



1  
00:00:08,180 --> 00:00:04,110  
[Silence, NASA Planetary Opening Animation]

2  
00:00:08,200 --> 00:00:12,230  
[Silence, NASA Planetary Opening Animation fades]

3  
00:00:12,250 --> 00:00:16,270  
[music, control room b-roll] Florence Tan: My name is Florence Tan.

4  
00:00:16,290 --> 00:00:20,280  
I'm the SAM Electrical Lead Engineer, but now I'm working as the, uh,

5  
00:00:20,300 --> 00:00:24,300  
SAM Payload Uplink Lead and the Payload Downlink Lead, supporting

6  
00:00:24,320 --> 00:00:28,400  
uh, operations on Mars! SAM is an instrument on

7  
00:00:28,420 --> 00:00:32,480  
the rover--Curiosity--it's...it's actually, I think

8  
00:00:32,500 --> 00:00:36,540  
of it--SAM--as a nose. You know, it's like a very sensitive nose. It can sniff out

9  
00:00:36,560 --> 00:00:40,610  
different Martian components. You know, air, as well as

10  
00:00:40,630 --> 00:00:44,660  
soil samples to really really tease out the secrets

11  
00:00:44,680 --> 00:00:48,710  
of Mars. The way SAM gets a sample is--first of all,

12  
00:00:48,730 --> 00:00:52,740  
sifted by the rover. And then, we get a tiny

13  
00:00:52,760 --> 00:00:56,790

small amount--you know, a dollop--into one of our 74 cups, which is

14

00:00:56,810 --> 00:01:00,820

actually in a carousel. And then, we take the sample, and it gets

15

00:01:00,840 --> 00:01:04,830

put into an oven. When the oven gets heated up about a thousand degrees

16

00:01:04,850 --> 00:01:08,910

--and it can go as high as 1100 degrees when we run the "hot oven"

17

00:01:08,930 --> 00:01:13,010

option--and this is Celsius, you know, not your regular oven.

18

00:01:13,030 --> 00:01:17,100

And then it goes--the gas that comes out gets flown into the

19

00:01:17,120 --> 00:01:21,180

three instruments that analyze this day. SAM is

20

00:01:21,200 --> 00:01:25,250

very similar to a very well-equipped lab

21

00:01:25,270 --> 00:01:29,300

on Earth, except, you know, we're special. We're on Mars!

22

00:01:29,320 --> 00:01:33,340

You know, this is something that I

23

00:01:33,360 --> 00:01:37,380

didn't appreciate until I polled one of the scientists and asked him, you know,

24

00:01:37,400 --> 00:01:41,400

when was the last time we did a quadrupole mass spectrometer on Mars?

25

00:01:41,420 --> 00:01:45,410

And he was like, "Uh, maybe 35

26

00:01:45,430 --> 00:01:49,520

years ago," and, you know, so this is--this is really special. We've never had

27

00:01:49,540 --> 00:01:53,620

something like this. There's no comparison. SAM is working

28

00:01:53,640 --> 00:01:57,720

just so marvellously--it is, you know

29

00:01:57,740 --> 00:02:01,810

--it is beyond our dreams. This is marvelous. I just...

30

00:02:01,830 --> 00:02:05,880

can't even tell you how great it is. It's...it's great! [fade out]

31

00:02:05,900 --> 00:02:09,940

[music, beeping, Goddard End Tag]

32

00:02:09,960 --> 00:02:13,990

[music, beeping fades, Goddard End Tag]