



1
00:00:09,910 --> 00:00:06,470
pink planet at sunset

2
00:00:11,910 --> 00:00:09,920
presented by science at nasa

3
00:00:13,669 --> 00:00:11,920
nasa has recently explored a very

4
00:00:16,390 --> 00:00:13,679
strange planet

5
00:00:18,390 --> 00:00:16,400
its days are twice as long as its years

6
00:00:20,230 --> 00:00:18,400
it has a tail like a comet

7
00:00:22,310 --> 00:00:20,240
it is capped by deposits of ice

8
00:00:24,390 --> 00:00:22,320
peppering terrain that elsewhere is hot

9
00:00:27,029 --> 00:00:24,400
enough to melt lead

10
00:00:28,230 --> 00:00:27,039
and to top it all off it appears to be

11
00:00:30,550 --> 00:00:28,240
pink

12
00:00:32,150 --> 00:00:30,560
the planet is mercury

13
00:00:34,549 --> 00:00:32,160

of course astronomers have known about

14

00:00:36,470 --> 00:00:34,559

mercury for thousands of years

15

00:00:39,350 --> 00:00:36,480

but since nasa's messenger probe went

16

00:00:40,709 --> 00:00:39,360

into orbit around mercury in 2011

17

00:00:42,630 --> 00:00:40,719

researchers feel like they've been

18

00:00:44,470 --> 00:00:42,640

discovering the innermost planet all

19

00:00:46,470 --> 00:00:44,480

over again

20

00:00:48,229 --> 00:00:46,480

one finding after another has confirmed

21

00:00:50,389 --> 00:00:48,239

the alien character of this speedy

22

00:00:52,389 --> 00:00:50,399

little world which you can see this week

23

00:00:54,069 --> 00:00:52,399

with your own eyes

24

00:00:55,750 --> 00:00:54,079

mercury is emerging from the glare of

25

00:00:57,670 --> 00:00:55,760

the sun for a beautiful two-week

26
00:00:59,670 --> 00:00:57,680
apparition during the month of february

27
00:01:01,590 --> 00:00:59,680
2013.

28
00:01:03,029 --> 00:01:01,600
the show begins about a half hour after

29
00:01:04,789 --> 00:01:03,039
sunset

30
00:01:07,270 --> 00:01:04,799
scan the horizon where the sun's glow is

31
00:01:09,590 --> 00:01:07,280
strongest and if the sky is clear

32
00:01:12,550 --> 00:01:09,600
mercury should pop out of the twilight

33
00:01:15,109 --> 00:01:12,560
a bright pink pinprick of light

34
00:01:17,270 --> 00:01:15,119
mercury itself is not actually pink

35
00:01:19,990 --> 00:01:17,280
but it is often colored so by the rosy

36
00:01:21,190 --> 00:01:20,000
hues of the setting sun

37
00:01:22,550 --> 00:01:21,200
if you're looking on the evening of

38
00:01:23,990 --> 00:01:22,560

february 8th

39

00:01:25,590 --> 00:01:24,000

scan the sky around mercury with

40

00:01:27,910 --> 00:01:25,600

binoculars

41

00:01:30,069 --> 00:01:27,920

a second planet is there too

42

00:01:32,550 --> 00:01:30,079

glowing faintly red mars is only a

43

00:01:35,190 --> 00:01:32,560

fraction of a degree from mercury

44

00:01:38,149 --> 00:01:35,200

in binocular optics mercury and mars

45

00:01:40,710 --> 00:01:38,159

form a charming little double planet

46

00:01:42,950 --> 00:01:40,720

as february unfolds mercury will rise

47

00:01:44,469 --> 00:01:42,960

higher in the sunset sky brightening as

48

00:01:47,749 --> 00:01:44,479

it ascends

49

00:01:49,670 --> 00:01:47,759

from february 11th through 21st the pink

50

00:01:51,990 --> 00:01:49,680

planet will be visible for as much as an

51

00:01:53,910 --> 00:01:52,000

hour after sunset

52

00:01:54,950 --> 00:01:53,920

february 11th is a date of special

53

00:01:56,550 --> 00:01:54,960

interest

54

00:01:58,389 --> 00:01:56,560

a slender crescent moon will appear

55

00:02:01,270 --> 00:01:58,399

straight above mercury providing

56

00:02:03,190 --> 00:02:01,280

guidance for novice sky watchers

57

00:02:05,190 --> 00:02:03,200

mercury circles the sun about three

58

00:02:07,429 --> 00:02:05,200

times closer than earth does

59

00:02:09,669 --> 00:02:07,439

rotating three times on its axis every

60

00:02:11,910 --> 00:02:09,679

two mercury years

61

00:02:14,309 --> 00:02:11,920

this slow spin under the solar inferno

62

00:02:17,030 --> 00:02:14,319

bakes mercury's surface bone dry and

63

00:02:20,710 --> 00:02:17,040

raises its daytime temperature to 425

64

00:02:22,150 --> 00:02:20,720

degrees celsius hot enough to melt lead

65

00:02:23,910 --> 00:02:22,160

this would seem an unlikely place to

66

00:02:25,350 --> 00:02:23,920

find deposits of ice

67

00:02:27,110 --> 00:02:25,360

yet that is what the messenger probe

68

00:02:29,190 --> 00:02:27,120

recently confirmed

69

00:02:31,110 --> 00:02:29,200

mercury has enough ice at its poles to

70

00:02:34,150 --> 00:02:31,120

encase washington dc with a layer of

71

00:02:36,309 --> 00:02:34,160

frozen water two miles thick

72

00:02:38,550 --> 00:02:36,319

ice on mercury is possible because the

73

00:02:39,670 --> 00:02:38,560

tilt of the planet's spin axis is almost

74

00:02:41,670 --> 00:02:39,680

zero

75

00:02:43,830 --> 00:02:41,680

less than one degree so there are

76
00:02:45,750 --> 00:02:43,840
pockets at the planet's poles that never

77
00:02:47,350 --> 00:02:45,760
see sunlight

78
00:02:49,430 --> 00:02:47,360
shadowed areas at each end of the

79
00:02:52,630 --> 00:02:49,440
heavily cratered planet turn out to be

80
00:02:54,949 --> 00:02:52,640
cold enough to freeze and hold water

81
00:02:57,030 --> 00:02:54,959
messenger found something else

82
00:02:59,589 --> 00:02:57,040
much of mercury's ice is coated with a

83
00:03:01,430 --> 00:02:59,599
mysterious dark substance

84
00:03:02,229 --> 00:03:01,440
researchers don't know exactly what it

85
00:03:06,390 --> 00:03:02,239
is

86
00:03:09,990 --> 00:03:06,400
organic compounds delivered to mercury

87
00:03:12,390 --> 00:03:10,000
by the impacts of asteroids and comets

88
00:03:14,790 --> 00:03:12,400

in some ways mercury itself resembles a

89

00:03:16,869 --> 00:03:14,800

comet with a long tail

90

00:03:18,470 --> 00:03:16,879

nasa's twin stereo probes on a mission

91

00:03:21,509 --> 00:03:18,480

to observe the sun

92

00:03:24,070 --> 00:03:21,519

spotted mercury's tail in 2008

93

00:03:25,990 --> 00:03:24,080

the messenger probe has flown through it

94

00:03:28,149 --> 00:03:26,000

the tail appears to be made of material

95

00:03:30,309 --> 00:03:28,159

blown off mercury's surface by exposure

96

00:03:32,550 --> 00:03:30,319

to solar flares and the solar wind at

97

00:03:34,149 --> 00:03:32,560

point-blank range

98

00:03:37,030 --> 00:03:34,159

with the sun currently approaching the

99

00:03:39,110 --> 00:03:37,040

maximum of its 11-year activity cycle

100

00:03:41,350 --> 00:03:39,120

mercury is getting hit by the stormiest

101

00:03:42,949 --> 00:03:41,360

space weather in years

102

00:03:45,030 --> 00:03:42,959

this is a great time for messenger to

103

00:03:47,589 --> 00:03:45,040

study the processes that turn mercury

104

00:03:50,070 --> 00:03:47,599

into a comet planet

105

00:03:52,149 --> 00:03:50,080

mercury is a strange planet indeed

106

00:03:54,470 --> 00:03:52,159

when the sun goes down tonight step

107

00:03:56,869 --> 00:03:54,480

outside and take a look

108

00:03:59,429 --> 00:03:56,879

for more news about strange planets in