



1  
00:00:00,020 --> 00:00:05,320

A total solar eclipse lets NASA researchers try out technology that could one day aid in the development of futu

2  
00:00:05,320 --> 00:00:10,320

However, they must flawlessly complete the experiment in a few short minutes.

3  
00:00:10,320 --> 00:00:12,140

Nat: The corona can be studied from

4  
00:00:12,160 --> 00:00:16,040

ground based telescopes only during an eclipse.

5  
00:00:16,040 --> 00:00:20,340

Whenever an eclipse happens, we make use of it and try to test some of our ideas.

6  
00:00:21,580 --> 00:00:25,460

We have only 2 minutes to do the experiment

7  
00:00:25,460 --> 00:00:28,380

and we have been preparing for maybe more

8  
00:00:28,390 --> 00:00:32,390

than a year. Nelson: Nothing can go wrong. Your camera can't shut down.

9  
00:00:32,410 --> 00:00:36,420

You can't press the wrong button. Because there is no time to change your mind

10  
00:00:36,440 --> 00:00:39,580

or make an alternate decision.

11  
00:00:39,580 --> 00:00:44,800

Nat: We are going to set up the telescope and observe the total solar eclipse

12  
00:00:44,800 --> 00:00:48,560

at 4 different wavelengths. The images taken

13  
00:00:48,580 --> 00:00:52,690

in these 4 different wavelengths will be used to

14

00:00:52,700 --> 00:00:55,220

determine the temperature and flow speed of the corona

15

00:00:55,220 --> 00:01:00,720

Nelson: We are taking these images using a polarization camera. Which will be a first for us

16

00:01:00,750 --> 00:01:04,760

I think it is the first for the solar physics community.

17

00:01:04,780 --> 00:01:08,780

Once the moon completely covers the sun, the experiment begins.

18

00:01:09,260 --> 00:01:13,340

It's my job to make sure the image is in the field of view.

19

00:01:13,340 --> 00:01:16,920

At the correct time, one

20

00:01:16,940 --> 00:01:20,950

person has to give the command to turn the filter wheel,

21

00:01:20,960 --> 00:01:24,620

and for each filter there is a different exposure time.

22

00:01:24,620 --> 00:01:28,520

Another person has to enter the exposure time.

23

00:01:28,520 --> 00:01:33,140

It's a combined effort of 6 different hands. No one

24

00:01:33,160 --> 00:01:37,160

person can make any errors.

25

00:01:37,580 --> 00:01:41,200

Nat: We do feel the pressure and also the excitement of the eclipse, but still we have

26

00:01:41,220 --> 00:01:44,160

to focus on our experiment.

27

00:01:44,780 --> 00:01:49,260

Nelson: It's a tense feeling, but I believe we will succeed.

28

00:01:49,290 --> 00:01:53,280

music

29

00:01:53,300 --> 00:01:57,330

tone