

# STRATFORD ASTRONOMY GROUP

MARCH 7<sup>TH</sup>, 2023



# AGENDA

- Meet and Greet
- Club NEWS and Activities (**Museum and New Year Dinner**)
- Club Q & A
- Equipment Lessons (**connect battery and camera**)
- Software and Imaging Information (**running MallincamSky**)
- Latest Astronomy NEWS
- WEBB NEWS
- What's UP this Month
- Show and Tell
- Astronomy Lessons
- Cosmology Lessons
- Conclusion

# MEET AND GREET

**Welcome**  
New Visitors

**Regrets**

# PREVIOUS MEETING REVIEW

## Meeting attended by 14:



Paul Bartlett  
Michael Burns  
Colleen Devine  
Doug Fyfe  
Tamara Harbar  
Patrick Hayes  
Bob Greer  
Wolfgang Keller  
Jim Kelly  
Tom Kimber  
Tim Paul  
Bill Thompson  
Peter Tinits  
Reg White

## CLUB NEWS AND ACTIVITIES

## Group Funds

**Total = \$1294.45**

- If you would like to contribute to the group, then please e-transfer Tim at:

**[timannemariepauli@gmail.com](mailto:timannemariepauli@gmail.com)**

or by cheques:

Tim Pauli  
96 Front Street  
Stratford, ON  
N5A4H2

# CLUB NEWS AND ACTIVITIES

## EQUIPMENT:

### STRATFORD ASTRONOMY CLUB EQUIPMENT

## CLUB EQUIPMENT LOCATION:

Paul Bartlett is now storing all the group's equipment. If you wish to borrow an item, then please contact him at:

[1948paul.bartlett@gmail.com](mailto:1948paul.bartlett@gmail.com)

519-274-2010

# UPCOMING MEETINGS

## NEXT MEETING DATES

### Bookings

Status: **Approved**

Total hours: 20

Status	Date	Start	End	Facility and spaces
<del>Approved</del>	<del>Tue, Sep 06, 2022</del>	<del>7:00pm</del>	<del>9:00pm</del>	<del>St. Michael CSS in Classroom 2 - Room 104</del>
<del>Approved</del>	<del>Tue, Oct 04, 2022</del>	<del>7:00pm</del>	<del>9:00pm</del>	<del>St. Michael CSS in Classroom 2 - Room 104</del>
<del>Approved</del>	<del>Tue, Nov 01, 2022</del>	<del>7:00pm</del>	<del>9:00pm</del>	<del>St. Michael CSS in Classroom 2 - Room 104</del>
<del>Approved</del>	<del>Tue, Dec 06, 2022</del>	<del>7:00pm</del>	<del>9:00pm</del>	<del>St. Michael CSS in Classroom 2 - Room 104</del>
<del>Approved</del>	<del>Tue, Jan 10, 2023</del>	<del>7:00pm</del>	<del>9:00pm</del>	<del>St. Michael CSS in Classroom 2 - Room 104</del>
<del>Approved</del>	<del>Tue, Feb 07, 2023</del>	<del>7:00pm</del>	<del>9:00pm</del>	<del>St. Michael CSS in Classroom 2 - Room 104</del>

<del>Approved</del>	<del>Tue, Mar 07, 2023</del>	<del>7:00pm</del>	<del>9:00pm</del>	<del>St. Michael CSS in Classroom 2 - Room 104</del>
Approved	Tue, Apr 04, 2023	7:00pm	9:00pm	St. Michael CSS in Classroom 2 - Room 104
Approved	Tue, May 02, 2023	7:00pm	9:00pm	St. Michael CSS in Classroom 2 - Room 104
Approved	Tue, Jun 06, 2023	7:00pm	9:00pm	St. Michael CSS in Classroom 2 - Room 104

# CLUB NEWS AND ACTIVITIES

## EQUIPMENT:

### STRATFORD ASTRONOMY CLUB EQUIPMENT

- **New Web site: (<https://awptest.espubs.com/>)**
  - Tim Pauli - Owner/Administrator
  - Ken Roberts - technical contact
  - Tom Kimber - Administrator/Editor
  - Doug Fyfe - Administrator
  - Michael Burns- Administrator
  - Tom will build it on WordPress.





## CLUB Q & A

- Let's open this up for any Questions and Answers. This can include events that you are aware of .

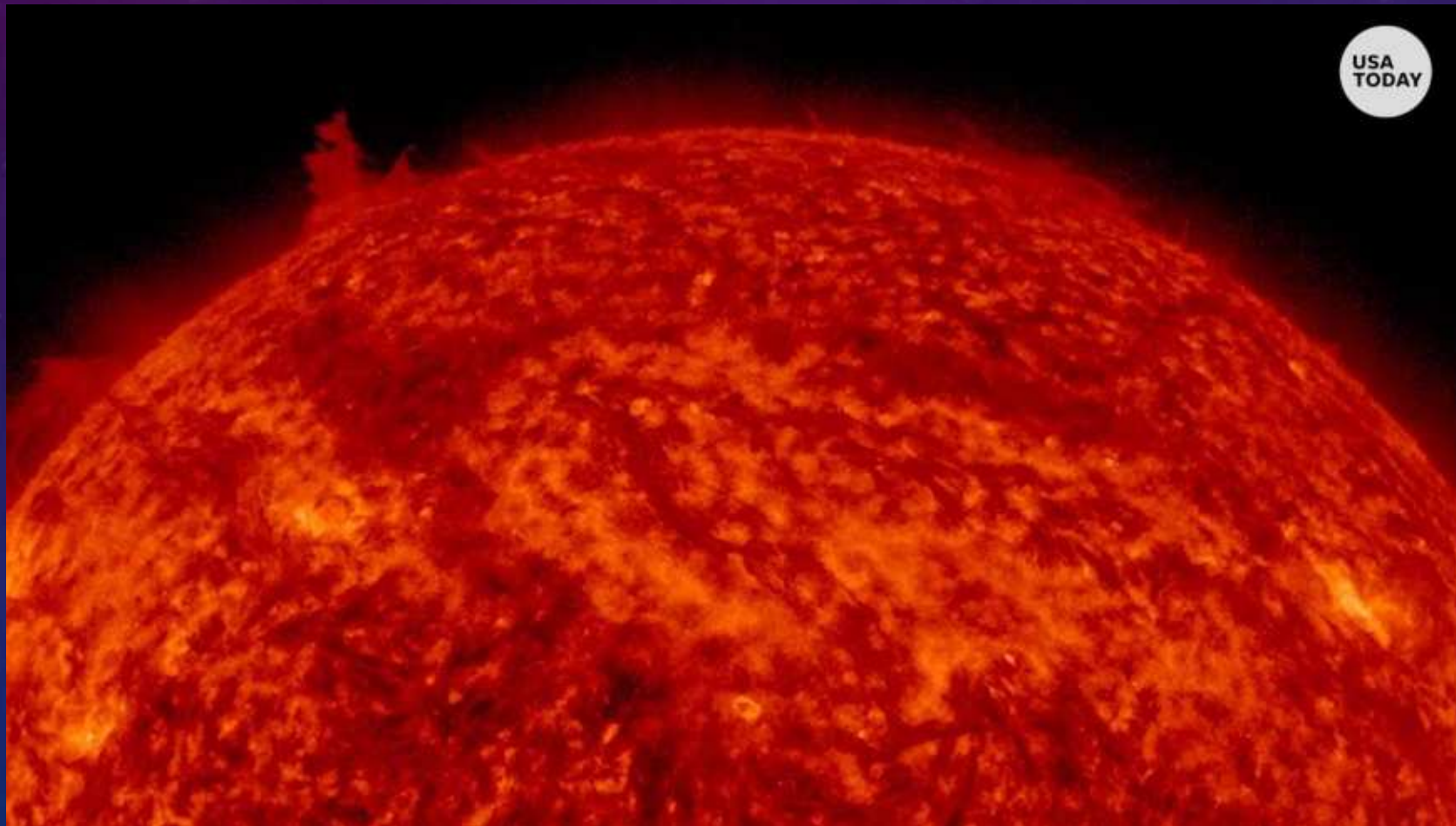
LATEST ASTRONOMY NEWS

FEBRUARY-MARCH



# February 14<sup>th</sup>: Strong solar flare erupts from sun

The sun emitted a strong solar flare, peaking at 10:48 a.m. EDT on Feb. 11, 2023. NASA's Solar Dynamics Observatory, which watches the sun constantly, captured an image of the event. Solar flares are powerful bursts of energy. Flares and solar eruptions can impact radio communications, electric power grids, navigation signals, and pose risks to spacecraft and astronauts. This flare is classified as an X1.1 flare. X-class denotes the most intense flares, while the number provides more information about its strength.





## FEBRUARY 16<sup>TH</sup>: AURORA OVER NORTHERN HEMISPHERE

- These mind-blowing images were captured on Tuesday in the north-western US city of Fairbanks, Alaska

# FEBRUARY: AURORA OVER ALBERTA



*Katya* photography

# FEBRUARY "AURORA OVER ENGLAND



# FEBRUARY FAIRBANKS DURING DRIVE



# FEBRUARY : MANITOBA





# Hubble views a merging galactic trio

- A spectacular trio of merging galaxies in the constellation Boötes takes center stage in this image from the NASA/ESA Hubble Space Telescope. These three galaxies are set on a collision course and will eventually merge into a single larger galaxy, distorting one another's spiral structure through mutual gravitational interaction in the process. An unrelated foreground galaxy appears to float serenely near this scene, and the smudged shapes of much more distant galaxies are visible in the background.

- This colliding trio—known to astronomers as SDSSCGB 10189—is a relatively rare combination of three large star-forming galaxies lying within only 50,000 light-years of one another. While that might sound like a safe distance, for galaxies this makes them extremely close neighbors. Our own galactic neighbors are much further away; Andromeda, the nearest large galaxy to the Milky Way, is more than 2.5 million light-years away from Earth.



# Discovery of massive early galaxies defies prior understanding of the universe (well Maybe)

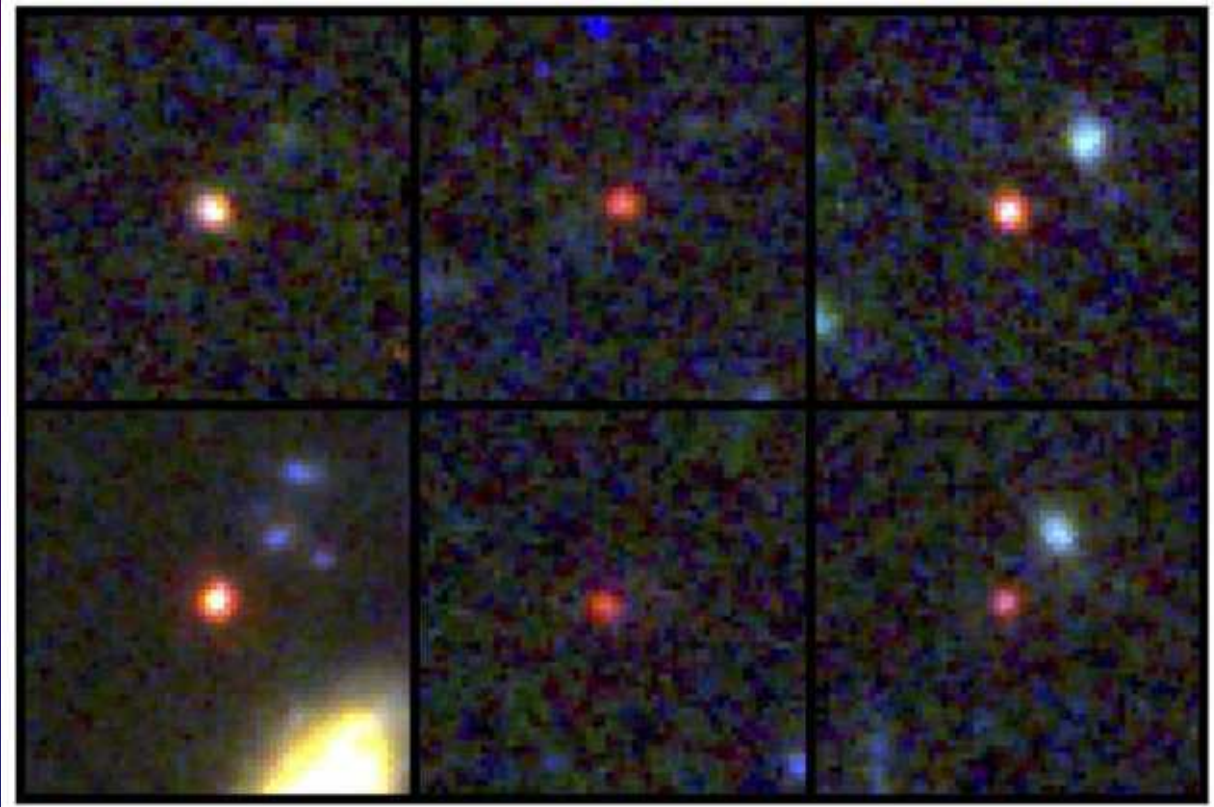
Six massive galaxies discovered in the early universe are upending what scientists previously understood about the origins of galaxies in the universe.

"These objects are way more massive than anyone expected," said Joel Leja, assistant professor of astronomy and astrophysics at Penn State, who modeled light from these galaxies. "We expected only to find tiny, young, baby galaxies at this point in time, but we've discovered galaxies as mature as our own in what was previously understood to be the dawn of the universe."

Using the [first dataset](#) released from NASA's James Webb Space Telescope, the international team of scientists discovered objects as mature as the Milky Way when the universe was only 3% of its current age, about 500-700 million years after the Big Bang.

Note: one of the images has now been shown to be a Quasar rather than a galaxy.

A previous image (Maisie's Galaxy) was age corrected. These images need more time to be verified.



# JAMES WEBB SPACE TELESCOPE UNCOVERS NEW DETAILS IN PANDORA'S CLUSTER

FEBRUARY 15

Researchers Astronomers have revealed the latest deep-field image from the NASA/ESA/CSA James Webb Space Telescope, featuring never-before-seen details in a region of space known as Pandora's Cluster (Abell 2744). Webb's view displays three clusters of galaxies—already massive—coming together to form a megacluster.

The combined mass of the galaxy clusters creates a powerful gravitational lens, a natural magnification effect of gravity, allowing much more distant galaxies in the early universe to be observed by using the cluster like a magnifying glass.



# WHAT'S UP

## STRATFORD ASTRONOMY GROUP

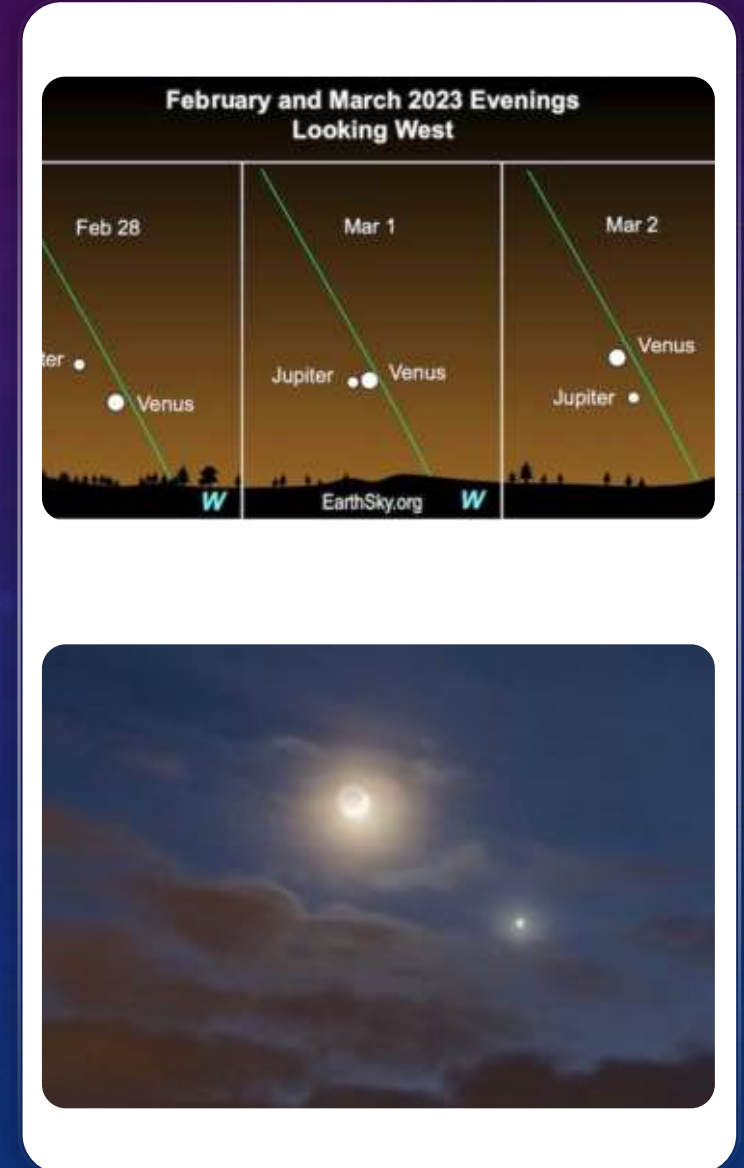
### WHAT'S UP FOR MARCH



This is a month of "Almost for us"

# MARCH 01 – A CLOSE ENCOUNTER OF VENUS & JUPITER

- Hopefully, you looked at the night sky on Tuesday and you noticed the almost magnetic pull of the planets to our eyes. Bright Venus and Jupiter are two of the most eye-catching and entrancing objects to spot on a night of stargazing, and the pair kick off March with a delightfully close encounter.



<< February

March 2023

April >>

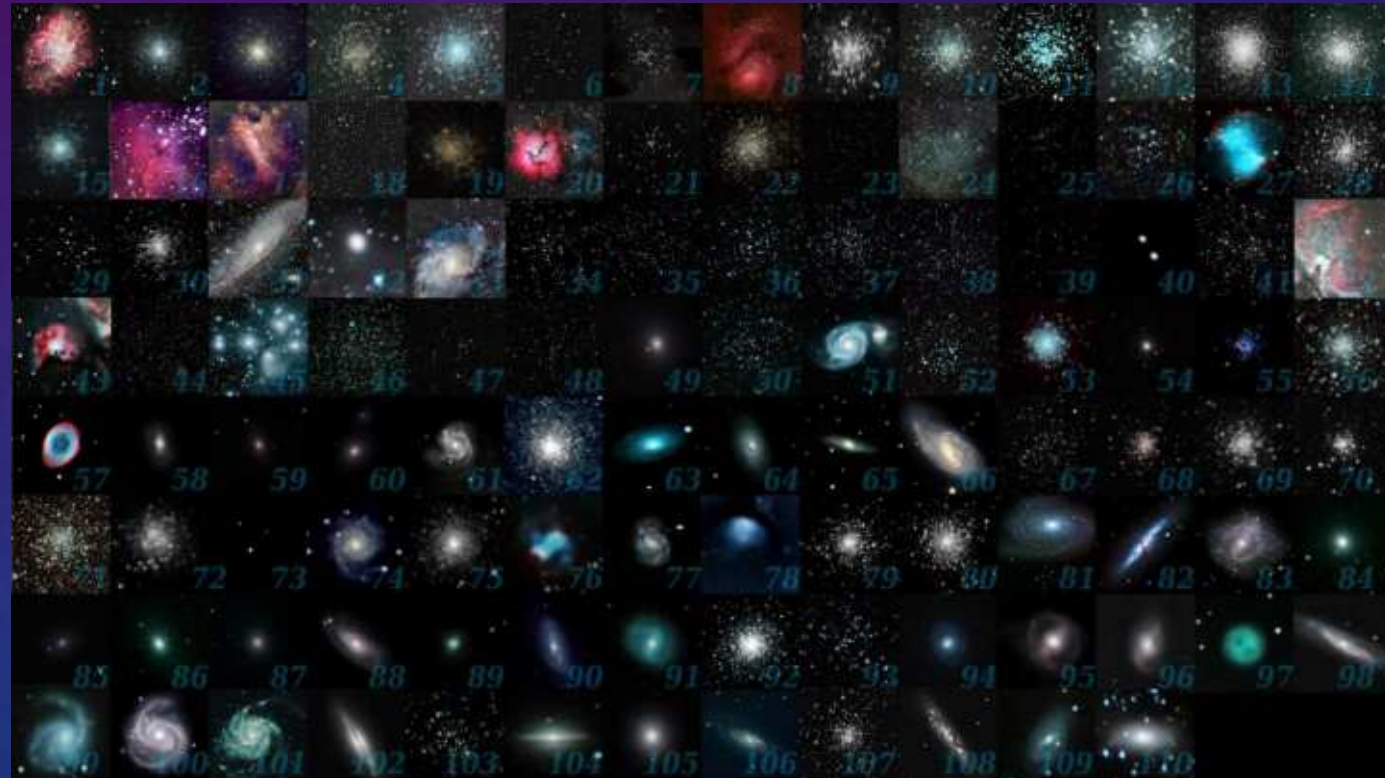
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
26 	27 	28 	1  Waxing gibbous Visible: 71% ↑ Age: 9.34 days	2  Waxing gibbous Visible: 79% ↑ Age: 10.24 days	3  Waxing gibbous Visible: 86% ↑ Age: 11.12 days	4  Waxing gibbous Visible: 92% ↑ Age: 12.01 days
5  Waxing gibbous Visible: 97% ↑ Age: 12.91 days	6  Full moon Visible: 99% ↑ Age: 13.81 days	7  Full moon Visible: 100% Age: 14.72 days	8  Full moon Visible: 100% ↓ Age: 15.65 days	9  Waning gibbous Visible: 97% ↓ Age: 16.59 days	10  Waning gibbous Visible: 92% ↓ Age: 17.55 days	11  Waning gibbous Visible: 85% ↓ Age: 18.52 days
12  Waning gibbous Visible: 77% ↓ Age: 19.51 days	13  Waning gibbous Visible: 68% ↓ Age: 20.51 days	14  Last quarter Visible: 57% ↓ Age: 21.54 days	15  Last quarter Visible: 46% ↓ Age: 22.59 days	16  Waning crescent Visible: 35% ↓ Age: 23.67 days	17  Waning crescent Visible: 24% ↓ Age: 24.76 days	18  Waning crescent Visible: 15% ↓ Age: 25.88 days
19  Waning crescent Visible: 8% ↓ Age: 27.01 days	20  New Visible: 3% ↓ Age: 28.14 days	21  New Visible: 1% ↓ Age: 29.27 days	22  New Visible: 1% ↑ Age: 0.85 days	23  Waxing crescent Visible: 5% ↑ Age: 1.93 days	24  Waxing crescent Visible: 10% ↑ Age: 2.98 days	25  Waxing crescent Visible: 17% ↑ Age: 3.99 days
26 	27 	28 	29 	30 	31 	1 

# HEY, THERE BE A MOON OVERHEAD

MOON PHASES FOR THE  
MONTH OF MARCH

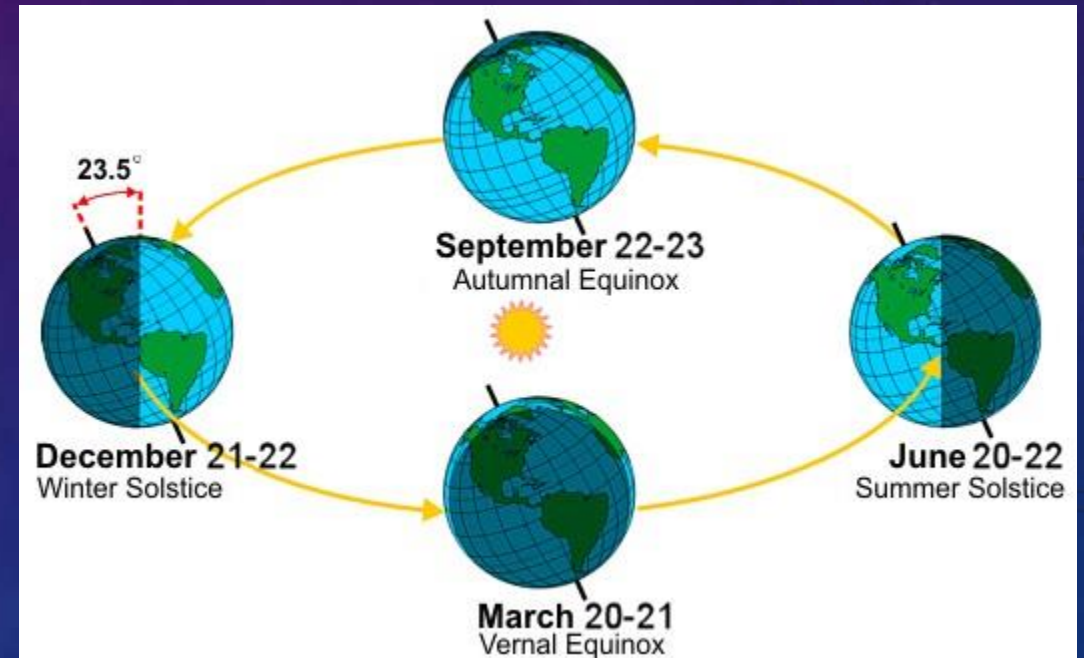
# MARCH 18 – FIRST ATTEMPT FOR THE MESSIER MARATHON

- Have you ever heard of the Messier Marathon? This is an opportunity to try and see all 110 Messier objects in a single night... yes, it's an ambitious prospect!
- The “best” night for the Messier Marathon each year typically happens at the new moon between March and early April, due to the Earth's planetary position in our annual orbit. In 2023, there are actually two opportunities, the weekends on either side of the New Moon on the 21st.
- As March 21st is a Tuesday, the first – and better/primary – opportunity to “run” the Messier Marathon is the weekend of March 18th-19th. On these nights, the waxing crescent moon will prevent as little interference as possible if you're not out on the New Moon itself.



## MARCH 20: THE VERNAL EQUINOX

On Monday, March 20, 2023, 5:24 PM (EST) get out and celebrate for from a celestial perspective, the March Equinox marks the point on the Earth's annual orbit when everywhere on Earth has almost exactly 12 hours of day and night. "Equinox" means "equal night," so this makes perfect sense. The perfect balance between day and night occurs because of the distance and angles between the sun and the Earth at its 23.5° tilt.





## MARCH 24: THE MOON AND VENUS TRY TO KISS

A relatively young moon (Crescent) and Venus get very personal with each other making this an awesome night (well early morning after the Sun has risen) if you happen to be visiting South Asia



# MARCH 25 – SECOND ATTEMPT FOR THE MESSIER MARATHON

- Have you ever heard of the Messier Marathon? This is an opportunity to try and see all 110 Messier objects in a single night... yes, it's an ambitious prospect!
- The “best” night for the Messier Marathon each year typically happens at the new moon between March and early April, due to the Earth's planetary position in our annual orbit. In 2023, there are actually two opportunities, the weekends on either side of the New Moon on the 21st.
- As March 21st is a Tuesday, the first – and better/primary – opportunity to “run” the Messier Marathon is the weekend of March 25th-26th. On these nights, the waxing crescent moon will prevent as little interference as possible if you're not out on the New Moon itself.



# MARCH 28: MARS HAS FELT LEFT OUT, SO THE MOON AND MARS GET CLOSE TOGETHER

Mars and the Moon appear in conjunction, just a couple of degrees apart (Again for us this happens at about 10am, so the Sun will be up), on March 28th; the first quarter Moon will make it easy to spot rust-color in the evening sky now at about 6 degrees apart.



# ASTRONOMY LESSONS



# SHOW AND TELL

# EQUIPMENT LESSONS



# SOFTWARE AND IMAGING LESSONS









