



1  
00:00:11,480 --> 00:00:07,190  
a taste of solar maximum presented by

2  
00:00:15,620 --> 00:00:11,490  
science at NASA experts say solar max is

3  
00:00:18,170 --> 00:00:15,630  
due in the year 2013 when it arrives the

4  
00:00:20,660 --> 00:00:18,180  
peak of the 11-year sunspot cycle will

5  
00:00:23,509 --> 00:00:20,670  
bring more solar flares more coronal

6  
00:00:26,210 --> 00:00:23,519  
mass ejections more geomagnetic storms

7  
00:00:29,810 --> 00:00:26,220  
and more Aurora's than we have

8  
00:00:32,780 --> 00:00:29,820  
experienced in quite some time on the

9  
00:00:35,000 --> 00:00:32,790  
weekend of July fourteenth 2012 sky

10  
00:00:38,660 --> 00:00:35,010  
watchers around the world got a taste of

11  
00:00:40,280 --> 00:00:38,670  
things to come it was mid Saturday in

12  
00:00:43,160 --> 00:00:40,290  
North America when a coronal mass

13  
00:00:45,290 --> 00:00:43,170

ejection or CME crashed into Earth's

14

00:00:48,100 --> 00:00:45,300

magnetic field and triggered the most

15

00:00:51,680 --> 00:00:48,110

sustained display of Aurora's in years

16

00:00:54,619 --> 00:00:51,690

for more than 36 hours magnetic storms

17

00:00:56,540 --> 00:00:54,629

circled Earth's poles Northern Lights

18

00:00:58,760 --> 00:00:56,550

spilled across the Canadian border into

19

00:01:02,510 --> 00:00:58,770

the United States as far south as

20

00:01:05,899 --> 00:01:02,520

California Colorado Kansas and Arkansas

21

00:01:09,260 --> 00:01:05,909

in the southern hemisphere skies turned

22

00:01:11,780 --> 00:01:09,270

red / Tasmania and New Zealand while the

23

00:01:15,109 --> 00:01:11,790

Aurora Australis pirouetted around the

24

00:01:18,859 --> 00:01:15,119

South Pole the source of the CME was

25

00:01:21,289 --> 00:01:18,869

giant sunspot AR 15 20 a seething nest

26  
00:01:24,800 --> 00:01:21,299  
of tangled magnetism more than 15 times

27  
00:01:27,460 --> 00:01:24,810  
wider than earth itself on July twelfth

28  
00:01:29,990 --> 00:01:27,470  
the sunspots magnetic field erupted

29  
00:01:32,330 --> 00:01:30,000  
producing an x-class solar flare and

30  
00:01:35,749 --> 00:01:32,340  
hurling a billion tons of electrified

31  
00:01:38,390 --> 00:01:35,759  
plasma toward our planet NASA's twin

32  
00:01:39,730 --> 00:01:38,400  
stereo probes and the European Space

33  
00:01:43,010 --> 00:01:39,740  
Agency's Solar and Heliospheric

34  
00:01:45,530 --> 00:01:43,020  
Observatory monitored the CME as it

35  
00:01:48,050 --> 00:01:45,540  
billowed away from the Sun using those

36  
00:01:49,730 --> 00:01:48,060  
data analysts at NOAA and NASA

37  
00:01:52,969 --> 00:01:49,740  
successfully predicted the clouds

38  
00:01:55,639 --> 00:01:52,979

arrival time it would take almost two

39

00:02:00,530 --> 00:01:55,649

full days for the CME to cross the 93

40

00:02:02,480 --> 00:02:00,540

million miles and Sun the CME's impact

41

00:02:04,459 --> 00:02:02,490

sharply compressed Earth's magnetosphere

42

00:02:07,340 --> 00:02:04,469

briefly exposing geosynchronous

43

00:02:09,050 --> 00:02:07,350

satellites to solar wind plasma

44

00:02:11,900 --> 00:02:09,060

the shaking of Earth's magnetic field

45

00:02:14,090 --> 00:02:11,910

caused compass needles to swing just a

46

00:02:15,710 --> 00:02:14,100

little bit and prompted electrical

47

00:02:18,620 --> 00:02:15,720

currents to flow through the soil at

48

00:02:21,590 --> 00:02:18,630

high latitudes fortunately the strike

49

00:02:24,740 --> 00:02:21,600

did no harm satellite survived and power

50

00:02:27,800 --> 00:02:24,750

grids stayed online next came the light

51  
00:02:30,260 --> 00:02:27,810  
show as the cme's wake washed across

52  
00:02:33,530 --> 00:02:30,270  
earth the polar regions of our planet

53  
00:02:36,290 --> 00:02:33,540  
lit up like a Christmas tree red green

54  
00:02:38,600 --> 00:02:36,300  
blue and purple Aurora's kept both ends

55  
00:02:40,550 --> 00:02:38,610  
of the planet glowing dancing and

56  
00:02:44,150 --> 00:02:40,560  
ultimately spreading to places where

57  
00:02:46,490 --> 00:02:44,160  
Aurora's are seldom seen in Arkansas for

58  
00:02:49,370 --> 00:02:46,500  
instance there was a faint glow off and

59  
00:02:51,910 --> 00:02:49,380  
on for most of the night reports Brad M

60  
00:02:55,190 --> 00:02:51,920  
finger from a little town called Ozark

61  
00:02:57,080 --> 00:02:55,200  
around 3am there was an outburst of red

62  
00:03:00,250 --> 00:02:57,090  
and purple plainly visible to the naked

63  
00:03:02,840 --> 00:03:00,260

eye in Pawnee grasslands Colorado

64

00:03:05,630 --> 00:03:02,850

photographer Robert Arn saw the northern

65

00:03:07,699 --> 00:03:05,640

lights for the first time ever as soon

66

00:03:10,430 --> 00:03:07,709

as I stepped out of the car the sky

67

00:03:13,009 --> 00:03:10,440

looked like it was on fire then the moon

68

00:03:15,890 --> 00:03:13,019

venus and jupiter rose together in the

69

00:03:18,819 --> 00:03:15,900

east to see the conjunction and the

70

00:03:21,110 --> 00:03:18,829

Aurora's side by side was incredible

71

00:03:23,360 --> 00:03:21,120

meanwhile at the other end of the planet

72

00:03:26,000 --> 00:03:23,370

Aurora's were going crazy over the South

73

00:03:27,949 --> 00:03:26,010

Pole reports robert schwartz at the

74

00:03:30,560 --> 00:03:27,959

amundsen-scott south pole research

75

00:03:32,539 --> 00:03:30,570

station we enjoyed the show under

76

00:03:34,849 --> 00:03:32,549

crystal clear skies with an air

77

00:03:38,150 --> 00:03:34,859

temperature of minus 105 degrees

78

00:03:40,370 --> 00:03:38,160

fahrenheit in ashland wisconsin on the

79

00:03:43,009 --> 00:03:40,380

other hand john Welling watched the show

80

00:03:45,560 --> 00:03:43,019

in his shirtsleeves tonight it was

81

00:03:48,069 --> 00:03:45,570

absolutely the best with a comfortable

82

00:03:51,590 --> 00:03:48,079

temperature of 78 degrees Fahrenheit and

83

00:03:53,740 --> 00:03:51,600

northern lights dancing over head the X

84

00:03:56,060 --> 00:03:53,750

flare definitely lived up to the hype

85

00:03:58,250 --> 00:03:56,070

from one end of the planet to the other

86

00:04:01,520 --> 00:03:58,260

spending more than 90 degrees of

87

00:04:04,729 --> 00:04:01,530

combined north south latitude 183

88

00:04:07,099 --> 00:04:04,739

degrees of temperature and 360 degrees

89

00:04:09,920 --> 00:04:07,109

of longitude this was truly a global

90

00:04:12,650 --> 00:04:09,930

space weather event and it was just a

91

00:04:14,610 --> 00:04:12,660

taste of things to come the sun-earth

92

00:04:16,259 --> 00:04:14,620

connection is heating up

93

00:04:18,180 --> 00:04:16,269

for more news about the sun-earth