1
00:00:08,089 --> 00:00:05,660
ken edge it and Mike Mahlon our space

2
00:00:10,820 --> 00:00:08,099
photographers fascinated by what they

3
00:00:13,100 --> 00:00:10,830
see and learn from their images but

4
00:00:15,410 --> 00:00:13,110
unlike other photographers the cameras

5
00:00:19,070 --> 00:00:15,420
they use our millions and millions of

6
00:00:21,260 --> 00:00:19,080
miles away circling the Red Planet the

7
00:00:23,330 --> 00:00:21,270
Mars orbiter camera is on the Mars

8
00:00:26,870 --> 00:00:23,340
Global Surveyor orbiting the planet

9
00:00:29,750 --> 00:00:26,880
since 1997 the missions longevity has

10
00:00:32,120 --> 00:00:29,760
allowed scientists to monitor a changing

11
00:00:34,069 --> 00:00:32,130
planet this enabled the camera team to

12
00:00:36,799 --> 00:00:34,079
witness the appearance of craters were

13
00:00:39,709 --> 00:00:36,809

none existed before and see evidence of

14
00:00:41,959 --> 00:00:39,719
current water flows on the surface the

15
00:00:45,740 --> 00:00:41,969
thing that startles me the most is the

16
00:00:48,740 --> 00:00:45,750
idea that water has flowed on Mars in

17
00:00:52,639 --> 00:00:48,750
this decade one of these two sites that

18
00:00:55,639 --> 00:00:52,649
we observed it had no new deposit in the

19
00:00:58,160 --> 00:00:55,649
galley in 2001 which was in this decade

20
00:01:01,430 --> 00:00:58,170
we come back in 2005 and there's this

21
00:01:02,840 --> 00:01:01,440
stuff that was amazing do you think

22
00:01:06,050 --> 00:01:02,850
what's actually happening is that

23
00:01:08,390 --> 00:01:06,060
there's ice formed in the rock and it's

24
00:01:10,700 --> 00:01:08,400
acting as a dam and then water builds up

25
00:01:12,410 --> 00:01:10,710
behind that I stabbed and when the

26
00:01:15,649 --> 00:01:12,420
pressure of that water gets high enough

27
00:01:18,080 --> 00:01:15,659
it breaks through the dam and out comes

28
00:01:20,840 --> 00:01:18,090
a lot of water and the debris that was

29
00:01:23,030 --> 00:01:20,850
forming the dad for an astronaut or a

30
00:01:25,490 --> 00:01:23,040
robotic vehicle you wouldn't want to be

31
00:01:27,350 --> 00:01:25,500
in the gully at the time clearly that

32
00:01:29,600 --> 00:01:27,360
would be like being caught in a channel

33
00:01:31,999 --> 00:01:29,610
in the desert during a flash flood many

34
00:01:33,980 --> 00:01:32,009
of us have heard for years the the

35
00:01:37,399 --> 00:01:33,990
mantra of follow the water that that's

36
00:01:39,830 --> 00:01:37,409
what NASA's Mars exploration is about we

37
00:01:42,590 --> 00:01:39,840
now know where to look using this

38
00:01:46,069 --> 00:01:42,600

before-and-after technique the team made

39
00:01:47,539 --> 00:01:46,079
another very serendipitous discovery it

40
00:01:50,120 --> 00:01:47,549
was in a picture that we taken as

41
00:01:52,219 --> 00:01:50,130
context for for a higher resolution view

42
00:01:54,350 --> 00:01:52,229
and I put in my notes why hadn't we take

43
00:01:57,080 --> 00:01:54,360
in a picture of the dark spot and Ken's

44
00:02:00,770 --> 00:01:57,090
response was because it didn't exist it

45
00:02:04,789 --> 00:02:00,780
was an impact crater a new one formed in

46
00:02:07,190 --> 00:02:04,799
the last five to six years since then

47
00:02:09,410 --> 00:02:07,200
they found a total of twenty new craters

48
00:02:11,839 --> 00:02:09,420
in a relatively small area

49
00:02:15,199 --> 00:02:11,849
if someone were to live on Mars for

50
00:02:18,440 --> 00:02:15,209
about 20 years the cratering rate is

51
00:02:20,600 --> 00:02:18,450
high enough that they would hear one of

52
00:02:22,910 --> 00:02:20,610
these events sometimes during those 20

53
00:02:25,040 --> 00:02:22,920
years there are enough of these objects

54
00:02:27,140 --> 00:02:25,050
hitting spread out statistically over

55
00:02:28,970 --> 00:02:27,150
the planet that you would expect to hear

56
00:02:33,020 --> 00:02:28,980
one of these blasts when it hit the

57
00:02:35,479 --> 00:02:33,030
ground oh that isn't happening on the

58
00:02:37,970 --> 00:02:35,489
earth the findings add to Mars Global

59
00:02:40,100 --> 00:02:37,980
Surveyor zega see the spacecraft is

60
00:02:42,650 --> 00:02:40,110
probably finished with its operating

61
00:02:46,309 --> 00:02:42,660
life but it leaves a treasury of

62
00:02:49,610 --> 00:02:46,319
scientific discovery find any evidence

63
00:02:53,240 --> 00:02:49,620

for liquid water today is mind-boggling

64
00:02:55,340 --> 00:02:53,250
ken and I are explorers we unfortunately

65
00:02:57,140 --> 00:02:55,350
have to use a surrogate vehicle I think

66
00:03:00,170 --> 00:02:57,150
both of us would love to go to Mars and

67
00:03:02,960 --> 00:03:00,180
come back but this is exploration it's

68
00:03:05,600 --> 00:03:02,970
not just a intellectual activity it's an

69
00:03:08,150 --> 00:03:05,610
emotional activity as well NASA's Mars

70
00:03:10,640 --> 00:03:08,160
Reconnaissance Orbiter continues the

71
00:03:13,340 --> 00:03:10,650
work of Mars Global Surveyor by taking

72
00:03:16,120 --> 00:03:13,350
pictures of this amazing planet at even