

# NOVA

NEWSLETTER OF THE VANCOUVER CENTRE RASC  
VOLUME 2025 ISSUE 2 MARCH APRIL 2025



## RASC Vancouver's First Star Party!

by Nolan Smith, VP and RASC National Rep.

We are excited to announce our first star party on **August 25-28!** It will be held in a dark sky location 2.5 hours outside Vancouver. Exclusive early-bird registration will be available for RASC-Vancouver members on April 2nd, 2025. Other RASC members and public registration will follow later. We are still in planning, so expect to see more details in early April for this observing-focused event, which will have room for cars, tents, and RVs! If you are as excited as we are, or otherwise have questions, reach out to Suzanna, Leigh, Marla, or me at the next meeting or at [starparty@rasc-vancouver.com](mailto:starparty@rasc-vancouver.com)



Service Rd

Nahatlatch Forest Service

### MARCH 13

SFU

Our own Robert Conrad will be presenting his Observational Basics Masterclass. Room AQ3149 at SFU's Burnaby Campus and on Zoom

SFU

### APRIL 10

See Meetup for details of our April lecture.

SFU

SFU

### MAY 8

See Meetup for details of our May lecture.

SFU

SFU

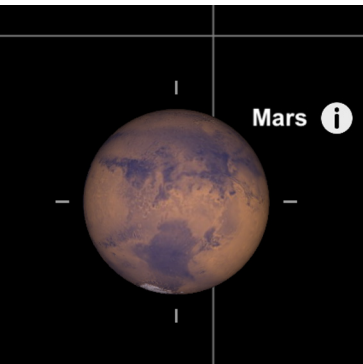
# An Observation of the Red Planet

by Phil Lobo

As the year 2025 opened, the planet Mars has been rising steadily higher in the early evening sky in the east. On January 16, Mars reached opposition and appeared at its largest angular size for some time, enticing astronomers with the good views of the red planet.

On January 17, I took advantage of a clear night to observe Mars at its most recent close approach to Earth. The telescope used was a 6-inch *f*/5 Newtonian. Early in the evening, Mars was about 35° above the horizon, but there did not seem to be any surface features visible. I decided to wait until 10pm when Mars would be higher in the sky, at about 55° altitude. I steadily increased mag-

nification. At 160×, the disk still had a steady, sharp edge and was



Mars on Jan. 17, 2025 at 10:00pm PST (from SkySafari app)

bright, and there was a hint of details. I tried various colour filters but they did not improve the view. A neutral density filter produced

the most improvement, suggesting that glare from the planet was obscuring details. After continued observation, more details became visible, possibly because the seeing improved.

The view of Mars through the telescope looked roughly like the image at left from the SkySafari app, but with less detail. Since the telescope was a Newtonian, the image was rotated 180° (i.e. inverted on both axes), so the screen image is shown rotated. The north polar cap was clearly visible. Mars had a distinct ‘man in the moon’ appearance. This was likely due to the pattern of the larger maria that were facing the Earth at the

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Date	Aug 6	Oct 11	Nov 12	Dec 15	Jan 16	Feb 18	Mar 10	Apr 10	May 15
Diameter	6"	8"	10"	12"	14.6"	12"	10"	8"	6"
Distance (AU)	1.573	1.171	.0.938	0.781	0.644	0.780	0.938	1.167	1.549

Angular Size of Mars Before and After the Jan. 16, 2025 Opposition

Credit: <https://starwalk.space/en/news/mars-opposition> “Mars Opposition 2025” (Jan 13, 2025)

# President's Message

It was 10 years ago this month that I first created my constellation matrix to help me learn the constellations visible from our latitude. Prior to that, I wasn't even sure how many of the 88 constellations were actually visible here so that was part of the reason for creating it initially. However, as I developed it, I began to

realize that it was going to be a much more powerful tool. If you use this matrix as I will describe in this article, you will learn the constellations faster than people who have been still trying to learn them after a lifetime. The amount of time? Less than a year if you're dedicated to learning them. But here's the thing about learning: If

you create it yourself using Stellarium as a guide, like me, by the time you finish creating it (maybe two days), you won't even need it because you will have learned them in the process! So, I highly recommend that you create this on your own (I've placed an Excel version in my [Google drive](#) which

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by Robert Conrad

## About RASC

The RASC Vancouver Centre meets at 7:30 PM on the second Thursday of every month at SFU's Burnaby campus (see map on page 4). Guests are always welcome. In addition, the Centre has an observing site where star parties are regularly scheduled.

Membership is currently \$104.00 per year (\$61.10 for persons under 21 years of age; family memberships also available) and can be obtained online, at a meeting, or by writing

to the Treasurer at the address below. Annual membership includes the invaluable Observer's Handbook, six issues of the RASC Journal, and, of course, access to all of the club events and projects.

For more information regarding the Centre and its activities, please contact our P.R. Director.

NOVA, the newsletter of the Vancouver Centre, RASC, is published on odd-numbered months. Opinions expressed herein are not nec-

essarily those of the Vancouver Centre.

Material on any aspect of astronomy should be e-mailed to the editor or mailed to the address below.

Remember, you are always welcome to attend meetings of Council, held on the first Thursday of every month at 7:30pm in the Trotter Studio in the Chemistry wing of the Shrum Science Centre at SFU. Please contact a council member for directions.

## 2025 Vancouver Centre Officers

<b>President</b>	Robert Conrad president@rasc-vancouver.com
<b>Vice-President</b>	Nolan Smith vp@rasc-vancouver.com
<b>Secretary</b>	Kyle Dally secretary@rasc-vancouver.com
<b>Treasurer</b>	Phil Lobo treasurer@rasc-vancouver.com
<b>National Rep.</b>	Nolan Smith national@rasc-vancouver.com
<b>Librarian</b>	William Fearon library@rasc-vancouver.com
<b>Public Relations</b>	Andrew Ferreira publicrelations@rasc-vancouver.com

<b>LPA</b>	Leigh Cummings lpa@rasc-vancouver.com
<b>Dir. of Telescopes</b>	Rick Schneider telescopes@rasc-vancouver.com
<b>Observing</b>	Robert Conrad observing@rasc-vancouver.com
<b>Membership</b>	Marla Daskis membership@rasc-vancouver.com
<b>Events Coordinator</b>	Vacant events@rasc-vancouver.com
<b>Education</b>	Andrew Krysa education@rasc-vancouver.com
<b>VRO, Past President</b>	Alan Jones observatory@rasc-vancouver.com

<b>Merchandise</b>	Vacant merchandise@rasc-vancouver.com
<b>Webmaster</b>	Martin Curic webmaster@rasc-vancouver.com
<b>NOVA Editor</b>	Gordon Farrell novaeditor@rasc-vancouver.com
<b>Speakers</b>	Andrew Ferreira speakers@rasc-vancouver.com
<b>Imaging</b>	Rick Schneider, Marla Daskis, Alan Jones imaging@rasc-vancouver.com
<b>At Large</b>	Michael Levy, Gordon Baush, J. Karl Miller

## Library

The centre has a large library of books, magazines and old NOVAs for your enjoyment. Please take advantage of this club service and visit often to check out the new purchases. Suggestions for future library acquisitions are appreciated.

## On the Internet

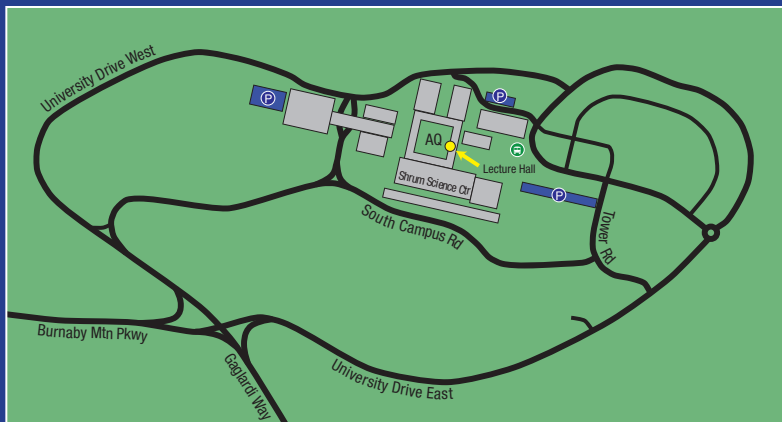
rasc-vancouver.com  
astronomy.meetup.com/131/  
www.facebook.com/RASC.Van  
www.instagram.com/rascvancouver/  
@rascvancouver.bsky.social

## Mailing Address

RASC Vancouver Centre  
PO Box 89608  
9000 University High Street  
Burnaby, B.C.  
V5A 4Y0



## Map to Meeting Site



Our March meeting is in room AQ 3149 of the Academic Quadrangle, along the east concourse near to the cafeteria, as indicated by the arrow on the map.

Pay parking is available at several locations located around campus (indicated as "P" on the map).

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you can access on the Vancouver RASC page under Astronomy Resources).

So, in this article I want to talk about two topics: one is how I created it and the second why it is so powerful and unleash the secret to why it is an amazing learning tool. Let's start with how I created it. Using [Stellarium](#), I would set the date to the 15<sup>th</sup> of the month and then locate the constellation. Let's use Taurus as an example. On March 15<sup>th</sup>, you can observe Taurus clearly around 8:30pm (it's completely dark at 9:00pm). At this time, Taurus is visible and getting ready to set in the West (somewhere between SW and W to be exact).

If I advance the time, it sets around midnight (if you have

mountains, probably more like 10:30pm). So that means in March I would say that Taurus is an evening constellation, so I enter the



letter "E" for that constellation in the matrix for March. If I advance to April 15, I can see that by the time it's dark, Taurus is already

setting below the horizon, so I enter "No" in the matrix for Taurus for April and so on. In November and December, we're lucky to see that Taurus is visible all night from dusk to dawn so for those two months I enter the letter "A" for all night. Repeat for all 12 months for all 55 constellations and by the time you finish, you will have learned the shapes of all 55 constellations visible from our area and when they are visible throughout the year. For constellations that are only partially visible from our area like Eridanus, Puppis, Sagittarius, Scorpius and Sculptor, I entered this symbol next to the constellation name (+). And if a

constellation is visible during any time of night but very low on the horizon, I enter an asterisk symbol

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# Imaging Group News

## Meetings and Presentations

The imaging group has been meeting on the first and third Tuesdays of each month. The first meeting is a general chat and the third week we have been trying to organize presentations. On January 21, Rob Lyons gave a really informative presentation called "Filters Unfiltered." He walked attendees through the way filters work and the recommendations for broadband and narrowband filtering, particularly in light-polluted skies.

## Trottier Telescope Access

The amazing weather we had for a stretch in January meant that we had a lot of access to the Trottier telescope! We had five imaging sessions in January alone! We're working on getting some good data on a few targets like the Crab Nebula and others. Normally, SFU allows the RASC access on

clear Tuesday nights but we may be offered access when SFU staff and students are not utilizing it.

Two qualified operators (RASC council members) are required for running the telescope safely, and we are always interested in having more qualified members. If you are interested in becoming a qualified operator, please contact the imaging group. Training is done under supervision, and qualification is done onsite by RASC members who are already qualified.

## Remote Telescope Proposal and Investigation

At the February 4 general chat meeting, the attendees discussed an idea about setting up a RASC telescope at a remote site in the south, with Bortle 1 skies. More investigation is needed to flesh out the details and determine equipment, costs and what would be required to run it, how to ac-

cess data etc. If you are interested in accessing data, donating equipment or otherwise supporting a remote telescope, please contact the imaging group to join and get involved. ★

by Marla Daskis

### Imaging Group Meetings:

- 1st and 3rd Tuesdays every month
- Quarterly In-Person at SFU
- Contact [Imaging@rasc-vancouver.com](mailto:Imaging@rasc-vancouver.com) to be added to email list for invites.

### Benefits:

- Like-minded people to share with
- Range of skills from beginner to expert
- Access to world class imaging equipment
- Member viewing at VRO

Please note: You must be a RASC Vancouver member to join the imaging group.

## Membership has its Privileges!

Are you tired of looking at the same objects again and again (planets, moon, etc.)? Is your telescope collecting dust because it's hard to locate deep sky objects? Would you like to bring your observing to a stellar level? Robert Conrad, our observing director, leads the Vancouver RASC observing group and invites you to join by sending him an email at [observing@rasc-vancouver.com](mailto:observing@rasc-vancouver.com). Some of the benefits of belonging to this group include:

- Hands on training on how to operate the SFU Trottier observatory
- Weekly observing sessions at the observatory or at dark sky locations
- One-on-one coaching on how to locate thousands of objects in the night sky
- Attend small interactive seminars delivered by Robert on a range of topics including failsafe star-hopping, charting challenging objects and understanding the motions of the cosmos
- Learn to make your telescope dance by locating objects such as asteroids, nova, and supernovae
- Spectroscopy and imaging training from Howard Trottier and an opportunity to collaborate on observatory research projects
- Updates on observable sky events happening during the week like asteroid/comet/deep sky conjunctions
- Access to observing guides and lists that Robert created that took hundreds of hours to create and will help with planning observing sessions
- Knowledge and expertise from other observing group members
- Learn how to quickly and efficiently find and star-hop to deep sky objects using a range of binoculars and telescopes

## Upcoming Events

### April

10 – Trotter Observatory 10th Anniversary

### May

3 - 4 – RASC Virtual General Assembly  
10 – Astronomy Day at SFU

### August

16 - 24 – Mt. Kobau Star Party

### December

11 – AGM

## Observational Astronomy Book Excerpt 4

by Robert Conrad & Andrew Krysa

There are a variety of tools and resources that are available to help you learn the night sky and help you advance in your interest in astronomy. These tools are welcome because without these tools and a viable strategy it is very challenging to learn the constellations, sky movement, telescope operation, etc.

Many of the tools pictured above provide a simulation of what the night sky looks like right now or at any given point in the past, present or future on any point on the Earth. Planning is crucial to success in astronomy and many of these tools help with planning your observing session. Because you can project what the sky may look like later that evening or later in the week or later that year, you can have a better idea of what you might want to observe in the future and also where the objects you want to observe will be located. This feature of the tools also helps with learning the night sky as you can point to anywhere in the sky and identify what you're looking at or you can sit at home and study constellations, star movement, etc.

One of the most traditional low-tech tools for learning the night sky is a planisphere. They are usually printed for specific latitudes so you should get one that is closest

to the latitude you are observing from. These are usually made of two pieces of plastic or paper fastened together so that you can rotate the top piece which has a window that shows through to the bottom piece. The bottom piece has the entire celestial sphere printed on it and, depending on what date and time you set the top piece to, the window will show you what stars and constellations are visible. Some of the planispheres targeted more for children and beginners don't show all the constellations which may be a good thing for beginners but not so good for more advanced observers. More detailed planispheres for more advanced observers are available. Some of the glossy plastic ones may reflect your headlamp light if you are out in the dark, which makes reading it more difficult. There are also glow-in-the-dark ones available which are easier to read in the dark. Remember to allow for daylight savings time when setting the time on the top piece. As you spin the top piece showing advancing time, you can also simulate and see which constellations will be rising or setting at what time. The most popular planisphere is the Miller planisphere and can be purchased online or at a local astronomy store. Many

organizations also give out the simpler ones for free at star parties and events.

Many magazines on astronomy will publish a monthly sky chart which shows what constellations will be visible that month along with the position of the planets. The challenge with these published sky charts is they only show the constellations that are visible at a certain time in the night like a snapshot. So if you are out later or earlier, some constellations that may be up then may not appear on the map and if you stay out most of the night, almost half of the constellations that could be visible are absent from the chart.

Sky atlases will be discussed in detail in later NOVA articles. The advantage of these atlases is that they are by far more detailed than a planisphere or a published monthly star map. The Pocket Sky Atlas shows you pretty much all the stars that you can see with the naked eye and binoculars. The entire celestial sphere is printed on all the separate pages of the atlas so it doesn't matter where you are on Earth at what time; all available views are published in the atlas so that you can always find what you are looking at. The atlases also show hundreds

or thousands of interesting celestial objects to observe like galaxies, globular clusters, nebulae and much more.

A myriad of useful apps are available for use on your mobile phone for both learning the sky and for planning observing sessions. There are weather apps, light pollution apps, aurora borealis and australis prediction apps, interactive pointing apps for identifying stars, planets and constellations, satellite and ISS pass apps, moon apps, planet apps and many more examples. We can mention here some of the ones we enjoy using. Starwalk 2 and Sky Safari are two examples of interactive point-and-identify apps. You simply start the app and point your phone at any spot in the sky and it will show you the stars and planets you can see and label them for you so you know what you are looking at. They are usually pretty accurate and use your phone's GPS so no Wi-Fi is generally needed. These apps are invaluable out in the field for quick identification of constellations and celestial objects and very easy and intuitive to use. Stellarium is an invaluable tool and powerful sky simulation software aimed at astronomy enthusiasts on your computer but a simplified version exists as an app for your phone. We go into great detail on Stellarium in this book so suffice to say that this app for the phone allows you to point and identify objects but also allows you to enter specific times and dates in the past or future to see what was visible on those nights and also includes some other features that the full computer version of Stellarium

has. The most valuable weather app that we have found is called Clear Outside. This app seems to be updated practically in real time and is far more accurate than any regular weather apps or even weather forecasts. We are often amazed at how accurately this app predicts the percentage of cloud cover and weather phenomena while other weather prediction resources often fall short. If you spend all that time packing up your equipment to go out somewhere and observe, you want to be pretty sure that the skies are going to be clear wherever you are going and this app never disappoints. Light pollution map or LPM exists as an app for your phone or you can visit their website at [www.lightpollutionmap.info](http://www.lightpollutionmap.info). This app shows you in colour gradations where the darkest and least light polluted areas for astronomical observing are near you. The darker and less light-polluted the area you can get to, the more enriching the experience of observing will be. You can find several moon apps that will show you the phases of the moon and rising and setting times. Several aurora prediction apps are also available.

Local astronomy groups and associations can be a very important part of your astronomy experience. Many of these groups will put on weekly or monthly star parties which are generally open to the public where people come and set up their telescopes and gather to share information or show the interested public wonders in the sky. If you are a beginner, many of these astronomers are more than will-

ing to share their knowledge with you, give you advice or point out things in the sky to you. If you have problems or questions about your telescope, mounts, binoculars, etc., most will also be more than happy to help you with these questions. It's a good way to meet other people that share the same interest as you and maybe make some lifelong connections. Your city might also have a planetarium or space centre that has space shows, meetings, presentations and lectures. Observatories exist in many larger cities or even in some rural darker areas and many of these can either be visited or have regular nights open to the public. In Canada, The Royal Astronomical Society of Canada, which is over 150 years old, has many centres across many parts of Canada and they organize events, lectures and observing sessions which are open to members and non-members. Most centres will have a weekly or monthly "Starry Nights" observing event, weather permitting, that anyone is welcome to attend. Don't be shy as many of these members are more than happy to meet new people who are as enthused about astronomy as you are. You may even want to eventually volunteer or join up as a regular member which has many benefits. Information on any of these groups or organizations can be easily found online.

There are a few good online sources where you can go to find what exciting things are happening and visible in the night sky so you can include these in your observing sessions. [Heavens-above.com](http://Heavens-above.com) is

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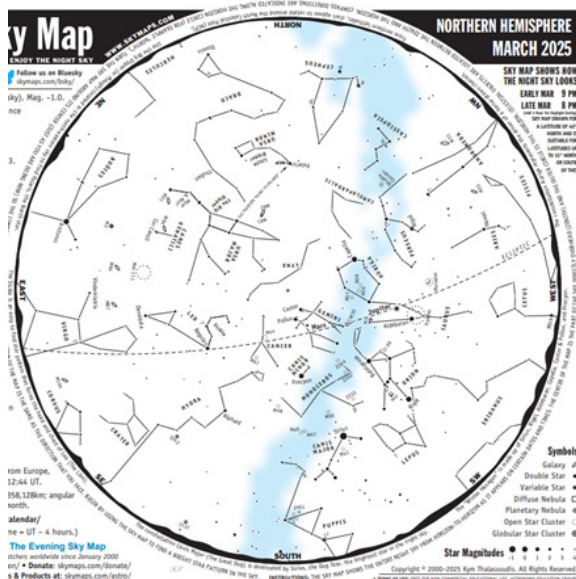
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next to the time it is visible (for example E\*). So, using the blank version of the matrix I placed on my Google drive will give you the opportunity to create and learn at the same time.

So here are some reasons why this matrix is so powerful. Let's start with what is already out there on the Internet about what's visible. Many on-line monthly sky maps often only show half the constellations that are visible for the night. For example, look at the [March sky map](#) from this website (right).

According to this sky map, the last zodiac constellation to rise is Virgo. However, in reality, also visible after Virgo while it's still dark are Libra, Scorpius and Sagittarius as well as many other constellations other than the zodiac ones like Corona Borealis, Hercules, Serpens Caput, Ophiuchus, Lyra, Cygnus, Serpens Cauda, Aquila, Scutum, Sagitta, Vulpecula, Delphinus, Equuleus, Pegasus... You get the point. If you relied on only these types of sky maps, it would take you an eternity to learn all the constellations, which is the case for many people, including those that consider themselves amateur astronomers. Here are some other key points about my matrix:

- The row totals show how many months each constellation is visible, which is important to note



for those that are only visible six or so months out of the year.

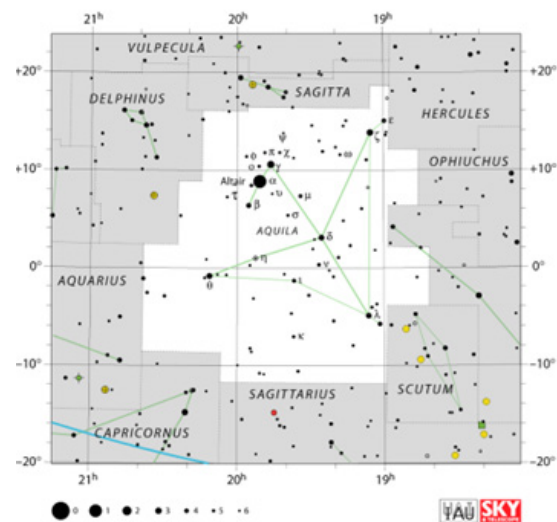
- The column totals show how many out of the 55 constellations are visible each month.
- I've included the official abbreviations for the constellations next to the constellation name, which is important as many sky maps only show the abbreviation.
- For each constellation, you can clearly see when they are not visible and when they are visible and at what time of night.
- When constellations are low on the horizon

(\*) which is important for both observers as well as astrophotographers.

In addition to the matrix, you will need a resource that shows you what the constellation looks like so when you are in the field you can identify them. I would highly recommend [these](#) (sample below) as they not only show the constellation you are trying to find, but which ones are nearby, which will help your brain remember them and where to

locate them.

I wish you the best of luck learning the constellations and can't stress how rewarding and important it is for not only observational astronomy but also for astrophotographers. And the best part, it's free! ✨





## Visible

E = Evening

A = All Night

M = Morning

(P) = Partially Visible

\*\*Created by Robert Conrad <https://www.facebook.com/groups/326912794079774> (Matrix updated August 2024)

Month	Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sept	Oct	Nov	Dec	Total
Andromeda (And)	E	E	E	No	M*	M	M	A	A	A	A	E	11
Aquarius (Aqr)	No	No	No	No	No	No	M	M	A	A	E	E	6
Aquila (Aql)	No	No	M	M	M	A	A	E	E	E	E	E	10
Aries (Ari)	E	E	E	No	No	No	M	A	A	A	A	E	9
Auriga (Aur)	A	A	E	E*	E*	No	No	M	A	A	A	A	10
Bootes (Boo)	M	M	A	A	A	A	A	E	E	E	M	M	12
Camelopardalis (Cam)	A	A	A	A	A*	A*	A	A	A	A	A	A	8
Cancer (Cnc)	A	A	E	E	E*	No	No	No	M	M	M	A	9
Canes Venatici (CVn)	M	A	A	A	A	A	E	No	No	M	M	M	10
Canis Major (CMa)	E	E	E	No	No	No	No	No	No	M	M	A	6
Canis Minor (CMi)	A	A	E	E	No	No	No	No	M	M	A	A	8
Capricornus (Cap)	No	No	No	No	No	M	M	A	E	E	E	No	6
Cassiopeia (Cas)	A	A	A*	A*	A*	A*	A	A	A	A	A	A	12
Cepheus (Cep)	A	A	A	A	A	A	A	A	A	A	A	A	12
Cetus (Cet)	E	E	No	No	No	No	No	M	M	A	A	E	7
Coma Berenices (Com)	M	A	A	A	A	E	E	No	No	No	M	M	9
Corona Borealis (CrB)	M	M	A	A	A	A	A	E	E*	E*	E/M	M	12
Corvus (Crv)	M	M	A	E	E	No	No	No	No	No	No	M	6
Crater (Crt)	M	A	A	E	E	No	No	No	No	No	No	M	6
Cygnus (Cyg)	E*/M*	M*	M	M	A	A	A	A	A	A	E	E*	12
Delphinus (Del)	No	No	M	M	M	A	A	A	A	E	E	E	10
Draco (Dra)	A	A	A	A	A	A	A	A	A	A	A	A	12
Equuleus (Equ)	E	No	No	M	M	M	A	A	A	E	E	E	10
Eridanus* (Eri)	E(P)	E(P)	E(P)	No	No	No	No	M(P)	M(P)	M(P)	A(P)	A(P)	8P
Gemini (Gem)	A	A	E	E	E*	No	No	No	M	M	M	A	9
Hercules (Her)	M	M	M	A	A	A	A	E	E	E*	E*	M*	12
Hydra (Hya)	A	A	E	E	E*	No	No	No	No	No	M	A	7
Lacerta (Lac)	E	E	M	M	M	A	A	A	A	A	E	E	12
Leo (Leo)	M	A	A	A	E	No	No	No	No	M	M	M	8
Leo Minor (LMi)	M	A	A	A	E	No	No	No	No	M	M	M	8
Lepus (Lep)	E	E	E	No	No	No	No	No	M	M	M	A	7
Libra (Lib)	M	M	M	M	A	A	E	No	No	No	No	No	7

A\*, E\*, M\* : Too low on horizon during prime dark time.

\* Partially visible from Vancouver

## Visible

E = Evening

A = All Night

M = Morning

(P) = Partially Visible

\*\*Created by Robert Conrad <https://www.facebook.com/groups/326912794079774> (Matrix updated August 2024)

Month	Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sept	Oct	Nov	Dec	Total
Lynx (Lyn)	A	A	A	A	E	No	No	No	M	M	M	M	9
Lyra (Lyr)	E*/M*	M	M	A	A	A	A	A	A	E	E	E	12
Monoceros (Mon)	A	E	E	E	No	No	No	No	No	M	M	A	7
Ophiuchus (Oph)	M	M	M	M	A	A	A	E	E	E	No	No	10
Orion (Ori)	E	E	E	No	No	No	No	No	M	M	M	A	7
Pegasus (Peg)	E	No	No	No	M*	M	A	A	A	A	E	E	9
Perseus (Per)	A	E	E	E*	No	No	M*	M	A	A	A	A	10
Pisces (Psc)	E	No	No	No	No	No	M	M	A	E	E	E	7
Puppis* (Pup)*	M(P)*	E(P)*	E(P)*	No	No	No	No	No	No	M(P)*	M(P)*	A(P)*	6P*
Sagitta (Sge)	No	M*	M*	M	M	A	A	A	E	E	E	E*	11
Sagittarius* (Sgr)*	No	No	No	No	M(P)*	M(P)*	E(P)*	E(P)*	E	No	No	No	5P*
Scorpius* (Sco)*	No	M(P)*	M(P)*	M(P)*	M(P)*	A(P)*	A(P)*	No	No	No	No	No	6P*
Sculptor* (Scl)*	No	No	No	No	No	No	M(P)*	M(P)*	M(P)*	E(P)*	E(P)*	E(P)*	6P*
Scutum (Sct)	No	No	M	M	M	M	E	E	No	No	No	No	7
Serpens Caput (Ser)	M	M	M	M	A	A	E	E	E*	No	No	M*	10
Serpens Cauda (Ser)	No	M*	M	M	A	A	A	E	E	E*	No	No	9
Sextans (Sex)	M	A	E	E	E*	No	No	No	No	M*	M	M	8
Taurus (Tau)	E	E	E	No	No	No	No	M	M	M	A	A	8
Triangulum (Tri)	E	E	E*	No	No	M*	M	M	A	A	A	E	10
Ursa Major (UMa)	A	A	A	A	A	A	A	A*	A*	A*	A	A	12
Ursa Minor (UMi)	A	A	A	A	A	A	A	A	A	A	A	A	12
Virgo (Vir)	M	M	M	A	A	E	No	No	No	No	M*	M	8
Vulpecula (Vul)	No	M*	M	M	M	A	A	A	E	E	E	E*	12

Total 44/55 45/55 47/55 39/55 39/55 31/55 35/55 35/55 41/55 45/55 46/55 48/55

A\*, E\*, M\* : Too low on horizon during prime dark time.

\* Partially visible from Vancouver

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time, which seems to be confirmed in the image from SkySafari. I felt that 250 $\times$  magnification might have helped, but did not have eye-pieces to achieve that magnification.

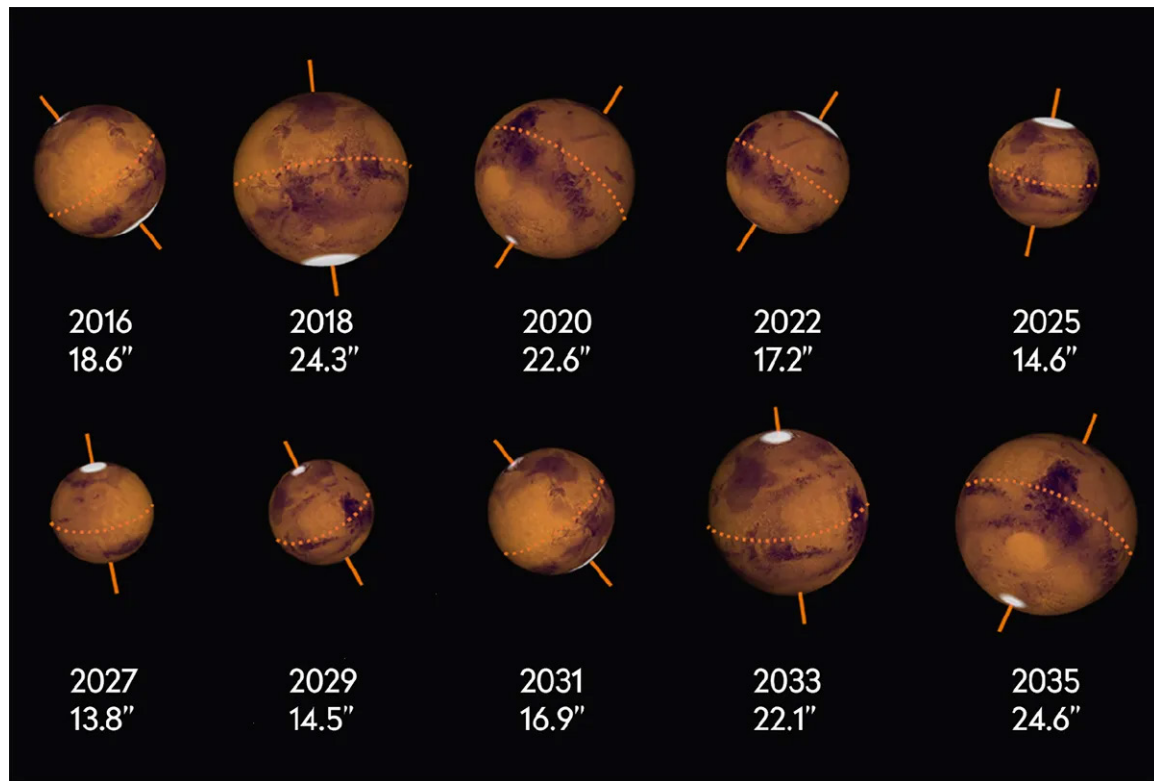
The reason that oppositions of Mars are much anticipated is that they occur on average only every 2 years and 50 days, and in between those times the angular size of Mars is mostly much smaller. The next opposition will occur on February 19, 2027. The graphic at the bottom of page 2 shows how the apparent size of Mars increased and decreased in the months be-

fore and after the January 16, 2025 opposition. January 17 next year, Mars will present only a 3.9" disk. The brightness of Mars also changes, for example from mag  $-1.4$  in January 2025 to mag  $+1.2$  in January 2026. The angular size of Mars can range from 25.1" to 3.5".

All oppositions of Mars are not created equal. The apparent size of Mars varies at each opposition, as shown in the illustration below. This is due to the orbits of Mars and Earth not being perfectly circular, as shown well in a diagram presented the section discussing Mars in the *RASC Observer's Handbook*. The 2033 and 2035

oppositions will likely be highly anticipated by both individual observers and astronomy clubs, due to the relatively large appearance of Mars.

Surface features on Mars can be elusive, and it is rewarding to detect them. Observers may want to take advantage of opportunities to observe Mars this spring since its apparent size will continue to decrease. Mars will be at its highest altitude above the horizon in the early evening in March and April, which might allow high magnifications to be used and compensate for a smaller size than at opposition. ★



Oppositions of Mars – Years and Angular Sizes

Credit: BBC Sky at Night Magazine, "Mars Reaches Opposition..." (Jan 2, 2025)

## Members' Gallery



### Guatemalan Skies by Milan B

This image was taken from a camp over 3,500 meters high on the Guatemalan volcano, Acatenango. Its southerly neighbour, an active volcano called Volcán de Fuego, is seen erupting in the photo. The 3AM morning southern sky on Jan 1st from latitude 14.5N looks splendid. Beta Centauri is waiting for her big sister Alpha Centauri to rise while both stars are watched closely by the Southern Cross over a gap of darkness in our galactic band called the Coalsack. The false cross is further to the right and the second brightest star in the sky, Canopus, is already lost behind the smoke from the active volcano. Lots of nebulosity could be seen in the visible section of the Milky Way.

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a great resource website for finding currently-visible comets, asteroids, satellite passes and is also available in a mobile phone app. [In-the-sky.org](http://In-the-sky.org) is a valuable website and a good resource to find things currently visible such as comets, asteroids, satellites and deep sky objects like galaxies and open and globular clusters. This website allows you to create custom planisphere-type sky charts for any given time which are great for beginners and also has links to many deep sky object catalogues

along with very realistic black and white photos of these deep sky objects. [Telescopius.com](http://Telescopius.com) is a website that lets you put in specific or general objects that you might be interested in and will track them for you and send you an alert when and where they are visible, usually when they are highest in the sky. When you sign up, they will also send you a monthly report based on your interests of what is currently observable. You can also search for different objects based on different search criteria you have entered.

You can also enter your telescope- and eyepiece-specific details and the site will display the exact view that you will see out in the field through your actual eyepiece.

Aladdin is a program that can be downloaded onto your computer from the internet for free and is basically a photographic database of the entire sky. It allows you to zoom in and zoom out and also allows you to search for things. You can search by name or location (right ascension and declination which we will talk about in a later NOVA). ★





### **NGC 7380, The Wizard Nebula by Rick Schneider**

The Wizard Nebula, in narrow band and coloured with the Foraxx palette, using the Foraxx script generously provided by Paulyman Astro, and with RGB stars. Taken by myself with my CDK 12.5 scope - 18 hours of data.