

A woman with light brown hair, wearing a dark jacket with white stripes on the sleeves and a brown turtleneck, stands outdoors. She is smiling slightly. The background shows a paved walkway, a white pole, and a body of water under a blue sky with scattered clouds. The ground appears to have some snow or ice patches.

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1
00:00:05,030 --> 00:00:02,710
two days ago we left new zealand uh

2
00:00:06,710 --> 00:00:05,040
christchurch and flew across the date

3
00:00:08,470 --> 00:00:06,720
line heading for

4
00:00:09,589 --> 00:00:08,480
this chile where we are

5
00:00:10,950 --> 00:00:09,599
at the moment

6
00:00:12,709 --> 00:00:10,960
it's winter time in the southern

7
00:00:22,470 --> 00:00:12,719
hemisphere so our

8
00:00:26,150 --> 00:00:24,390
and it does feel like we're exploring

9
00:00:27,189 --> 00:00:26,160
through atmosphere that hasn't been

10
00:00:29,750 --> 00:00:27,199
sampled

11
00:00:32,229 --> 00:00:29,760
ever in some cases or for many many

12
00:00:34,870 --> 00:00:32,239
years in others during our flight we

13
00:00:37,590 --> 00:00:34,880

went from 500 feet over the ocean all

14

00:00:40,150 --> 00:00:37,600

the way up to about 40 000 feet and in

15

00:00:41,030 --> 00:00:40,160

that we could see sea ice as down at the

16

00:00:42,950 --> 00:00:41,040

bottom

17

00:00:45,110 --> 00:00:42,960

all the way up to the polar vortex at

18

00:00:45,910 --> 00:00:45,120

the very top and temperatures that went

19

00:00:48,229 --> 00:00:45,920

to

20

00:00:50,869 --> 00:00:48,239

minus 70 degrees celsius outside the

21

00:00:52,470 --> 00:00:50,879

aircraft was extremely cold

22

00:00:54,310 --> 00:00:52,480

that meant that we were sampling in the

23

00:00:56,150 --> 00:00:54,320

stratosphere so we saw a lot of high

24

00:00:58,709 --> 00:00:56,160

ozone levels but not as high as they

25

00:01:00,790 --> 00:00:58,719

possibly could have been and we were

26

00:01:02,630 --> 00:01:00,800

very close to the ozone hole which will

27

00:01:04,310 --> 00:01:02,640

start to probably peak in about

28

00:01:05,990 --> 00:01:04,320

september

29

00:01:09,670 --> 00:01:06,000

the ozone hole is formed when you get a

30

00:01:11,830 --> 00:01:09,680

lot of cfc's so chlorofluorocarbons these

31

00:01:13,510 --> 00:01:11,840

were species that were banned nearly 30

32

00:01:15,270 --> 00:01:13,520

years ago as part of the montreal

33

00:01:17,109 --> 00:01:15,280

protocol and yet they're still in the

34

00:01:19,749 --> 00:01:17,119

atmosphere because they have a very long

35

00:01:22,149 --> 00:01:19,759

lifetime so it's going to be about 50

36

00:01:25,749 --> 00:01:22,159

years before the cfc's disappear from the

37

00:01:30,469 --> 00:01:28,630

i'm here on green mountain on ascension

38

00:01:32,149 --> 00:01:30,479

island which is right in the middle of

39

00:01:34,469 --> 00:01:32,159

the atlantic ocean

40

00:01:37,270 --> 00:01:34,479

green island is formed by tectonic

41

00:01:39,510 --> 00:01:37,280

processes the atlantic ocean is

42

00:01:41,590 --> 00:01:39,520

spreading and there's a ridge down the

43

00:01:43,910 --> 00:01:41,600

middle which represents the spreading

44

00:01:45,830 --> 00:01:43,920

center is where a lot of magma is coming

45

00:01:47,670 --> 00:01:45,840

up to the surface and then flowing out

46

00:01:50,469 --> 00:01:47,680

under the ocean becoming the new ocean

47

00:01:52,950 --> 00:01:50,479

floor it's about 3000 kilometers from

48

00:01:55,270 --> 00:01:52,960

the nearest land

49

00:01:57,670 --> 00:01:55,280

however when we came uh into the

50

00:01:58,630 --> 00:01:57,680

vicinity of the island let's say

51
00:02:01,109 --> 00:01:58,640
um

52
00:02:04,069 --> 00:02:01,119
200 miles to the south

53
00:02:06,709 --> 00:02:04,079
we began to encounter a lot of smoke and

54
00:02:09,830 --> 00:02:06,719
pollution the atom project is designed

55
00:02:12,550 --> 00:02:09,840
to understand how pollutants enter the

56
00:02:15,350 --> 00:02:12,560
remote parts of the global atmosphere

57
00:02:17,910 --> 00:02:15,360
i have to say we were totally unprepared

58
00:02:20,309 --> 00:02:17,920
for how thick the smoke was and how high

59
00:02:22,710 --> 00:02:20,319
the pollution concentrations were this

60
00:02:24,630 --> 00:02:22,720
smoke and pollution originates in

61
00:02:25,750 --> 00:02:24,640
southern africa

62
00:02:27,670 --> 00:02:25,760
where

63
00:02:30,550 --> 00:02:27,680

people set fires for a variety of

64

00:02:32,710 --> 00:02:30,560

reasons for agriculture for

65

00:02:35,110 --> 00:02:32,720

range improvement we did have a computer

66

00:02:37,509 --> 00:02:35,120

model that we used when we were planning

67

00:02:39,110 --> 00:02:37,519

the mission and the model predicted that

68

00:02:41,030 --> 00:02:39,120

this stuff would be here so maybe i

69

00:02:43,670 --> 00:02:41,040

shouldn't have been surprised although i

70

00:02:45,990 --> 00:02:43,680

have to say that um the model put the

71

00:02:47,830 --> 00:02:46,000

pollution in the right place

72

00:02:49,750 --> 00:02:47,840

but maybe not the right amount maybe we