



1
00:00:08,450 --> 00:00:05,180
we don't really know on earth why you

2
00:00:12,499 --> 00:00:08,460
get thunderstorms at the rate we get

3
00:00:15,560 --> 00:00:12,509
them we look at Saturn they're very

4
00:00:17,450 --> 00:00:15,570
infrequent we were pretty sure that

5
00:00:21,650 --> 00:00:17,460
lightning exists there but we actually

6
00:00:25,359 --> 00:00:21,660
couldn't see it it's a giant planet with

7
00:00:29,240 --> 00:00:25,369
huge atmosphere there should be a lot of

8
00:00:33,459 --> 00:00:29,250
weather there we had heard the lightning

9
00:00:37,639 --> 00:00:33,469
on the radio instrument on Cassini but

10
00:00:40,040 --> 00:00:37,649
you you hear static on the radio signal

11
00:00:43,420 --> 00:00:40,050
but you can't pinpoint where it's coming

12
00:00:47,510 --> 00:00:43,430
from we had to use a synthetic noise

13
00:00:49,850 --> 00:00:47,520

because the actual noise that the radio

14

00:00:53,360 --> 00:00:49,860

instrument is picking up is beyond the

15

00:00:55,459 --> 00:00:53,370

human ear so so we we picked the noise

16

00:00:57,770 --> 00:00:55,469

that sounded like an electrical

17

00:01:05,539 --> 00:00:57,780

discharge in other words a big spark

18

00:01:07,190 --> 00:01:05,549

that's what lightning is it's taken us a

19

00:01:11,060 --> 00:01:07,200

long time to see the lightning and

20

00:01:13,640 --> 00:01:11,070

that's because I normally the night side

21

00:01:16,399 --> 00:01:13,650

of Saturn is very bright because the

22

00:01:18,109 --> 00:01:16,409

Rings are shining down all the time the

23

00:01:21,499 --> 00:01:18,119

night side of Saturn is brighter than a

24

00:01:24,160 --> 00:01:21,509

person under a full moon the strategy we

25

00:01:27,620 --> 00:01:24,170

choose was to look at the equinox and

26

00:01:31,730 --> 00:01:27,630

the equinoxes when the Sun is in the

27

00:01:35,149 --> 00:01:31,740

ring plane so it doesn't illuminate the

28

00:01:37,910 --> 00:01:35,159

rings that much and rings become become

29

00:01:41,149 --> 00:01:37,920

dark and this line becomes dark when it

30

00:01:43,940 --> 00:01:41,159

finally got dark it's dark enough at

31

00:01:48,620 --> 00:01:43,950

night we pointed cameras there and

32

00:01:50,929 --> 00:01:48,630

wonder of wonders there were lightning

33

00:01:53,749 --> 00:01:50,939

flashes and took a series of pictures

34

00:01:55,969 --> 00:01:53,759

and in one picture would be no lightning

35

00:01:57,740 --> 00:01:55,979

flash in the next picture that it would

36

00:02:01,069 --> 00:01:57,750

be a lightning flash and at the same

37

00:02:05,030 --> 00:02:01,079

time you hear the noise over the radio

38

00:02:10,100 --> 00:02:07,640

and who actually saw it I didn't believe

39

00:02:14,320 --> 00:02:10,110

it the lightning storms on Saturn are

40

00:02:17,540 --> 00:02:14,330

very much like learning on earth you get

41

00:02:19,310 --> 00:02:17,550

the same strength lightning storms but

42

00:02:21,260 --> 00:02:19,320

they are thunderstorms there they have