

NASA'S CURIOSITY ROVER FINDS NEW CLUES TO MARS' WATERY PAST



Jet Propulsion Laboratory
California Institute of Technology

1
00:00:00,000 --> 00:00:05,289
foreign

2
00:00:10,730 --> 00:00:08,330
the Curiosity Rover has discovered lots

3
00:00:12,830 --> 00:00:10,740
of evidence of ancient Lakes on Mars but

4
00:00:14,629 --> 00:00:12,840
what we saw in this Panorama surprised

5
00:00:16,910 --> 00:00:14,639
us

6
00:00:17,930 --> 00:00:16,920
curiosity is currently exploring Mount

7
00:00:19,550 --> 00:00:17,940
Sharp

8
00:00:20,750 --> 00:00:19,560
you can see the upper part of the

9
00:00:22,970 --> 00:00:20,760
mountain here

10
00:00:25,310 --> 00:00:22,980
the whole mountain is three miles tall

11
00:00:28,490 --> 00:00:25,320
but we're down in the foothills

12
00:00:30,650 --> 00:00:28,500
in 2022 the Rover started exploring a

13
00:00:32,389 --> 00:00:30,660

unique feature on Mars called the marker

14

00:00:35,270 --> 00:00:32,399

band

15

00:00:36,889 --> 00:00:35,280

it's a dark thin layer of rock that

16

00:00:38,030 --> 00:00:36,899

stands out from the layers above and

17

00:00:40,610 --> 00:00:38,040

below it

18

00:00:43,010 --> 00:00:40,620

we first saw it in Orbiter images years

19

00:00:45,170 --> 00:00:43,020

before we launched

20

00:00:47,750 --> 00:00:45,180

what created this winding layer of hard

21

00:00:49,549 --> 00:00:47,760

rock is a mystery but curiosity can help

22

00:00:52,729 --> 00:00:49,559

us understand what formed the marker

23

00:00:57,110 --> 00:00:54,590

we first discovered that the Rocks

24

00:00:59,029 --> 00:00:57,120

within the marker band are really hard

25

00:01:01,490 --> 00:00:59,039

Curiosity has faced some challenges

26
00:01:02,750 --> 00:01:01,500
drilling into them here's two of our

27
00:01:05,090 --> 00:01:02,760
attempts

28
00:01:06,440 --> 00:01:05,100
but we might find a softer spot on the

29
00:01:07,969 --> 00:01:06,450
road ahead

30
00:01:10,370 --> 00:01:07,979
[Music]

31
00:01:12,469 --> 00:01:10,380
nearby we found an exciting scientific

32
00:01:14,510 --> 00:01:12,479
clue

33
00:01:16,789 --> 00:01:14,520
these rippled textures were created

34
00:01:20,390 --> 00:01:16,799
billions of years ago by waves in a

35
00:01:24,170 --> 00:01:22,429
we've climbed through many Lake deposits

36
00:01:31,070 --> 00:01:24,180
during our mission but have never seen

37
00:01:35,450 --> 00:01:33,289
this was especially surprising since the

38
00:01:37,560 --> 00:01:35,460

area we're in probably formed at a time

39

00:01:39,710 --> 00:01:37,570

when Mars was becoming more dry

40

00:01:43,069 --> 00:01:39,720

[Music]

41

00:01:47,149 --> 00:01:45,350

just above the rippled layer is another

42

00:01:49,069 --> 00:01:47,159

intriguing clue

43

00:01:51,830 --> 00:01:49,079

these rocks have a very repetitive

44

00:01:54,230 --> 00:01:51,840

pattern in their spacing and thickness

45

00:01:56,450 --> 00:01:54,240

we see lots of layers on Mars but

46

00:01:58,850 --> 00:01:56,460

they're rarely this regular we're not

47

00:02:01,429 --> 00:01:58,860

sure what caused this rhythmic pattern

48

00:02:03,289 --> 00:02:01,439

weather or climate Cycles like dust

49

00:02:05,640 --> 00:02:03,299

storms happening at periodic intervals

50

00:02:15,570 --> 00:02:05,650

are possible explanations

51
00:02:16,670 --> 00:02:15,580
[Music]

52
00:02:19,010 --> 00:02:16,680
[Applause]

53
00:02:21,770 --> 00:02:19,020
look at these gorgeous layered Hills and

54
00:02:23,690 --> 00:02:21,780
cliffs that curiosity is headed toward

55
00:02:28,729 --> 00:02:23,700
if this was on Earth we'd probably make

56
00:02:33,410 --> 00:02:30,949
in the distance here we can see debris

57
00:02:35,449 --> 00:02:33,420
in a valley called Gettys Valles

58
00:02:37,790 --> 00:02:35,459
this was washed down here by wet

59
00:02:39,410 --> 00:02:37,800
landslides very late in Mount Sharp's

60
00:02:41,390 --> 00:02:39,420
history

61
00:02:43,430 --> 00:02:41,400
this Landslide debris is probably the

62
00:02:44,809 --> 00:02:43,440
most recent evidence of water that we'll

63
00:02:47,210 --> 00:02:44,819

ever see

64

00:02:49,250 --> 00:02:47,220

it will allow us to study layers higher

65

00:02:54,350 --> 00:02:49,260

up on Mount sharp that we can't reach

66

00:02:58,190 --> 00:02:56,270

Curiosity has driven through some

67

00:03:00,589 --> 00:02:58,200

amazing scenery and we've learned so

68

00:03:03,050 --> 00:03:00,599

much about Mars's ancient climate

69

00:03:04,880 --> 00:03:03,060

but even after 10 years there's so much