1
00:00:00,580 --> 00:00:05,500
[Music]

2
00:00:31,200 --> 00:00:35,880
>>SOFIA is an observatory, observatories like
it to be dark, so when it's summer back home,

3
00:00:35,880 --> 00:00:39,600
we come down here where it's winter, and we
get the long nights, and get to see stuff

4
00:00:39,600 --> 00:00:40,980
in the Southern Hemisphere sky.

5
00:00:40,980 --> 00:00:44,520
>>We were able
to observe Eta Carinae.

6
00:00:45,440 --> 00:00:50,000
I've never seen that target,
so you learn something new on every observation.

7
00:00:50,000 --> 00:00:56,240
>>One of my favorite objects that must be observed
from the Southern Hemisphere, is actually

8
00:00:56,240 --> 00:01:02,351
what's called the Large Magellenic Cloud. This is
a dwarf galaxy that's a satellite to the Milky

9
00:01:02,351 --> 00:01:06,760
Way. A lot of astronomers consider it a great
laboratory for studying star formation.

10
00:01:06,760 --> 00:01:09,259
[Music/SOFIA Taking Off]

11
00:01:09,280 --> 00:01:13,681
The four instruments that the SOFIA telescope

brought down for the deployment is really

12
00:01:13,681 --> 00:01:20,128
necessary in the sense that each instrument's
detector is sensitive to a different part

13
00:01:20,160 --> 00:01:25,941
of the electromagnetic spectrum. When you're
trying to conduct observations for different

14
00:01:25,941 --> 00:01:32,079
science needs, you wanna be looking at light
of, essentially all wavelengths, because how

15
00:01:32,080 --> 00:01:37,450
much light the object is producing at each
wavelength tells you something about the physics that's

16
00:01:37,450 --> 00:01:40,560
going on in that system.

17
00:01:40,560 --> 00:01:47,640
[Music]

18
00:01:47,640 --> 00:01:51,280
>>We just finished
the occultation of Pluto with the FLITECAM/HIPO

19
00:01:51,280 --> 00:01:56,510
instrument set, and today we're installing
the FORCAST instrument. FORCAST is the Faint

20
00:01:56,510 --> 00:02:02,550
Object infRared CAmera for SOFIA Telescope.
When it comes to changing instruments, the

21
00:02:02,560 --> 00:02:08,180
off going instrument, there's a long procedure
that gets followed. They kill all the power,

22
00:02:08,180 --> 00:02:12,210
uncouple all the electrical connections, and
they have a long process to de-torque all

23
00:02:12,240 --> 00:02:17,200
the bolts in a certain sequence, they have
to pass it down one side of the airplane that

24
00:02:17,200 --> 00:02:22,340
has a reinforced floor. When we go to install
it, it's the reverse process. You bring it

25
00:02:22,400 --> 00:02:27,760
to the telescope flange, align it with the
guide pins, and then torque it in place.

26
00:02:29,760 --> 00:02:34,141
The avionics team attaches all the cables and
fiber optics. They do a power check to make

27
00:02:34,160 --> 00:02:38,720
sure that everything is plugged in to the
right connectors. And then along comes the

28
00:02:38,720 --> 00:02:44,080
cryogens team, they fill up the liquid nitrogen
tanks, and then the helium tanks.

29
00:02:47,520 --> 00:02:52,759
And then the science instrument team will come out,
check their instrument for calibration and

30
00:02:52,759 --> 00:02:53,961
optical accuracy.

31
00:02:54,000 --> 00:02:56,000
>>Trying to nod to A again.

32
00:02:57,520 --> 00:02:59,520

Yep, and that's done.

33
00:02:59,520 --> 00:03:01,520
>>OK, that's good.

34
00:03:01,520 --> 00:03:06,880
>>FORCAST is a mid-infrared camera and spectrometer. It's a really great

35
00:03:06,880 --> 00:03:09,840
tool for studying the process of star formation.

36
00:03:09,840 --> 00:03:12,720
Today we conducted a functional checkout.

37
00:03:12,720 --> 00:03:21,621
The functional checkout serves to help us
understand how the science instrument is performing

38
00:03:21,621 --> 00:03:25,381
right before we go off and fly a ten hour
science flight.