
Venus
Moon

1
00:00:04,309 --> 00:00:02,070
[Music]

2
00:00:07,269 --> 00:00:04,319
what's up for september

3
00:00:08,390 --> 00:00:07,279
the moon with mars and venus and a star

4
00:00:11,669 --> 00:00:08,400
with a planet

5
00:00:12,230 --> 00:00:11,679
that wasn't on september 6th you'll find

6
00:00:14,310 --> 00:00:12,240
the moon

7
00:00:15,430 --> 00:00:14,320
extremely close to mars in the predawn

8
00:00:17,189 --> 00:00:15,440
sky

9
00:00:19,269 --> 00:00:17,199
now they were even closer back on august

10
00:00:20,230 --> 00:00:19,279
9th but still a really pretty spectacle

11
00:00:21,990 --> 00:00:20,240
this month

12
00:00:23,750 --> 00:00:22,000
if you're up early and can step outside

13
00:00:25,509 --> 00:00:23,760

for a look they'll be only a couple of

14
00:00:26,950 --> 00:00:25,519
degrees apart meaning they'll appear in

15
00:00:29,910 --> 00:00:26,960
the same field of view

16
00:00:32,229 --> 00:00:29,920
if you look with most binoculars on

17
00:00:33,830 --> 00:00:32,239
september 13th and 14th look in the east

18
00:00:37,350 --> 00:00:33,840
before dawn to see the slim

19
00:00:39,270 --> 00:00:37,360
crescent moon slip past brilliant venus

20
00:00:41,350 --> 00:00:39,280
on the 13th you'll find the moon hanging

21
00:00:42,790 --> 00:00:41,360
above venus with about 20 percent of its

22
00:00:44,549 --> 00:00:42,800
surface illuminated

23
00:00:46,229 --> 00:00:44,559
by the next morning the moon has moved

24
00:00:47,990 --> 00:00:46,239
here to the left of venus

25
00:00:50,709 --> 00:00:48,000
and has only about 10 percent of its

26
00:00:52,549 --> 00:00:50,719
sunlit surface visible

27
00:00:53,750 --> 00:00:52,559
looking toward the south in september

28
00:00:56,229 --> 00:00:53,760
there's really only

29
00:00:58,709 --> 00:00:56,239
one relatively bright star for most of

30
00:00:59,189 --> 00:00:58,719
us who live near cities that star is

31
00:01:00,709 --> 00:00:59,199
called

32
00:01:03,590 --> 00:01:00,719
fomalhaut and it's got a pretty

33
00:01:05,350 --> 00:01:03,600
interesting story the star is about 25

34
00:01:06,390 --> 00:01:05,360
light years away meaning it's relatively

35
00:01:08,230 --> 00:01:06,400
close by

36
00:01:09,510 --> 00:01:08,240
it's also fairly young at just a few

37
00:01:11,429 --> 00:01:09,520
hundred million years

38
00:01:13,510 --> 00:01:11,439

and it's still surrounded by a disk of

39
00:01:16,149 --> 00:01:13,520
debris which is a common feature for

40
00:01:17,749 --> 00:01:16,159
stars during their planet-forming phase

41
00:01:20,149 --> 00:01:17,759
now we've discovered thousands of

42
00:01:20,789 --> 00:01:20,159
exoplanets planets outside our solar

43
00:01:22,550 --> 00:01:20,799
system

44
00:01:24,390 --> 00:01:22,560
but fomo heat appeared to be the first

45
00:01:26,230 --> 00:01:24,400
star to have a planet detected by direct

46
00:01:28,070 --> 00:01:26,240
imaging with a telescope that being the

47
00:01:29,910 --> 00:01:28,080
hubble space telescope

48
00:01:31,510 --> 00:01:29,920
astronomers announced the find back in

49
00:01:34,230 --> 00:01:31,520
2008

50
00:01:35,670 --> 00:01:34,240
so fomo out had itself a planet but this

51
00:01:36,230 --> 00:01:35,680
is where it gets interesting as the

52
00:01:38,710 --> 00:01:36,240
planet

53
00:01:39,990 --> 00:01:38,720
had a funky orbit wasn't giving off

54
00:01:42,149 --> 00:01:40,000
excess heat like a young

55
00:01:43,749 --> 00:01:42,159
planet should and proceeded to grow

56
00:01:44,389 --> 00:01:43,759
fainter over the several years that

57
00:01:48,149 --> 00:01:44,399
followed

58
00:01:50,389 --> 00:01:48,159
disappearing by 2014 in april 2020

59
00:01:52,310 --> 00:01:50,399
another team of astronomers using hubble

60
00:01:55,910 --> 00:01:52,320
announced their finding that fomo hout's

61
00:01:57,990 --> 00:01:55,920
planet wasn't a planet after all in fact

62
00:02:00,709 --> 00:01:58,000
their study showed what hubble detected

63
00:02:01,429 --> 00:02:00,719

was likely a giant expanding cloud of

64
00:02:03,429 --> 00:02:01,439
debris

65
00:02:05,510 --> 00:02:03,439
resulting from a huge collision of two

66
00:02:07,190 --> 00:02:05,520
small bodies made of dust and ice

67
00:02:09,830 --> 00:02:07,200
similar to worlds you might find in our

68
00:02:11,270 --> 00:02:09,840
own kuiper belt the scientists calculate

69
00:02:13,190 --> 00:02:11,280
collisions like this happen around

70
00:02:14,229 --> 00:02:13,200
fomalhaut only every couple hundred

71
00:02:16,229 --> 00:02:14,239
thousand years

72
00:02:17,350 --> 00:02:16,239
so hubble just happened to be looking at

73
00:02:19,750 --> 00:02:17,360
the right time

74
00:02:21,670 --> 00:02:19,760
not long after the collision took place

75
00:02:24,229 --> 00:02:21,680
so we may have lost a planet

76
00:02:25,670 --> 00:02:24,239
but we gained a cool insight into how

77
00:02:28,710 --> 00:02:25,680
planetary systems

78
00:02:29,110 --> 00:02:28,720
form and evolve you can find fomalhaut

79
00:02:30,869 --> 00:02:29,120
low

80
00:02:33,509 --> 00:02:30,879
in the south a couple of hours after

81
00:02:35,190 --> 00:02:33,519
sunset to the left of the bright pair of

82
00:02:37,750 --> 00:02:35,200
saturn and jupiter

83
00:02:39,270 --> 00:02:37,760
since it's bright and low in the sky it

84
00:02:40,949 --> 00:02:39,280
sometimes appears to flicker from

85
00:02:42,550 --> 00:02:40,959
atmospheric turbulence

86
00:02:44,710 --> 00:02:42,560
that can cause some skywatchers to

87
00:02:47,190 --> 00:02:44,720
wonder just what the heck it is

88
00:02:49,110 --> 00:02:47,200

now you know it's fomalhaut the nearby

89
00:02:52,229 --> 00:02:49,120
star where it appears we witnessed a

90
00:02:53,589 --> 00:02:52,239
dramatic planetary collision

91
00:02:56,869 --> 00:02:53,599
here are the phases of the moon for

92
00:03:00,470 --> 00:02:58,390
you can catch up on all of nasa's

93
00:03:02,869 --> 00:03:00,480
missions to explore the solar system and

94
00:03:04,390 --> 00:03:02,879
beyond at nasa.gov

95
00:03:06,229 --> 00:03:04,400
i'm preston dykes from nasa's jet

96
00:03:18,630 --> 00:03:06,239
propulsion laboratory and that's what's