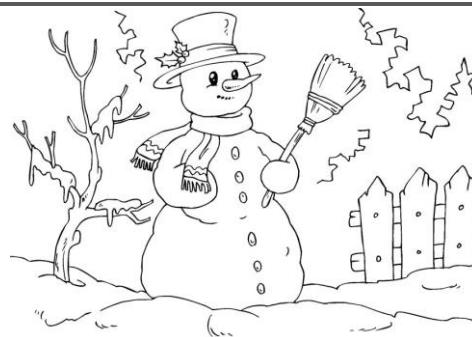


Welcome Everyone!! A note from our President:

THE TIME IS FINALLY HERE!!!! Our **December** meeting will be on the 15th, and will be the first one in a loooong time, to be held in person, live and in colour!! ***THIS WILL BE OUR XMAS SOCIAL, AND WE ARE ASKING FOR A POTLUCK SNACK TO BE BROUGHT. NO NUT PRODUCTS PLEASE.***



The meeting place is **Emmanuel United Church** on Lakeshore Drive. The parking and entrance is off of William street. We have posted a map on our website to help you get there. All Government Regulations will be followed, therefore, you will need **proof of 2 vaccinations**, as well as **masks**. We will be taking contact info on arrival as well. ALSO...We will still be airing the meeting on Zoom, for those who cannot attend in person. It has been a long haul for everyone over the last 128 months or so, but on behalf of the executive group, I would like to extend our thanks to everyone for the patience and help that has been shown. Our little club has thrived thanks to you.

DON'T FORGET TO:



- Check out our **YouTube Channel**: [GATEWAY TO THE UNIVERSE - YouTube](https://www.youtube.com/channel/UC...) for identifying constellations, messier objects, how-to's and more. Check often!!
- Also check out our **Facebook Group**: *NORTH BAY ASTRONOMY CLUB* as our up-to-date source for info.
- And of course our **WEBSITE** is: www.gatewaytotheuniverse.org

Venus slides sunward throughout December 2021, dropping closer to the sunset point as western twilight darkens each day. The planet is easy to spot at the beginning of the month as the blazing starlike object near the sunset point. But Venus proves more difficult to spot near month's end as it gets closer to the sunset, appears in brighter twilight, and sets sooner behind the sun. Venus is about to move between the Earth and sun in its smaller, faster orbit. It'll be nearest the Earth-sun line – at inferior conjunction – on January 9, 2022.

Mars has been traveling behind the sun from Earth. But late December 2021 is the time to start following the red planet again as it heads toward its bright appearance in December 2022. Mars should be just visible, with difficulty, in the direction of sunrise, before the sun comes up, on the last day or so of 2021. The thin waning crescent moon aids in your discovery of Mars on the final morning of the year.

Mercury is nowhere to be found for most of December. During that time, it's moving around the far side of the blinding sun, as seen from Earth. But on the last several evenings of the year, Mercury's angular distance from the sun on our sky's dome should be great enough that'll we'll glimpse the planet, briefly, perhaps 30 minutes after sunset, in the sunset direction.

Jupiter/Saturn From the Northern Hemisphere, if you stand facing Jupiter in the southeast, Saturn will be the starlike object on the brighter planet's right side. Saturn will sit about midway between Jupiter and Venus as the month begins, forming planetary bookends. They'll be very noticeable if you look in the evening twilight sky, in the direction of the sunset. Throughout December, Jupiter, Saturn and Venus evenly position themselves like jewels on a celestial string. We astronomers call this imaginary string across our sky the ecliptic. It's really the flat plane of our solar system, the plane in which all the major planets – and, for the most part, their moons – travel around the sun..

Question of the month

What are the only two planets in our solar system without moons?
Answer in next month's issue



Moon phases

Full moon	December 18, 2021	09:37:58 PM	251,726 miles
Last quarter	December 26, 2021	07:26:00 PM	234,215 miles
New moon	January 2, 2022	11:35:49 AM	226,733 miles
First quarter	January 9, 2022	11:13:20 AM	244,824 miles

NASA's James Webb Space Telescope will spend its first year looking for primordial galaxies, gold-forging explosions, and habitable planets. THE BUMPS ON THE LONG and winding road keep coming for NASA's flagship James Webb Space Telescope mission. On November 23, NASA again bumped the launch date for the often delayed, multi-billion-dollar spacecraft and scientific instrument from December 18 until at least December 22 due to concerns over a loose clamp securing the telescope to its Ariane 5 rocket. But what's another few days for a project that's more than 20 years in the making? Unlike the Hubble telescope, the Webb telescope won't sit in low Earth orbit. Instead, it will take up a position more than a million miles away at Lagrangian point 2 (L2), a place where Earth's gravity and the Sun's gravity cancel out, allowing the Webb to keep Earth constantly at its back as the telescope orbits our star.

ANSWER: How Far Away Is the Moon?

The Moon is an average of 238,855 miles away from Earth, which is about 30 Earths away.

We have The *Beginners Certificate* and *Messier Certificate* and other *Certificates* on our website. It gives purpose to stargazing. There are always people to help you along. Good luck and clear skies to all.

Brian McKillop has logged 91 of the 100 objects from the **CHAPMAN 100 List**

Michelle St.Onge has logged 31 of the 110 objects from the **Messiers Certificate List**

Bill Montague has logged 27 of the 65 objects from the **Bill's Finest Globular List**

Bob Chapman has logged 1345 of the 2517 objects from the **Complete Herschel List**

CONGRATULATIONS TO Rene Ross FOR COMPLETED HIS **Beginner's Certificate List** Woo Hoo!!



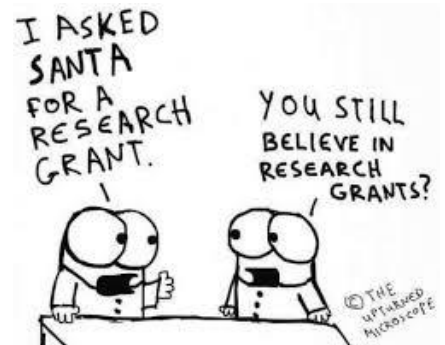
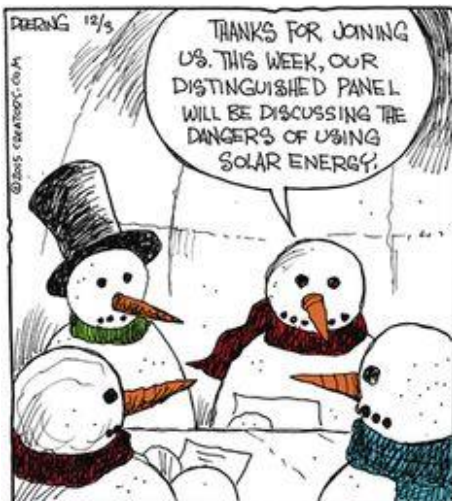
Congrats to everyone taking part in your beginners certificate or messier list or other list.

On-going Progress with Certs and Lists E-mail me your progress at stargazingran@yandex.com

The **RASC-Sudbury Centre** welcomes anyone wishing to take part in their virtual meetings to send a request to rascsudburycentre@gmail.com

Or many of you know Linda Pulliah you can contact her at pulliah@fibreop.ca

The Sudbury Astronomy Club Meetings are every **first** Friday of each month at 7:30pm-9:30pm. For full details go to www.sudburyastronomyclub.com



THE SKIES ARE YOURS TO DISCOVER
stargazingran NBAC



Merry Christmas
And A Happy New Year!