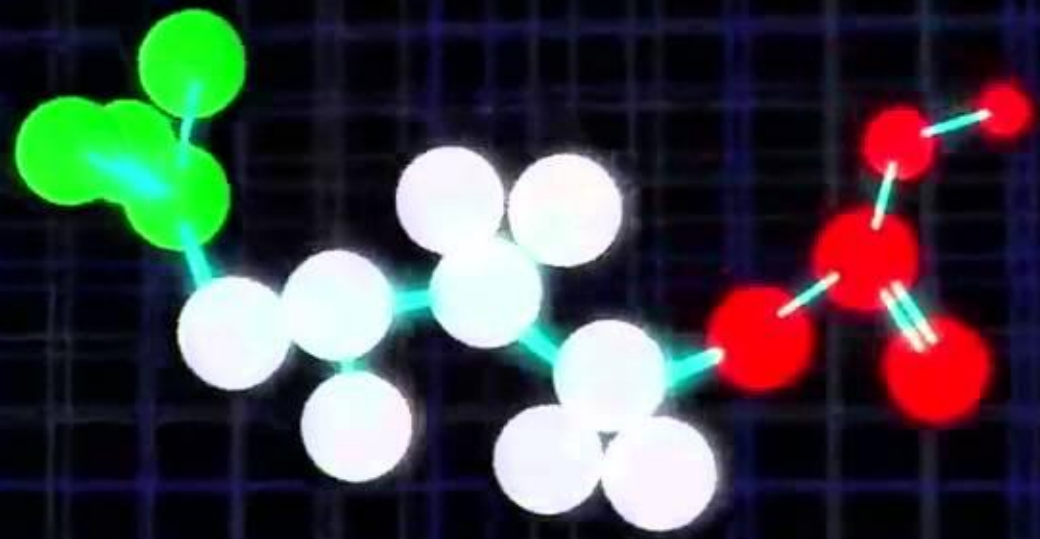

1
00:00:01,770 --> 00:00:09,620
Hi, I'm Pan Conrad, deputy principal investigator
of the SAM instrument suite on the Mars Science

2
00:00:09,620 --> 00:00:14,360
Laboratory and this is your Curiosity rover
update.

3
00:00:14,360 --> 00:00:20,630
While our robotic explorer has been busy characterizing
the surface of Mars, the SAM team has also

4
00:00:20,630 --> 00:00:24,870
been busy, but we've been looking at something
invisible, the Martian atmosphere.

5
00:00:24,870 --> 00:00:31,830
SAM, or Sample Analysis at Mars, is not one
instrument, but three, all of which are designed

6
00:00:31,830 --> 00:00:35,750
to work together to chemically characterize
Mars.

7
00:00:35,750 --> 00:00:41,410
SAM measures chemical elements and molecules
and we do this by looking at.

8
00:00:41,410 --> 00:00:46,780
We can bake solid samples until they give
up their volatile components or their gases

9
00:00:46,780 --> 00:00:52,460
or we can directly inhale the Martian atmosphere
through our inlet ports.

10
00:00:52,460 --> 00:00:57,809
The tunable laser spectrometer has a special
role for SAM in that it can very sensitively

11
00:00:57,809 --> 00:01:04,430
detect the organic molecule, methane, which
has been observed from the Earth telescopically

12
00:01:04,430 --> 00:01:10,549
and also by the Mars Express orbiter at very,
very low limits in the Martian atmosphere.

13
00:01:10,549 --> 00:01:15,119
We're trying to discover whether or not
we can see this molecule from the Martian

14
00:01:15,119 --> 00:01:19,600
surface and if it has any variation from season
to season.

15
00:01:19,600 --> 00:01:24,600
So we've already begun prospecting for methane
and to date we don't have a definitive detection.

16
00:01:24,600 --> 00:01:28,310
We'll continue looking during the course
of the mission.

17
00:01:28,310 --> 00:01:34,490
In the coming months, wherever Curiosity goes
SAM will continue to sniff the Martian atmosphere

18
00:01:34,490 --> 00:01:40,049
periodically looking for changes on a seasonal
or maybe even diurnal basis and that will

19
00:01:40,049 --> 00:01:45,810
tell us something about the dynamics the exchange
between the surface and the atmosphere.