1
00:00:08,120 --> 00:00:04,070
<>

2
00:00:08,120 --> 00:00:12,140
laboratory. If we understand what's going on on the Sun, we can turn

3
00:00:12,140 --> 00:00:16,160
and look outwards to every other star and transfer that knowledge

4
00:00:16,160 --> 00:00:20,170
to those other stars. We have learned a lot from our previous solar satellites.

5
00:00:20,170 --> 00:00:24,230
We find out that you can't look at the Sun in one color.

6
00:00:24,230 --> 00:00:28,270
You need to look at it in many different colors to try and understand what's going

7
00:00:28,270 --> 00:00:32,310
on. AIA is the Atmospheric Imaging Assembly.

8
00:00:32,310 --> 00:00:36,330
It's a series of four telescopes that will look at the Sun

9
00:00:36,330 --> 00:00:40,350
in a whole bunch of different wavelengths. When we look at the Sun with our different

10
00:00:40,350 --> 00:00:44,400
colors, we're looking at the Sun in different temperatures. From the

11
00:00:44,400 --> 00:00:48,460
50,000 Kelvin, which is pretty warm for the Sun but pretty hot for us, to

12
00:00:48,460 --> 00:00:52,500
several million Kelvin, which is very hot. When we look at these pictures,

13
00:00:52,500 --> 00:00:56,540

we see these huge loops of material that come and go. Those are magnetic

14
00:00:56,540 --> 00:01:00,550
fields being illuminated as hot plasma tracks along it.

15
00:01:00,550 --> 00:01:04,610
Sometimes the field line doesn't have anything there, and we can't see it. Then all

16
00:01:04,610 --> 00:01:08,670
of a sudden, material will flow into that field line, and we'll see it illuminated

17
00:01:08,670 --> 00:01:12,710
against the disk of the Sun. We would like to understand why that material

18
00:01:12,710 --> 00:01:16,750
goes up there, why does it get hot, and what happens to it

19
00:01:16,750 --> 00:01:20,760
when a flare or a coronal mass ejection happens, which takes some of that

20
00:01:20,760 --> 00:01:24,820
energy and converts it into bright light or into a large chunk of material

21
00:01:24,820 --> 00:01:28,870
being thrown off the Sun. <>