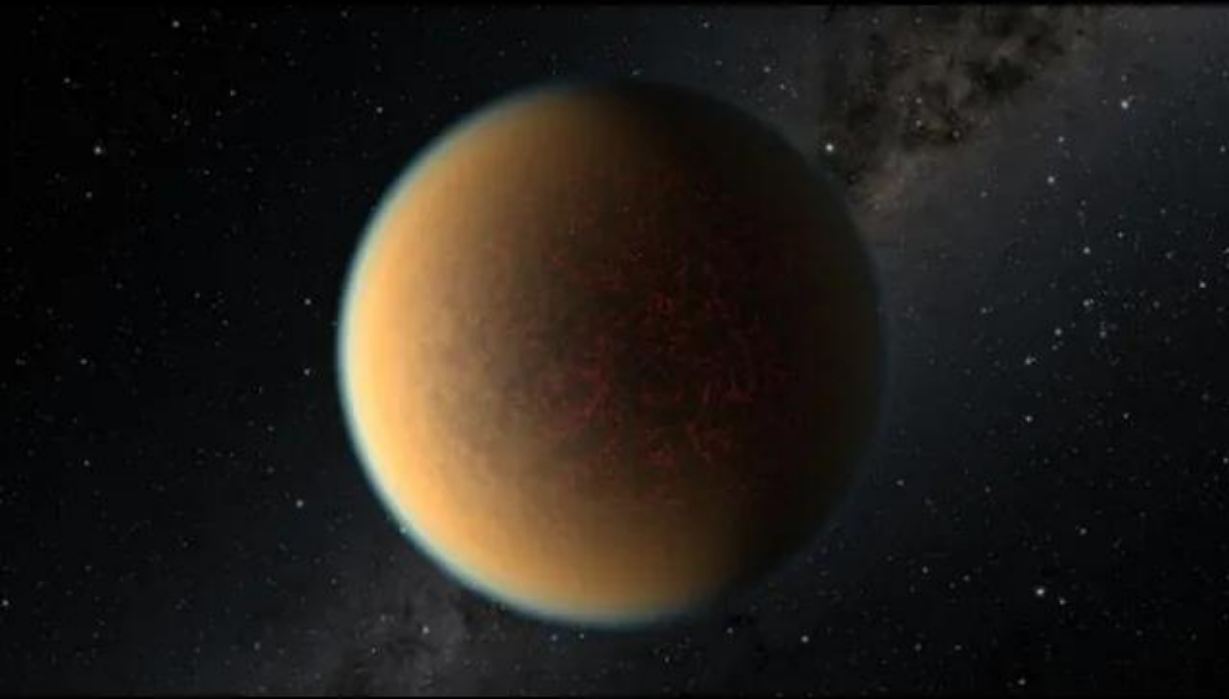

1
00:00:05,590 --> 00:00:02,790
there is evidence that a planet around a

2
00:00:07,590 --> 00:00:05,600
distant star lost its atmosphere then

3
00:00:09,830 --> 00:00:07,600
gained a second one through volcanic

4
00:00:13,629 --> 00:00:09,840
activity according to scientists using

5
00:00:17,029 --> 00:00:13,639
nasa's hubble space telescope the planet

6
00:00:19,670 --> 00:00:17,039
gj1132b is hypothesized to have begun as

7
00:00:21,349 --> 00:00:19,680
a gaseous world with a rocky core

8
00:00:23,590 --> 00:00:21,359
starting out at several times the

9
00:00:26,310 --> 00:00:23,600
diameter of earth this so-called

10
00:00:28,950 --> 00:00:26,320
sub-neptune quickly lost its early

11
00:00:31,429 --> 00:00:28,960
hydrogen and helium atmosphere due to

12
00:00:34,310 --> 00:00:31,439
the intense radiation of the young hot

13
00:00:36,389 --> 00:00:34,320

star it orbits then the planet was

14
00:00:38,950 --> 00:00:36,399
stripped down to a bare core about the

15
00:00:40,869 --> 00:00:38,960
size of earth and that's when things got

16
00:00:43,270 --> 00:00:40,879
interesting

17
00:00:45,190 --> 00:00:43,280
to the surprise of astronomers hubble

18
00:00:47,430 --> 00:00:45,200
observed an atmosphere which according

19
00:00:50,069 --> 00:00:47,440
to their theory is a secondary

20
00:00:51,910 --> 00:00:50,079
atmosphere that is present now

21
00:00:54,150 --> 00:00:51,920
based on a combination of direct

22
00:00:56,150 --> 00:00:54,160
observational evidence and inference

23
00:00:58,310 --> 00:00:56,160
through computer modeling the team

24
00:01:01,430 --> 00:00:58,320
reports that the atmosphere consists of

25
00:01:04,070 --> 00:01:01,440
molecular hydrogen hydrogen cyanide and

26
00:01:05,189 --> 00:01:04,080
methane and also contains an aerosol

27
00:01:07,030 --> 00:01:05,199
haze

28
00:01:09,270 --> 00:01:07,040
scientists think hydrogen from the

29
00:01:11,750 --> 00:01:09,280
original atmosphere was absorbed into

30
00:01:13,510 --> 00:01:11,760
the planet's molten magma mantle then

31
00:01:16,469 --> 00:01:13,520
slowly released through volcanic

32
00:01:18,710 --> 00:01:16,479
processes to form a new atmosphere

33
00:01:21,670 --> 00:01:18,720
though this hydrogen continues to escape

34
00:01:24,550 --> 00:01:21,680
into space the secondary atmosphere is

35
00:01:26,149 --> 00:01:24,560
replenished by volcanic gases that seep

36
00:01:27,429 --> 00:01:26,159
through cracks in the planet's thin

37
00:01:29,670 --> 00:01:27,439
crust

38
00:01:31,749 --> 00:01:29,680

scientists are wondering how many other

39
00:01:34,710 --> 00:01:31,759
planets might have started out as gas

40
00:01:36,950 --> 00:01:34,720
giants but became smaller and rocky

41
00:01:37,830 --> 00:01:36,960
after their early atmospheres evaporated

42
00:01:39,990 --> 00:01:37,840
away

43
00:01:42,230 --> 00:01:40,000
astronomers hoped to use the upcoming

44
00:01:44,870 --> 00:01:42,240
james webb space telescope's infrared

45
00:01:48,030 --> 00:01:44,880
vision to detect hot areas of volcanic

46
00:01:51,190 --> 00:01:48,040
activity on the planet

47
00:01:53,030 --> 00:01:51,200
gj1132b might be orbiting a distant star

48
00:01:56,630 --> 00:01:53,040
41 light years away