



1  
00:00:04,950 --> 00:00:02,790  
the high-resolution camera on nasa's

2  
00:00:07,430 --> 00:00:04,960  
mars reconnaissance orbiter has

3  
00:00:09,910 --> 00:00:07,440  
photographed the mars exploration rover

4  
00:00:12,470 --> 00:00:09,920  
opportunity beside a stadium-sized

5  
00:00:15,110 --> 00:00:12,480  
crater which the rover will explore over

6  
00:00:16,950 --> 00:00:15,120  
the next several weeks the time includes

7  
00:00:18,710 --> 00:00:16,960  
an important milestone for opportunity

8  
00:00:21,189 --> 00:00:18,720  
and its twin spirit

9  
00:01:11,270 --> 00:00:21,199  
this month both rovers are celebrating

10  
00:01:15,590 --> 00:01:13,510  
it's been seven years since the rovers

11  
00:01:17,830 --> 00:01:15,600  
landed on mars and this was originally a

12  
00:01:19,590 --> 00:01:17,840  
90-day mission only three months and

13  
00:01:21,190 --> 00:01:19,600

here we are some seven years later and

14

00:01:22,710 --> 00:01:21,200

we're still exploring and we're still

15

00:01:25,429 --> 00:01:22,720

discovering on the surface with these

16

00:01:27,190 --> 00:01:25,439

rovers recently the high-rise camera on

17

00:01:29,350 --> 00:01:27,200

the mars reconnaissance orbiter took a

18

00:01:31,429 --> 00:01:29,360

picture of santa maria crater with

19

00:01:33,270 --> 00:01:31,439

opportunity right there and so if you

20

00:01:35,350 --> 00:01:33,280

zoom in on the picture you can see

21

00:01:37,109 --> 00:01:35,360

opportunity right there at the edge of

22

00:01:39,030 --> 00:01:37,119

the crater you know this is just like a

23

00:01:40,630 --> 00:01:39,040

parent at the grand canyon and your

24

00:01:42,069 --> 00:01:40,640

child is walking around to the other rim

25

00:01:43,830 --> 00:01:42,079

and you see them very close to the edge

26

00:01:45,990 --> 00:01:43,840

and you get a little worried but no the

27

00:01:47,990 --> 00:01:46,000

rover's right there doing what we have

28

00:01:50,389 --> 00:01:48,000

her doing exploring that crater after

29

00:01:52,069 --> 00:01:50,399

opportunity has finished uh the

30

00:01:53,270 --> 00:01:52,079

investigation of santa maria crater

31

00:01:55,270 --> 00:01:53,280

which will happen

32

00:01:56,870 --> 00:01:55,280

after we complete solar conjunction so

33

00:01:58,789 --> 00:01:56,880

around mid-february

34

00:02:01,109 --> 00:01:58,799

the rover is going to you know pick

35

00:02:03,350 --> 00:02:01,119

things up and start driving again and

36

00:02:05,910 --> 00:02:03,360

head towards endeavor crater which is

37

00:02:08,150 --> 00:02:05,920

still about six kilometers away as the

38

00:02:09,510 --> 00:02:08,160

crow flies so it'll take us some time to

39

00:02:11,190 --> 00:02:09,520

get there you know probably with the

40

00:02:13,510 --> 00:02:11,200

order of a martian year maybe two earth

41

00:02:16,150 --> 00:02:13,520

years but that's our next big objective

42

00:02:18,869 --> 00:02:16,160

because we know there are these clay

43

00:02:21,670 --> 00:02:18,879

minerals present in the rim of endeavor

44

00:02:25,430 --> 00:02:21,680

crater that is suggestive of ancient

45

00:02:28,229 --> 00:02:25,440

water on mars that was of neutral ph

46

00:02:30,949 --> 00:02:28,239

uh neutral water is what astrobiologists

47

00:02:32,869 --> 00:02:30,959

um assess that life started in and so

48

00:02:34,869 --> 00:02:32,879

the fact that there is evidence of

49

00:02:37,030 --> 00:02:34,879

ancient neutral water on mars is very

50

00:02:39,910 --> 00:02:37,040

exciting for the biopotential of the

51  
00:02:42,470 --> 00:02:39,920  
planet spirit has gone into a deep sleep

52  
00:02:44,949 --> 00:02:42,480  
during the winter and spirit will get

53  
00:02:46,390 --> 00:02:44,959  
colder than she's ever gotten before so

54  
00:02:49,190 --> 00:02:46,400  
there's a real risk that the rover may

55  
00:02:51,110 --> 00:02:49,200  
not survive the winter however if spirit

56  
00:02:52,470 --> 00:02:51,120  
does survive the winter

57  
00:02:54,309 --> 00:02:52,480  
we are listening

58  
00:02:56,229 --> 00:02:54,319  
uh and we're listening every day to see

59  
00:02:57,830 --> 00:02:56,239  
if the rover wakes up and talks to us

60  
00:03:00,550 --> 00:02:57,840  
and so that's what we've been doing ever

61  
00:03:02,070 --> 00:03:00,560  
since march we haven't heard from spirit

62  
00:03:03,910 --> 00:03:02,080  
since

63  
00:03:05,589 --> 00:03:03,920

and but energy levels should be

64

00:03:07,509 --> 00:03:05,599

improving every single day and will

65

00:03:08,869 --> 00:03:07,519

continue to listen as long as we think