1
00:00:00,010 --> 00:00:05,680
[droning sound]

2
00:00:05,700 --> 00:00:09,180
[music] Unlike robotic rovers, which land on the Martian surface,

3
00:00:09,200 --> 00:00:14,880
the Mars Atmosphere and Volatile EvolutioN mission, MAVEN, will go to work in orbit.

4
00:00:14,900 --> 00:00:20,380
But there are other things that separate this remarkable mission from recent trips to the Red Planet.

5
00:00:20,400 --> 00:00:29,270
Instead of taking photographic images, or measuring the terrain, MAVEN will study the Martian atmosphere, us

6
00:00:29,290 --> 00:00:35,240
Scientists believe that Mars was once home to a thicker atmosphere, and bodies of flowing water,

7
00:00:35,260 --> 00:00:39,340
but they wonder, where did all that atmosphere and water go?

8
00:00:39,360 --> 00:00:47,310
The answer may lie in the Sun, or more precisely, how the solar wind interacted with the early Martian environ

9
00:00:47,330 --> 00:00:56,980
By carefully observing Mars' atmosphere today, scientists will better understand what it was like in the ancient

10
00:00:57,000 --> 00:01:02,980
Pursuit of answers requires serious muscle. MAVEN carries eight scientific instruments,

11
00:01:03,000 --> 00:01:09,450
each designed to examine specific aspects of the Martian environment, from atmospheric composition,

12
00:01:09,470 --> 00:01:14,730
to the planet's magnetic field, to the characteristics of the Mars upper atmosphere.

13
00:01:14,750 --> 00:01:19,580

The spacecraft's orbit will be unusually elliptical too, affording opportunities

14
00:01:19,600 --> 00:01:25,880
to make measurements close to the planet, as well as more than 3,800 miles above the surface.

15
00:01:25,900 --> 00:01:32,780
Scientists using MAVEN to study the present-day Martian atmosphere hope to reveal what the planet was like

16
00:01:32,800 --> 00:01:39,670
Did the early atmosphere support liquid water, and where did it go? Were conditions once favorable for life?

17
00:01:39,690 --> 00:01:45,380
Did changes in the atmosphere help to turn Mars into the frozen desert we see today?

18
00:01:45,400 --> 00:01:49,790
These questions and more have beguiled Mars-watchers for decades.

19
00:01:49,810 --> 00:01:57,080
With MAVEN, NASA intends to fill in some of the planet's elusive early chapters.