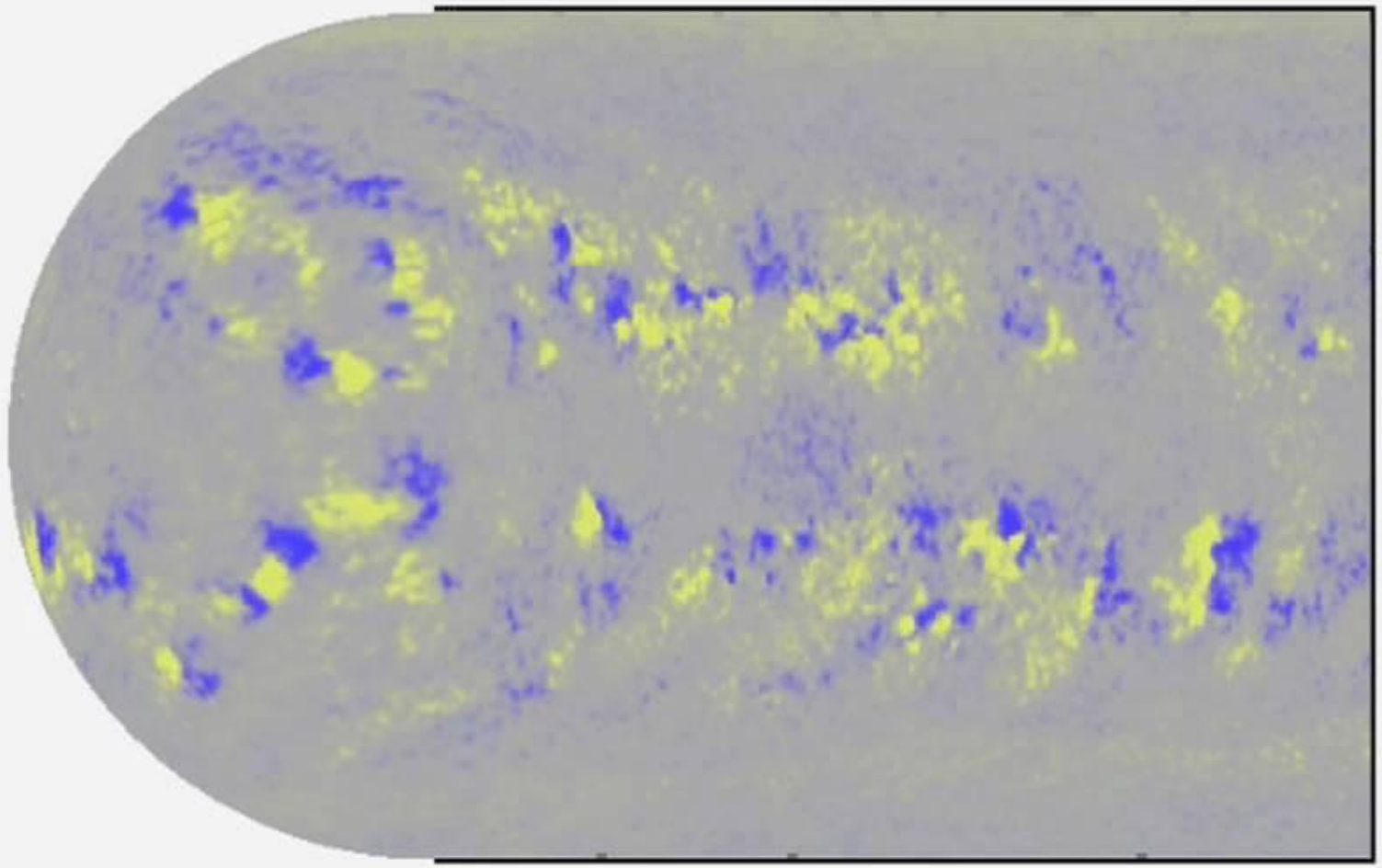

1
00:00:04,870 --> 00:00:02,950
this video clip reveals the evolution of

2
00:00:07,510 --> 00:00:04,880
the sun's magnetism over the course of

3
00:00:09,430 --> 00:00:07,520
three solar cycles it uses data from the

4
00:00:12,150 --> 00:00:09,440
national solar observatory and from the

5
00:00:13,910 --> 00:00:12,160
esa nasa soho satellite

6
00:00:15,749 --> 00:00:13,920
we use special filters to measure the

7
00:00:17,670 --> 00:00:15,759
sun's magnetic field

8
00:00:19,750 --> 00:00:17,680
we can peel off a map of the magnetic

9
00:00:21,990 --> 00:00:19,760
field as the sun rotates

10
00:00:23,349 --> 00:00:22,000
new maps are obtained about every 27

11
00:00:25,269 --> 00:00:23,359
days

12
00:00:26,710 --> 00:00:25,279
the changes from one rotation to the

13
00:00:28,630 --> 00:00:26,720

next are dramatic

14
00:00:30,710 --> 00:00:28,640
magnetic fields and sunspots erupt in

15
00:00:32,630 --> 00:00:30,720
two bands on either side of the equator

16
00:00:34,389 --> 00:00:32,640
they leave behind magnetic elements

17
00:00:36,549 --> 00:00:34,399
which are transported across the surface

18
00:00:38,470 --> 00:00:36,559
by the flowing gases

19
00:00:40,549 --> 00:00:38,480
as each solar cycle progresses these

20
00:00:42,709 --> 00:00:40,559
bands drift toward the equator the

21
00:00:44,389 --> 00:00:42,719
magnetic elements themselves move to the

22
00:00:46,630 --> 00:00:44,399
right near the equator and to the left

23
00:00:48,790 --> 00:00:46,640
and forward at higher latitudes