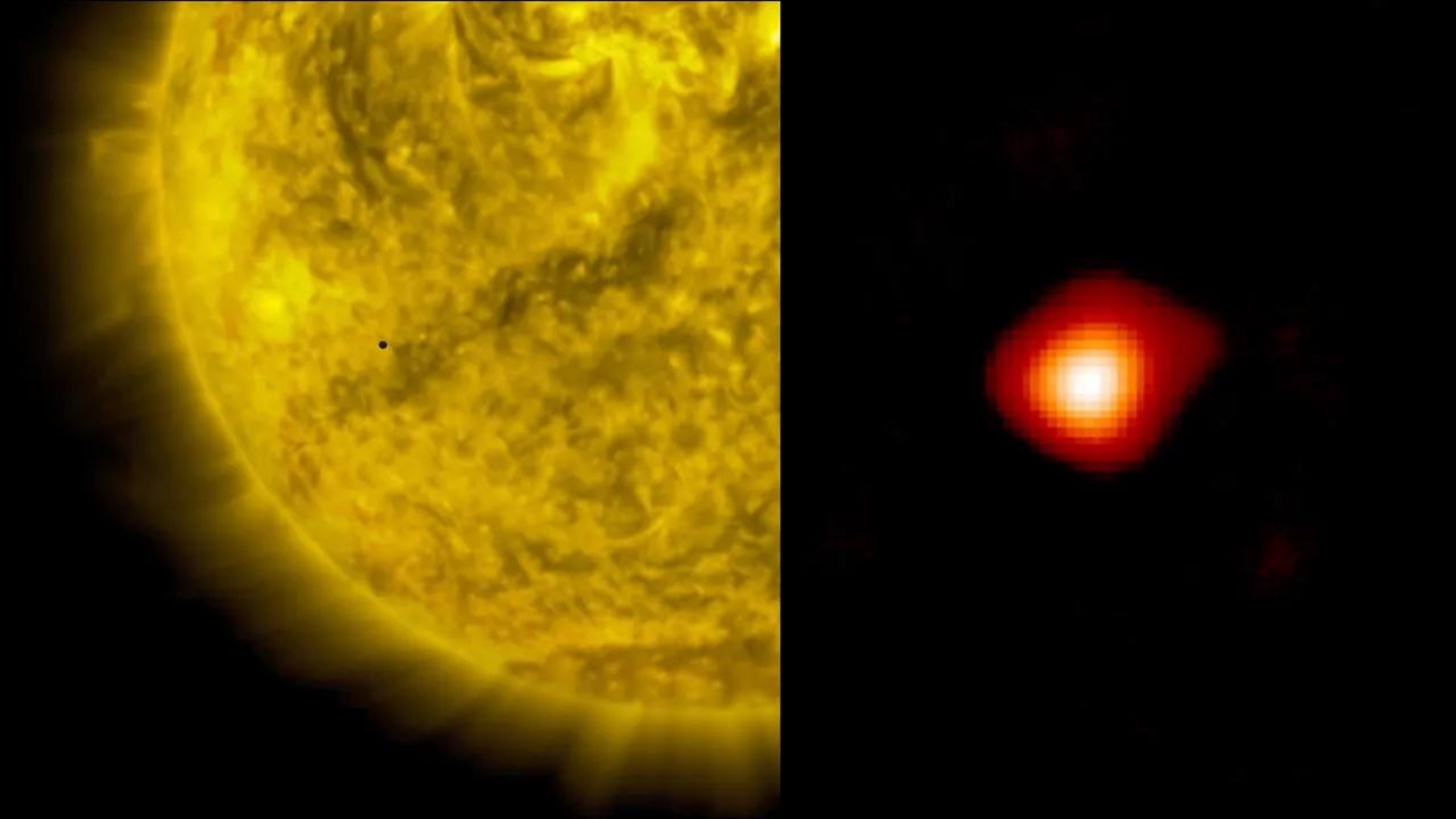

1
00:00:05,450 --> 00:00:01,480
[Music]

2
00:00:07,909 --> 00:00:05,460
what's up for November mercury transits

3
00:00:11,660 --> 00:00:07,919
across the Sun and the dimming of the

4
00:00:13,610 --> 00:00:11,670
demon star Algol on November 11th we're

5
00:00:16,070 --> 00:00:13,620
in for a rare treat as the innermost

6
00:00:18,680 --> 00:00:16,080
planet mercury passes directly in front

7
00:00:20,570 --> 00:00:18,690
of the Sun for a few hours this event is

8
00:00:22,929 --> 00:00:20,580
called a transit and for mercury they

9
00:00:26,359 --> 00:00:22,939
happen only about 13 times in a century

10
00:00:28,070 --> 00:00:26,369
transits of Venus are even more rare the

11
00:00:30,349 --> 00:00:28,080
event will last about five and a half

12
00:00:31,790 --> 00:00:30,359
hours during which Mercury's path will

13
00:00:34,340 --> 00:00:31,800

take it right across the middle of the

14
00:00:36,470 --> 00:00:34,350
sun's disk for observers in the eastern

15
00:00:38,000 --> 00:00:36,480
US the transit begins after sunrise

16
00:00:40,340 --> 00:00:38,010
meaning you'll be able to view the

17
00:00:43,520 --> 00:00:40,350
entire thing for the central and western

18
00:00:44,930 --> 00:00:43,530
US the transit begins before sunrise but

19
00:00:46,700 --> 00:00:44,940
there's enough time left as the Sun

20
00:00:48,440 --> 00:00:46,710
climbs up the sky for you to catch a

21
00:00:50,900 --> 00:00:48,450
glimpse before mercury makes its exit

22
00:00:52,610 --> 00:00:50,910
now remember you should never look

23
00:00:54,350 --> 00:00:52,620
directly at the Sun without proper

24
00:00:56,630 --> 00:00:54,360
protection as it can permanently damage

25
00:00:58,819 --> 00:00:56,640
your eyes if you have a pair of eclipse

26
00:01:01,400 --> 00:00:58,829
shades those are okay for viewing the

27
00:01:03,049 --> 00:01:01,410
Sun but mercury is so small in

28
00:01:04,700 --> 00:01:03,059
comparison that it can be next to

29
00:01:06,800 --> 00:01:04,710
impossible to see a transit without

30
00:01:08,960 --> 00:01:06,810
magnification your best bet is a

31
00:01:11,120 --> 00:01:08,970
telescope with a certified Sun filter

32
00:01:13,910 --> 00:01:11,130
but other options include solar

33
00:01:15,700 --> 00:01:13,920
projection boxes and Sun funnels plus

34
00:01:18,109 --> 00:01:15,710
NASA's Solar Dynamics Observatory

35
00:01:20,060 --> 00:01:18,119
spacecraft will be sharing near

36
00:01:23,030 --> 00:01:20,070
real-time images during the transit

37
00:01:25,460 --> 00:01:23,040
whatever method you choose be safe when

38
00:01:27,350 --> 00:01:25,470

observing the Sun the next mercury

39
00:01:30,380 --> 00:01:27,360
transit that will be visible in the US

40
00:01:31,969 --> 00:01:30,390
isn't until 2040 9 so if you're in the

41
00:01:34,240 --> 00:01:31,979
States you might want to make the effort

42
00:01:37,100 --> 00:01:34,250
to catch this special celestial event a

43
00:01:38,929 --> 00:01:37,110
much more frequent type of transit you

44
00:01:41,359 --> 00:01:38,939
might want to check out is the regular

45
00:01:44,780 --> 00:01:41,369
dimming and brightening of the demon's

46
00:01:47,060 --> 00:01:44,790
star angle found in the constellation

47
00:01:48,800 --> 00:01:47,070
Perseus Algol is actually two stars

48
00:01:50,870 --> 00:01:48,810
orbiting around each other and they're

49
00:01:52,550 --> 00:01:50,880
oriented nearly edge-on such that from

50
00:01:55,039 --> 00:01:52,560
our perspective the smaller star

51
00:01:56,929 --> 00:01:55,049
regularly passes in front of the larger

52
00:01:59,480 --> 00:01:56,939
brighter one causing it to dim for about

53
00:02:02,660 --> 00:01:59,490
10 hours at a time this happens like

54
00:02:05,120 --> 00:02:02,670
clockwork every two days 20 hours 49

55
00:02:06,920 --> 00:02:05,130
minutes you can find tables of these

56
00:02:08,889 --> 00:02:06,930
minima as they're called in lots of

57
00:02:12,020 --> 00:02:08,899
astronomy magazines and websites to

58
00:02:13,580 --> 00:02:12,030
observe al Ghul's eclipses find the date

59
00:02:15,770 --> 00:02:13,590
and time of a predicted minimum

60
00:02:18,229 --> 00:02:15,780
and start observing maybe an hour or two

61
00:02:20,360 --> 00:02:18,239
before that time take a look about every

62
00:02:23,030 --> 00:02:20,370
half-hour binoculars are really useful

63
00:02:25,820 --> 00:02:23,040

for this over a few hours following the

64
00:02:28,190 --> 00:02:25,830
minimum Algol will slowly brighten back

65
00:02:30,350 --> 00:02:28,200
to its normal state at its normal

66
00:02:32,870 --> 00:02:30,360
brightness Algol appears about as bright

67
00:02:34,729 --> 00:02:32,880
as the nearby star al Mach while at its

68
00:02:37,580 --> 00:02:34,739
minimum it dims to around the brightness

69
00:02:39,380 --> 00:02:37,590
of its neighbor Gorgon a etre Hsieh so

70
00:02:41,479 --> 00:02:39,390
these two stars provide a helpful way to

71
00:02:44,630 --> 00:02:41,489
compare angles brightness throughout the

72
00:02:50,030 --> 00:02:44,640
night as you observe here are the phases

73
00:02:51,920 --> 00:02:50,040
of the Moon for November you can catch

74
00:02:55,759 --> 00:02:51,930
up on all of NASA's current and future

75
00:02:57,410 --> 00:02:55,769
missions at nasa.gov I'm Preston dykes