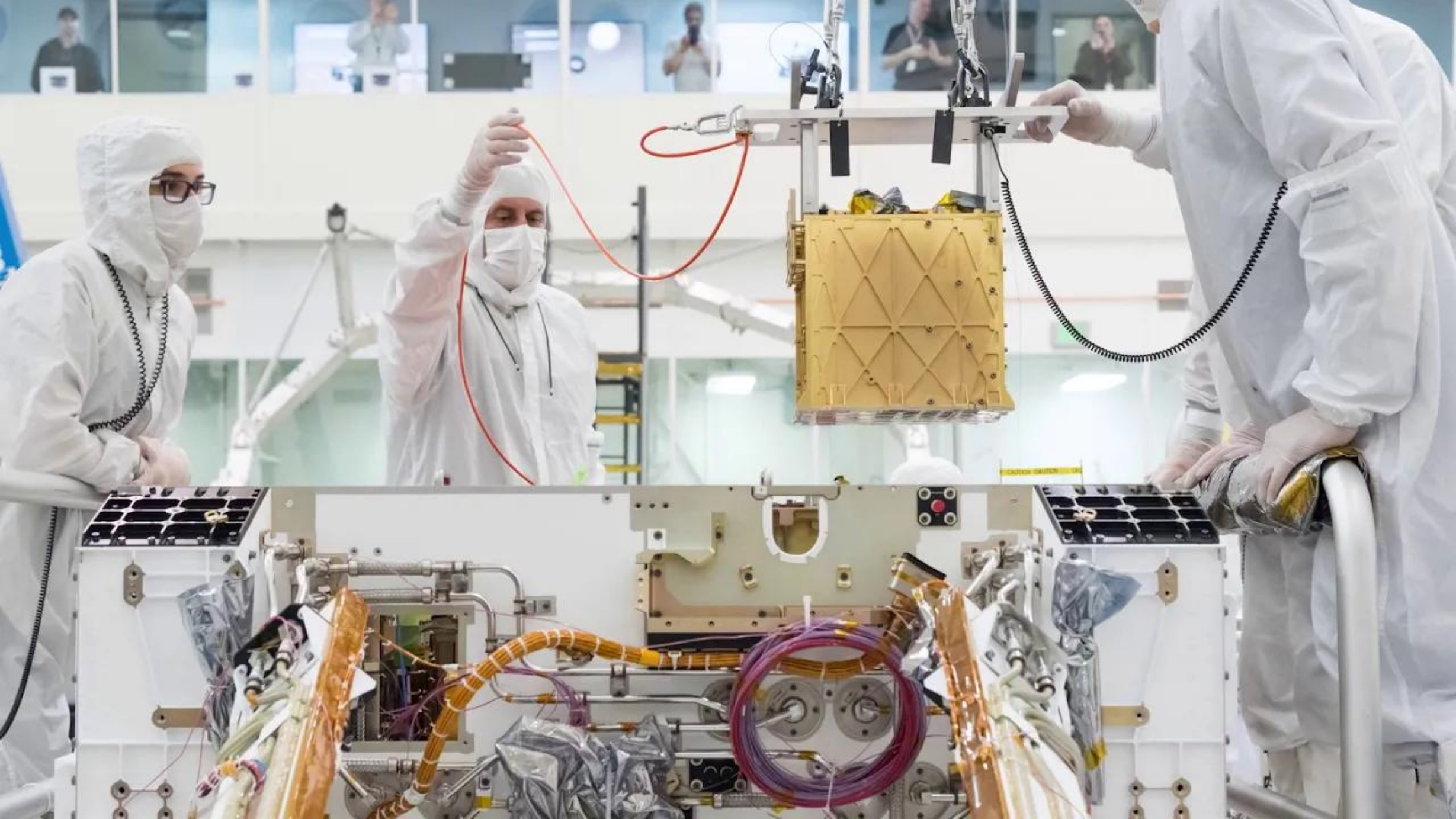

1
00:00:00,480 --> 00:00:01,640
[Dramatic music]

2
00:00:01,660 --> 00:00:03,620
Technology Demonstration Missions

3
00:00:04,160 --> 00:00:06,940
support NASA’s goals by providing advances

4
00:00:07,120 --> 00:00:10,700
that will help us go to the Moon, Mars and beyond.

5
00:00:11,560 --> 00:00:12,780
with capabilities like...

6
00:00:14,580 --> 00:00:17,100
Advancing propulsion technologies

7
00:00:17,100 --> 00:00:18,220
that harness the Sun’s energy.

8
00:00:19,200 --> 00:00:21,220
Building and Testing cryogenic tools

9
00:00:21,280 --> 00:00:23,280
and propellant storage tanks.

10
00:00:23,820 --> 00:00:26,540
Demonstrating a new propulsion system that utilizes

11
00:00:26,540 --> 00:00:29,280
a less toxic and higher performance fuel.

12
00:00:31,780 --> 00:00:35,380
Navigating to and precisely identifying a safe place

13
00:00:35,380 --> 00:00:38,060

to land on the rough terrain of Mars.

14
00:00:39,060 --> 00:00:41,300
Testing an inflatable aeroshell that will

15
00:00:41,400 --> 00:00:44,140
slow down large payloads before landing on Mars.

16
00:00:46,920 --> 00:00:49,920
Developing power systems so humans can live

17
00:00:49,920 --> 00:00:52,060
on the surface of the moon and Mars.

18
00:00:53,080 --> 00:00:55,640
Producing oxygen from the Martian carbon dioxide

19
00:00:55,640 --> 00:00:58,480
atmosphere to enable sustainable habitats.

20
00:00:59,440 --> 00:01:01,980
Building and assembling structures in space

21
00:01:01,980 --> 00:01:04,520
with additive manufacturing and robotics.

22
00:01:06,680 --> 00:01:09,120
EXPLORING further than ever before

23
00:01:09,120 --> 00:01:12,140
by providing robotic manufacturing, assembly and

24
00:01:12,140 --> 00:01:15,640
servicing to extend the life of satellites while in orbit.

25
00:01:17,180 --> 00:01:20,340
Using lasers to enhance spacecraft communications

26
00:01:20,340 --> 00:01:23,160
systems, enabling more data transmission

27
00:01:23,160 --> 00:01:24,720
to the ground in less time.

28
00:01:26,060 --> 00:01:29,100
Testing high-efficiency lasers and optical systems

29
00:01:29,100 --> 00:01:31,620
to improve the quality of communications

30
00:01:31,620 --> 00:01:33,620
during deep space exploration.

31
00:01:34,720 --> 00:01:37,760
Providing precise onboard timekeeping for spacecraft

32
00:01:37,860 --> 00:01:41,500
navigation as missions explore the vast universe.

33
00:01:45,400 --> 00:01:48,420
NASA’s Technology Demonstration Missions Program

34
00:01:48,480 --> 00:01:51,120
is advancing technologies for exploration