



1  
00:00:22,759 --> 00:00:21,019  
the late 1960s when Apollo missions were

2  
00:00:25,070 --> 00:00:22,769  
bound for the moon that we were first

3  
00:00:27,859 --> 00:00:25,080  
able to see complete pictures of the

4  
00:00:30,800 --> 00:00:27,869  
earth environmentalists began to look at

5  
00:00:33,889 --> 00:00:30,810  
our planet as a single fragile ecosystem

6  
00:00:36,380 --> 00:00:33,899  
now we are intensely studying the thin

7  
00:00:39,380 --> 00:00:36,390  
halo of atmosphere that surrounds and

8  
00:00:42,139 --> 00:00:39,390  
protects earth it recycles the air we

9  
00:00:44,510 --> 00:00:42,149  
breathe regulates climate and acts as a

10  
00:00:48,110 --> 00:00:44,520  
protective barrier filtering out much of

11  
00:00:50,600 --> 00:00:48,120  
the sun's harmful radiation last year an

12  
00:00:52,790 --> 00:00:50,610  
international group of scientists proved

13  
00:00:55,960 --> 00:00:52,800

that ozone the key element in this

14

00:00:58,780 --> 00:00:55,970

filtering process is being lost at

15

00:01:01,150 --> 00:00:58,790

farming rate over the South Pole in fact

16

00:01:04,420 --> 00:01:01,160

a sizable hole develops over this area

17

00:01:07,590 --> 00:01:04,430

each winter without ozo the sun's

18

00:01:10,789 --> 00:01:07,600

harmful radiation will destroy life

19

00:01:13,560 --> 00:01:10,799

a group of man-made compounds called

20

00:01:15,810 --> 00:01:13,570

chlorofluorocarbons or CFCs used as

21

00:01:18,510 --> 00:01:15,820

refrigerants cleaning solvent sending

22

00:01:20,940 --> 00:01:18,520

some plastic forms are to blame for this

23

00:01:23,249 --> 00:01:20,950

environmental problem they eventually

24

00:01:26,670 --> 00:01:23,259

make their way into the atmosphere and

25

00:01:29,730 --> 00:01:26,680

destroy ozone according to dr. Brian

26  
00:01:32,930 --> 00:01:29,740  
tune of NASA's Ames Research Center it

27  
00:01:36,990 --> 00:01:32,940  
is a global scale environmental problem

28  
00:01:39,410 --> 00:01:37,000  
this really marks the first time I in

29  
00:01:42,870 --> 00:01:39,420  
the history of environmental science

30  
00:01:44,880 --> 00:01:42,880  
where human beings and one side of the

31  
00:01:48,029 --> 00:01:44,890  
planet have done something to the planet

32  
00:01:50,520 --> 00:01:48,039  
that is significantly affected globally

33  
00:01:53,570 --> 00:01:50,530  
and on the far side of the planet from

34  
00:01:56,160 --> 00:01:53,580  
where the original pollution took place

35  
00:01:58,440 --> 00:01:56,170  
using the beautiful sea port town of

36  
00:02:01,499 --> 00:01:58,450  
stavanger norway as a base of operations

37  
00:02:03,389 --> 00:02:01,509  
an international team of scientists

38  
00:02:05,850 --> 00:02:03,399

assembled this year in an emergency

39

00:02:08,580 --> 00:02:05,860

effort to make a detailed study of the

40

00:02:10,889 --> 00:02:08,590

North Pole most of the work was

41

00:02:14,729 --> 00:02:10,899

performed a blow to any NASA aircraft

42

00:02:16,920 --> 00:02:14,739

this is the nail art to not for the

43

00:02:18,810 --> 00:02:16,930

mission special wing pods are attached

44

00:02:20,940 --> 00:02:18,820

containing atmospheric chemistry

45

00:02:25,349 --> 00:02:20,950

analysis equipment and a host of other

46

00:02:27,510 --> 00:02:25,359

instruments typically flights are made

47

00:02:30,480 --> 00:02:27,520

about 12 miles

48

00:02:32,970 --> 00:02:30,490

the fringes of space like into the

49

00:02:37,500 --> 00:02:32,980

layers of atmosphere directly affected

50

00:02:41,460 --> 00:02:37,510

by ozone mars the ER to is research

51  
00:02:43,890 --> 00:02:41,470  
partner is a modified ECA it flies at

52  
00:02:46,020 --> 00:02:43,900  
lower altitudes but has increased fuel

53  
00:02:48,960 --> 00:02:46,030  
reserves which allowed to cover more

54  
00:02:53,190 --> 00:02:48,970  
territory even flights directly over the

55  
00:02:56,250 --> 00:02:53,200  
North Pole inside the dc-8 is actually a

56  
00:02:58,950 --> 00:02:56,260  
complete scientific Observatory loaded

57  
00:03:00,780 --> 00:02:58,960  
with sensing instruments scientists

58  
00:03:03,840 --> 00:03:00,790  
perform their experiments and are able

59  
00:03:06,600 --> 00:03:03,850  
to map results right on the spot this

60  
00:03:08,940 --> 00:03:06,610  
instrument contains for lasers capable

61  
00:03:11,490 --> 00:03:08,950  
of shooting life many miles up into the

62  
00:03:13,950 --> 00:03:11,500  
atmosphere the light reflects back to

63  
00:03:15,800 --> 00:03:13,960

the plane and provide scientists with a

64

00:03:18,540 --> 00:03:15,810

cross-sectional map of ozone

65

00:03:21,420 --> 00:03:18,550

concentrations as well as aerosols or

66

00:03:25,080 --> 00:03:21,430

regions where ozone depletion is capable

67

00:03:26,750 --> 00:03:25,090

of occurring initial results from both

68

00:03:29,370 --> 00:03:26,760

aircraft indicate that high

69

00:03:32,940 --> 00:03:29,380

concentrations of CFCs have been found

70

00:03:34,940 --> 00:03:32,950

at northern latitudes primed for ozone

71

00:03:37,430 --> 00:03:34,950

destruction

72

00:03:40,280 --> 00:03:37,440

when combined with high altitude ice

73

00:03:43,729 --> 00:03:40,290

clouds the right amount of sunlight and

74

00:03:46,729 --> 00:03:43,739

confined slow moving masses of air ozone

75

00:03:49,520 --> 00:03:46,739

destruction occurs as a result of this

76  
00:03:52,070 --> 00:03:49,530  
airborne mission scientists who are able

77  
00:03:56,180 --> 00:03:52,080  
to confirm the process and product areas

78  
00:03:58,160 --> 00:03:56,190  
of depletion international policy makers

79  
00:04:01,370 --> 00:03:58,170  
have met in hopes of limiting the amount

80  
00:04:04,250 --> 00:04:01,380  
of CFC production and losing they agreed

81  
00:04:07,280 --> 00:04:04,260  
to phase out the truce by the year 2000

82  
00:04:11,930 --> 00:04:07,290  
many scientists word that this may not

83  
00:04:14,300 --> 00:04:11,940  
be soon enough again dr. P the ozone

84  
00:04:15,860 --> 00:04:14,310  
problem for example when you release

85  
00:04:19,219 --> 00:04:15,870  
clear fluorocarbons to the environment

86  
00:04:22,820 --> 00:04:19,229  
it's decades to centuries before those

87  
00:04:25,909 --> 00:04:22,830  
are removed researching safe economic

88  
00:04:28,330 --> 00:04:25,919

replacements for CFCs is a vital part of

89

00:04:31,040 --> 00:04:28,340

solving this serious environmental issue

90

00:04:32,340 --> 00:04:31,050

thanks to the intensive work done in the

91

00:04:36,090 --> 00:04:32,350

last few years

92

00:04:38,450 --> 00:04:36,100

we know why ozone depletion exists it is

93

00:04:40,950 --> 00:04:38,460

now up to the world community to take