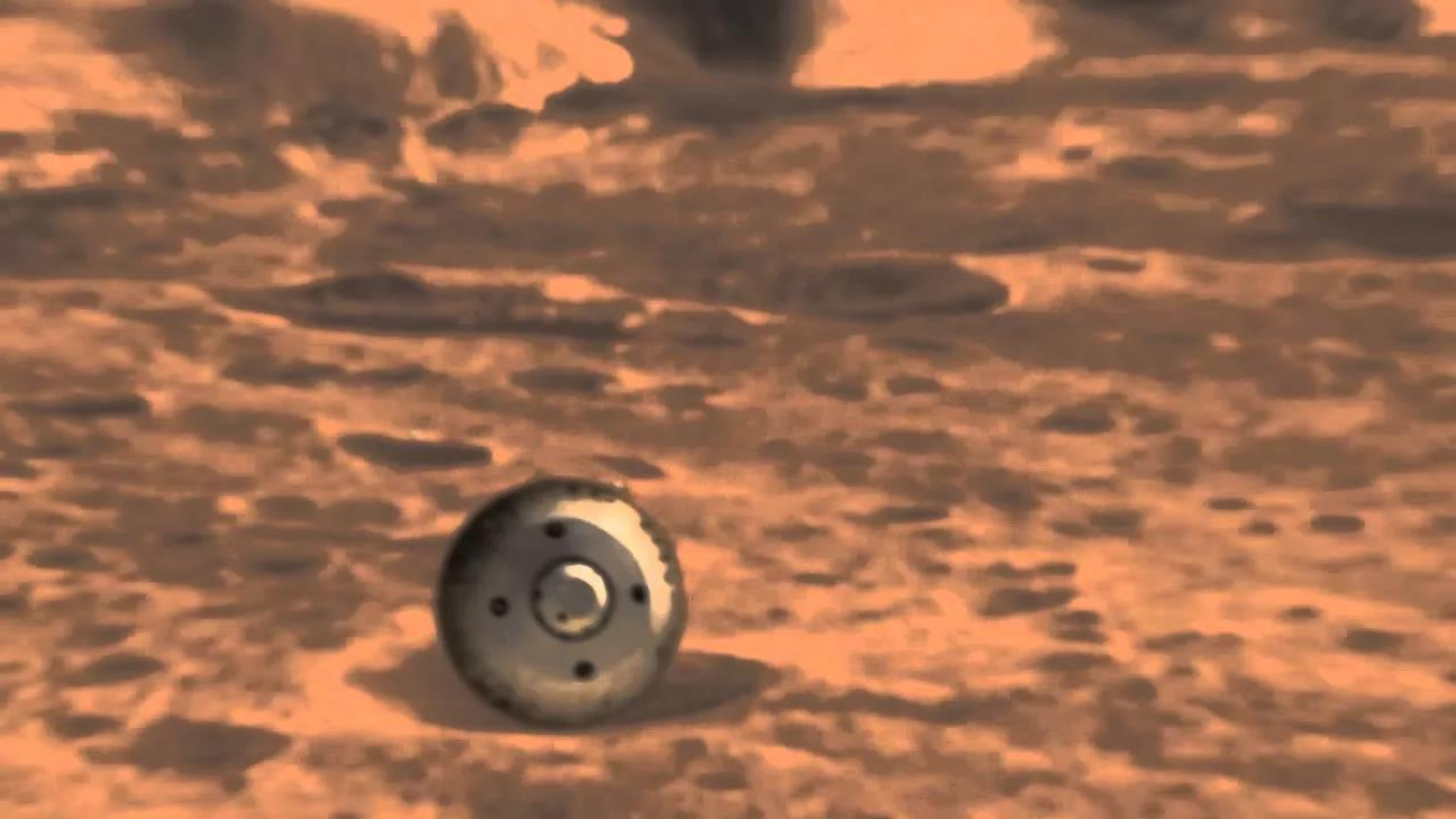

1
00:00:00,750 --> 00:00:04,860
My name is Chris Baker, I'm a Campaign Manager
with the Flight Opportunities Program in the

2
00:00:04,860 --> 00:00:09,400
Space Technology Mission Directorate.

3
00:00:09,400 --> 00:00:17,630
Music
There's several technologies that we're

4
00:00:17,630 --> 00:00:22,110
working to test through our program with commercial
space companies.

5
00:00:22,110 --> 00:00:28,510
One of them in particular is a series of technologies
from the Jet Propulsion Laboratory for autonomous

6
00:00:28,510 --> 00:00:32,790
entry, descent and landing technologies to
help safely land payloads on the surface of

7
00:00:32,790 --> 00:00:37,700
Mars in close proximity or in proximity to
hazardous terrain.

8
00:00:37,700 --> 00:00:43,079
When we're landing a rover on the surface
of Mars, we use a large landing ellipse because

9
00:00:43,079 --> 00:00:46,379
of the uncertainty in where were actually
going to come in.

10
00:00:46,379 --> 00:00:50,890
As you enter through the atmosphere, you have
wind and other atmospheric phenomena that

11

00:00:50,890 --> 00:00:53,449
push you a little bit off course from where
you entered.

12
00:00:53,449 --> 00:00:58,280
Also there is some uncertainty in where you
actually entered into the atmosphere.

13
00:00:58,280 --> 00:01:03,770
Now, when you are entering, you're coming
in for a landing there's a wide range of

14
00:01:03,770 --> 00:01:06,450
places you may actually come to rest.

15
00:01:06,450 --> 00:01:11,070
And so currently what we do is pick a landing
area that is free of hazards for that entire

16
00:01:11,070 --> 00:01:12,310
uncertainty band.

17
00:01:12,310 --> 00:01:19,810
What is do is we use the new technologies
that JPL is working on to try to better control

18
00:01:19,810 --> 00:01:25,790
where we are, our knowledge of where we are,
over the Martian surface and then use the

19
00:01:25,790 --> 00:01:30,950
spacecraft's ability to correct for that
within the final couple kilometers of landing

20
00:01:30,950 --> 00:01:33,369
to get closer to where we actually want to
land

21
00:01:33,369 --> 00:01:39,310
What JPL is introducing for future Mars mission

is an automated system that as a spacecraft

22
00:01:39,310 --> 00:01:44,810
is entering through the atmosphere is looking
for key terrain feature and trying and map

23
00:01:44,810 --> 00:01:49,720
its position as it’s coming in for a landing
relative to this map.