially with the appearance of Darwin's *The Origin of Species* in 1859, the same year as the Fitzgerald translation and reinterpretation. Academically, this poem attracted most of the members of the Pre-Raphaelite movement, though the English population of the time thoroughly embraced the poem's thought and feeling. Even today, this poem encourages many people to enjoy both the poem and the Sun, Moon, and stars that it embraces.

A few years before I began my time at Acadia, and before my near-expulsion, I was completing my observations of Messier's 109 object catalogue. "It was Messier's mistake," Miss Williamson explained. "When you locate the rest, we credit you with M40."

I saw Messier 40 the last three nights. Messier himself found it in 1764 while searching for a nebula discovered near Megrez, in Ursa Major, by Johannes Hevelius. Hevelius, who was not using a telescope, noticed a touch of nebulosity. Messier could not confirm this but he did record two faint stars. Today most of us call M40 Messier's mistake, but I disagree with this. He probably understood his friend's naked eye view of the two stars, which even to him could show some nebulosity, and left the pair in his catalogue. Could the pair look nebulous to us when

viewed without a telescope, just as groups of stars like the Beehive and Pleiades look nebulous to today's viewers when seen without a telescope?

To find M40, simply locate Megrez and move a little more than one degree to its northeast. There will be 70 Ursae Majoris. Continue another quarter degree to the two stars that form Messier 40. Remember that this is not a double star, but instead two stars at different distances from Earth.

Finally, Messier 40 offers a bonus. Close to the east of the two stars lie two very nice spiral galaxies, NGC 4290 and NGC 4284. You need a very dark sky to catch these, but they are lovely.

So what do Minerva, the The Rubáiyát, and Messier 40 have in common? Nothing, you might say. Minerva is a pile of metal and glass loosely held together with glue and pressure. The Fitzgerald Rubáiyát is a poem. Messier 40 is a mistake.

No. Not at all. Minerva has given me 58 years of passion and pleasure being under the sky, whose rising Moon only adds to the joy. And over centuries, people like Charles Messier and Hevelius shared that same incredible craving for the stars, including the tiny pair of distant suns collectively called Messier 40.



By Marc Ricard. August 12th

An odd sight drifting across the northwestern sky tonight.

Turns out it was an Ariane 6 Rocket spotted by several members including David Shuman and Alexei Weins visiting Cape Canaveral. (Ed.)



Super Nova SN 2025rbs in NGC 7331. Captured 2025-08-01 by Gilbert St-Onge and Marjolaine Savoie in Dorval. The super nova is the bright star to the left of the galaxy core, outshining the core itself.

SN 2025rbs NGC 7331/ G ST-Onge & M Savoie 2025 08 01 Dorval Qc

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How Much of the Dumbbell Nebula can we See?



The Dumbbell Nebula down to the bone

By Gilbert St-Onge (RASC, CDADFS, SAM, FAAQ)

Messier 27 is the celestial object that was chosen to see what is the limit of the smallest details that can be detected with our amateur instruments. It is a planetary nebula (PN) [2] in the constellation Vulpecula which is at a distance of ~ 1200 ly. With our equipment we can detect this type of object mainly by using our narrowband filters which cover the emission ranges of Oxygen [OIII] at 496 nm to 504 nm and Hydrogen alpha at 656.3 ± 5 nm. This PN is composed mainly of gas ionized by UV radiation from the progenitor white dwarf star whose surface is very hot. These nebulae do not have much dust that is detectable. To complete this project, we also use the IR 72 Is near IR filter, at ≈ 793 nm to $\approx 1,000$ nm.

A major challenge for this experiment is the poor-quality urban skies of the western suburbs of Montreal. In these very bright sky conditions, we do not expect to see very faint and fine details in the sky around the main nebula, but rather we aim for the limit of accessible sampling in the most intense regions of the nebula.

Observing location: Dorval, QC, Canada

Main instrument used: 6.3-inch aperture refractor telescope used at f/7

The detector is an STF-8300 from SBIG

Pixel size: Square pixels measuring 5.4 microns per pixel

Sampling used:

Refractor of FL= 1120 mm, and CCD = 5.4 microns/pixel

Sampling is 1 arcsecond per pixel.

Figure 1

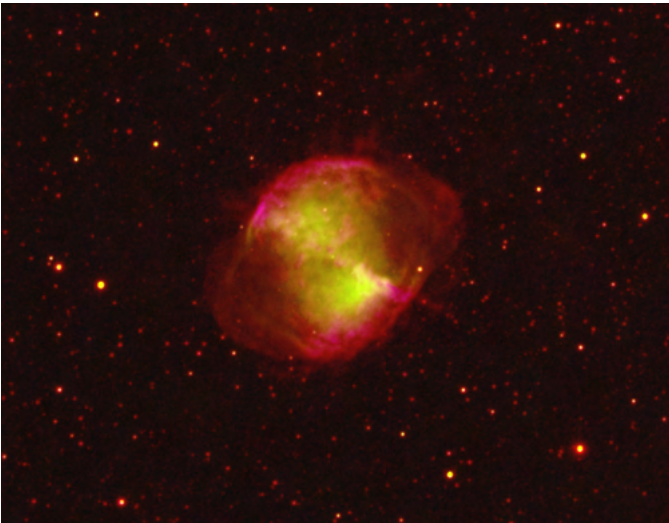


Figure 1 Summary;

Let's start with a standard RGB image of the planetary nebula Messier 27.

This will be our primary comparison image since it was captured by a ZWO 1600 Colour CMOS camera, using the "Optolong L-eNHance duo band" filter.

It is subject to the same observation conditions as all the other images in this project.

The use of the Oxygen [OIII] sensitive filter (495 nm to 504 nm), is used because these PN objects, undergo the effects of UV radiation from the star which promotes so-called forbidden oxygen transitions. For our purposes we targeted the signature of doubly ionized oxygen [OIII] 495.9 and 500.7, in the visible range. Figures 2 and 2b are the results with the oxygen sensitive filter.



Figure 2

A good image of Messier 27 using an OIII filter.

We can see the distribution of [OIII] throughout the nebula and several more intense compact regions covering the surface of the large main nebula.

The OIII appears to be a thin fog covering the nebula in some places.



Figure 2b

By removing the maximum continuum from the OIII image, we are able to highlight several fainter regions across the entire surface of the main nebula.

We see another dimension to the image, a dimension of depth.

Here, we have reached the maximum resolution of the sky.



Figure 3

An image still in the doubly ionized oxygen [OIII] region, adjusted to reveal some very faint outbursts of gas further out in the sky around the main nebula. These nebulae were ejected from the star before those from the main nebula; they are very difficult to detect in skies as poor as those over the Montreal region.



Figure 4

Figure 4 is in Hydrogen-alpha (H-alpha) light. It shows a greater number of raised structures on the Great Nebula than in [OIII] light, mainly the Great Crossbar. In addition, several elongations can be seen on the surrounding sky.



Figure 5

Figure 5 is also in H-alpha, we can see some very pale eruptions of gas further in the sky all around the main nebula. Some correspond to the extensions observed with the OIII filter.



Figure 6

Figure 6 is finer and the resolution allows us to better see darker filamentary structures that appear to pass in front of the nebula and move away from it on the upper left to the NE. Figure 4 shows these dark structures very well.

Figure 6b

The lines in this image show the main darker structure moving away from the main nebula to the NE.

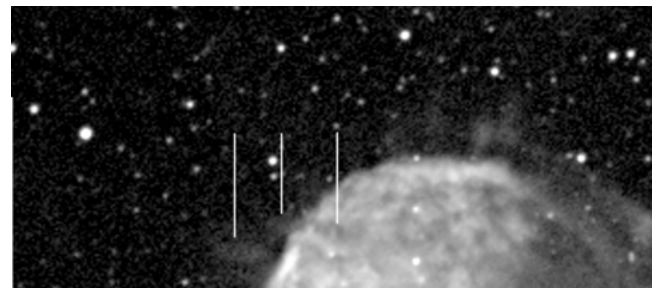




Figure 7

This image in H-alpha, allows us to see yet another aspect of this dark, curved thread-like structure on the surface of the main nebula to the north. We see others a little lower on the northern section just a little above the centre, they cross the nebula completely from east to west. The heart of the nebula is covered by a large darker sector.

Figure 8

This was taken using the 72 Is IR filter (near IR).

We can see the large number of stars detected with this filter in the near IR range, but above all, we can clearly see that there is not much signal from this planetary nebula in the near IR. Therefore, there is not much light to cause reflections and dust in these nebulae. This confirms that these PNs are nebulae dominated by ionized gas that are detected by emission lines specific to these objects in their spectra. We use filters sensitive to oxygen [OIII] and hydrogen alpha "H α ", for this file.



The participants who contributed to this small project: Mainly, Marjolaine Savoie, Benoit Genesses and Gilbert St-Onge.

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Messier 15 et Pease 1 (Par Gilbert St-Onge), ASTRONOMIE QUÉBEC, <http://astronomie.quebec/magazine.php> :

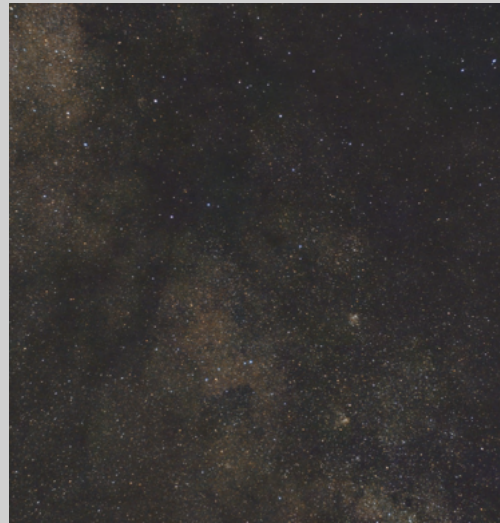
Novembre/décembre 2014 Pages 30 à 34

[2] (NP), Nébuleuse planétaire

https://fr.wikipedia.org/wiki/N%C3%A9buleuse_plan%C3%A9taire

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By Olibier Habay

Here are 2 wide field pictures of center of the Milkyway taken from Bortle 4 location during camping trip along lake Ontario with my DSLR Canon T7i + 50 mm lens, no tracking).

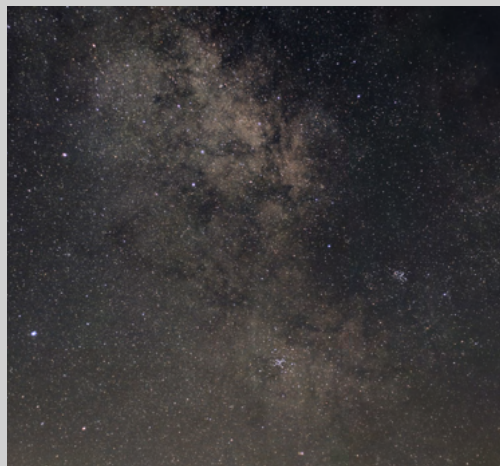
First one is centered on globular clusters M6 and M7 (42 lights, 21 darks - 3200 iso, 3.2 sec each + bias, no flat).

Second one is a little higher, in Sagittarius constellation showing, I believe , what is refered to as the small Sagittarius star cloud (bottom) and Eagle nebula (although not really resolved in this picture). This one was taken in Bortle 3 area (26 lights. 11 darks - 3200 iso and 5 sec each). I only realized afterwards that 5 sec was a little too much (stars are starting to trail when you zoom on the picture). But still nice I think.

By the way it was amazing to look at the dark sky in that area (and there was no moon)!

I m going to have to figure how to make the colors come out better

To the left, improved version (better processing in Siril), I believe, of the picture I took of the Milkyway with M6 and M7.



Adirondack Astronomy Retreat



By David H. Levy, Photos by David Levy.

The 2025 version of the Adirondack Astronomy Retreat, in progress as I write, may (or may not) be our last one. It is a chance for star gazers to gather, enjoy the fabulous night sky, and rediscover why we fell in love with the sky in the first place.

We have already had two fabulous nights. Tuesday night, July 22, was a bit hazy but David Cotterrell photographed some apparent haze in the north-northeast that turned out to be a faint glow of the aurora Borealis. Then, visually, I detected a faint greenish glow for some time thereafter. This event reminded me of my first major auroral display. That one happened right here on 8 July 1966. That was the night that twilight never ended. The twilight glow moved over toward the north, evolved into a bright auroral glow, a rayed arc, and lasted all night with a flaming beautiful light. As weak as Tuesday's glow was, I did see several rays pop out. I did 3.6 hours of comet hunting that night.

As wonderful as Tuesday night was, it is difficult to compare it to Monday night. That might have been the best sky, or surely one of the best, that I have ever seen anywhere. Not only did Messier 31, the Andromeda Galaxy, appear visible to the unaided eye, but also Messier 33 in Triangulum, became easier and easier to see as it arose out of the small microclimate cloud that was hovering over nearby Lake Champlain. Later, that cloud covered most of the sky. But when it dissipated later in the night, the Triangulum galaxy was clearly a naked eye object. I completed 3.1 hours of comet searching that night.

I began my search for comets long ago on the night of 17 December 1965. That brief 10-minute search between Pollux and Castor in Gemini did not last long, but it was the start of a lifetime search that continues to this day. I no longer expect to find another new comet, but I enjoy the search itself as much as I ever did.

My comet search, that culminated in the discovery of Periodic Comet Shoemaker-Levy 9 by Gene and Carolyn Shoemaker and me, was clearly the highlight of my career. But it was only the second highlight of my life. Meeting and marrying Wendee was the first, and it will always be.

The week at our 2025 Adirondack Astronomy Retreat is one I shall never forget. The group of people here are by far the smartest bunch I have ever had the privilege of knowing. With the coming of darkness each night, I used Tranquilitatis, a lovely 20 cm. reflector that Mark Zdiarski brought with him. Particularly on Monday night, I used it to spot a cacophony of galaxies in and near the Big Dipper, galaxies I cannot see from my Vail, Arizona home because of the glow from Tucson to my northwest. As attractive as all these galaxies are, their beauty pales before the truly magnificent appearance of Messier 51, the Whirlpool, and perhaps even more so with the advent of Messier 81, that attractive spiral in Ursa Major, and its enigmatic neighbour Messier 82. With these three galaxies, and later the Moon and Venus gently rising over nearby Ferguson Mountain, my night comes to an unforgettable conclusion. 



David Levy with Cupid the Questar, the summer before our Adirondack Astronomy Retreat began.

Arboretum ^{Morgan}

Welcome to the Morgan Arboretum!

Live, breathe, and enjoy 245 hectares of Saint-Anne-De-Bellevue forest, meadow, and wetland trails inviting you to connect with nature. Our nearly 25 kilometres of all-season paths offer you the chance to explore one of Montreal's most precious nature reserves. Come for a picnic with family or friends in summer, watch in awe at the leaves in fall, ski our groomed trails in winter, and rejoice in the new warmth of spring. Open all seasons, with activities for all ages.

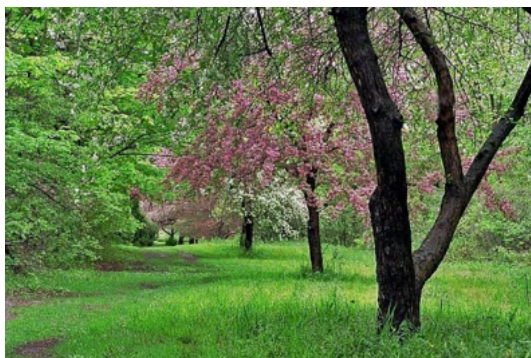
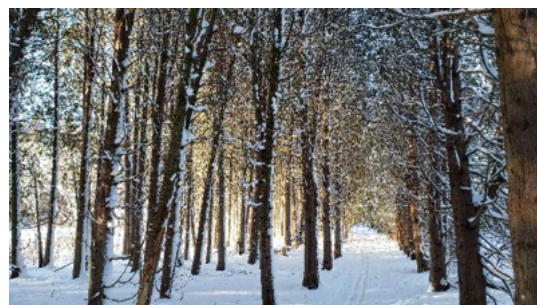
The Morgan Arboretum specialises in 4 main areas; conservation, research, education and leisure. Numerous recreational programs are available for all ages, such as Shinrin Yoku (guided forest bathing), summer camp programs, ecological workshops, scavenger hunts, and holiday events! As protecting and conserving our land is at the forefront of our mission, a combination of youth educational programming and a land maintenance team ensures that our community is well taken care of. The forest also provides fantastic research space for student projects, as it provides a consistent, untouched environment for scientific study.

Did you know that the Arboretum is home to over 500 species of plants, animals, insects, and fungi? It is home to many unique species, such as monarch butterflies, jack-in-the-pulpit flowering plants, Cooper's hawks, and giant puffball mushrooms.

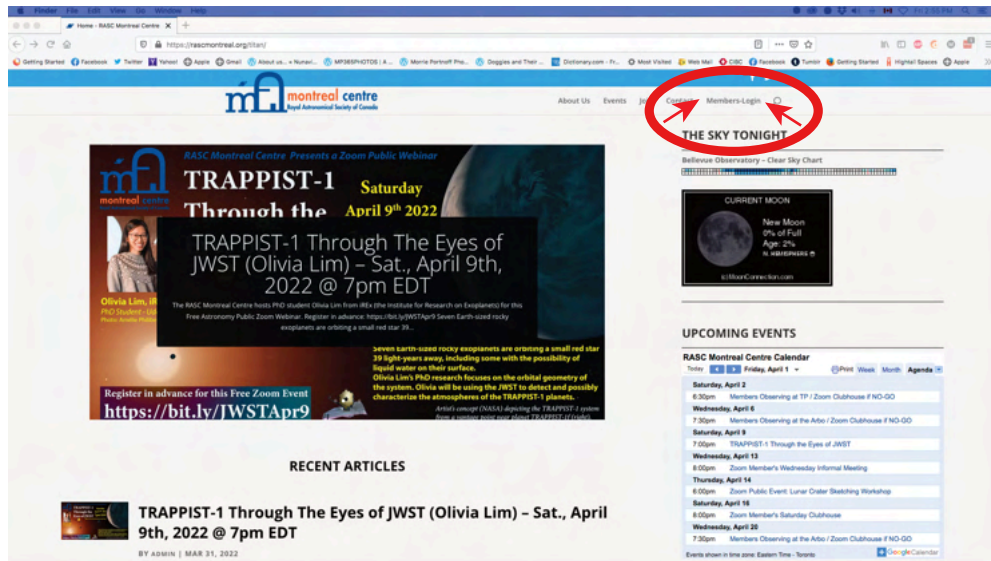
The Morgan Arboretum is open to the public and members every day of the week from 9:00 AM to 4:00 PM. Our membership program

offers daily access based on a yearly fee, and is available for purchase now! To purchase a membership, please refer to our website's "membership" section below.

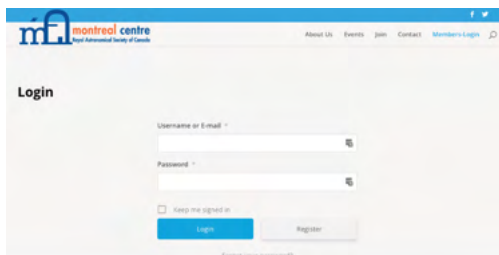
For more information, call 514-398-7811, email gatekeeper.morganarboretum@mcgill.ca, or visit our webpage at www.mcgill.ca/morganarboretum



Being a RASC Montreal Centre Member has its ADVANTAGES



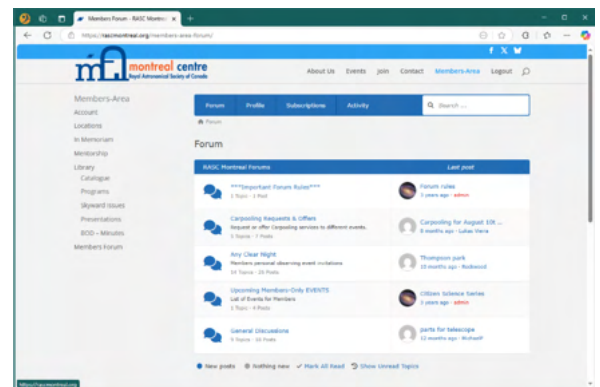
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