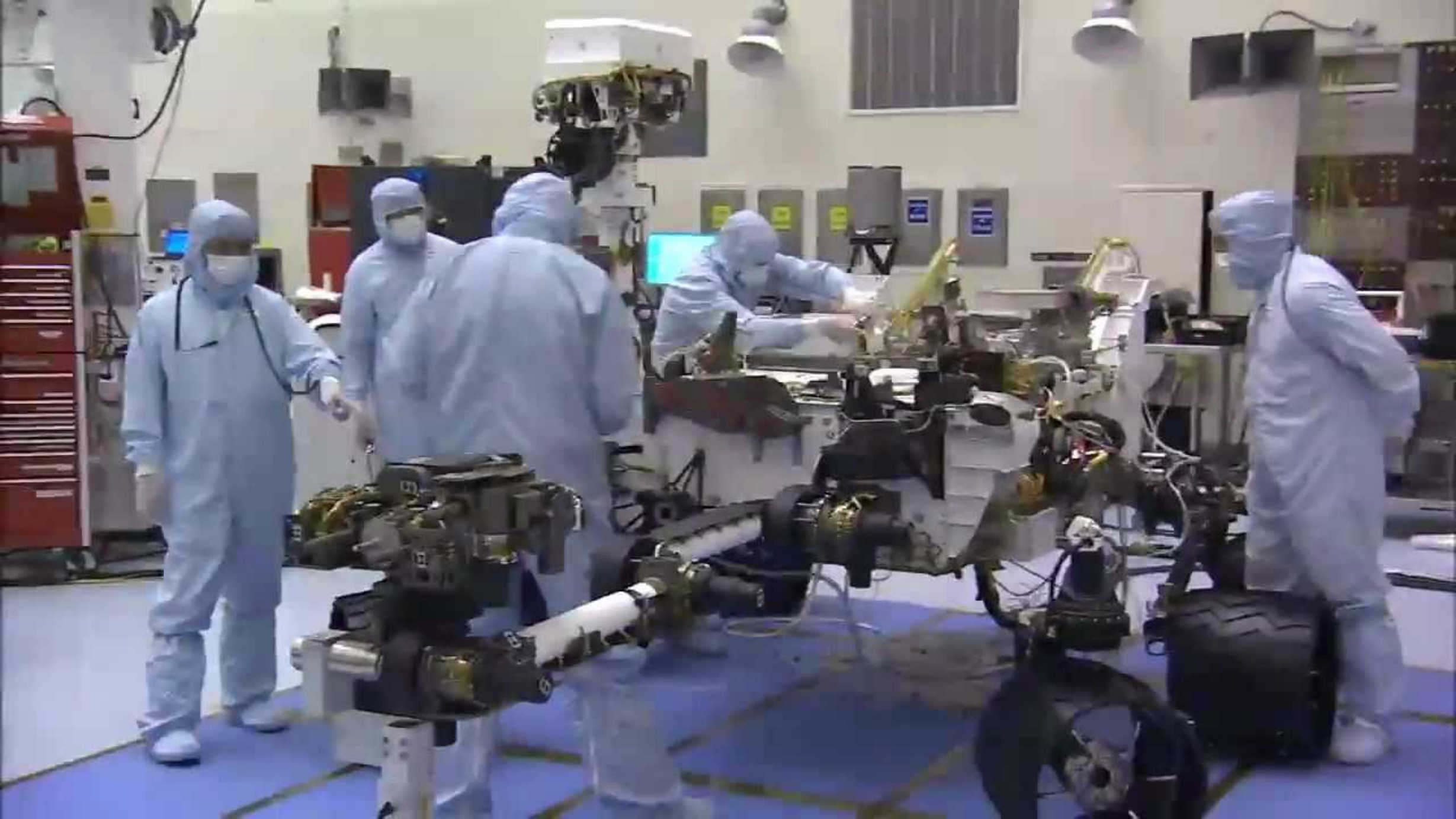

1
00:00:02,830 --> 00:00:05,020
Hello everyone, my name is David Gruel.

2
00:00:05,020 --> 00:00:08,420
And I'm the Assembly Test and Launch Operation Manager for the Mars

3
00:00:08,420 --> 00:00:10,350
Science Laboratory project.

4
00:00:10,350 --> 00:00:12,990
I'm coming to you from a clean room at the Kennedy Space Center where

5
00:00:12,990 --> 00:00:16,410
my team is currently conducting the final functional test of the MSL flight

6
00:00:16,410 --> 00:00:17,650
hardware destined for Mars.

7
00:00:17,650 --> 00:00:21,250
I'd like to take a moment and introduce you to the flight vehicles that make

8
00:00:21,250 --> 00:00:26,019
up the MSL spacecraft and then introduce you also to the Curiosity rover

9
00:00:26,019 --> 00:00:30,109
Over here we have our crew stage. The crew stage is comprised of a solar

10
00:00:30,109 --> 00:00:34,190
ray, several guidance sensors and a propellant system that basically gets

11
00:00:34,190 --> 00:00:36,589
the MSL spacecraft from Earth to Mars.

12
00:00:36,589 --> 00:00:39,380
Once we get to Mars, the vehicle will have served its purpose and we

13
00:00:39,380 --> 00:00:42,900
jettison it and it burns up in the atmosphere before we actually make first

14
00:00:42,900 --> 00:00:45,350
contact with the atmosphere itself.

15
00:00:45,350 --> 00:00:50,400
Over here, we have part of the aero shell that protects the vehicle as we go

16
00:00:50,400 --> 00:00:52,320
through the Martian atmosphere.

17
00:00:52,320 --> 00:00:55,690
The back shell’s the vehicle over here in white, which provides an interface

18
00:00:55,690 --> 00:00:59,030
to a large deceleration parachute.

19
00:00:59,030 --> 00:01:03,170
And over here, is the heat shield. And the heat shield has the protective

20
00:01:03,170 --> 00:01:07,790
insulative titles that keep curiosity safe as all the heat is generated as we

21
00:01:07,790 --> 00:01:11,230
actually make our way through the Martian atmosphere.

22
00:01:11,230 --> 00:01:15,640

Behind me is the descent stage. The descent stage is the jet pack that

23
00:01:15,640 --> 00:01:18,750
safely gets Curiosity down to the surface of Mars.

24
00:01:18,750 --> 00:01:22,430
Unlike Pathfinder, and the twin rovers Spirit and Opportunity, which utilized

25
00:01:22,430 --> 00:01:26,360
airbags to make it down to the surface, Curiosity relies on the descent

26
00:01:26,360 --> 00:01:29,250
stage and its jet pack to actually make it down to the surface.

27
00:01:29,250 --> 00:01:33,260
Using retro rockets and a terminal descent radar system, this is what

28
00:01:33,260 --> 00:01:37,110
actually carries Curiosity safely down the surface so that it can actually get

29
00:01:37,110 --> 00:01:39,640
its wheels on to the ground to perform its science.

30
00:01:39,640 --> 00:01:42,390
Coming up next, we'll show you what Curiosity actually looks like and the

31
00:01:42,390 --> 00:01:45,780
configuration it will appear once it actually safely makes it down to the

32
00:01:45,780 --> 00:01:47,340

surface of Mars in August of next year.

33
00:01:47,340 --> 00:01:53,190
So here's the star the show, the Curiosity rover. Here Curiosity looks the

34
00:01:53,190 --> 00:01:55,880
same way that she'll look when she makes it to the surface of Mars and

35
00:01:55,880 --> 00:01:57,650
deploys all of her mechanisms.

36
00:01:57,650 --> 00:02:01,320
Sticking up off the top deck of the rover is a remote science mast which

37
00:02:01,320 --> 00:02:03,729
contains all of our stereo imagery.

38
00:02:03,729 --> 00:02:07,560
You can also see the six wheels which will actually propel Curiosity around

39
00:02:07,560 --> 00:02:10,950
the surface of Mars. As well as the robotic arm which is sticking off the front

40
00:02:10,950 --> 00:02:14,641
of the vehicle with the turret which allows us to do science on rocks that are

41
00:02:14,641 --> 00:02:17,920
in the vicinity the rover and return samples to science instruments that are

42
00:02:17,920 --> 00:02:20,360
contained on the body the rover itself.

43

00:02:20,360 --> 00:02:23,950
All total there’s nine science instruments
would return all sorts of exciting

44
00:02:23,950 --> 00:02:26,030
science from the surface of Mars.

45
00:02:26,030 --> 00:02:29,200
Up next for us, were ready start stacking
the vehicle. And from there,