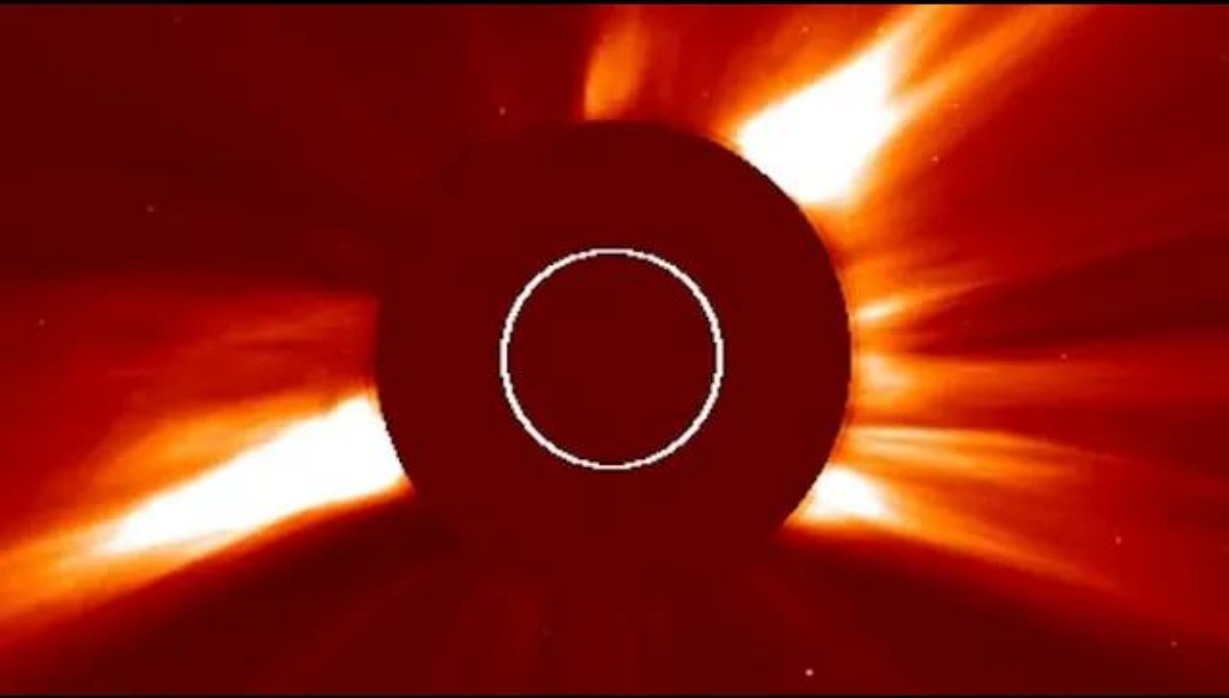

1
00:00:05,430 --> 00:00:03,590
an unusual eruption on the sun may offer

2
00:00:08,710 --> 00:00:05,440
clues to understanding our star's

3
00:00:10,950 --> 00:00:08,720
mysterious explosions

4
00:00:16,550 --> 00:00:10,960
solar eruptions are massive releases of

5
00:00:19,830 --> 00:00:18,470
this material can travel across the

6
00:00:25,990 --> 00:00:19,840
solar system

7
00:00:29,509 --> 00:00:27,910
the radiation and the material from the

8
00:00:31,029 --> 00:00:29,519
sun can interact with the planet's

9
00:00:36,069 --> 00:00:31,039
magnetic fields

10
00:00:40,869 --> 00:00:37,990
eruptions on the sun usually come in one

11
00:00:45,390 --> 00:00:42,790
coronal mass ejections

12
00:00:47,510 --> 00:00:45,400
jets and partial eruptions

13
00:00:49,590 --> 00:00:47,520

[Music]

14
00:00:53,110 --> 00:00:49,600
the new research studied an event named

15
00:00:55,110 --> 00:00:53,120
the rosetta stone of solar eruptions

16
00:00:57,510 --> 00:00:55,120
just as the rosetta stone was the key to

17
00:00:59,430 --> 00:00:57,520
understanding egyptian hieroglyphics

18
00:01:01,349 --> 00:00:59,440
studying this eruption could be the key

19
00:01:02,650 --> 00:01:01,359
to understanding all types of solar

20
00:01:04,070 --> 00:01:02,660
eruptions

21
00:01:06,550 --> 00:01:04,080
[Music]

22
00:01:08,310 --> 00:01:06,560
in the rosetta stone eruption all three

23
00:01:10,070 --> 00:01:08,320
types of eruptions happened in the same

24
00:01:14,230 --> 00:01:10,080
event

25
00:01:18,469 --> 00:01:16,149
the main eruption was too big to be a

26
00:01:19,910 --> 00:01:18,479
jet but too narrow to be a coronal mass

27
00:01:22,070 --> 00:01:19,920
ejection

28
00:01:24,230 --> 00:01:22,080
a second cooler layer of material on the

29
00:01:27,109 --> 00:01:24,240
surface of the sun also started to erupt

30
00:01:29,590 --> 00:01:27,119
about a half an hour later

31
00:01:32,789 --> 00:01:29,600
but it fell back down as a partial solar

32
00:01:36,950 --> 00:01:34,950
this rosetta stone of solar eruptions

33
00:01:41,749 --> 00:01:36,960
will also give clues to help scientists

34
00:01:45,350 --> 00:01:43,510
the better our predictions are the more

35
00:01:47,350 --> 00:01:45,360
time we have to prepare for material

36
00:01:48,740 --> 00:01:47,360
from the sun to interact with earth's

37
00:01:52,550 --> 00:01:48,750
magnetic field

38
00:01:56,149 --> 00:01:54,389

predicting large solar eruptions can

39
00:01:57,350 --> 00:01:56,159
help better protect our astronauts and