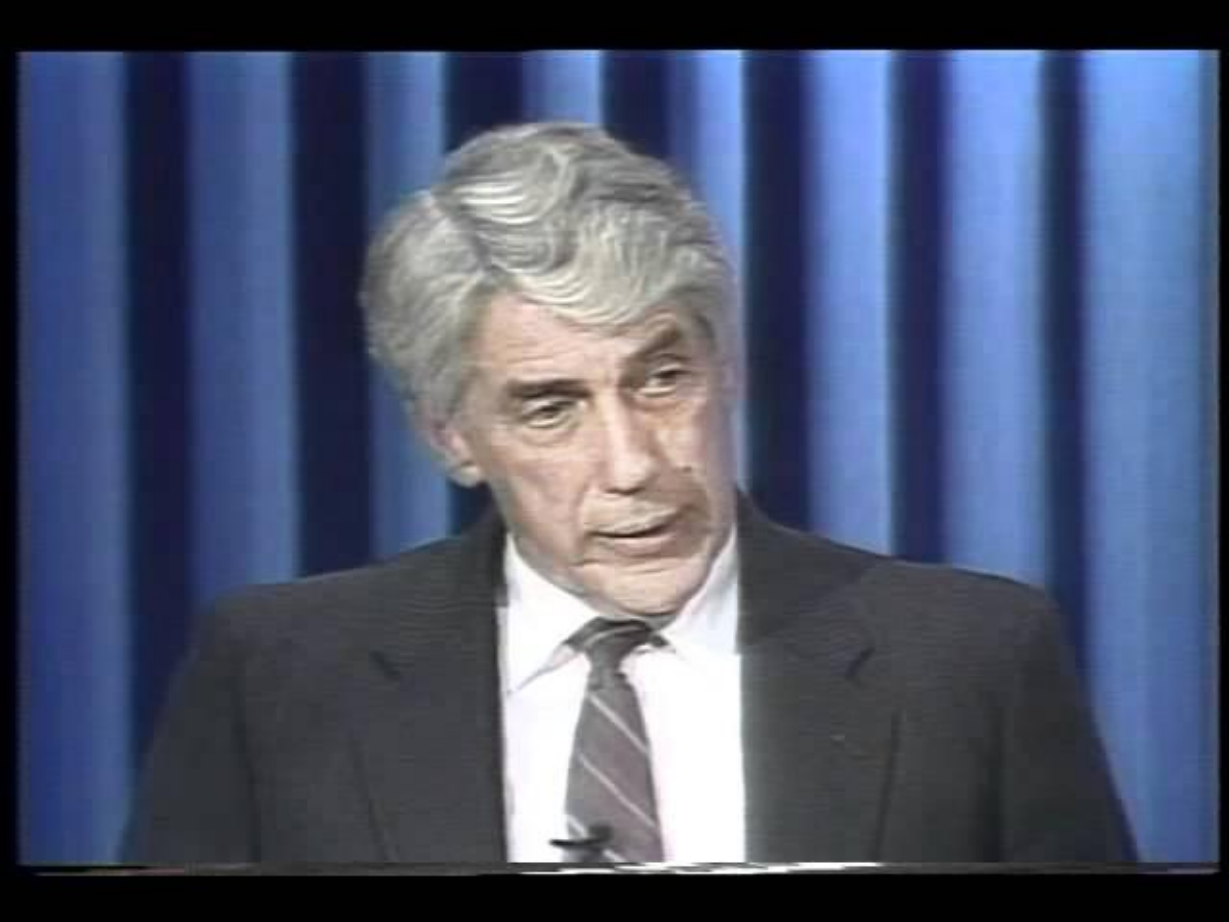

1
00:00:13,090 --> 00:00:16,710
Oh

2
00:00:21,870 --> 00:00:18,810
this is el def the long-duration

3
00:00:23,849 --> 00:00:21,880
exposure facility this school bus size

4
00:00:26,490 --> 00:00:23,859
satellite covered with samples of a

5
00:00:29,670 --> 00:00:26,500
variety of space-age materials has been

6
00:00:31,740 --> 00:00:29,680
circling the Earth since 1984 these

7
00:00:33,689 --> 00:00:31,750
samples will tell NASA what happens to

8
00:00:35,250 --> 00:00:33,699
spacecraft materials when they're

9
00:00:37,590 --> 00:00:35,260
exposed to the harsh environment of

10
00:00:40,680 --> 00:00:37,600
space for long periods like they will be

11
00:00:42,810 --> 00:00:40,690
on Space Station freedom NASA's original

12
00:00:45,180 --> 00:00:42,820
plan was to bring ldap home after about

13
00:00:47,310 --> 00:00:45,190

a year but because the shuttle fleet was

14
00:00:49,049 --> 00:00:47,320
grounded for nearly three years el def

15
00:00:51,689 --> 00:00:49,059
has now stayed in orbit five times

16
00:00:53,609 --> 00:00:51,699
longer than once expected the crew of

17
00:00:55,500 --> 00:00:53,619
the next space shuttle mission plans to

18
00:00:57,719 --> 00:00:55,510
use the orbiters remote manipulator arm

19
00:00:59,490 --> 00:00:57,729
to grab the satellite and ease it into

20
00:01:01,950 --> 00:00:59,500
the cargo bay where it will be stowed

21
00:01:03,570 --> 00:01:01,960
for the trip back to earth it will mean

22
00:01:05,700 --> 00:01:03,580
the homecoming of more than 50

23
00:01:07,980 --> 00:01:05,710
experiments and while the delay has

24
00:01:10,499 --> 00:01:07,990
meant the loss of some data on the other

25
00:01:12,149 --> 00:01:10,509
hand without a doubt the majority of the

26
00:01:15,330 --> 00:01:12,159
experiments are substantially enhanced

27
00:01:17,310 --> 00:01:15,340
by being up there the five years such is

28
00:01:19,530 --> 00:01:17,320
the case with an experiment developed by

29
00:01:21,960 --> 00:01:19,540
the University of Alabama Huntsville and

30
00:01:24,210 --> 00:01:21,970
NASA's Marshall Space Flight Center it

31
00:01:27,000 --> 00:01:24,220
measures the effects of atomic oxygen on

32
00:01:29,070 --> 00:01:27,010
surfaces at orbital altitude the same

33
00:01:31,380 --> 00:01:29,080
stuff we breathe on earth takes on a

34
00:01:33,360 --> 00:01:31,390
different form in space that literally

35
00:01:35,430 --> 00:01:33,370
erodes the surfaces of spacecraft over

36
00:01:37,920 --> 00:01:35,440
long periods of time by this

37
00:01:40,430 --> 00:01:37,930
unanticipated longer exposure the LDF

38
00:01:43,320 --> 00:01:40,440

can provide considerable beneficial

39
00:01:45,750 --> 00:01:43,330
results in terms of this studying these

40
00:01:47,850 --> 00:01:45,760
oxidation effects that kind of

41
00:01:49,680 --> 00:01:47,860
information can be extremely crucial in

42
00:01:52,350 --> 00:01:49,690
the building of a space station any

43
00:01:54,719 --> 00:01:52,360
spacecraft that's to survive for a long

44
00:01:56,310 --> 00:01:54,729
period of time in space the benefits

45
00:01:59,219 --> 00:01:56,320
from l death may be as varied as the

46
00:02:01,649 --> 00:01:59,229
experiments it carries there are even

47
00:02:03,090 --> 00:02:01,659
millions of tomato seeds up there which

48
00:02:05,430 --> 00:02:03,100
will soon be in the hands and the

49
00:02:08,039 --> 00:02:05,440
gardens of students who may be the

50
00:02:10,139 --> 00:02:08,049
scientists of tomorrow although the

51
00:02:12,479 --> 00:02:10,149
scientific homecoming may be overdue in

52
00:02:14,910 --> 00:02:12,489
one sense it will be just in time in

53
00:02:16,940 --> 00:02:14,920
another just in time that is to get as

54
00:02:19,679 --> 00:02:16,950
much exposure in space as is possible

55
00:02:22,170 --> 00:02:19,689
before L def is destroyed returning to