1
00:00:13,509 --> 00:00:11,030
on the 1st of august 2008 a rare and

2
00:00:14,910 --> 00:00:13,519
awe-inspiring event will take place a

3
00:00:17,910 --> 00:00:14,920
total solar

4
00:00:20,950 --> 00:00:17,920
eclipse skies over canada greenland

5
00:00:23,029 --> 00:00:20,960
russia mongolia and china will darken as

6
00:00:24,390 --> 00:00:23,039
the sun is completely blocked out by the

7
00:00:26,630 --> 00:00:24,400
moon

8
00:00:28,630 --> 00:00:26,640
over the centuries these striking events

9
00:00:30,950 --> 00:00:28,640
have inspired countless inquiries and

10
00:00:35,190 --> 00:00:30,960
questions so we post some to our

11
00:00:39,270 --> 00:00:37,350
a solar eclipse takes place whenever the

12
00:00:40,069 --> 00:00:39,280
moon passes between the earth and the

13
00:00:42,229 --> 00:00:40,079

sun

14
00:00:46,630 --> 00:00:42,239
and some portion of its shadow passes

15
00:00:50,630 --> 00:00:48,950
one of the important things is

16
00:00:52,229 --> 00:00:50,640
as many people have probably heard

17
00:00:54,229 --> 00:00:52,239
growing up you should never look at the

18
00:00:56,310 --> 00:00:54,239
sun directly because it would damage

19
00:00:58,069 --> 00:00:56,320
your eyes the same thing is true during

20
00:01:00,869 --> 00:00:58,079
an eclipse the only time when it's

21
00:01:03,990 --> 00:01:00,879
actually safe to look at the sun

22
00:01:06,149 --> 00:01:04,000
is exactly at totality so otherwise you

23
00:01:07,270 --> 00:01:06,159
need to either have special glasses with

24
00:01:08,230 --> 00:01:07,280
a filter

25
00:01:11,670 --> 00:01:08,240
or

26
00:01:13,670 --> 00:01:11,680
if you have a telescope that projects

27
00:01:15,510 --> 00:01:13,680
the image onto a screen or even you can

28
00:01:19,910 --> 00:01:15,520
make a pinhole camera that projects the

29
00:01:23,910 --> 00:01:21,749
during a total eclipse it gives

30
00:01:26,789 --> 00:01:23,920
scientists a rare opportunity to make

31
00:01:28,870 --> 00:01:26,799
direct measurements of the sun's corona

32
00:01:31,830 --> 00:01:28,880
with all types of instruments and

33
00:01:33,830 --> 00:01:31,840
measure it at the different wavelengths

34
00:01:36,310 --> 00:01:33,840
measure it at different frequencies once

35
00:01:38,789 --> 00:01:36,320
a second 20 times a second 100 times a

36
00:01:42,950 --> 00:01:38,799
second with different size telescopes

37
00:01:46,389 --> 00:01:44,550
soon we'll be launching at the end of

38
00:01:48,630 --> 00:01:46,399

this year something called the solar

39
00:01:51,109 --> 00:01:48,640
dynamics observatory

40
00:01:53,749 --> 00:01:51,119
which is going to give us

41
00:01:55,830 --> 00:01:53,759
an unprecedented view of the sun and a

42
00:01:58,789 --> 00:01:55,840
whole bunch of different wavelengths

43
00:02:01,270 --> 00:01:58,799
all at the same time and very fast so

44
00:02:03,749 --> 00:02:01,280
we're very excited about that

45
00:02:05,990 --> 00:02:03,759
the august 1st solar eclipse promises to

46
00:02:08,070 --> 00:02:06,000
be a stunning event and while only

47
00:02:10,550 --> 00:02:08,080
people in a small area of the world will

48
00:02:12,309 --> 00:02:10,560
be able to see the eclipse in person

49
00:02:15,270 --> 00:02:12,319
viewers all across the globe can watch