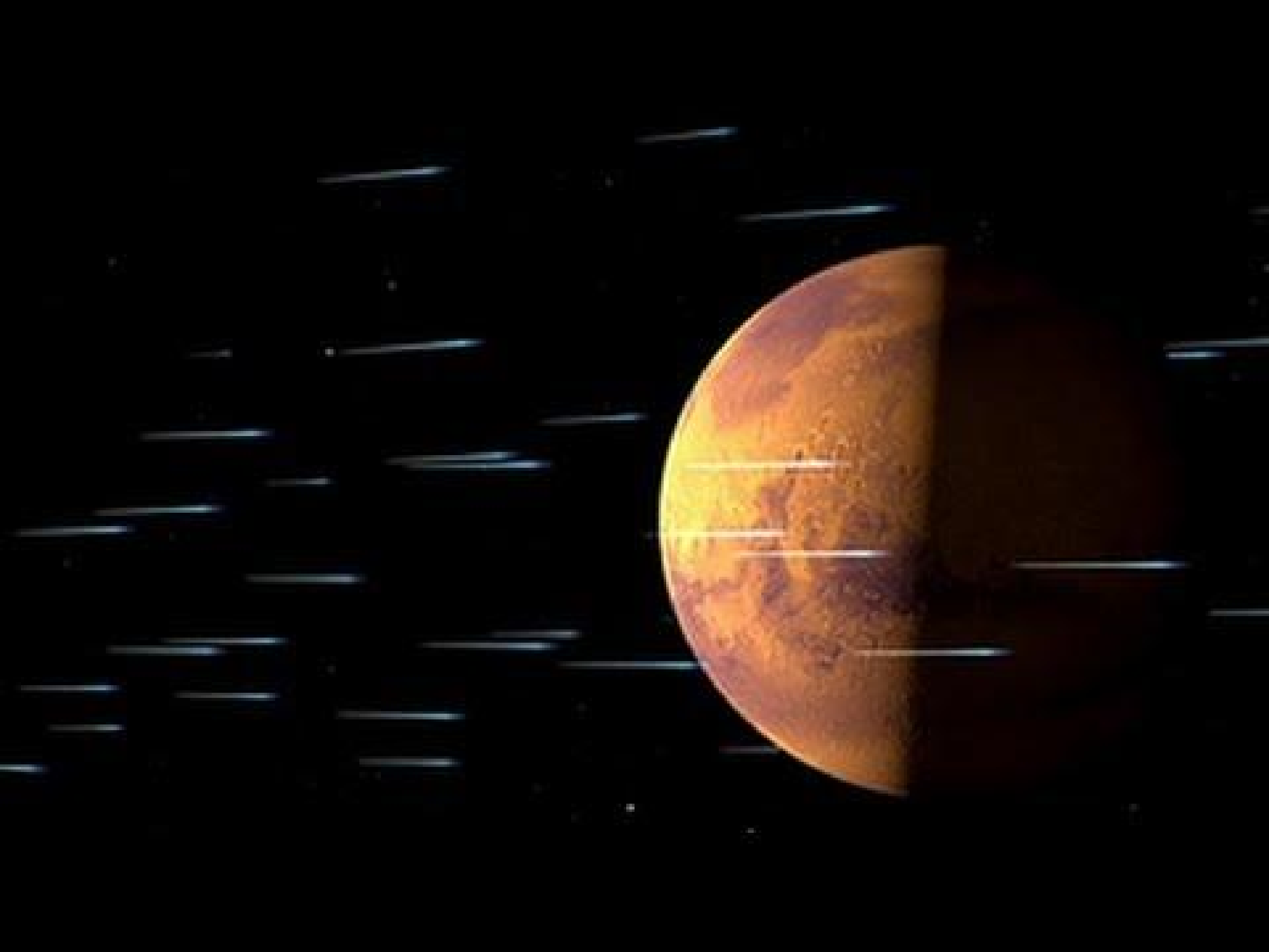

1
00:00:00,010 --> 00:00:08,280
[drone]

2
00:00:08,300 --> 00:00:13,980
[music]

3
00:00:14,000 --> 00:00:19,880
My name is Nick Schneider. I'm the science lead for the Imaging Ultraviolet Spectrograph on the MAVEN missi

4
00:00:19,900 --> 00:00:23,280
and I'm a member of the Laboratory for Atmospheric and Space Physics.

5
00:00:23,300 --> 00:00:28,520
My name is Ian Stewart. I'm a senior research scientist here at LASP.

6
00:00:28,540 --> 00:00:33,710
Right now I'm working with the IUVS team on the MAVEN mission to Mars.

7
00:00:33,730 --> 00:00:37,900
So the philosophy of NASA's Mars Program has been "Follow the water,"

8
00:00:37,920 --> 00:00:41,080
but "Where did the atmosphere go?" is still a lingering question,

9
00:00:41,100 --> 00:00:46,880
and so MAVEN is designed to figure out whether or not that atmosphere could have escaped away to space.

10
00:00:46,900 --> 00:00:54,500
The MAVEN payload, all of the instruments on it are designed to examine the processes by which gases escap

11
00:00:54,520 --> 00:00:58,980
When we look at the ultraviolet light we can tell what the atmosphere is composed of.

12
00:00:59,000 --> 00:01:04,460
We can also tell its temperature, measure variations in the composition and temperature as we look at

13
00:01:04,480 --> 00:01:10,280

different parts of the atmosphere, at different seasons on Mars, different times of day.

14
00:01:10,300 --> 00:01:15,030
The Imaging Ultraviolet Spectrograph is the most powerful ultraviolet spectrograph to be sent to another planet

15
00:01:15,050 --> 00:01:22,180
It's got a very high spectral resolution that allows us to look very closely at an emission from hydrogen,

16
00:01:22,200 --> 00:01:28,980
and we look so closely that we can tell the difference between hydrogen and heavy hydrogen, called deuterium

17
00:01:29,000 --> 00:01:32,320
And by measuring the ratio of heavy hydrogen to light hydrogen

18
00:01:32,340 --> 00:01:36,180
we can get a good guess of just how much water has escaped from the planet.

19
00:01:36,200 --> 00:01:40,480
Now this has been done before in the lower atmosphere but it's never been done in the upper atmosphere

20
00:01:40,500 --> 00:01:44,880
where the escape is actually occurring, so that's going to be a first for MAVEN.

21
00:01:44,900 --> 00:01:48,660
I've worked on many planetary missions all the way back to Mariner 6 and 7.

22
00:01:48,680 --> 00:01:54,510
At the beginning of my scientific career that's what I worked on, on Mars, and so here I'm almost at the end,

23
00:01:54,530 --> 00:02:01,480
and it's a real pleasure to go back to Mars and study it in more detail asking better questions.