

A dark space background featuring several celestial bodies: a small reddish planet (Mars) in the upper left, a large yellowish planet with rings (Saturn) on the left, a large blue and white planet (Earth) at the bottom, and a large yellowish planet with bands (Jupiter) on the right. The text is centered in a white, handwritten-style font.

# WHAT'S UP

SKYWATCHING HIGHLIGHTS

OCTOBER 2022



1  
00:00:05,690 --> 00:00:02,230

[Music]

2  
00:00:06,650 --> 00:00:05,700

what's up for October evenings with

3  
00:00:10,129 --> 00:00:06,660

Giants

4  
00:00:11,150 --> 00:00:10,139

Mars changes course and meteors from

5  
00:00:13,549 --> 00:00:11,160

Orion

6  
00:00:15,230 --> 00:00:13,559

giant planets Jupiter and Saturn are

7  
00:00:17,510 --> 00:00:15,240

visible throughout the night in October

8  
00:00:19,670 --> 00:00:17,520

early in the evening you'll find them to

9  
00:00:21,290 --> 00:00:19,680

the southeast moving slowly Westward

10  
00:00:23,570 --> 00:00:21,300

with the Stars over the course of the

11  
00:00:26,390 --> 00:00:23,580

night they form a triangle with bright

12  
00:00:28,910 --> 00:00:26,400

star formal out when observing the trio

13  
00:00:32,330 --> 00:00:28,920

note how the planets shine with a steady

14

00:00:34,130 --> 00:00:32,340

light while the star twinkles this can

15

00:00:37,610 --> 00:00:34,140

be an easy way to know if what you're

16

00:00:39,709 --> 00:00:37,620

looking at is a planet or a star

17

00:00:41,810 --> 00:00:39,719

Mars has been steadily working its way

18

00:00:44,270 --> 00:00:41,820

toward the East all year like it usually

19

00:00:47,030 --> 00:00:44,280

does relative to the background Stars

20

00:00:49,430 --> 00:00:47,040

but at the end of October Mars halts

21

00:00:50,930 --> 00:00:49,440

This apparent motion then appears to

22

00:00:53,270 --> 00:00:50,940

reverse course

23

00:00:55,970 --> 00:00:53,280

over the next three months from November

24

00:00:58,369 --> 00:00:55,980

to late January Mars moves toward the

25

00:01:01,189 --> 00:00:58,379

west each night then near the end of

26

00:01:03,590 --> 00:01:01,199

January it reverses direction again and

27

00:01:05,570 --> 00:01:03,600

continues its Eastward Journey

28

00:01:08,690 --> 00:01:05,580

this is what's called the retrograde

29

00:01:10,609 --> 00:01:08,700

motion of Mars it happens about every

30

00:01:12,230 --> 00:01:10,619

two years and it really threw early

31

00:01:14,210 --> 00:01:12,240

observers for a loop

32

00:01:16,429 --> 00:01:14,220

that Mars appears to change its

33

00:01:18,230 --> 00:01:16,439

direction is an illusion caused by the

34

00:01:21,350 --> 00:01:18,240

Motions of our planet in its orbit

35

00:01:23,810 --> 00:01:21,360

passing by the red planet in its orbit

36

00:01:25,850 --> 00:01:23,820

see Earth and Mars are on these roughly

37

00:01:28,429 --> 00:01:25,860

circular paths around the Sun like

38

00:01:30,410 --> 00:01:28,439

Horrors on a racetrack and Earth is on

39

00:01:33,230 --> 00:01:30,420

the inner faster track

40

00:01:35,330 --> 00:01:33,240

about every 26 months we overtake Mars

41

00:01:37,249 --> 00:01:35,340

which is moving slower in its orbit

42

00:01:39,350 --> 00:01:37,259

during that period when we're passing

43

00:01:41,569 --> 00:01:39,360

Mars but before we round the bend in our

44

00:01:43,550 --> 00:01:41,579

orbit to pull away from it we see Mars

45

00:01:45,469 --> 00:01:43,560

in retrograde appearing to change

46

00:01:47,149 --> 00:01:45,479

direction even though it's still moving

47

00:01:48,950 --> 00:01:47,159

forward in its orbit

48

00:01:51,830 --> 00:01:48,960

so take note of Mars over the next few

49

00:01:53,870 --> 00:01:51,840

months as it appears to reverse course

50

00:01:55,910 --> 00:01:53,880

note how its position changes with

51  
00:01:57,889 --> 00:01:55,920  
respect to Beetlejuice aldebaran and the

52  
00:01:59,749 --> 00:01:57,899  
Pleiades over the weeks and you'll be

53  
00:02:02,030 --> 00:01:59,759  
witnessing what was once a source of

54  
00:02:04,429 --> 00:02:02,040  
intense curiosity for astronomers but

55  
00:02:07,490 --> 00:02:04,439  
which we now know is just a sign of two

56  
00:02:10,010 --> 00:02:07,500  
planets passing in the night

57  
00:02:12,050 --> 00:02:10,020  
the oriented meteor shower is active

58  
00:02:14,449 --> 00:02:12,060  
throughout October and November and

59  
00:02:16,430 --> 00:02:14,459  
Peaks on the night of October 20th it's

60  
00:02:18,770 --> 00:02:16,440  
a moderate shower usually producing 10

61  
00:02:21,650 --> 00:02:18,780  
to 20 meteors per hour at its peak under

62  
00:02:23,449 --> 00:02:21,660  
clear Dark Skies this year the moon will

63  
00:02:25,490 --> 00:02:23,459

be about 20 percent full on the peak

64

00:02:27,229 --> 00:02:25,500

nights so it will interfere a bit when

65

00:02:28,910 --> 00:02:27,239

it rises a couple of hours before Dawn

66

00:02:31,610 --> 00:02:28,920

but it shouldn't totally spoil the

67

00:02:33,229 --> 00:02:31,620

viewing the shower's name comes from the

68

00:02:35,750 --> 00:02:33,239

fact that you can trace the paths of its

69

00:02:36,949 --> 00:02:35,760

meteors back to an area on the sky near

70

00:02:39,290 --> 00:02:36,959

Orion

71

00:02:41,750 --> 00:02:39,300

these meteors are fragments of dust left

72

00:02:44,210 --> 00:02:41,760

behind by Comet Halley in a trail that

73

00:02:46,250 --> 00:02:44,220

extends along its orbit they tend to be

74

00:02:48,050 --> 00:02:46,260

bright and fast moving and they often

75

00:02:49,729 --> 00:02:48,060

leave persistent trails that can glow in

76

00:02:52,430 --> 00:02:49,739

the sky for a few seconds after they

77

00:02:54,710 --> 00:02:52,440

Streak by no special equipment is needed

78

00:02:56,630 --> 00:02:54,720

to observe meteor showers just make sure

79

00:02:58,809 --> 00:02:56,640

you're warm enough and viewing from a

80

00:03:01,490 --> 00:02:58,819

safe dark spot away from Bright Lights

81

00:03:03,770 --> 00:03:01,500

then all you have to do is look up and

82

00:03:05,509 --> 00:03:03,780

enjoy the show

83

00:03:08,270 --> 00:03:05,519

here are the phases of the moon for

84

00:03:12,410 --> 00:03:10,369

stay up to date with all of NASA's

85

00:03:15,649 --> 00:03:12,420

missions to explore the solar system and

86

00:03:17,390 --> 00:03:15,659

Beyond at [nasa.gov](http://nasa.gov) I'm Preston Dykes