science @ NASA

December 3rd

January 1st

January 31st

1
00:00:00,000 --> 00:00:03,520
[MUSIC]

2
00:00:03,540 --> 00:00:14,530
A Supermoon Trilogy – Presented by Science@NASA

3
00:00:14,550 --> 00:00:18,960
Mark your calendars: a series of three supermoons will appear on the celestial stage

4
00:00:18,980 --> 00:00:26,810
on December 3, 2017, January 1, 2018, and January 31, 2018.

5
00:00:26,830 --> 00:00:34,200
A supermoon is a Moon that is full when it is also at or near its closest point in its orbit around Earth.

6
00:00:34,220 --> 00:00:42,810
Since the Moon’s orbit is elliptical, one side (apogee) is about 30,000 miles (50,000 km)

7
00:00:42,830 --> 00:00:45,880
farther from Earth than the other (perigee).

8
00:00:45,900 --> 00:00:50,830
Nearby perigee full Moons appear about 14% bigger and 30% brighter

9
00:00:50,850 --> 00:00:55,090
than full Moons that occur near apogee in the Moon's orbit.

10
00:00:55,110 --> 00:01:00,040
“The supermoons are a great opportunity for people to start looking at the Moon,

11
00:01:00,060 --> 00:01:02,850
not just that once but every chance they have!”

12
00:01:02,870 --> 00:01:07,380
says Noah Petro, a research scientist from NASA’s Goddard Space Flight Center.

13
00:01:07,400 --> 00:01:11,020

It’s hard for our eyes to distinguish these small changes in size

14
00:01:11,040 --> 00:01:15,700
when the Moon is high amidst the vastness of the night sky.

15
00:01:15,720 --> 00:01:19,320
But any time you catch a full Moon as it rises or sets,

16
00:01:19,340 --> 00:01:24,370
while it’s suspended low on the horizon beaming through the silhouettes of trees or buildings,

17
00:01:24,390 --> 00:01:27,750
its apparent size might make you do a double-take.

18
00:01:27,770 --> 00:01:33,710
You almost feel as though you could reach out, grab the glowing orb, and drop it into your coffee cup.

19
00:01:33,730 --> 00:01:35,300
Even more so if it’s a supermoon.

20
00:01:35,320 --> 00:01:42,570
If you can catch only one episode of the supermoon trilogy, catch the third one. It will be extra special.

21
00:01:42,590 --> 00:01:48,850
First of all, the January 31st supermoon will feature a total lunar eclipse,

22
00:01:48,870 --> 00:01:54,330
with totality viewable from western North America across the pacific to Eastern Asia.

23
00:01:54,350 --> 00:02:00,650
The Moon’s orbit around our planet is tilted so it usually falls above or below the shadow of the Earth.

24
00:02:00,670 --> 00:02:05,910
About twice each year, a full Moon lines up perfectly with the Earth and Sun

25
00:02:05,930 --> 00:02:12,560
such that Earth’s shadow totally blocks the Sun’s light, which would normally reflect off the Moon.

26
00:02:12,580 --> 00:02:18,050
“The lunar eclipse on January 31 will be visible during moonset.

27
00:02:18,070 --> 00:02:21,170
Folks in the Eastern United States, where the eclipse will be partial,

28
00:02:21,190 --> 00:02:25,780
will have to get up in the morning to see it,” notes Petro. “But it’s another great chance to watch the Moon.”

29
00:02:25,800 --> 00:02:31,010
The Moon will lose its brightness and take on an eerie, fainter-than-normal glow

30
00:02:31,030 --> 00:02:34,770
from the scant sunlight that makes its way through Earth’s atmosphere.

31
00:02:34,790 --> 00:02:39,800
Often cast in a reddish hue because of the way the atmosphere bends the light,

32
00:02:39,820 --> 00:02:43,410
totally eclipsed Moons are sometimes called ‘blood Moons.’

33
00:02:43,430 --> 00:02:50,180
“We’re seeing all of the Earth’s sunrises and sunsets at that moment reflected from the surface of the Moon,”

34
00:02:50,200 --> 00:02:54,250
says Sarah Noble, a Program Scientist at NASA headquarters.

35
00:02:54,270 --> 00:02:58,550
The January 31st supermoon will also be the second full Moon of the month.

36
00:02:58,570 --> 00:03:06,160
Some people call the second full Moon in a month a Blue Moon, that makes it a super ‘blue Moon.’

37
00:03:06,180 --> 00:03:10,690
Blue Moons happen every two and a half years, on average.

38
00:03:10,710 --> 00:03:15,830

With the total eclipse, it’ll be a royal spectacle indeed: a ‘super blue blood’ Moon.

39
00:03:15,850 --> 00:03:20,790
Sometimes the celestial rhythms sync up just right to wow us.

40
00:03:20,810 --> 00:03:24,070
Heed your calendar reminders. On the three dates marked,

41
00:03:24,090 --> 00:03:30,750
step out into the moonset or moonrise and look up for a trilogy of sky watching treats!