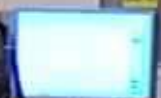


STARDUST
National Aeronautics and Space Administration
UNIVERSITY OF WASHINGTON

DEEP SPACE 1



1
00:00:10,759 --> 00:00:09,049
my name is David gruel and I'm the

2
00:00:12,620 --> 00:00:10,769
assembly test and launch operations

3
00:00:14,870 --> 00:00:12,630
manager for the Mars Science Laboratory

4
00:00:16,070 --> 00:00:14,880
project I'm coming to you from a

5
00:00:17,720 --> 00:00:16,080
cleanroom at the Kennedy Space Center

6
00:00:19,760 --> 00:00:17,730
where my team is currently conducting

7
00:00:22,370 --> 00:00:19,770
the final functional tests of the MSL

8
00:00:25,009 --> 00:00:22,380
flight hardware destined for Mars over

9
00:00:26,509 --> 00:00:25,019
here we have our crew stage the crew

10
00:00:28,790 --> 00:00:26,519
stage is comprised of a solar array

11
00:00:30,410 --> 00:00:28,800
several guidance sensors and a

12
00:00:32,260 --> 00:00:30,420
propellant system that basically gets

13
00:00:34,580 --> 00:00:32,270

the MSL spacecraft from Earth to Mars

14

00:00:36,229 --> 00:00:34,590

once we get to Mars the vehicle will

15

00:00:37,220 --> 00:00:36,239

have served its purpose and we jettison

16

00:00:39,680 --> 00:00:37,230

it and it burns up in the atmosphere

17

00:00:41,600 --> 00:00:39,690

before we actually make first contact

18

00:00:43,670 --> 00:00:41,610

with the atmosphere itself the backshell

19

00:00:45,229 --> 00:00:43,680

is the vehicle over here in white which

20

00:00:47,959 --> 00:00:45,239

provides an interface to a large

21

00:00:50,270 --> 00:00:47,969

deceleration parachute and over here is

22

00:00:52,520 --> 00:00:50,280

the heat shield and the heat shield has

23

00:00:54,709 --> 00:00:52,530

the protective insulative tiles that

24

00:00:56,569 --> 00:00:54,719

keep curiosity safe well as all the heat

25

00:00:59,510 --> 00:00:56,579

is generated as we actually wake our way

26
00:01:01,970 --> 00:00:59,520
through the Martian atmosphere behind me

27
00:01:03,709 --> 00:01:01,980
is the descent stage the descent stage

28
00:01:05,620 --> 00:01:03,719
is the jetpack that safely gets

29
00:01:07,850 --> 00:01:05,630
curiosity down to the surface of Mars

30
00:01:09,800 --> 00:01:07,860
unlike Pathfinder and the twin rovers

31
00:01:11,390 --> 00:01:09,810
Spirit and Opportunity which utilized

32
00:01:13,700 --> 00:01:11,400
airbags to make it down to the surface

33
00:01:15,440 --> 00:01:13,710
curiosity relies on the descent stage

34
00:01:17,899 --> 00:01:15,450
and this jetpack to actually make it

35
00:01:20,420 --> 00:01:17,909
down to the surface using retro rockets

36
00:01:22,039 --> 00:01:20,430
and a terminal descent radar system this

37
00:01:23,990 --> 00:01:22,049
is what actually carries the Curiosity

38
00:01:25,460 --> 00:01:24,000

safely down to the surface so that it

39

00:01:28,070 --> 00:01:25,470

can actually gets wheels onto the ground

40

00:01:30,469 --> 00:01:28,080

perform its science so here's the star

41

00:01:32,390 --> 00:01:30,479

of the show the Curiosity rover here

42

00:01:33,830 --> 00:01:32,400

curiosity looks the same way that she'll

43

00:01:35,630 --> 00:01:33,840

look when she makes to the surface of

44

00:01:37,760 --> 00:01:35,640

Mars and deploys all of her mechanisms

45

00:01:39,740 --> 00:01:37,770

sticking up off the top deck of the

46

00:01:42,260 --> 00:01:39,750

rover is a remote science mast which

47

00:01:44,120 --> 00:01:42,270

contains all of our stereo imagery you

48

00:01:45,710 --> 00:01:44,130

can also see the six wheels which will

49

00:01:47,929 --> 00:01:45,720

actually propel curiosity around the

50

00:01:49,460 --> 00:01:47,939

surface of Mars as well as the robotic

51
00:01:51,380 --> 00:01:49,470
arm which is sticking off the front of

52
00:01:53,120 --> 00:01:51,390
the vehicle with the turret which allows

53
00:01:54,859 --> 00:01:53,130
us to do science on rocks that are in

54
00:01:56,389 --> 00:01:54,869
the vicinity of the rover and return

55
00:01:57,709 --> 00:01:56,399
samples to science instruments that are

56
00:02:00,289 --> 00:01:57,719
contained on the body of the rover

57
00:02:01,880 --> 00:02:00,299
itself all total there's nine science

58
00:02:03,469 --> 00:02:01,890
instruments which will return all sorts

59
00:02:05,899 --> 00:02:03,479
of exciting science from the surface of

60
00:02:07,520 --> 00:02:05,909
Mars up next for us we're ready to start

61
00:02:08,900 --> 00:02:07,530
stacking the vehicle and from there

62
00:02:11,059 --> 00:02:08,910
we're looking forward to a great mission

63
00:02:12,530 --> 00:02:11,069

as curiosity launches and lands on the