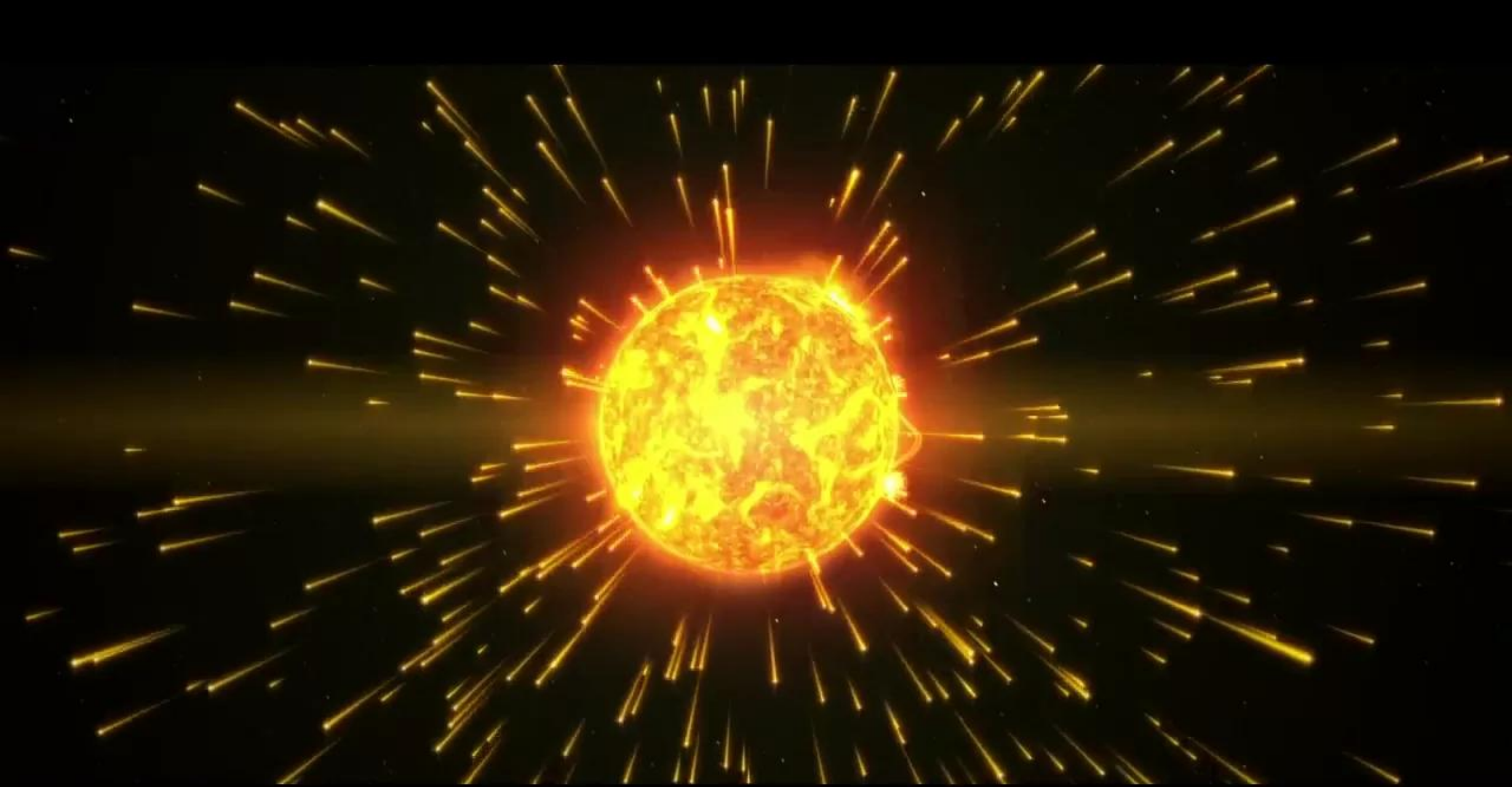

1
00:00:00,010 --> 00:00:12,150
[music]

2
00:00:12,170 --> 00:00:17,070
Even though it's not obvious just by looking at it, scientists think that Mars, a dry, dusty planet,

3
00:00:17,090 --> 00:00:22,640
may have once looked at lot more like Earth, with a blue atmosphere, thick clouds, and possibly even water.

4
00:00:22,660 --> 00:00:29,400
Scientists also think that Mars lost its atmosphere over the course of billions of years, gradually transforming in

5
00:00:29,420 --> 00:00:36,480
NASA's MAVEN spacecraft will help provide clearer answers regarding Mars's climate history, and scientists th

6
00:00:36,500 --> 00:00:41,800
For example, there are a series of what are known as Plasma Processes that can slowly strip away a planet's a

7
00:00:41,820 --> 00:00:46,640
These processes are started by the Sun, which emits light in the form of high-energy photons.

8
00:00:46,660 --> 00:00:53,080
When a photon at an extreme ultraviolet wavelength enters a planet's atmosphere, it can run into a molecule th

9
00:00:53,100 --> 00:00:58,830
The molecule absorbs the photon, and the energy from this impact can kick off an electron, leaving behind an i

10
00:00:58,850 --> 00:01:03,780
This stray electron will eventually recombine with another ion, and the energy the electron gives to this reaction

11
00:01:03,800 --> 00:01:09,980
is sometimes enough to split the molecule into its component parts, give those parts a lot of speed, and launch

12
00:01:10,000 --> 00:01:15,150
And although this process occurs continuously in most atmospheres, with a self-maintaining cloud of ions and

13
00:01:15,170 --> 00:01:21,830

forming a planetary ionosphere, the escape of atoms over billions of years can contribute to the overall loss of