

**The Oregon Chapter of the
American Meteorological Society
28th annual
“Winter Weather Forecast Conference”**

**Since the last
meeting...**





2020

January

Live Leak
4GIFs.com

NASA Astronauts Make History with 1st All-Woman Spacewalk October 2019



**Astronauts Christina Koch and Jessica Meir
complete the first spacewalk with an all-women
team.**

Mercury Transit

November 11, 2019

NASA's Solar Dynamics Observatory (SDO)

2019/11/11 12:15:04.840



NASA Starliner

Dec 20 – 22, 2019



2020 is Leap Year



A tropical year, also known as a solar year, an astronomical year, or an equinoctial year, is, on average, approximately 365 days, 5 hours, 48 minutes and 45 seconds long (365.24219 days). Although a common year has 365 days in today's Gregorian calendar, we add a leap day nearly every four years to stay in sync with the tropical year.

**Satellites show devastating toll of Australian
wildfires on wildlife and human populations
January 2020**



The Wolf Moon penumbral lunar eclipse

Jan 10, 2020



Credit: Ali Balikci

NASA astronaut Christina Koch returns to Earth after record-breaking spaceflight

Feb 6, 2020



NASA astronaut Christina Koch lands back on Earth after 328 days in space, breaking the record for the longest-ever single spaceflight by a woman.

**Katherine Johnson, pioneering NASA
mathematician of 'Hidden Figures' fame,
dies at 101**

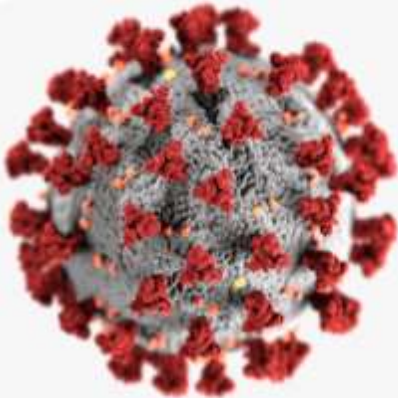
Feb 24, 2020



Coronavirus

Oregon Gov. Kate Brown's executive order

March, 2020



DMSI Update and Information on COVID-19

To help limit exposure to COVID-19 and help protect our entire community, DMSI is currently closed to the public. This closure includes all events, programs, and Spring Break Camps & Classes.

While the museum will remain closed to the public, administrative staff and customer service will still be accessible by phone and email.

[Learn More >](#)



Self-Isolation Tips From Scott Kelly, the NASA Astronaut Who Lived a Year in Space

March 2020



- ✓ **Follow a schedule**
- ✓ **Pace yourself**
- ✓ **Go outside**
- ✓ **Get a hobby**
- ✓ **Keep a journal**
- ✓ **Take time to connect**
- ✓ **Listen to experts**

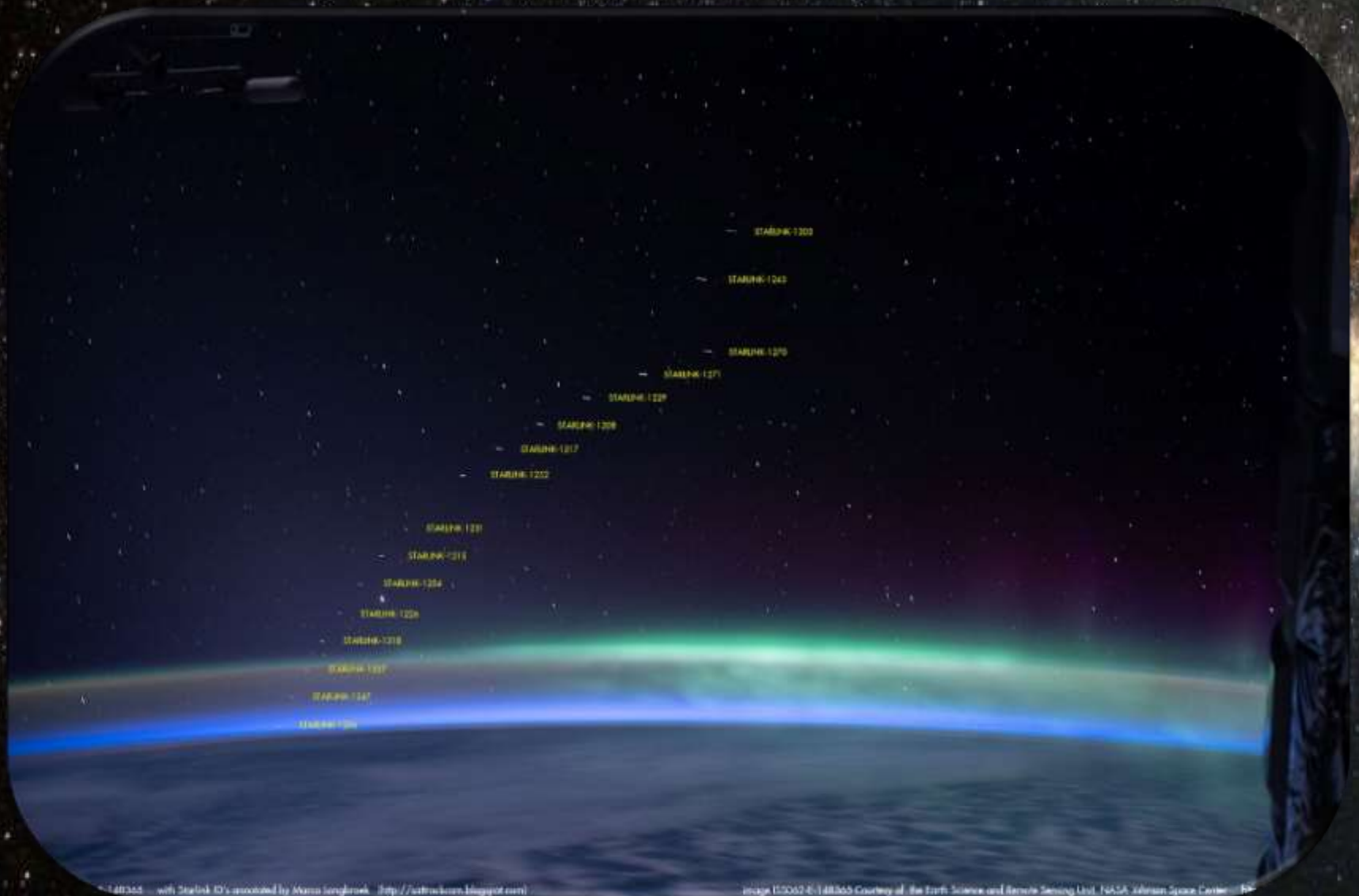
NASA pauses work on James Webb Space Telescope due to coronavirus, weighs risk to other science missions



(Image: © NASA/Chris Gunn)

Starlink

2020



Happy 30th, Hubble!

April 24, 2020



Hubble captures a 'Cosmic Reef' in stunning 30th anniversary image

April 24, 2020



Hubble image shows remains of Comet ATLAS

April 25, 2020



(Image: © NASA/ESA/Ye (UMD))

Liftoff! SpaceX launches 1st astronauts for NASA on historic test flight



May 30, 2020

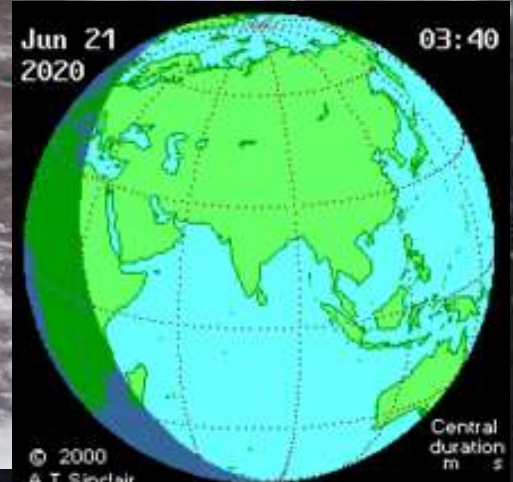
Annular Solar Eclipse

June 21, 2020



Jun 21
2020

03:40



© 2000
A.T.Sinclair

Central
duration
m s

sunearth.gsfc.nasa.gov/eclipse

Comet NEOWISE

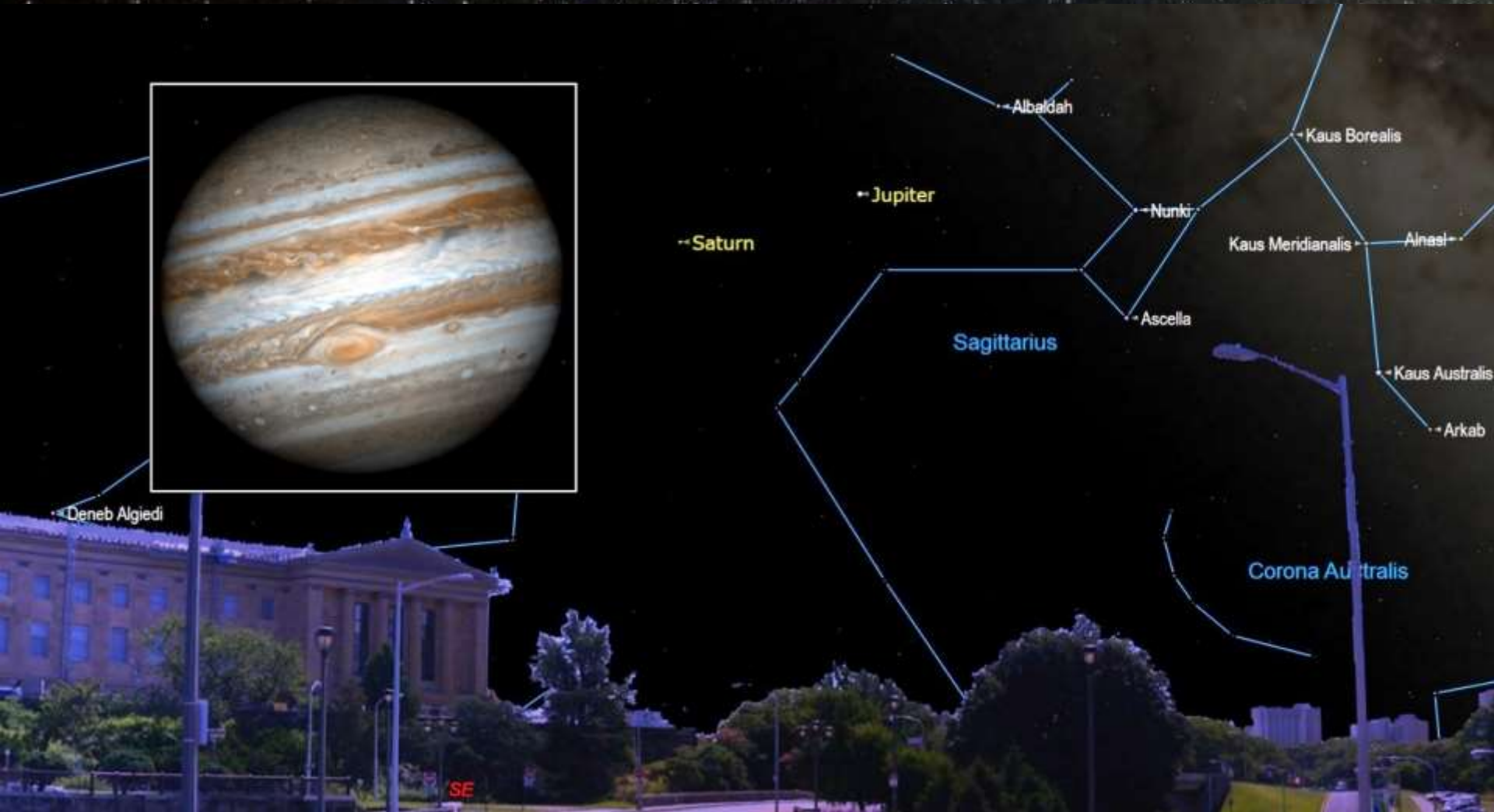
April 2020



Credit: John Foster

Jupiter at opposition

July 14, 2020



Hope Mars Mission Launch

July 19, 2020



Saturn at opposition

July 20, 2020



China launches ambitious Mars mission

July 23, 2020



CHINA LAUNCHES FIRST SOLO MISSION TO MARS

CBSN

Blastoff! NASA's Perseverance rover launches to Mars

July 30, 2020



Feb. 18, 2021



Arecibo Observatory in Puerto Rico suffers serious damage after cable breaks

August 12, 2020



**The smoke from US West Coast wildfires is visible from nearly 1 million miles away
September 2020**



Cycle 25 Has Begun....

September 2020

Sunspot number: 11

[What is the sunspot number?](#)

Updated 22 Oct 2020

Spotless Days

Current Stretch: 0 days

2020 total: 204 days (69%)

2019 total: 281 days (77%)

2018 total: 221 days (61%)

2017 total: 104 days (28%)

2016 total: 32 days (9%)

2015 total: 0 days (0%)

2014 total: 1 day (<1%)

2013 total: 0 days (0%)

2012 total: 0 days (0%)

2011 total: 2 days (<1%)

2010 total: 51 days (14%)

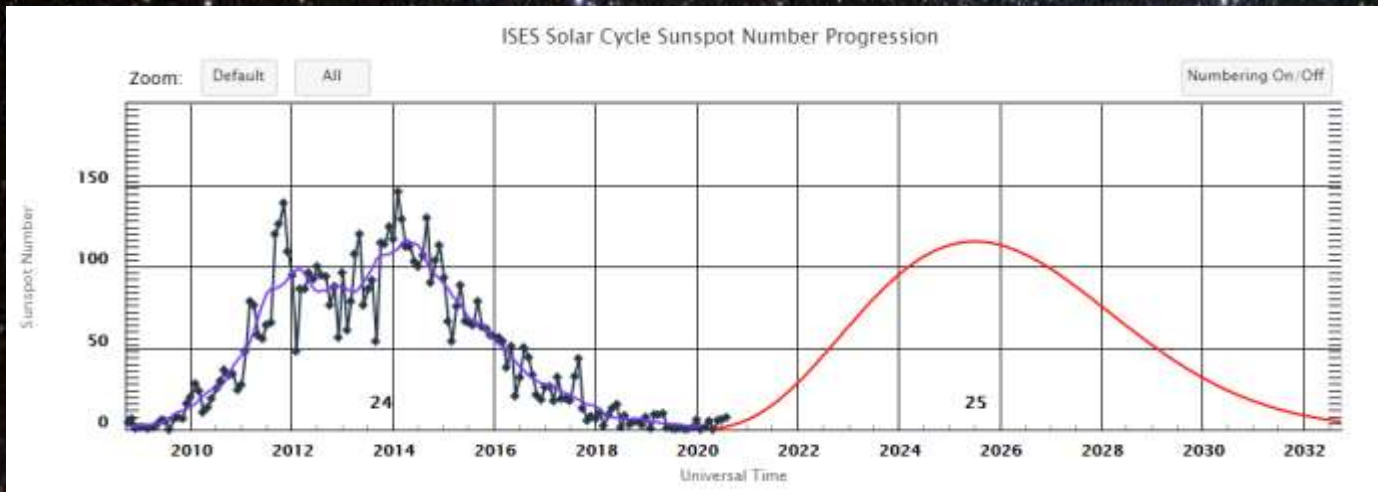
2009 total: 260 days (71%)

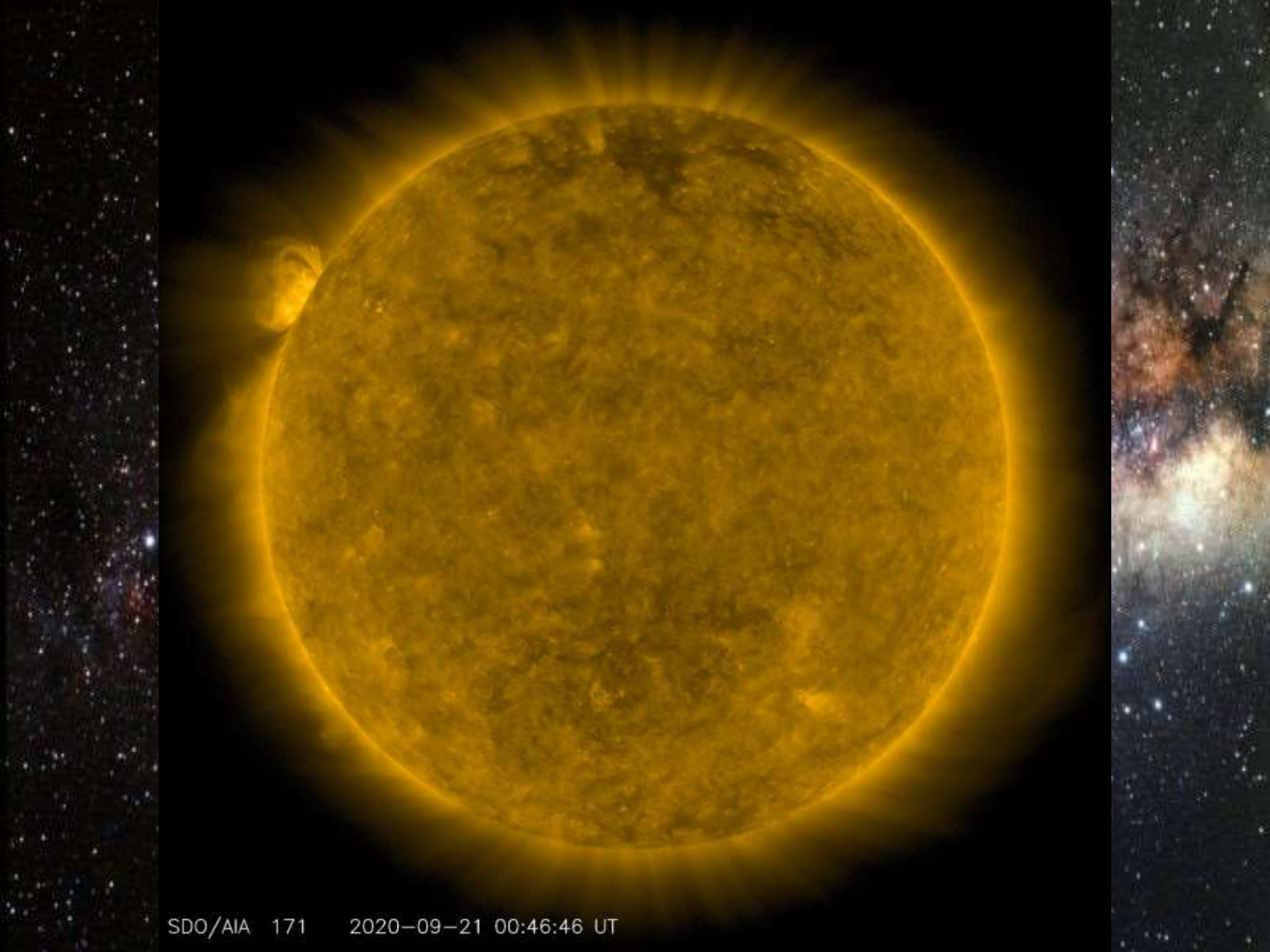
2008 total: 268 days (73%)

2007 total: 152 days (42%)

2006 total: 70 days (19%)

Updated 22 Oct 2020





SDO/AIA 171 2020-09-21 00:46:46 UT

Harvest Moon



Credit: David Haworth

October 1, 2020

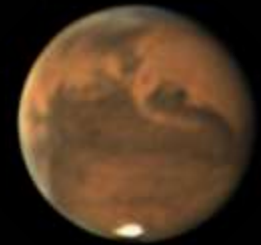
Planetarium Reopening



October 6, 2020

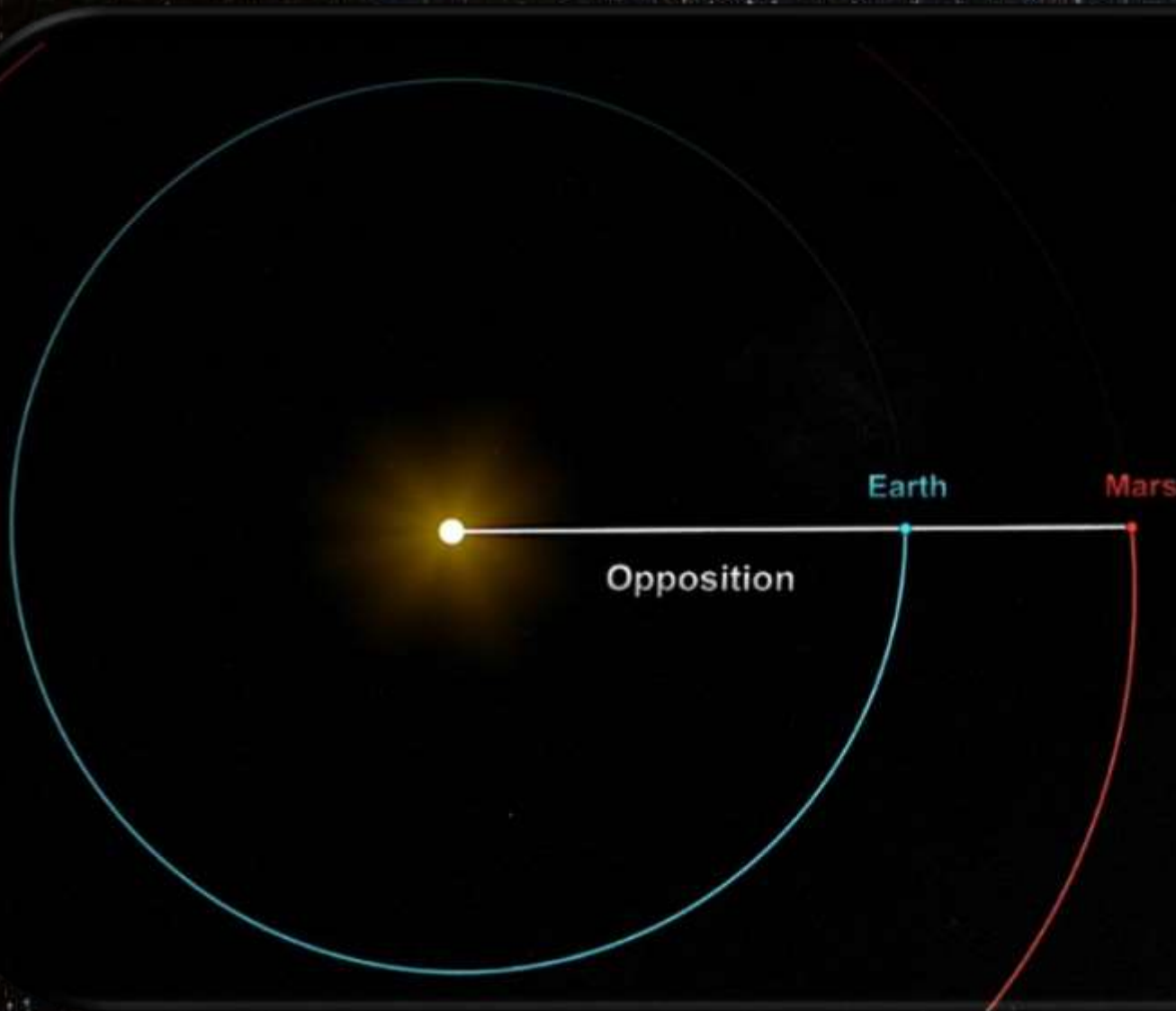
Mars is at its closest to Earth until 2035

Oct 13, 2020



Mars oppositions:

July 27, 2018
Oct. 13, 2020
Dec. 8, 2022



Blue Origin's New Shepard rocket aces record 7th launch, landing in test flight



October 13, 2020

Expedition 64



October 14, 2020

OSIRIS-REx TAGs Surface of Asteroid Bennu

Oct 21, 2020



**NASA Astronaut Chris Cassidy, Crewmates
Land Safely Back on Earth
Oct 21, 2020**



Coming Soon...



Hunter's Moon



Credit: David Haworth

October 31. 2020

‘Once in a Blue Moon’

October 31, 2020



The Blue Moon on 08-31-2012 © John Chumack

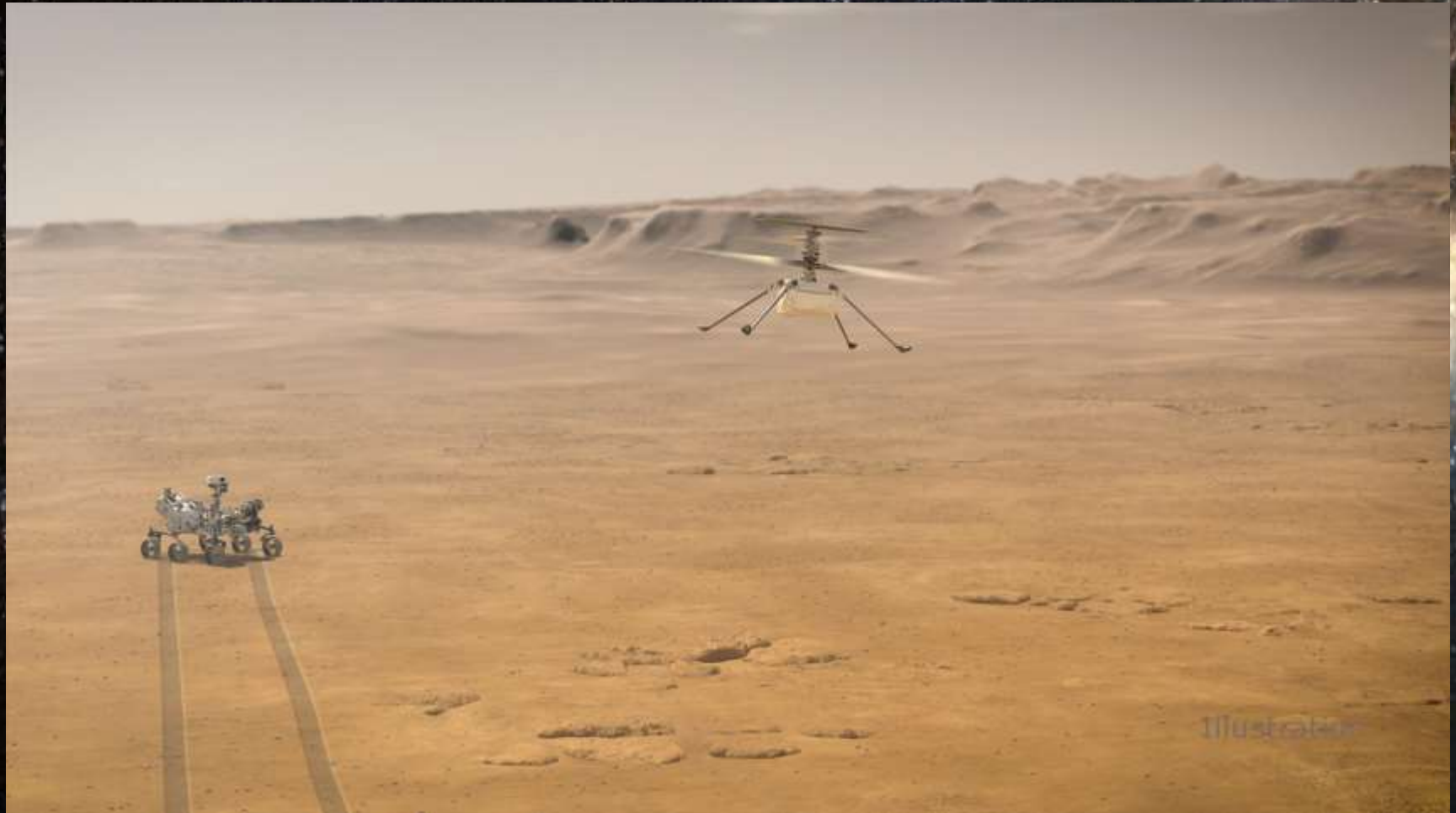
Penumbral Lunar Eclipse

November 29–30, 2020 (1:42 am)



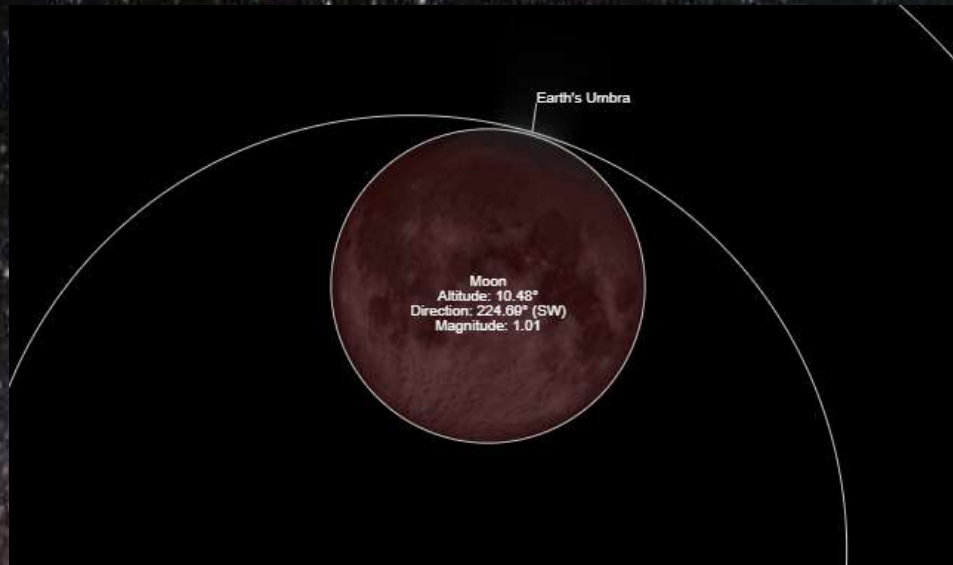
Time	Phase	Event	Direction	Altitude
11:32 pm Sun, Nov 29		<i>Penumbral Eclipse begins</i> The Earth's penumbra start touching the Moon's face.	 166°	 64.1°
1:42 am Mon, Nov 30		<i>Maximum Eclipse</i> Moon is closest to the center of the shadow.	 228°	 57.1°
3:53 am Mon, Nov 30		<i>Penumbral Eclipse ends</i> The Earth's penumbra ends.	 262°	 36.9°






Mars 2020 Perseverance Entry, Descent, and Landing System February 8, 2021



Total Lunar Eclipse

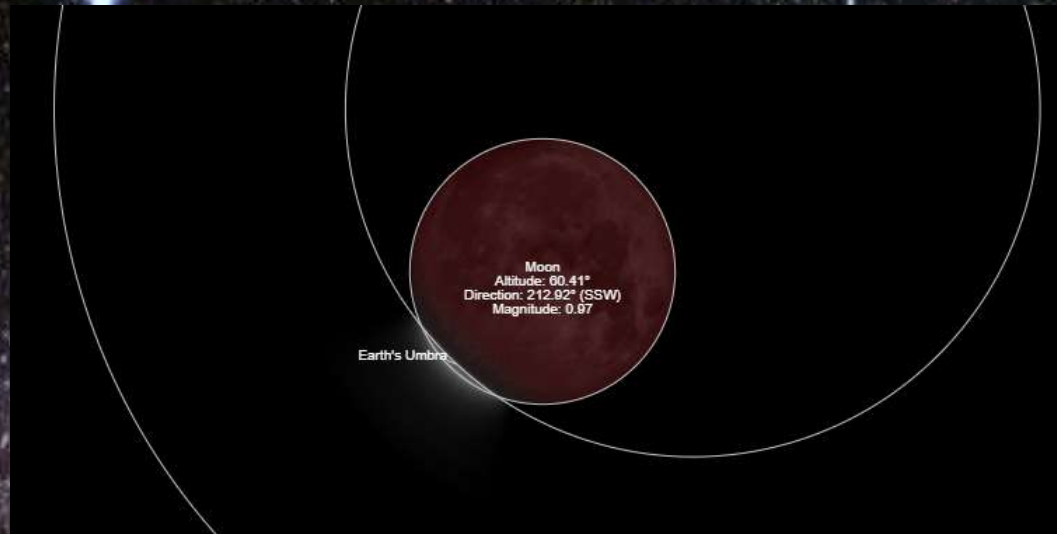
May 26, 2021 (4:18 am)


















Time	Phase	Event	Direction	Altitude
1:47 am Wed, May 26		<i>Penumbral Eclipse begins</i> The Earth's penumbra start touching the Moon's face.	↓ 191°	↗ 22.5°
2:44 am Wed, May 26		<i>Partial Eclipse begins</i> Partial moon eclipse starts - moon is getting red.	↙ 205°	↗ 19.3°
4:11 am Wed, May 26		<i>Total Eclipse begins</i> Total moon eclipse starts - completely red moon.	↙ 223°	↗ 10.9°
4:18 am Wed, May 26		<i>Maximum Eclipse</i> Moon is closest to the center of the shadow.	↙ 224°	↗ 10.0°
4:25 am Wed, May 26		<i>Total Eclipse ends</i> Total moon eclipse ends. Moon close to horizon, so make sure you have free sight to Southwest.	↙ 226°	↗ 9.1°
5:38 am Wed, May 26	Setting	<i>Moonset</i> Setting	↙ 239°	→ -0.2°

Partial Lunar Eclipse

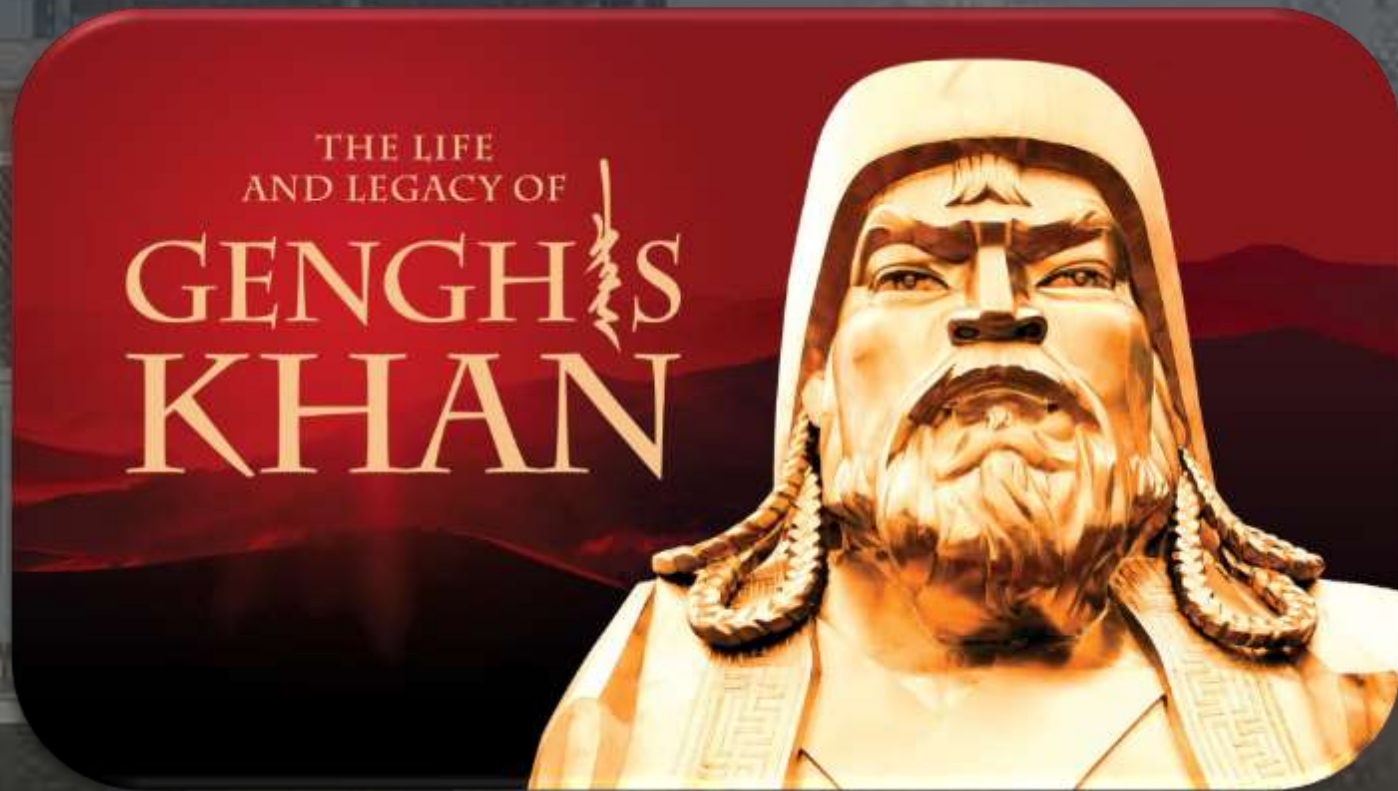
November 18, 2021 (1:08 am)



Time	Phase	Event	Direction	Altitude
10:02 pm Thu, Nov 18		<i>Penumbral Eclipse begins</i> The Earth's penumbra start touching the Moon's face.	 130°	 54.4°
11:18 pm Thu, Nov 18		<i>Partial Eclipse begins</i> Partial moon eclipse starts - moon is getting red.	 162°	 62.0°
1:02 am Fri, Nov 19		<i>Maximum Eclipse</i> Moon is closest to the center of the shadow.	 212°	 59.8°
2:47 am Fri, Nov 19		<i>Partial Eclipse ends</i> Partial moon eclipse ends.	 246°	 46.3°
4:03 am Fri, Nov 19		<i>Penumbral Eclipse ends</i> The Earth's penumbra ends.	 263°	 33.7°

OMSITM

Everyday Encounters with Science



Coming October 24, 2020!



Stay Healthy!





Good Luck Forecasters!