
SPEXONE

1
00:00:00,734 --> 00:00:03,136
(music)

2
00:00:03,136 --> 00:00:04,337
Good morning.

3
00:00:04,371 --> 00:00:07,941
This is the twenty-second of March, 2021.

4
00:00:14,280 --> 00:00:16,383
It's four-fifty in the morning.

5
00:00:16,383 --> 00:00:18,118
We are here this early to

6
00:00:18,251 --> 00:00:20,720
load the SPEXone instrument into the truck.

7
00:00:28,261 --> 00:00:31,231
(music)

8
00:00:44,144 --> 00:00:47,113
SPEXOne will measure the intensity and degree of polarization

9
00:00:47,347 --> 00:00:52,786
of light that is reflected by small particles in the atmosphere

10
00:00:54,287 --> 00:00:56,556
These particles are called aerosols

11
00:00:56,656 --> 00:00:59,626
Overall these aerosols counterbalance

12
00:00:59,626 --> 00:01:02,395
the warming by greenhouse gases

13
00:01:02,495 --> 00:01:05,098

but we don't know by what amount.

14
00:01:05,231 --> 00:01:07,567
And because this is so unknown,

15
00:01:07,700 --> 00:01:10,670
it's hard to predict future climate change.

16
00:01:11,304 --> 00:01:13,306
And with SPEXone

17
00:01:13,440 --> 00:01:14,574
we want to accurately

18
00:01:14,774 --> 00:01:16,709
measure the effect of aerosols

19
00:01:16,810 --> 00:01:18,912
on clouds and climate.

20
00:01:19,079 --> 00:01:22,048
(music)

21
00:01:35,895 --> 00:01:37,997
One challenge in building and designing SPEXone

22
00:01:37,997 --> 00:01:39,766
was design of the optical system.

23
00:01:39,999 --> 00:01:42,035
since SPEXone is a multiviewing instrument

24
00:01:42,235 --> 00:01:44,671
We needed to be able to

25
00:01:44,737 --> 00:01:46,206
capture the light from five different directions

26
00:01:46,306 --> 00:01:48,108
into a single, compact instrument