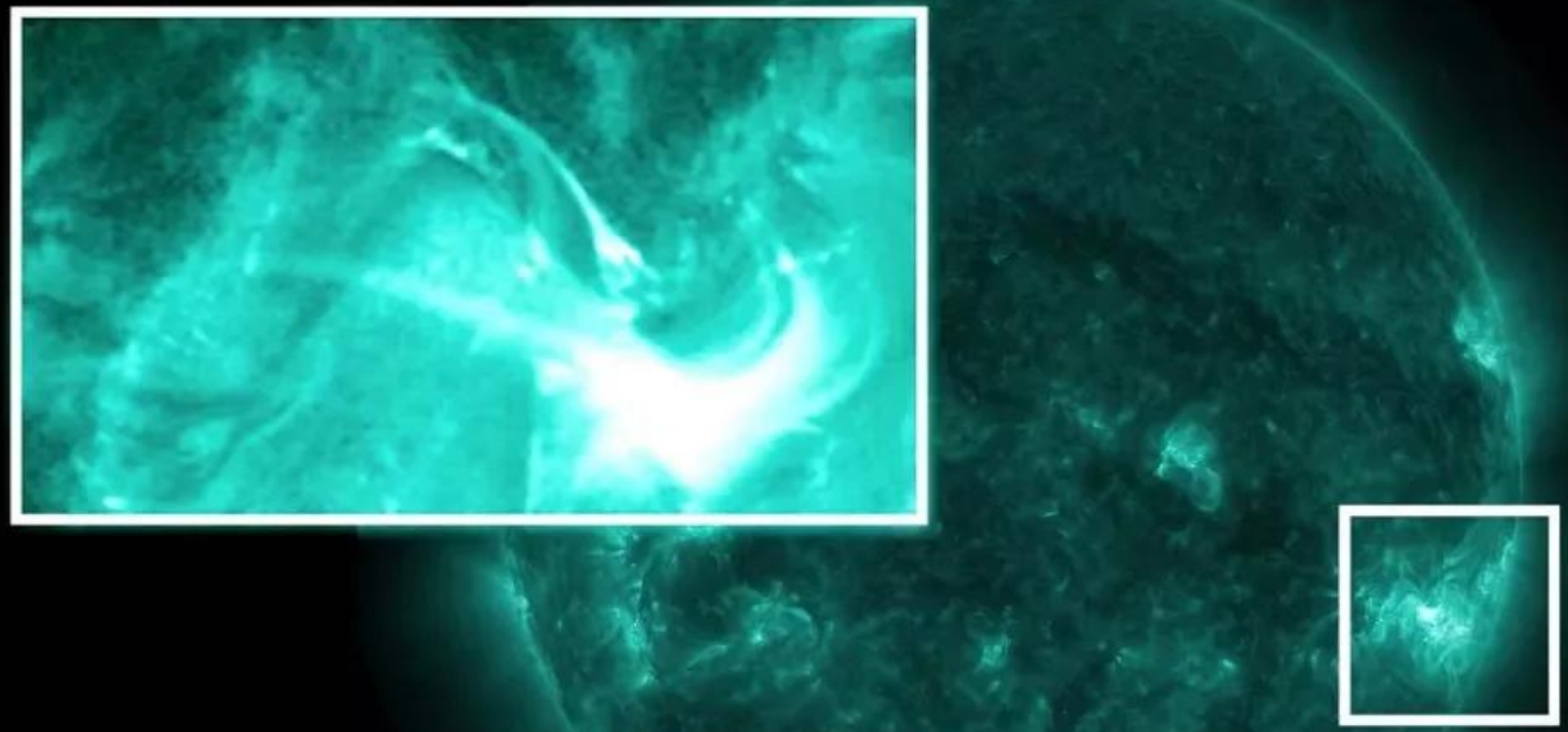

1
00:00:00,000 --> 00:00:03,540
music throughout

2
00:00:03,560 --> 00:00:07,920
Did you see that? The sun was caught on camera, ripping apart a structure

3
00:00:07,920 --> 00:00:12,360
that was about to erupt. Didn't catch it? Let's watch again.

4
00:00:12,390 --> 00:00:16,560
A structure began rising from the surface, gaining energy as it lifted.

5
00:00:16,580 --> 00:00:19,260
But then nothing happened.

6
00:00:19,260 --> 00:00:24,840
This is the first time anyone had witnessed the teardown of a structure on the sun’s surface.

7
00:00:24,860 --> 00:00:29,340
Fortunately, at the time of this event, multiple spacecraft were making simultaneous observations

8
00:00:29,340 --> 00:00:32,860
in various temperatures. Scientists used

9
00:00:32,860 --> 00:00:37,180
those unique views to investigate why the eruption failed.

10
00:00:37,210 --> 00:00:41,310
The sun’s landscape is controlled by magnetic forces.

11
00:00:41,330 --> 00:00:45,500
Within this environment, there are locations where a rapid release of energy is more likely to occur.

12
00:00:45,520 --> 00:00:49,560
Known as “magnetic topology,” distinctive magnetic field lines rule

13
00:00:49,580 --> 00:00:53,500

these special areas, and they determine how or whether

14
00:00:53,500 --> 00:00:56,000
underlying structures can move outwards.

15
00:00:56,000 --> 00:01:02,100
When solar structures with opposite magnetic orientation collide, we expect to see them explosively release en

16
00:01:02,120 --> 00:01:06,180
yielding a flare and a burst of material called a Coronal Mass Ejection.

17
00:01:06,200 --> 00:01:10,360
: However, If the magnetic structure dares

18
00:01:10,360 --> 00:01:13,980
to move into a less hospitable magnetic region, the surrounding topology

19
00:01:13,980 --> 00:01:18,100
will shred the structure effectively removing magnetic energy and preventing

20
00:01:18,160 --> 00:01:21,420
the potential eruption.

21
00:01:21,420 --> 00:01:30,940
This observation highlights how the sun's magnetic topology is a key factor in whether or not an eruption is suc