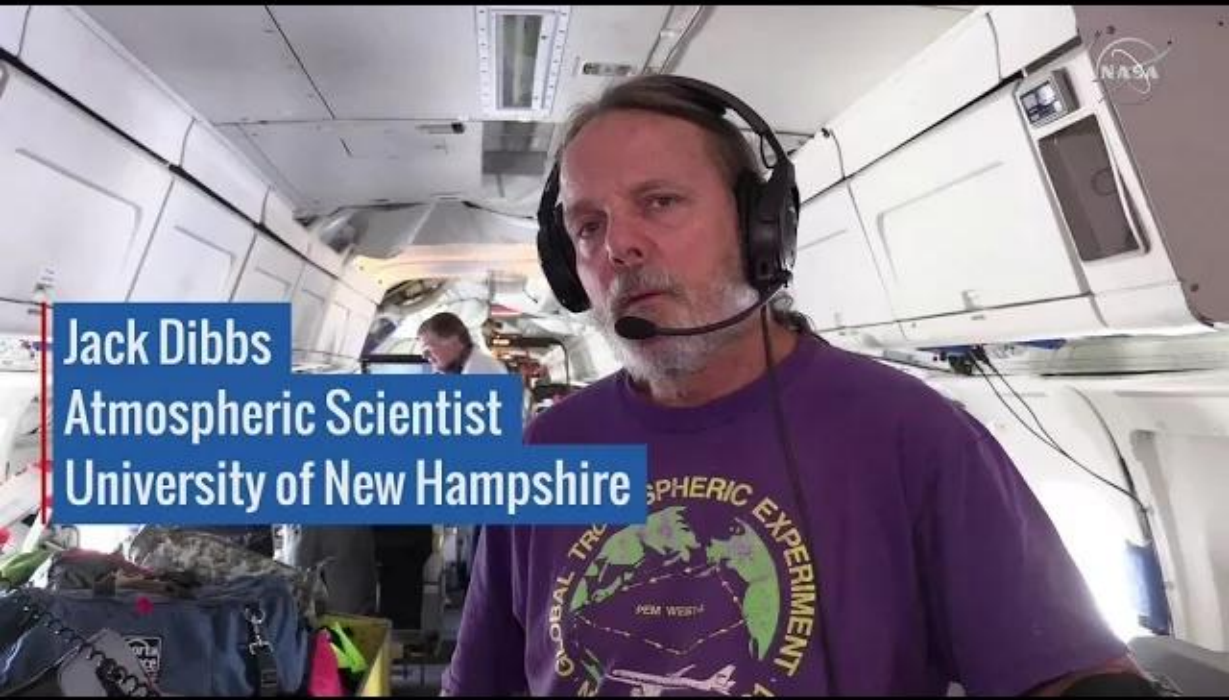
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PEM WEST

1
00:00:00,250 --> 00:00:04,380
The system is called Soluble Acidic Gases and Aerosols.

2
00:00:04,400 --> 00:00:05,330
We have two parts to it.

3
00:00:05,350 --> 00:00:08,090
One is a filter that's a bulk filter.

4
00:00:08,110 --> 00:00:10,510
It collects aerosols from very tiny sizes

5
00:00:10,530 --> 00:00:12,450
up to about 5 microns.

6
00:00:12,470 --> 00:00:14,670
So we measure 8 or 9 ions,

7
00:00:14,690 --> 00:00:16,040
tracers of pollution,

8
00:00:16,060 --> 00:00:19,160
sea salt, biomass burning, and dust.

9
00:00:19,180 --> 00:00:21,300
So the combinations or the ratios

10
00:00:21,320 --> 00:00:23,160
tells us something about the source of the air.

11
00:00:23,580 --> 00:00:26,430
Then we run the mist chamber IC sampler,

12
00:00:26,450 --> 00:00:28,400
which collects soluble gases

13
00:00:28,420 --> 00:00:31,440

and fine, submicron aerosols into a liquid.

14
00:00:31,460 --> 00:00:32,430
And we make injections

15
00:00:32,450 --> 00:00:35,230
right onto the IC on the airplane

16
00:00:35,250 --> 00:00:36,780
so we get data about 3 or 4 minutes

17
00:00:36,800 --> 00:00:39,060
after we collect the sample.

18
00:00:39,080 --> 00:00:40,630
And there the focus is

19
00:00:40,650 --> 00:00:42,980
primarily on nitrate and sulfate.

20
00:00:43,000 --> 00:00:44,790
Well the filter sampling,

21
00:00:44,810 --> 00:00:46,290
it's a manual system.

22
00:00:46,310 --> 00:00:48,220
So you got to put the filters in there

23
00:00:48,240 --> 00:00:50,110
and open the valves.

24
00:00:50,130 --> 00:00:53,160
So every few minutes I gotta get up

25
00:00:53,180 --> 00:00:54,880
and put in another filter,

26
00:00:54,900 --> 00:00:56,130
and take the ones out

27
00:00:56,150 --> 00:00:58,200
and put them back here in the cooler

28
00:00:58,220 --> 00:01:01,020
so they don't degrade.

29
00:01:01,040 --> 00:01:02,600
I think that we're going to see

30
00:01:02,620 --> 00:01:03,430
really clean air,

31
00:01:03,450 --> 00:01:04,500
but we're also going to see

32
00:01:04,520 --> 00:01:07,880
pockets of pollution from various sources.

33
00:01:07,900 --> 00:01:09,000
A long time ago

34
00:01:09,020 --> 00:01:10,850
we came down to the Southern Ocean

35
00:01:10,870 --> 00:01:14,390
on a NASA mission called ChemTropics,

36
00:01:14,410 --> 00:01:15,320
and the same idea

37
00:01:15,340 --> 00:01:16,780
we're trying to get into the tropics

38
00:01:16,800 --> 00:01:18,730

and find this really clean air.

39
00:01:18,750 --> 00:01:20,620
But we were seeing biomass burning plumes

40
00:01:20,640 --> 00:01:22,690
from Africa and South America

41
00:01:22,710 --> 00:01:24,650
in the middle of the Pacific Ocean.

42
00:01:24,670 --> 00:01:27,020
So I think we will see stuff like that.

43
00:01:27,040 --> 00:01:29,500
It's just not clear

44
00:01:29,520 --> 00:01:31,430
how much of an effect does that have.

45
00:01:31,450 --> 00:01:33,590
If you don't go after them

46
00:01:33,610 --> 00:01:34,650
and you just fly around,

47
00:01:34,670 --> 00:01:36,610
do you see them 10 percent of the time

48
00:01:36,630 --> 00:01:38,180
or 50, or...? We don't know.

49
00:01:38,200 --> 00:01:42,200
So that's why this mission is not targeting them.

50
00:01:42,220 --> 00:01:43,140
It's trying to sample them

51
00:01:43,160 --> 00:01:44,130
as they happen to be there.

52
00:01:44,150 --> 00:01:45,880
We're certainly going to hit them