



1  
00:00:00,480 --> 00:00:08,480  
[Music]

2  
00:00:08,480 --> 00:00:09,300  
>>Six o'clock,

3  
00:00:09,300 --> 00:00:10,400  
time to get started.

4  
00:00:10,400 --> 00:00:10,980  
>>Lynne?

5  
00:00:10,980 --> 00:00:11,880  
>>Here.

6  
00:00:11,880 --> 00:00:12,680  
>>LeeAnn?

7  
00:00:12,680 --> 00:00:13,560  
>>Here.

8  
00:00:13,560 --> 00:00:15,800  
>>We're going to do  
two legs on S106.

9  
00:00:15,806 --> 00:00:18,866  
The first one is pointing  
at the main part of S106.

10  
00:00:18,866 --> 00:00:21,166  
This is a star forming region.

11  
00:00:21,166 --> 00:00:25,646  
[Music] [Aircraft Engines]

12  
00:00:29,380 --> 00:00:30,400  
>> The EPOS.

13

00:00:30,400 --> 00:00:31,716

When we get up to altitude,

14

00:00:31,716 --> 00:00:33,266

everywhere you go this

EPOS goes with you.

15

00:00:33,266 --> 00:00:36,640

That's your emergency air,

and for those with glasses,

16

00:00:36,646 --> 00:00:39,826

you know to put the glasses

in before you put the mask on.

17

00:00:39,826 --> 00:00:43,166

[Aircraft taking off]

18

00:00:43,166 --> 00:00:47,026

[Music]

19

00:00:48,256 --> 00:00:51,816

>> My name is George Hademenos,

and I am a physics teacher

20

00:00:51,826 --> 00:00:54,866

at Richardson High School

in Richardson, Texas.

21

00:00:54,866 --> 00:00:56,256

>> My name is Judy Little.

22

00:00:56,256 --> 00:00:57,836

I am from Omaha, Nebraska,

23

00:00:57,846 --> 00:01:01,320

and I am a science

teacher in a high school.

24

00:01:01,320 --> 00:01:02,820

>> My name is Diane Watson.

25

00:01:02,826 --> 00:01:05,836

I'm a special education  
math and science teacher,

26

00:01:05,836 --> 00:01:09,356

and I teach at Richardson High  
School near Dallas, Texas.

27

00:01:09,356 --> 00:01:11,356

>> My name is LeeAnn Vaughan.

28

00:01:11,356 --> 00:01:14,316

I am a science teacher  
from Omaha, Nebraska.

29

00:01:14,316 --> 00:01:18,976

[Music] [Radio chatter]

30

00:01:22,196 --> 00:01:24,826

>> As a physics teacher,  
what I like to do is search

31

00:01:24,826 --> 00:01:28,806

for creative and innovative  
approaches to enlighten my kids

32

00:01:28,806 --> 00:01:31,946

on real-world applications  
of physics.

33

00:01:32,680 --> 00:01:35,560

Although I'm a teacher,  
I'm also a student as well.

34

00:01:35,560 --> 00:01:36,760

I love to learn.

35

00:01:36,760 --> 00:01:39,540

I love to engage in these  
new learning experiences.

36

00:01:41,216 --> 00:01:43,756

>> They're going to  
pore over a ton of data.

37

00:01:43,756 --> 00:01:46,006

>> What kind of storage  
are you talking about?

38

00:01:46,006 --> 00:01:47,756

>> The observatory is expected

39

00:01:47,760 --> 00:01:50,760

to collect three terabytes  
of data per flight.

40

00:01:50,766 --> 00:01:53,946

>> Science data is really the  
bread and butter of SOFIA.

41

00:01:53,946 --> 00:01:55,540

That's what we hang our hat on.

42

00:01:55,540 --> 00:01:56,880

>> Leg ten; right?

43

00:01:56,880 --> 00:01:58,080

>> Uh-huh, yep.

44

00:01:58,676 --> 00:01:59,536

>> Leg nine.

45

00:01:59,540 --> 00:02:01,100

Yeah, we're starting at  
nine, and we'll do a --

46

00:02:01,296 --> 00:02:05,076

>> All right, see. See the nine leg--to the nine leg's at six-fifty...

47

00:02:05,076 --> 00:02:07,296

I have always been  
interested in science.

48

00:02:07,306 --> 00:02:09,956

The beauty of having  
STEM opportunities is

49

00:02:09,956 --> 00:02:12,876

that in addition to expanding  
our information about astronomy,

50

00:02:12,876 --> 00:02:15,336

is also to learn  
about data collection

51

00:02:15,346 --> 00:02:17,516

and mathematical calculations.

52

00:02:17,516 --> 00:02:20,646

[Radio chatter]

53

00:02:20,880 --> 00:02:24,140

>> This screen is  
giving us all the data.

54

00:02:24,146 --> 00:02:27,796

So this is still telling us  
the time into the flight.

55

00:02:27,796 --> 00:02:32,376

It's telling us longitudes,  
latitudes, timing, altitudes.

56

00:02:32,380 --> 00:02:34,860

This is telling us the  
angle of the telescope;

57

00:02:34,866 --> 00:02:38,536

it's telling us whether the  
telescope is still centered

58

00:02:38,536 --> 00:02:39,816

in its bay.

59

00:02:39,816 --> 00:02:41,236

[Music] [Aircraft flying]

60

00:02:41,246 --> 00:02:42,760

>> How do you hook kids?

61

00:02:42,760 --> 00:02:44,400

You know, what's the hook?

62

00:02:44,406 --> 00:02:48,476

It's like, well, kids love  
to see things go kaboom.

63

00:02:48,476 --> 00:02:49,316

>> Yeah.

64

00:02:49,326 --> 00:02:51,126

>> Colliding galaxies.

65

00:02:51,460 --> 00:02:52,660

>> Galactic collisions, baby.

66

00:02:52,660 --> 00:02:54,780

>> My kids see that in a  
book, and they're like, "Hey,

67

00:02:54,780 --> 00:02:56,780

we're going to learn  
about this?"

68

00:02:56,786 --> 00:03:00,066

We've looked at galaxies  
colliding and then the stars

69

00:03:00,066 --> 00:03:02,056

that are forming in that area.

70

00:03:02,056 --> 00:03:04,616

We're looking at  
young or new stars

71

00:03:04,616 --> 00:03:08,706

and there's an accretion disk or  
an area of material that twirls

72

00:03:08,706 --> 00:03:12,096

around it, and then how does  
that affect or influence

73

00:03:12,096 --> 00:03:14,036

that star's formation.

74

00:03:14,046 --> 00:03:16,316

If I could talk to my high  
school students right now,

75

00:03:16,316 --> 00:03:19,036

I would just say that if you  
look around, you're going

76

00:03:19,036 --> 00:03:23,536

to see why hard work and  
science and math and all kinds

77

00:03:23,536 --> 00:03:26,916

of opportunities out there  
are worth the effort.

78

00:03:27,696 --> 00:03:29,456

>> I think that's a satellite.

79

00:03:29,906 --> 00:03:36,766

For me, the bigger impact really is taking what I'm seeing as far

80

00:03:36,766 --> 00:03:40,766

as science in action and just the process of science.

81

00:03:42,016 --> 00:03:44,936

Another thing that has been really impressive is watching

82

00:03:44,936 --> 00:03:47,706

the problem solving, watching teams

83

00:03:47,706 --> 00:03:48,986

of people working together,

84

00:03:48,986 --> 00:03:51,436

not just the scientists working together

85

00:03:51,436 --> 00:03:54,256

but also the entire team on board.

86

00:03:54,256 --> 00:03:56,666

I just think that's a really important lesson

87

00:03:56,666 --> 00:03:57,976

to bring back to our students.

88

00:03:57,976 --> 00:04:00,436

How do you go about solving a problem?

89

00:04:00,440 --> 00:04:02,040

[Music] [Radio chatter]

90

00:04:02,046 --> 00:04:04,046

>> So you have three  
different visions.

91

00:04:04,046 --> 00:04:06,906

So they're still  
looking at these targets.

92

00:04:06,906 --> 00:04:09,380

Here...here...here...

93

00:04:09,386 --> 00:04:14,226

So even though we're nearly  
at the end of our journey,

94

00:04:14,226 --> 00:04:17,696

we are still infrared  
telescoping right

95

00:04:17,696 --> 00:04:21,626

up until we turn past  
Las Vegas and go home.

96

00:04:22,116 --> 00:04:23,756

How many people at five o'clock

97

00:04:23,756 --> 00:04:27,116

in the morning are still  
doing, with the same excitement

98

00:04:27,116 --> 00:04:31,356

and tenacity they were doing at  
eight o'clock last night?