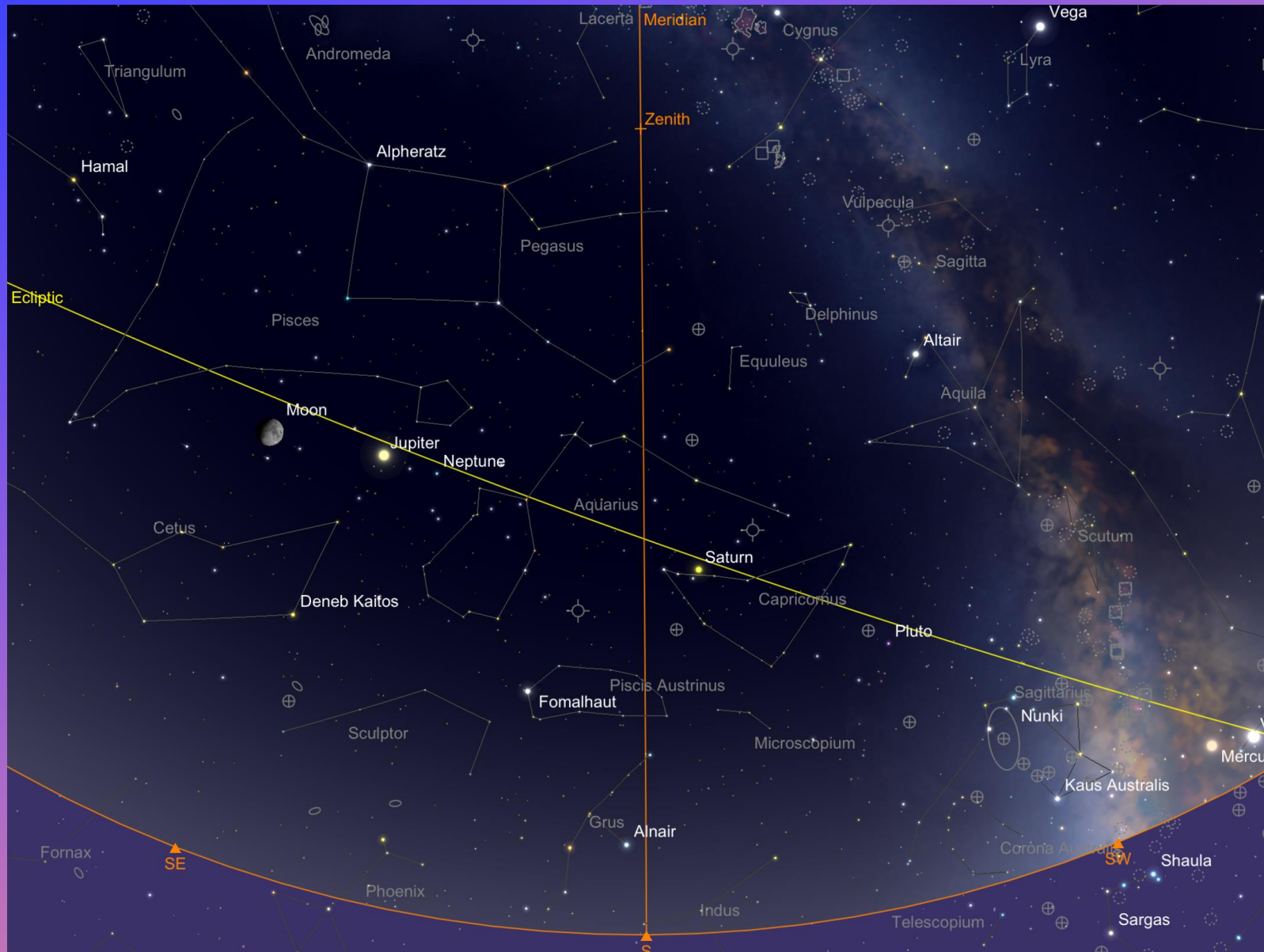


THE MOON



Barry Bishop & Bill Wood, Amateur Astronomers

Little Colorado River Valley Astronomy Club



Tonight's sky view to the south at 5:30 p.m.

December 2 2022
Show Low AZ

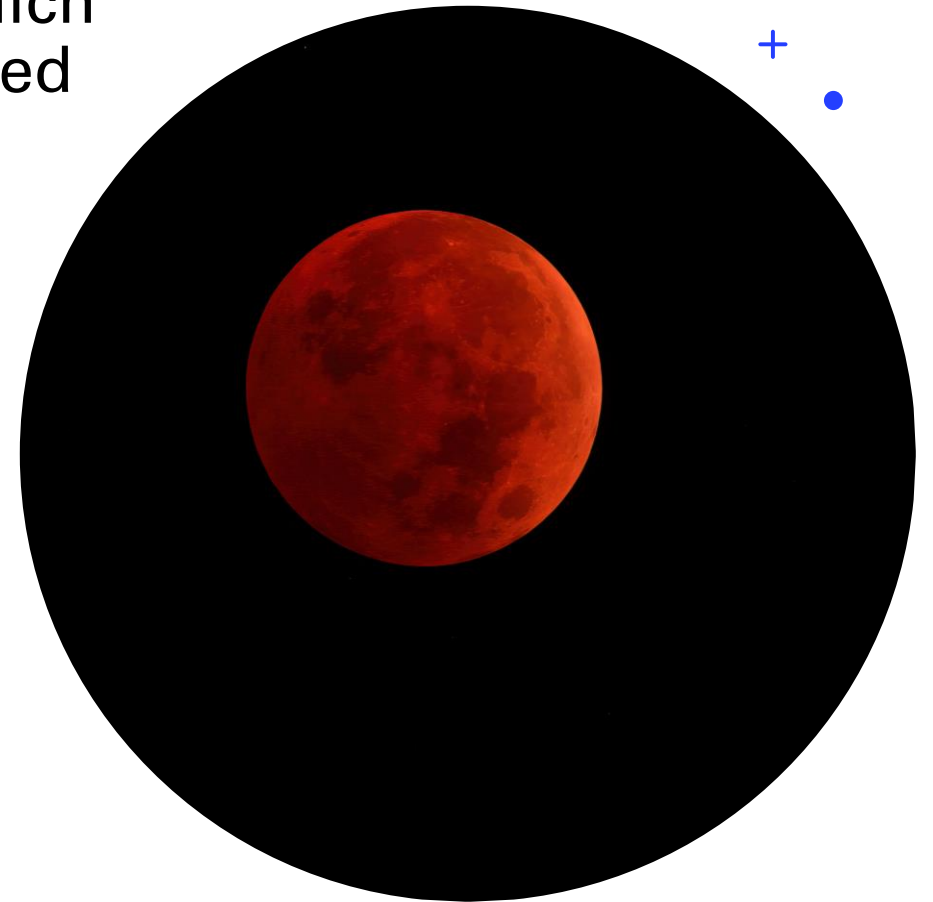
SkySafari Pro 7
iPad bwood

9 day old moon

The Moon

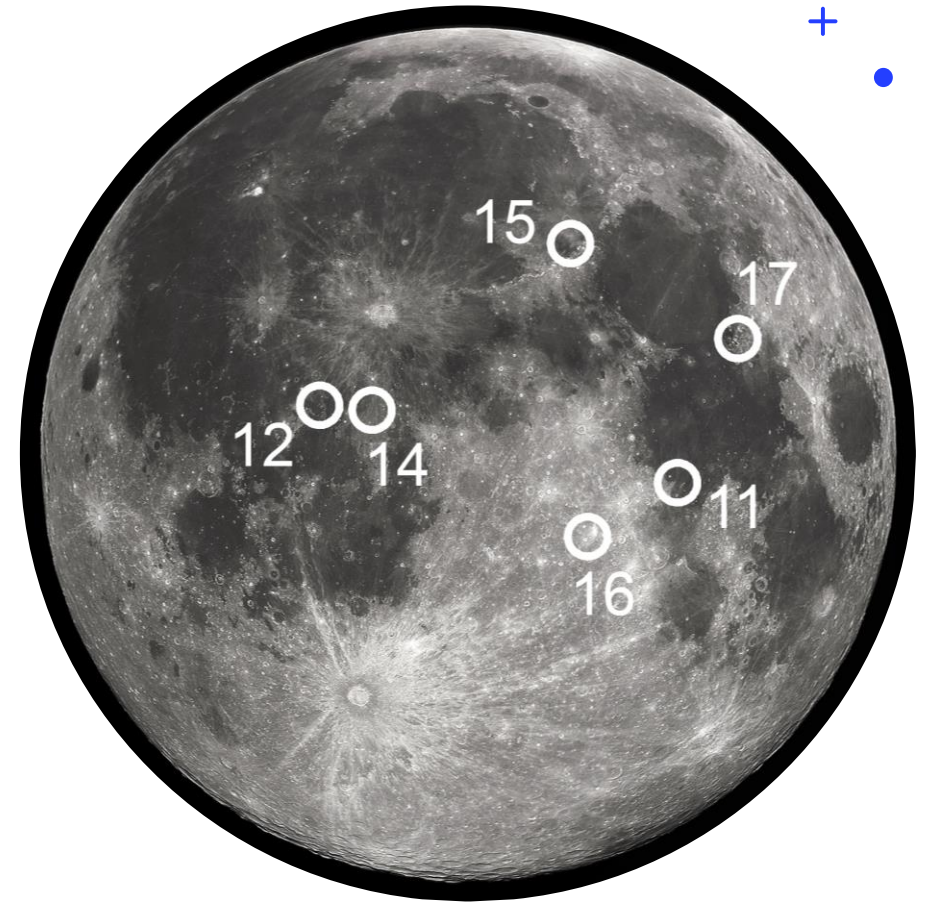
Our closest neighbor to Earth is our moon which is only 238,000 miles away and has been visited by 12 astronauts over 3 years on 6 missions.

1. A lunar day lasts 27.3 Earth days.
2. A lunar month lasts 27.3 Earth days.
3. The moon is tidally locked to Earth which keeps one side of the moon facing Earth.
4. The moon's orbit around Earth is an ellipse with Earth located at one of the foci.
5. Perigee 225,800 miles, apogee 252,000 miles.
6. 27,000 mile difference in the moon's distance from Earth will change its size by 10%.
7. The moon's gravity is 1/6 Earth gravity.



Apollo Landing Sites & a Return to the Moon

1. 6 missions to the moon were flown from 1969 to 1972 with a focus on geology discoveries to determine the moon's origin.
2. Use binoculars or a telescope to view the terrain at each landing site when the shadow is nearby.
3. Artemis 1 uncrewed Orion capsule splash down coverage December 11, 9 a.m. mst.



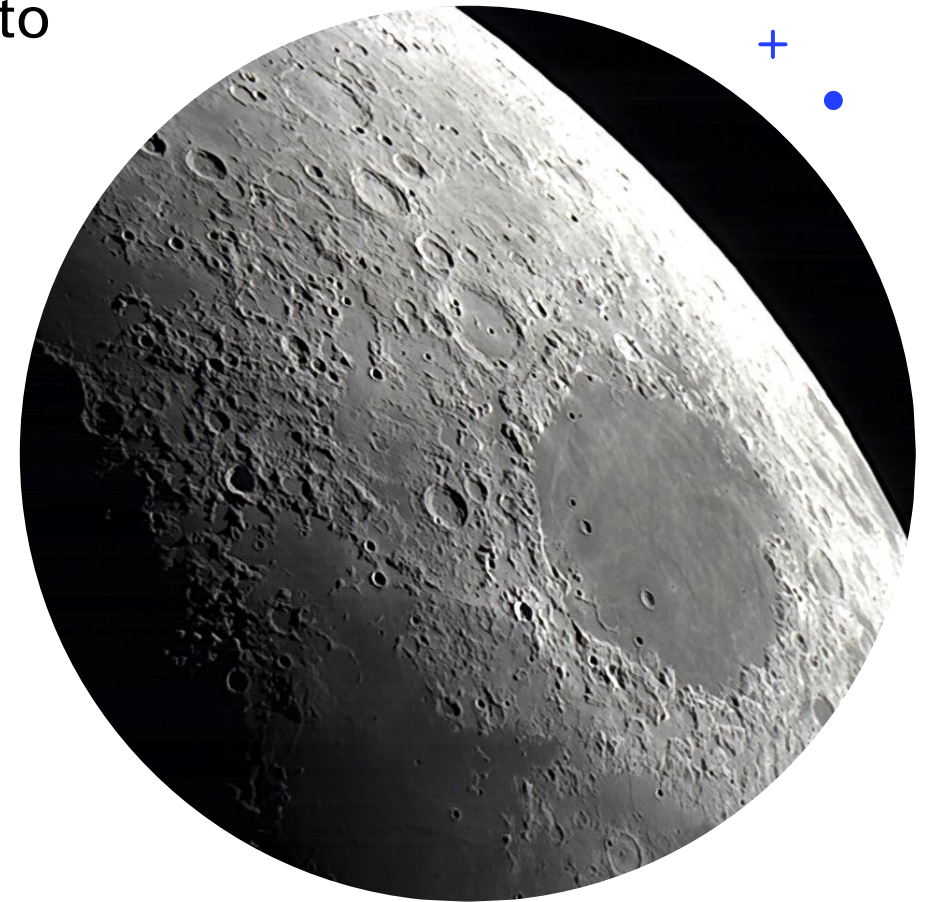
NASA ARTEMIS PROGRAM. MOON TO MARS

<https://youtu.be/bmC-FwibsZg>

To The Moon

The first step of the Artemis program is to return to the Moon for the benefit of all through discovery, economic opportunity, & global partnerships.

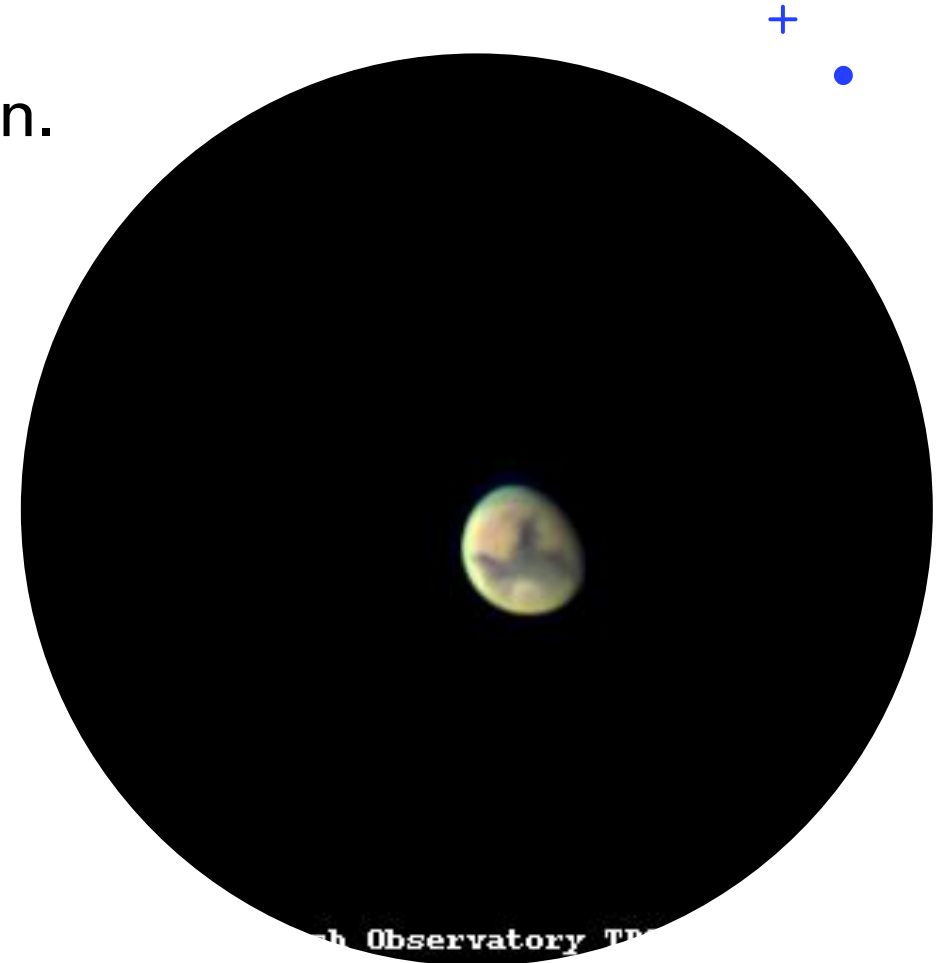
1. ISS (International Space Station). **IN PLACE**
2. SLS (Space Launch System), Orion capsule. **IN PLACE**
3. **11/23** - Unmanned lunar surface exploration will search for ice at the lunar south pole for oxygen, hydrogen, & water.
4. **11/24** - Lunar Gateway.
5. **4/25** - HLS (Human Landing System).
6. Lunar Base infrastructure, supplies, manufacturing & operations will support a lunar economy.



To Mars

Getting to Mars will use the technology & knowledge we gained from going to the moon.

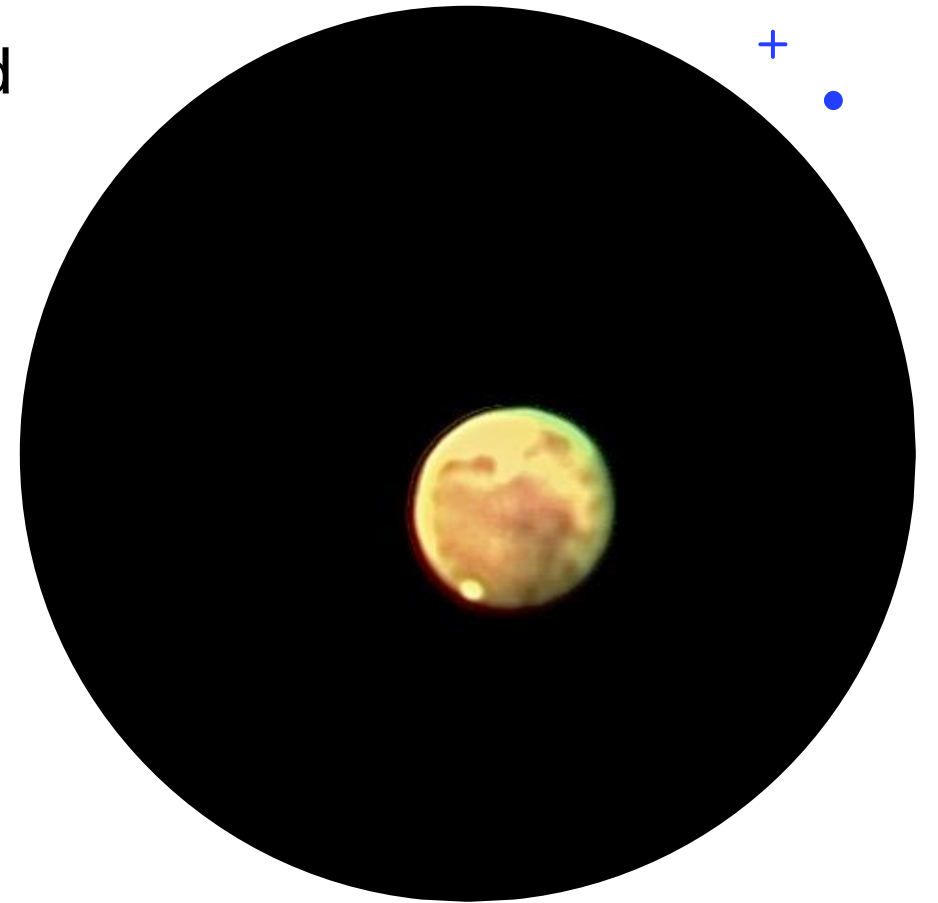
1. Unmanned Mars exploration to search for ice and water that also provides oxygen and hydrogen.
2. Launch a Mars space craft from the moon.
3. Mars Gateway.
4. Mars HLS (Human Landing System).
5. Martian Base infrastructure, supplies, manufacturing & operations will support a Martian economy.



And Beyond

Artemis will continue manned and unmanned exploration throughout the solar system.

1. Lunar & asteroid mining.
2. Europa, Titan, Uranus, & Trident Probes.
3. Kuiper belt exploration.





Jupiter Opposition 9/25/22 WHO C14 B Wood lcrvac.org

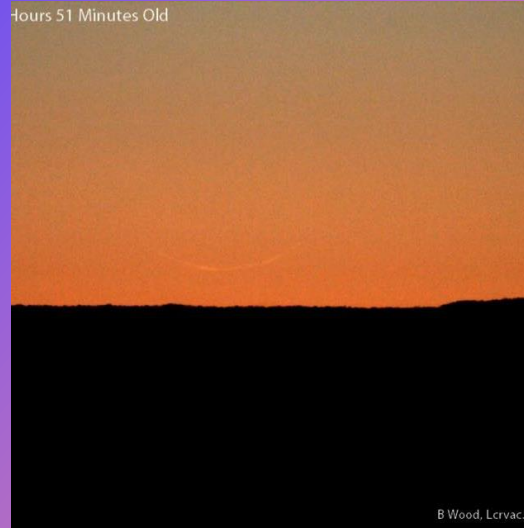
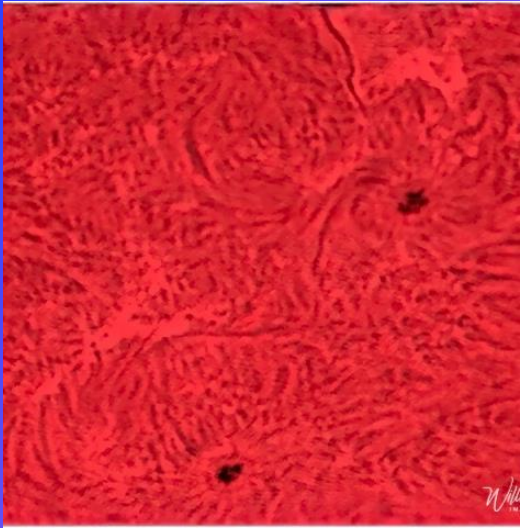
Software

Photofiltre 6.5.2 free – General image editor d/I, <https://photofiltre-portable.en.softonic.com/>

Magic Lantern free – Extends Canon EOS Camera Menu Functions d/I, <https://magiclantern.fm/>

Stellarium free – Planetarium App d/I (linux, MacOS, Windows, Web), <https://stellarium.org/>

SkySafari Pro \$40 – Planetarium App d/I (iOS & Android), <https://skysafariastronomy.com/>



Periodicals

Sky & Telescope

Astronomy

Astronomy Technology Today

M2M

Astronomy Suppliers

OPT

B&H

EWS Hobby, Show Low

Astronomy Websites

NASA free, search 'Artemis' & watch NASA streaming to keep up with on-going progress,

nasa.gov

Facebook, Join closed group - Little Colorado River Valley Astronomy Club

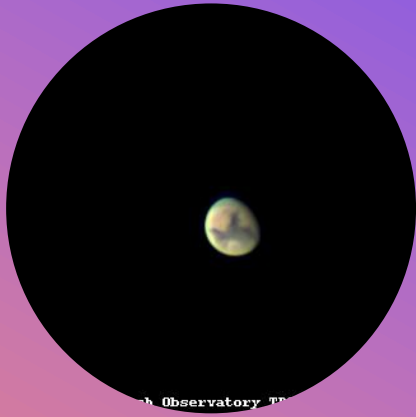
SHOW LOW PUBLIC LIBRARY JANUARY OBSERVING



DAYTIME SOLAR OBSERVING

M2M

+



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THANK YOU

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