1
00:00:08,300 --> 00:00:04,110
Music

2
00:00:08,320 --> 00:00:12,490
David Sibeck: The goals of the mission are to determine where the charged particles

3
00:00:12,510 --> 00:00:16,540
in the Earths radiation belts come from? How they get energized?

4
00:00:16,560 --> 00:00:20,650
And how they're lost into space? Each of the two spacecraft

5
00:00:20,670 --> 00:00:24,760
carries five instrument suites, and a total of eight instruments.

6
00:00:24,780 --> 00:00:28,800
The two spacecraft are identical. One of the instrument suites on

7
00:00:28,820 --> 00:00:32,830
the spacecraft is the ECT suite. And this instrument

8
00:00:32,850 --> 00:00:36,880
suite consists of a set of instruments. The HOPE instrument measures the

9
00:00:36,900 --> 00:00:41,050
coldest plasma in the Earth's radiation environment. MagEIS, measures

10
00:00:41,070 --> 00:00:45,230
intermediate energy; ions and electrons. Next instrument up

11
00:00:45,250 --> 00:00:49,410
is REPT and it measures still higher particles. The RBSPICE instrument

12
00:00:49,430 --> 00:00:53,450
measures ring current particles and their composition. The wind

13
00:00:53,470 --> 00:00:57,510

current is a region of charged particles around the Earth that greatly affects

14
00:00:57,530 --> 00:01:01,620
the Earth's magnetic field. The RPS instrument

15
00:01:01,640 --> 00:01:05,810
measures the radioactive particles in the inner radiation belt.

16
00:01:05,830 --> 00:01:09,940
The EFW instrument measures the electric field.

17
00:01:09,960 --> 00:01:14,060
And it spectacularly consists of very long wires that extend

18
00:01:14,080 --> 00:01:18,190
40 to 50 meters out from the spacecraft with little

19
00:01:18,210 --> 00:01:22,250
balls on the end that measure the sensitive electric field in space.

20
00:01:22,270 --> 00:01:26,320
The EMFISIS instrument suite comprises two instruments.

21
00:01:26,340 --> 00:01:30,430
A magnetometer out on a boom, that measures the ambient magnetic

22
00:01:30,450 --> 00:01:34,540
field out in space and a search coil magnetometer that measures

23
00:01:34,560 --> 00:01:38,590
wave activity in the magnetic field. I'm excited about this mission

24
00:01:38,610 --> 00:01:42,640
because it's going to provide answers to questions that we've been asking a long time;

25
00:01:42,660 --> 00:01:46,680
about where the particles come from in the Earths radiation belts? What charges

26
00:01:46,700 --> 00:01:50,800
them up? And what causes them to move around? I've been wondering about this a long

27
00:01:50,820 --> 00:01:54,960
time, and I'm ready to learn the answer.