



1  
00:00:06,230 --> 00:00:04,249  
nasa observes the earth from land air

2  
00:00:08,089 --> 00:00:06,240  
and space to better understand the

3  
00:00:10,820 --> 00:00:08,099  
environmental changes taking place on

4  
00:00:12,890 --> 00:00:10,830  
our home planet over the next several

5  
00:00:14,749 --> 00:00:12,900  
months the NASA airborne science program

6  
00:00:16,609 --> 00:00:14,759  
will send its fleet of flying

7  
00:00:18,340 --> 00:00:16,619  
laboratories to locations around the

8  
00:00:21,080 --> 00:00:18,350  
world to study the air we breathe

9  
00:00:23,359 --> 00:00:21,090  
tropical storms and hurricanes melting

10  
00:00:26,060 --> 00:00:23,369  
polar ice sheets and how ecosystems

11  
00:00:28,189 --> 00:00:26,070  
respond to climate change NASA

12  
00:00:30,169 --> 00:00:28,199  
scientists will study ground-level air

13  
00:00:32,330 --> 00:00:30,179

pollution in the Denver area in the

14

00:00:35,900 --> 00:00:32,340

fourth and final field campaign of the

15

00:00:38,540 --> 00:00:35,910

discover-aq mission the nasa p3 b and

16

00:00:40,580 --> 00:00:38,550

b200 airborne laboratories will measure

17

00:00:43,160 --> 00:00:40,590

pollution along Colorado's Front Range

18

00:00:45,740 --> 00:00:43,170

which routinely experiences unhealthy

19

00:00:48,200 --> 00:00:45,750

levels of ozone in the summer the goal

20

00:00:50,209 --> 00:00:48,210

of discover-aq is to better understand

21

00:00:50,750 --> 00:00:50,219

surface conditions where people live and

22

00:00:52,729 --> 00:00:50,760

breathe

23

00:00:54,709 --> 00:00:52,739

so future satellites can be used more

24

00:00:57,740 --> 00:00:54,719

effectively to measure air quality in

25

00:00:59,869 --> 00:00:57,750

the lower atmosphere the hurricane and

26  
00:01:02,779 --> 00:00:59,879  
severe storm Sentinel or hs3 mission

27  
00:01:04,939 --> 00:01:02,789  
will study hurricane intensity change in

28  
00:01:06,980 --> 00:01:04,949  
the North Atlantic using two specially

29  
00:01:10,070 --> 00:01:06,990  
equipped Global Hawk uninhabited aerial

30  
00:01:12,200 --> 00:01:10,080  
vehicles or UAVs the remotely piloted

31  
00:01:14,660 --> 00:01:12,210  
aircraft are uniquely suited for

32  
00:01:16,820 --> 00:01:14,670  
hurricane research they fly almost twice

33  
00:01:19,249 --> 00:01:16,830  
as high as commercial aircraft for as

34  
00:01:21,350 --> 00:01:19,259  
long as 30 hours providing continuous

35  
00:01:24,350 --> 00:01:21,360  
measurements above and around developing

36  
00:01:25,999 --> 00:01:24,360  
storms the use of the global Hawks is

37  
00:01:28,640 --> 00:01:26,009  
very complementary to satellites

38  
00:01:30,740 --> 00:01:28,650

satellites give you a broad view of

39

00:01:32,330 --> 00:01:30,750

things over the entire Atlantic Basin

40

00:01:34,580 --> 00:01:32,340

but you only get maybe one or two

41

00:01:36,859 --> 00:01:34,590

snapshots a day with the global hawk

42

00:01:39,440 --> 00:01:36,869

you're not seen as why of an area but

43

00:01:42,620 --> 00:01:39,450

you're seeing a fixed area for a fairly

44

00:01:44,960 --> 00:01:42,630

continuous period of time 3 NASA

45

00:01:47,300 --> 00:01:44,970

airborne campaigns will study changes in

46

00:01:49,160 --> 00:01:47,310

earth's polar environments the

47

00:01:51,980 --> 00:01:49,170

multi-year operation IceBridge mission

48

00:01:54,499 --> 00:01:51,990

returns to Punta Arenas Chile where the

49

00:01:56,870 --> 00:01:54,509

dc-8 airborne laboratory will fly south

50

00:01:58,609 --> 00:01:56,880

to measure sea ice glaciers and ice

51  
00:02:00,250 --> 00:01:58,619  
sheets over key regions in West

52  
00:02:02,830 --> 00:02:00,260  
Antarctica we have

53  
00:02:05,320 --> 00:02:02,840  
back every year over the same glacier in

54  
00:02:07,960 --> 00:02:05,330  
Antarctica and measure with extreme

55  
00:02:10,300 --> 00:02:07,970  
precision how the surface elevation has

56  
00:02:13,600 --> 00:02:10,310  
changed from year to year and that tells

57  
00:02:15,580 --> 00:02:13,610  
us how much ice Antarctica is losing to

58  
00:02:17,530 --> 00:02:15,590  
other NASA airborne missions we'll study

59  
00:02:20,380 --> 00:02:17,540  
the impact of warming temperatures in

60  
00:02:22,840 --> 00:02:20,390  
the Arctic the arize campaign will use

61  
00:02:24,820 --> 00:02:22,850  
the NASA c-130 aircraft to measure

62  
00:02:27,460 --> 00:02:24,830  
Arctic cloud properties and surface

63  
00:02:29,320 --> 00:02:27,470

characteristics over open water land and

64

00:02:31,480 --> 00:02:29,330

sea ice to see how the climate in the

65

00:02:33,610 --> 00:02:31,490

region is changing and the five-year

66

00:02:37,150 --> 00:02:33,620

carve experiment will measure carbon

67

00:02:40,000 --> 00:02:37,160

dioxide and methane in the atmosphere we

68

00:02:41,950 --> 00:02:40,010

are making airborne measurements of the

69

00:02:43,960 --> 00:02:41,960

principal gases that would be given off

70

00:02:46,000 --> 00:02:43,970

by the decomposition of thawing

71

00:02:49,960 --> 00:02:46,010

permafrost we think that they are

72

00:02:52,750 --> 00:02:49,970

susceptible to very rapid release and

73

00:02:55,420 --> 00:02:52,760

this could be a significant perturbation

74

00:02:58,750 --> 00:02:55,430

to not only the climate in Arctic but

75

00:03:00,970 --> 00:02:58,760

the entire world's climate system the

76

00:03:03,040 --> 00:03:00,980

NASA airborne science program is on a