1
00:00:19,910 --> 00:00:17,430
scientists trying to unravel the

2
00:00:22,150 --> 00:00:19,920
mysteries of how our planet works and

3
00:00:24,630 --> 00:00:22,160
what could threaten its health are twice

4
00:00:25,589 --> 00:00:24,640
dependent upon nasa's airborne science

5
00:00:27,910 --> 00:00:25,599
program

6
00:00:30,470 --> 00:00:27,920
its use of more than a dozen piloted and

7
00:00:33,030 --> 00:00:30,480
unpiloted aircraft at six nasa centers

8
00:00:34,870 --> 00:00:33,040
and flight facilities supports and

9
00:00:37,510 --> 00:00:34,880
supplements the work of the agency's

10
00:00:39,110 --> 00:00:37,520
fleet of earth observing satellites

11
00:00:41,110 --> 00:00:39,120
we're the only civilian agency in the

12
00:00:42,790 --> 00:00:41,120
world that routinely flies above fifty

13
00:00:45,110 --> 00:00:42,800

thousand feet the sensitive

14
00:00:47,590 --> 00:00:45,120
instrumentation used by a spacecraft to

15
00:00:49,590 --> 00:00:47,600
capture and measure what it sees below

16
00:00:51,750 --> 00:00:49,600
must be carefully calibrated to the

17
00:00:54,069 --> 00:00:51,760
highest standards

18
00:00:56,830 --> 00:00:54,079
airborne science aircraft are dedicated

19
00:00:58,869 --> 00:00:56,840
to ensure the sensor's accuracy and

20
00:01:00,549 --> 00:00:58,879
reliability we're looking at a whole

21
00:01:02,389 --> 00:01:00,559
series of new satellites in the earth

22
00:01:04,390 --> 00:01:02,399
science division to launch

23
00:01:06,469 --> 00:01:04,400
a lot of the sensors that will be on

24
00:01:08,390 --> 00:01:06,479
those satellites are right now being

25
00:01:10,550 --> 00:01:08,400
tested in our from our instrument

26
00:01:12,710 --> 00:01:10,560
incubator program on the aircraft

27
00:01:14,149 --> 00:01:12,720
they're also testing the algorithm

28
00:01:16,070 --> 00:01:14,159
developments and how we're going to

29
00:01:18,469 --> 00:01:16,080
actually be able to utilize that data to

30
00:01:20,789 --> 00:01:18,479
help the society and the political

31
00:01:23,590 --> 00:01:20,799
policies that'll be generated once the

32
00:01:25,990 --> 00:01:23,600
satellite data are in airborne science

33
00:01:28,230 --> 00:01:26,000
often delivers context and meaning

34
00:01:31,190 --> 00:01:28,240
providing the whats and whys to earth

35
00:01:33,910 --> 00:01:31,200
scientists an airborne science aircraft

36
00:01:37,190 --> 00:01:33,920
can travel and linger in places where a

37
00:01:40,149 --> 00:01:37,200
satellite simply can't get one snapshot

38
00:01:43,270 --> 00:01:40,159

the polar ice caps a tropical storm on

39
00:01:45,030 --> 00:01:43,280
the equator the eye of a hurricane

40
00:01:47,749 --> 00:01:45,040
returning with complementary sets of

41
00:01:50,230 --> 00:01:47,759
measurements fresh atmospheric samples

42
00:01:51,190 --> 00:01:50,240
and more detailed multi-dimensional

43
00:01:53,830 --> 00:01:51,200
imagery

44
00:01:56,310 --> 00:01:53,840
airborne science focuses its aerial work

45
00:01:58,149 --> 00:01:56,320
in six areas of nasa's earth science

46
00:01:59,190 --> 00:01:58,159
division weather

47
00:02:00,469 --> 00:01:59,200
climate

48
00:02:03,109 --> 00:02:00,479
solid earth

49
00:02:06,310 --> 00:02:03,119
carbon cycle and ecosystems

50
00:02:08,309 --> 00:02:06,320
water and energy cycles and atmospheric

51
00:02:10,229 --> 00:02:08,319
composition in the atmospheric

52
00:02:12,790 --> 00:02:10,239
composition area one of the things we

53
00:02:14,869 --> 00:02:12,800
looked at years ago with the er2 which

54
00:02:17,750 --> 00:02:14,879
happens to be behind me right now

55
00:02:19,350 --> 00:02:17,760
we we were able to go into the ozone

56
00:02:22,070 --> 00:02:19,360
hole and

57
00:02:24,150 --> 00:02:22,080
the satellites would tell us there was a

58
00:02:25,190 --> 00:02:24,160
problem with the ozone hole such that

59
00:02:27,270 --> 00:02:25,200
there was

60
00:02:28,630 --> 00:02:27,280
more ozone or less ozone at different

61
00:02:30,070 --> 00:02:28,640
times of the year

62
00:02:32,790 --> 00:02:30,080
but we really didn't know what the

63
00:02:34,869 --> 00:02:32,800

numbers were essentially the er-2

64
00:02:36,630 --> 00:02:34,879
aircraft was turned into a flying

65
00:02:38,550 --> 00:02:36,640
chemistry laboratory

66
00:02:39,790 --> 00:02:38,560
its ultra-sensitive instruments

67
00:02:41,910 --> 00:02:39,800
pinpointed

68
00:02:44,630 --> 00:02:41,920
chlorofluorocarbons as the ozone hole

69
00:02:45,910 --> 00:02:44,640
culprit and led directly to the montreal

70
00:02:48,630 --> 00:02:45,920
protocol

71
00:02:51,270 --> 00:02:48,640
a recent report quantified how less

72
00:02:53,430 --> 00:02:51,280
helpful life on earth would be without

73
00:02:55,990 --> 00:02:53,440
the 20 year old international treaty

74
00:02:58,309 --> 00:02:56,000
banning cfcs they were saying in the

75
00:03:00,790 --> 00:02:58,319
report that it was six times the amount

76
00:03:03,110 --> 00:03:00,800
of ultraviolet radiation would be coming

77
00:03:05,509 --> 00:03:03,120
into areas like here in washington d.c

78
00:03:07,190 --> 00:03:05,519
as discussions continue to heat up over

79
00:03:08,470 --> 00:03:07,200
climate change and the health of our

80
00:03:10,869 --> 00:03:08,480
home planet

81
00:03:13,830 --> 00:03:10,879
nasa's airborne science program will

82
00:03:15,030 --> 00:03:13,840
help provide facts for cooler heads to

83
00:03:17,430 --> 00:03:15,040
study

84
00:03:23,430 --> 00:03:17,440
to learn more about nasa's airborne