1
00:00:01,070 --> 00:00:01,620
music

2
00:00:01,640 --> 00:00:03,740
I built my first AM radio with my dad

3
00:00:03,760 --> 00:00:05,900
full-on, really sodering and building.

4
00:00:05,920 --> 00:00:09,700
I built, you know, missile rockets, and we launched those.

5
00:00:09,720 --> 00:00:11,310
And we had telescopes.

6
00:00:11,330 --> 00:00:13,520
And he was the first to show me Mars.

7
00:00:13,540 --> 00:00:16,040
And I slowly got into the space program that way.

8
00:00:16,060 --> 00:00:21,510
I knew in high school that I wanted to be an astronomer.

9
00:00:21,530 --> 00:00:23,820
You can discover and find out what's going on.

10
00:00:23,840 --> 00:00:27,830
Depending on what you are studying. For me, it's Titan's atmosphere. Name's Carrie Ander and I'm a space sc

11
00:00:27,850 --> 00:00:31,860
at NASA's Goddard Space Flight Center, and I'm a team member on

12
00:00:31,880 --> 00:00:36,010
Cassini CIRS. CIRS is called the composit infrared spectrometer, and it's one of the

13
00:00:36,030 --> 00:00:40,040

tweleve instruments on board the Cassini spacecraft, which is orbiting Satern.

14
00:00:40,060 --> 00:00:44,050
What CIRS does is it goes beyond the human visible

15
00:00:44,070 --> 00:00:48,070
spectrum part, that we see with our eyes, into the thermal infrared, what I'll call it.

16
00:00:48,090 --> 00:00:52,320
So imagine sitting in front of fire, and you

17
00:00:52,340 --> 00:00:56,520
are not looking at it, but you're feeling the fire, the heat from the fire.

18
00:00:56,540 --> 00:01:00,560
CIRS sees that heat and records it. And then we can tell what

19
00:01:00,580 --> 00:01:04,610
is going on: there's this molecule, this molecule, this type of maybe particulate, a cloud.

20
00:01:04,630 --> 00:01:08,630
to try to figure out "Ok, what could that be?" And that's what we're

21
00:01:08,650 --> 00:01:12,640
doing to to find out the types of clouds that we see

22
00:01:12,660 --> 00:01:16,660
with CIRS. But if you just kind of look at Titan from a big picture point of view, first of all

23
00:01:16,680 --> 00:01:20,720
it's a moon, and it orbits Satern. It's Satern's largest moon.

24
00:01:20,740 --> 00:01:24,770
And it's the second largest moon in our solar system, next to Jupiter's Ganymede.

25
00:01:24,790 --> 00:01:28,780
But what's really intriguing about Titan is that it is the only moon in our solar system

26
00:01:28,800 --> 00:01:32,790
with a thick, substantial planet-like atmosphere

27
00:01:32,810 --> 00:01:36,990
On Earth, in our troposphere, you know, when you look up and you see clouds

28
00:01:37,010 --> 00:01:41,030
those are all made of liquid water, ice

29
00:01:41,050 --> 00:01:45,090
crystals or a combination of the two. Well, Titan doesn't have that.

30
00:01:45,110 --> 00:01:49,130
It has methane instead. So you'd see all this

31
00:01:49,150 --> 00:01:53,150
methane rain, methane drizzle, methane clouds, all that.

32
00:01:53,170 --> 00:01:57,160
There's a lot of early Earth scientists out there who want to learn about, you know, life

33
00:01:57,180 --> 00:02:01,190
"Is there life?" You can go to Titan as one possibility,

34
00:02:01,210 --> 00:02:05,290
because it can be representative what the early Earth was like before

35
00:02:05,310 --> 00:02:09,300
we were here. It's a completely different environment than

36
00:02:09,320 --> 00:02:13,340
Earth, but it has a lot of similarities at the same time. It's a very dynamic

37
00:02:13,360 --> 00:02:17,380
world. In studying it, you can do any kind of photochemistry,

38
00:02:17,400 --> 00:02:21,580

different chemistry, different physics.

39
00:02:21,600 --> 00:02:25,620
I was always interested in math and science, but my dad, I think, was a key role.