



2008 Mar 9 03:05:00

1
00:00:22,250 --> 00:00:19,580
we often underestimate how beautiful a

2
00:00:25,070 --> 00:00:22,260
scientific discovery can be when the

3
00:00:27,380 --> 00:00:25,080
thymus satellite fleet launched in 2007

4
00:00:30,230 --> 00:00:27,390
the mission set out to investigate what

5
00:00:31,999 --> 00:00:30,240
triggers substorms substorms our

6
00:00:33,889 --> 00:00:32,009
atmospheric events visible in the

7
00:00:35,720 --> 00:00:33,899
northern hemisphere as a sudden

8
00:00:41,240 --> 00:00:35,730
brightening of the northern lights or

9
00:00:43,160 --> 00:00:41,250
aurora borealis one such substorm in

10
00:00:45,529 --> 00:00:43,170
march two thousand eight produced

11
00:00:50,209 --> 00:00:45,539
lightning-fast aurora with the energy of

12
00:00:51,799 --> 00:00:50,219
a moderate earthquake nasa scientists

13
00:00:54,080 --> 00:00:51,809

found the answer to this mysterious

14

00:00:57,920 --> 00:00:54,090

behavior and massive energy in giant

15

00:01:00,260 --> 00:00:57,930

magnetic ropes these can be as wide as

16

00:01:02,360 --> 00:01:00,270

the earth itself serve as conduits for

17

00:01:04,789 --> 00:01:02,370

solar wind particles which collide with

18

00:01:07,399 --> 00:01:04,799

the Earth's magnetic field and charge

19

00:01:09,950 --> 00:01:07,409

the spectacular substorms and Aurora's

20

00:01:11,539 --> 00:01:09,960

these ropes are evidence of a direct

21

00:01:14,270 --> 00:01:11,549

connection between the Sun and the

22

00:01:16,609 --> 00:01:14,280

Earth's upper atmosphere it is when

23

00:01:19,070 --> 00:01:16,619

these ropes form and unravel that the

24

00:01:21,170 --> 00:01:19,080

highly energetic solar wind ignites the

25

00:01:23,719 --> 00:01:21,180

Earth's magnetic field and lights up the

26

00:01:25,940 --> 00:01:23,729

northern sky providing a celestial dance