1
00:00:06,000 --> 00:00:10,055
You're actually hearing the vibration of the Sun.

2
00:00:10,055 --> 00:00:12,515
It almost has a warmth to it.

3
00:00:14,415 --> 00:00:15,990
It's just enough where I can almost

4
00:00:16,300 --> 00:00:20,170
feel the sound on my skin or on my

5
00:00:20,170 --> 00:00:20,600
clothes.

6
00:00:21,680 --> 00:00:25,280
I imagine feeling the Sun, you know,

7
00:00:25,580 --> 00:00:26,980
moving next to me.

8
00:00:28,740 --> 00:00:32,201
My name is Alex Young and I am the

9
00:00:32,201 --> 00:00:33,740
associate director for science

10
00:00:34,040 --> 00:00:36,262
in the Heliophysics Science Division

11
00:00:36,262 --> 00:00:38,928
here at NASA Goddard Space Flight Center.

12
00:00:38,928 --> 00:00:41,151
When anything material moves,

13
00:00:41,151 --> 00:00:43,450

waves travel through it

14
00:00:43,456 --> 00:00:44,579
and the same thing happens

15
00:00:44,579 --> 00:00:45,640
inside the Sun.

16
00:00:46,140 --> 00:00:48,233
And these waves are traveling, bouncing

17
00:00:48,233 --> 00:00:51,025
around inside the Sun and if your eyes

18
00:00:51,025 --> 00:00:53,177
were sensitive enough you actually could

19
00:00:53,177 --> 00:00:55,190
see this jiggle, but what scientists

20
00:00:55,190 --> 00:00:57,540
have done is they've taken that jiggle

21
00:00:57,960 --> 00:01:00,060
and turned it into sound,

22
00:01:00,400 --> 00:01:02,543
into a sound that we can hear

23
00:01:02,543 --> 00:01:03,450
with our own ears.

24
00:01:05,180 --> 00:01:07,250
The sun is vibrating at lots of

25
00:01:07,250 --> 00:01:08,380
different frequencies

26
00:01:08,920 --> 00:01:09,920
and one of the things that's

27
00:01:10,260 --> 00:01:11,260
pretty cool about that is

28
00:01:12,360 --> 00:01:14,848
we can use those vibrations in the Sun

29
00:01:15,380 --> 00:01:16,930
to look inside the Sun.

30
00:01:18,040 --> 00:01:20,178
We don't have straightforward

31
00:01:20,178 --> 00:01:20,700
ways to look inside the Sun.

32
00:01:20,788 --> 00:01:22,960
I mean, we don't have a microscope

33
00:01:23,380 --> 00:01:26,821
to zoom inside the Sun so using a star

34
00:01:26,821 --> 00:01:29,115
or the Sun's natural vibrations allows

35
00:01:29,115 --> 00:01:29,880
us to

36
00:01:30,280 --> 00:01:32,980
see inside of it and we can see huge

37
00:01:32,980 --> 00:01:34,590
rivers of

38
00:01:35,000 --> 00:01:37,633

solar material flowing around.

39
00:01:37,633 --> 00:01:39,827
We are finally starting to understand the

40
00:01:39,827 --> 00:01:42,900
layers of the Sun and the complexity.

41
00:01:43,400 --> 00:01:45,762
It's really cool because all of this

42
00:01:45,762 --> 00:01:46,100
complex

43
00:01:46,680 --> 00:01:49,314
motions inside the Sun are in fact what

44
00:01:49,314 --> 00:01:50,961
generates magnetic fields inside the

45
00:01:50,961 --> 00:01:53,267
Sun and those magnetic fields float up

46
00:01:53,267 --> 00:01:54,476
to the surface

47
00:01:54,476 --> 00:01:56,291
and give us sunspots and those

48
00:01:56,291 --> 00:01:57,280
sunspots give us

49
00:01:57,900 --> 00:01:59,200
solar flares and

50
00:01:59,840 --> 00:02:01,117
coronal mass ejections, this whole

51
00:02:01,117 --> 00:02:02,742
thing we call space weather.

52
00:02:02,742 --> 00:02:04,440
So all of these things are connected

53
00:02:05,200 --> 00:02:06,700
and that simple sound

54
00:02:07,080 --> 00:02:09,217
is giving us a probe inside of a star.

55
00:02:09,217 --> 00:02:10,880
I think that's a pretty cool thing.

56
00:02:23,720 --> 00:02:26,210
The dynamic imagery and sounds of the Sun

57
00:02:26,420 --> 00:02:29,166
are on display at the NASA Goddard Visitor Center

58
00:02:29,166 --> 00:02:29,620
in Greenbelt, Maryland.

59
00:02:30,760 --> 00:02:32,322
Solarium is an immersive art

60
00:02:32,322 --> 00:02:33,572
installation that transports visitors

61
00:02:33,572 --> 00:02:35,760
into the heart of our solar system.

62
00:02:38,560 --> 00:02:40,663
This story was produced right here at Goddard

63
00:02:40,663 --> 00:02:42,095

by Katie Atkinson and Micheala Sosby.

64
00:02:43,640 --> 00:02:45,532
The sounds you heard in this piece were sonified

65
00:02:45,532 --> 00:02:47,856
by the Stanford Experimental Physics Lab.

66
00:02:47,856 --> 00:02:49,026
The data comes from the Solar and

67
00:02:49,026 --> 00:02:50,140
Heliospheric Observatory