



1
00:00:00,000 --> 00:00:21,920

I

2
00:00:21,930 --> 00:00:35,690

you

3
00:00:42,060 --> 00:00:39,060

old sayings aside lightning sometimes

4
00:00:45,120 --> 00:00:42,070

does strike twice but perhaps not always

5
00:00:47,370 --> 00:00:45,130

in the same place can one lightning bolt

6
00:00:49,640 --> 00:00:47,380

somehow trigger a second so called

7
00:00:53,310 --> 00:00:49,650

sympathetic strike many miles away

8
00:00:55,710 --> 00:00:53,320

what's closely this is lightning as seen

9
00:00:58,140 --> 00:00:55,720

from the Space Shuttle seem to be

10
00:01:01,320 --> 00:00:58,150

sympathetic flashes want to go off and a

11
00:01:02,760 --> 00:01:01,330

couple next to it Roger that these

12
00:01:04,700 --> 00:01:02,770

flashes are very interesting because

13
00:01:07,830 --> 00:01:04,710

they show a possible relationship

14

00:01:10,260 --> 00:01:07,840

between very large flashes separated by

15

00:01:11,820 --> 00:01:10,270

large distances hopefully the shuttle

16

00:01:14,010 --> 00:01:11,830

data will help us to understand this

17

00:01:15,960 --> 00:01:14,020

phenomenon and that's just one of the

18

00:01:18,030 --> 00:01:15,970

objectives of lightning research being

19

00:01:19,380 --> 00:01:18,040

conducted by scientists here at NASA's

20

00:01:22,170 --> 00:01:19,390

Marshall Space Flight Center in

21

00:01:24,300 --> 00:01:22,180

Huntsville Alabama and some new answers

22

00:01:26,190 --> 00:01:24,310

will likely come from an ongoing series

23

00:01:28,680 --> 00:01:26,200

of space shuttle based lightning

24

00:01:30,960 --> 00:01:28,690

experiments the shuttles television

25

00:01:33,120 --> 00:01:30,970

cameras will be used to simulate what

26
00:01:35,609 --> 00:01:33,130
future lightning sensors will see a

27
00:01:37,800 --> 00:01:35,619
global weather computer called Makeda's

28
00:01:40,050 --> 00:01:37,810
will alert the crew to what storms lie

29
00:01:43,290 --> 00:01:40,060
ahead so that additional pictures can be

30
00:01:45,510 --> 00:01:43,300
taken ultimately NASA hopes to use this

31
00:01:47,550 --> 00:01:45,520
information to design lightning sensing

32
00:01:49,680 --> 00:01:47,560
instruments to be placed on future

33
00:01:52,620 --> 00:01:49,690
satellites and on the space station

34
00:01:54,390 --> 00:01:52,630
freedom if we put lightning sensors into

35
00:01:56,070 --> 00:01:54,400
geostationary orbit into low-earth orbit

36
00:01:58,020 --> 00:01:56,080
will be able to get a global mapping of

37
00:02:00,060 --> 00:01:58,030
lightning activity improving our

38
00:02:02,340 --> 00:02:00,070

understanding of the basic physics of

39

00:02:03,930 --> 00:02:02,350

storms and developing new ways to

40

00:02:06,270 --> 00:02:03,940

observe them will lead to better

41

00:02:08,190 --> 00:02:06,280

forecasting abilities making us all

42

00:02:10,620 --> 00:02:08,200

safer from this deadly force of nature

43

00:02:12,390 --> 00:02:10,630

perhaps we're just beginning to

44

00:02:15,840 --> 00:02:12,400

understand what this research may lead

45

00:02:18,240 --> 00:02:15,850

to as an example we've uncovered some

46

00:02:19,860 --> 00:02:18,250

relationships between lightning activity

47

00:02:21,630 --> 00:02:19,870

the flash rate of lightning and the

48

00:02:23,550 --> 00:02:21,640

precipitation rain volume of the cloud

49

00:02:26,070 --> 00:02:23,560

if we can establish this relationship

50

00:02:28,110 --> 00:02:26,080

and quantifying further we would be able

51
00:02:29,910 --> 00:02:28,120
to then use whitening from lightning

52
00:02:31,020 --> 00:02:29,920
observations from space to turn on with

53
00:02:33,420 --> 00:02:31,030
the rainfall rate from a particular

54
00:02:35,820 --> 00:02:33,430
storm system is using the vantage point

55
00:02:37,800 --> 00:02:35,830
of space to better understand the many

56
00:02:40,680 --> 00:02:37,810
environmental systems in our world and

57
00:02:42,720 --> 00:02:40,690
how they interact is the goal of NASA's

58
00:02:45,809 --> 00:02:42,730
initiative for the 1990s known as

59
00:02:47,400 --> 00:02:45,819
mission to Planet Earth for now ongoing

60
00:02:49,290 --> 00:02:47,410
lightning studies

61
00:02:52,170 --> 00:02:49,300
provide researchers with an important

62
00:03:07,340 --> 00:02:52,180
head start in Huntsville this is Mike

63
00:03:19,340 --> 00:03:12,870

I guess I want to say it's really a

64

00:03:23,600 --> 00:03:21,800

farrell circular circulatory patterns

65

00:03:25,490 --> 00:03:23,610

that are not quite organized into one

66

00:03:30,890 --> 00:03:25,500

year failure decide to join up it i'll

67

00:03:33,200 --> 00:03:30,900

be a good doctor that support a

68

00:03:35,770 --> 00:03:33,210

panhandle and alabama some places are

69

00:03:38,210 --> 00:03:35,780

getting a little bit worried about it i