
JPL

1
00:04:16,840 --> 00:04:14,440
rocki for small lightweight versatile is

2
00:04:19,210 --> 00:04:16,850
the latest in a series of planetary

3
00:04:21,430 --> 00:04:19,220
Rovers that tests the possibility of

4
00:04:26,560 --> 00:04:21,440
exploring the surfaces of other planets

5
00:04:27,790 --> 00:04:26,570
with robots this is Robbie an earlier

6
00:04:30,460 --> 00:04:27,800
Rover experiment

7
00:04:33,129 --> 00:04:30,470
Robbie is as long as a pickup truck and

8
00:04:35,920 --> 00:04:33,139
weighs two tons it is not meant for

9
00:04:38,760 --> 00:04:35,930
space travel but is a valuable testbed

10
00:04:42,460 --> 00:04:38,770
for semi autonomous navigation concepts

11
00:04:45,750 --> 00:04:42,470
rocky 3 closer to the idea of a real

12
00:04:49,030 --> 00:04:45,760
space Explorer weighs about 56 pounds

13
00:04:51,280 --> 00:04:49,040

this mini Rover evolved from many years

14
00:04:53,610 --> 00:04:51,290
of robotics and automation development

15
00:04:56,770 --> 00:04:53,620
at the NASA Jet Propulsion Laboratory

16
00:04:58,659 --> 00:04:56,780
small but capable planetary Rovers have

17
00:05:01,360 --> 00:04:58,669
been made possible by the development of

18
00:05:08,710 --> 00:05:01,370
micro technologies from computer chips

19
00:05:11,710 --> 00:05:08,720
to sensors dr. Lonnie Lang the plan is

20
00:05:15,279 --> 00:05:11,720
to have a rover of this kind about seven

21
00:05:18,219 --> 00:05:15,289
kilograms 15 16 pounds built for a small

22
00:05:19,810 --> 00:05:18,229
Lander in the measure system to be able

23
00:05:22,870 --> 00:05:19,820
to do these kinds of tasks for

24
00:05:24,850 --> 00:05:22,880
scientific and exploration Rocky's final

25
00:05:27,610 --> 00:05:24,860
performance test was on a rock-strewn

26
00:05:30,909 --> 00:05:27,620
Mars like location in a dry riverbed

27
00:05:33,190 --> 00:05:30,919
near JPL in Pasadena California in the

28
00:05:34,480 --> 00:05:33,200
background is a surveyor spacecraft of

29
00:05:39,310 --> 00:05:34,490
the type that landed on the moon

30
00:05:41,440 --> 00:05:39,320
twenty-five years ago this demonstration

31
00:05:58,650 --> 00:05:41,450
celebrates that historic surveyor

32
00:06:06,810 --> 00:06:04,440
a camera on the lander notes locations

33
00:06:09,630 --> 00:06:06,820
and is used by the operators to select

34
00:06:11,820 --> 00:06:09,640
targets for the rover when viewed with

35
00:06:14,820 --> 00:06:11,830
special goggles the images appear in

36
00:06:17,070 --> 00:06:14,830
three dimensions the operator designates

37
00:06:19,400 --> 00:06:17,080
a series of waypoints for rocky to

38
00:06:21,810 --> 00:06:19,410

follow on its way to the target rock

39
00:06:24,000 --> 00:06:21,820
activities are programmed in Rocky's

40
00:06:29,070 --> 00:06:24,010
onboard computer and they are triggered

41
00:06:31,320 --> 00:06:29,080
by the operators command first the rover

42
00:06:33,840 --> 00:06:31,330
will deploy a seismometer a fully

43
00:06:36,330 --> 00:06:33,850
functional micro device sensitive enough

44
00:06:39,480 --> 00:06:36,340
to detect the billions of a G needed to

45
00:06:41,700 --> 00:06:39,490
feel a Mars quake the smallest quake a

46
00:06:44,450 --> 00:06:41,710
human can feel is about eight one

47
00:06:48,210 --> 00:06:44,460
thousandth of a G so the instrument is

48
00:06:56,580 --> 00:06:48,220
125 billion times more sensitive than a

49
00:06:59,460 --> 00:06:56,590
human being as rocky travels between

50
00:07:01,620 --> 00:06:59,470
points the operator has identified it is

51
00:07:05,340 --> 00:07:01,630
guided by a new computing technique

52
00:07:07,530 --> 00:07:05,350
called behavior control sensors tell

53
00:07:09,960 --> 00:07:07,540
rocky about its pitch and roll and

54
00:07:13,950 --> 00:07:09,970
modifies the vehicle direction to avoid

55
00:07:17,040 --> 00:07:13,960
dangerous situations the rover's camera

56
00:07:19,530 --> 00:07:17,050
scans the view ahead and rocky moves to

57
00:07:21,780 --> 00:07:19,540
its next task to chip the weathered

58
00:07:24,000 --> 00:07:21,790
surface from iraq so a sensitive

59
00:07:28,369 --> 00:07:24,010
spectrometer can determine the content

60
00:07:28,379 --> 00:07:53,309
and now down it's a Grover camera

61
00:07:58,659 --> 00:07:56,860
next Rakhi has to collect a soil sample

62
00:08:06,330 --> 00:07:58,669
and deliver it to the lander where it

63
00:08:12,429 --> 00:08:09,700

rocky 4 is a prototype for an even

64
00:08:15,550 --> 00:08:12,439
smaller lighter Rover one that will

65
00:08:17,769 --> 00:08:15,560
weigh only about 11 pounds it will carry

66
00:08:20,920 --> 00:08:17,779
science instruments capable of testing

67
00:08:24,490 --> 00:08:20,930
the surface and atmosphere of Mars that

68
00:08:28,179 --> 00:08:24,500
rover will be sent to Mars as mankind's