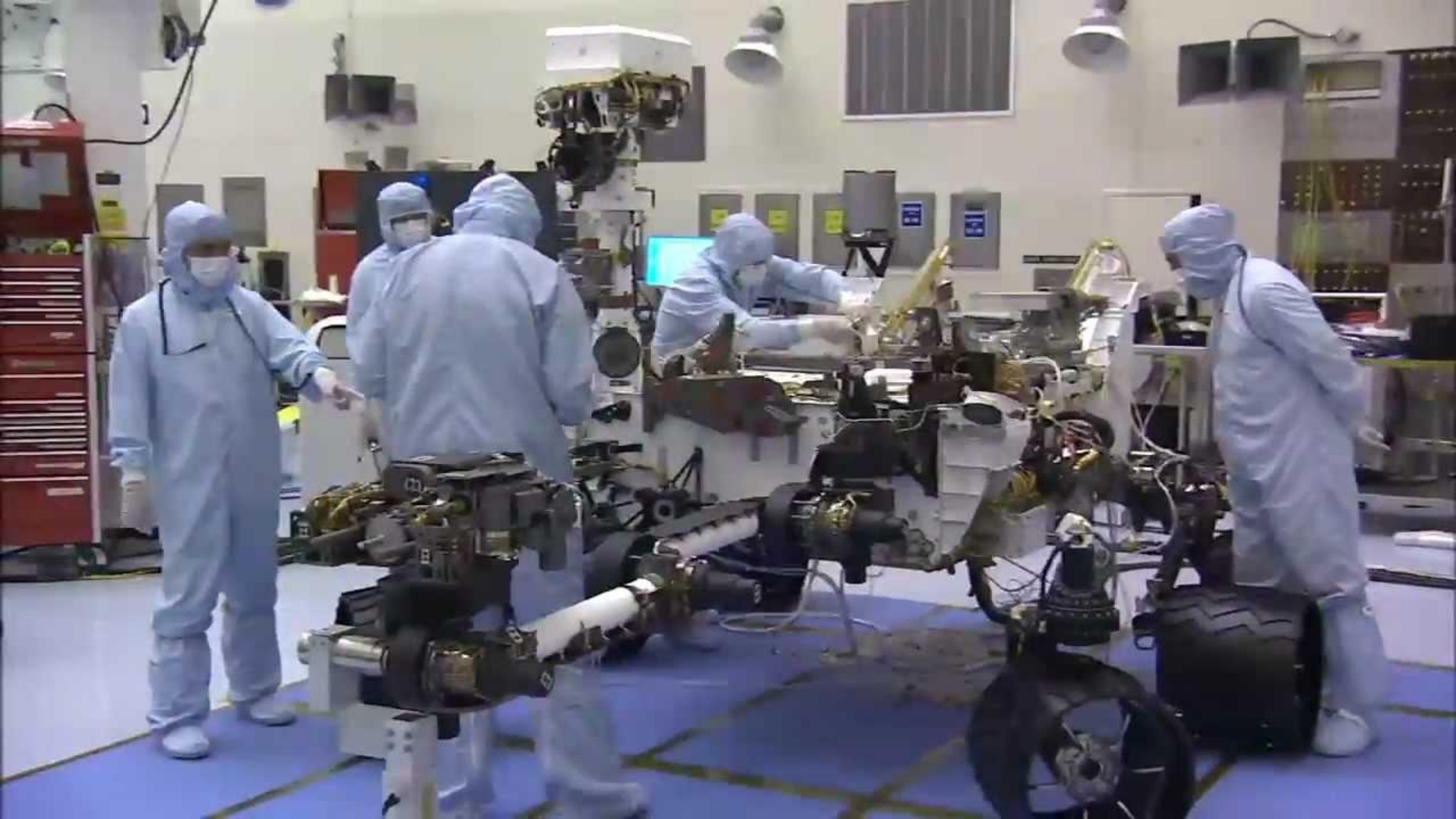

1
00:00:00,000 --> 00:00:11,770
Music.

2
00:00:11,770 --> 00:00:17,300
SLATE: What other Mars rover missions have you worked with?

3
00:00:17,300 --> 00:00:30,230
BAEZ: I personally was fortunate to be a part of all the rovers on Mars right now, starting with Sojourner in 199

4
00:00:30,230 --> 00:00:34,650
followed by Spirit and Opportunity and now Curiosity.

5
00:00:34,650 --> 00:00:43,620
An awesome program, it's great to have these JPL, in-house built, robotic missions with the rovers.

6
00:00:43,620 --> 00:00:46,850
They take a personality of their own. I mean, we name them.

7
00:00:46,850 --> 00:00:51,570
Folks are able to follow them and what they're doing in this day and age of technology you can

8
00:00:51,570 --> 00:01:03,600
jump on the web and figure out what they're doing right now. It's awesome, the next best thing is really having

9
00:01:03,600 --> 00:01:09,940
SLATE: Can you describe the Curiosity rover?

10
00:01:09,940 --> 00:01:16,710
BAEZ: Basically this thing's a Transformer. It starts as a pancake and opens up and you got six wheels, you ha

11
00:01:16,710 --> 00:01:22,330
you have all kinds of protuberances coming out of it and it's all got to work right the first time.

12
00:01:22,330 --> 00:01:28,130
It's got to survive a rocket launch and it's got to get sky-hooked onto the surface of Mars.

13
00:01:28,130 --> 00:01:37,770

You've got to think of MSL as more than just a rover. What folks are seeing now, if you go out to the launch pa

14
00:01:37,770 --> 00:01:42,060
and within the payload fairing is what looks like a flying saucer.

15
00:01:42,060 --> 00:01:46,730
I mean, it literally looks like what a science fiction flying saucer looks like.

16
00:01:46,730 --> 00:01:58,330
And within that is the cruise stage and then the aeroshells and the lander, or the rover,

17
00:01:58,330 --> 00:02:01,460
and not only that, but its descent stage.

18
00:02:01,460 --> 00:02:08,570
And the cruise stage and descent stage are propulsive, they've got to be able to steer or stop and so forth.

19
00:02:08,570 --> 00:02:17,510
They're loaded with fuel, they have rocket engines on them, just like the Atlas rocket does but on a smaller sca

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00:02:17,510 --> 00:02:21,880
so there is quite a bit of complexity when you see all that put together.

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00:02:21,880 --> 00:02:35,820
It starts out as a 4,000-pound payload and by the time we're done with it, the rover's only 900 kilograms, about

22
00:02:35,820 --> 00:02:48,910
So over half of that mass is stuff that is required just to get it from the moment that Atlas releases it to landing c

23
00:02:48,910 --> 00:02:54,420
SLATE: Is it intimidating to work with that kind of complexity?

24
00:02:54,420 --> 00:03:00,870
BAEZ: No, absolutely not. It's awesome, it's cool. That's what engineers love to do.

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00:03:00,870 --> 00:03:06,450
SLATE: How does this mission compare to other planetary missions?

26
00:03:06,450 --> 00:03:15,760
BAEZ: They all have their unique challenges, but I think that this one is cool in that fact that it's a rover. It?s big

27
00:03:15,760 --> 00:03:20,080
Some people say it's the size of a Mini. No, I stood next to it.

28
00:03:20,080 --> 00:03:25,450
It's bigger than a Mini, it's more like the smaller version of the Hummer.

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00:03:25,450 --> 00:03:39,440
I mean, the wheelbase is just, wide, and this thing has a mast that's seven foot tall. So it's, it's big and it's very

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00:03:39,440 --> 00:03:45,670
SLATE: How does Curiosity's size impact planning?

31
00:03:45,670 --> 00:03:52,020
BAEZ: MSL, because it's large, it needs a different kind of power source.

32
00:03:52,020 --> 00:03:57,750
We're using a nuclear power source for this one and when you do that it adds a

33
00:03:57,750 --> 00:04:01,900
bit of complexity because of the safety issues with it.

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00:04:01,900 --> 00:04:07,110
NASA really takes the initiative and almost over-reacts.

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00:04:07,110 --> 00:04:17,310
We bring in the DOE and other agencies that are used to handling this type of material and now we put in a lot

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00:04:17,310 --> 00:04:29,350
make sure that the material is first kept and safeguarded well and that the mission is bound to be perfect in the

37
00:04:29,350 --> 00:04:36,860
launches so that we don't have a release or have people panicked.

38
00:04:36,860 --> 00:04:40,480

The way the RTG is encased, there's no harm.

39
00:04:40,480 --> 00:04:50,450
This thing is, it's in a safe for all intents and purposes and we really do take that extra step in ensuring

40
00:04:50,450 --> 00:04:55,550
that this material is safeguarded and won't harm the planet.