



1
00:00:22,230 --> 00:00:20,150
as we all know this morning we're

2
00:00:23,349 --> 00:00:22,240
gathered here primarily for the purpose

3
00:00:26,390 --> 00:00:23,359
of

4
00:00:28,950 --> 00:00:26,400
the crew being briefed by the students

5
00:00:30,870 --> 00:00:28,960
on the two experiments slated to fly on

6
00:00:32,790 --> 00:00:30,880
sts-26

7
00:00:35,270 --> 00:00:32,800
and here with us this morning is lord

8
00:00:36,470 --> 00:00:35,280
bruce a student

9
00:00:38,389 --> 00:00:36,480
and he's from

10
00:00:41,830 --> 00:00:38,399
mcdonald or mcdonald douglas is

11
00:00:43,750 --> 00:00:41,840
sponsoring him and he's from st louis

12
00:00:45,270 --> 00:00:43,760
okay well basically the experiment is

13
00:00:47,510 --> 00:00:45,280

very simple

14

00:00:49,270 --> 00:00:47,520

um what we're trying to observe is the

15

00:00:52,790 --> 00:00:49,280

effects of weightlessness

16

00:00:54,549 --> 00:00:52,800

on the grain formation and molecular

17

00:00:56,229 --> 00:00:54,559

uh reorganization

18

00:00:58,389 --> 00:00:56,239

of the titanium

19

00:01:01,990 --> 00:00:58,399

filaments there

20

00:01:07,109 --> 00:01:04,710

the experiment itself is uh again i say

21

00:01:09,270 --> 00:01:07,119

it's very simple what the

22

00:01:11,350 --> 00:01:09,280

astronauts will be doing is

23

00:01:15,429 --> 00:01:11,360

they'll observe for any

24

00:01:17,749 --> 00:01:15,439

discrepancies such as a broken tube or

25

00:01:19,350 --> 00:01:17,759

loose wiring or anything like that

26

00:01:26,710 --> 00:01:19,360

and

27

00:01:28,789 --> 00:01:26,720

goes on

28

00:01:31,429 --> 00:01:28,799

this will

29

00:01:34,390 --> 00:01:31,439

confirm the continuity of the circuit

30

00:01:38,469 --> 00:01:34,400

and what you'll do is

31

00:01:42,069 --> 00:01:40,230

you'll hit the master switch and

32

00:01:54,870 --> 00:01:42,079

complete the circuit and if you observe

33

00:01:58,870 --> 00:01:57,350

and you will maintain this for

34

00:02:01,510 --> 00:01:58,880

approximately

35

00:02:04,630 --> 00:02:01,520

20 seconds and that will raise the

36

00:02:06,469 --> 00:02:04,640

temperature of the of the wire up to 882

37

00:02:08,469 --> 00:02:06,479

degrees centigrade

38

00:02:11,510 --> 00:02:08,479

okay so we just need to get it above

39

00:02:12,790 --> 00:02:11,520

800 and right whatever that is

40

00:02:14,470 --> 00:02:12,800

that's where the wires are the length

41

00:02:16,390 --> 00:02:14,480

they are they were calculated to carry

42

00:02:17,910 --> 00:02:16,400

the current and create that

43

00:02:18,790 --> 00:02:17,920

temperature

44

00:02:22,150 --> 00:02:18,800

okay

45

00:02:24,390 --> 00:02:22,160

and basically that's it

46

00:02:26,710 --> 00:02:24,400

again i'd like to thank all the

47

00:02:28,470 --> 00:02:26,720

mcdonald douglas and nasa personnel for

48

00:02:29,350 --> 00:02:28,480

all the support they've given me

49

00:02:30,710 --> 00:02:29,360

and

50

00:02:33,670 --> 00:02:30,720

just to say to

51
00:02:35,589 --> 00:02:33,680
if this goes out to any students to

52
00:02:37,670 --> 00:02:35,599
try and get involved in it and it's not

53
00:02:39,830 --> 00:02:37,680
too hard to make them an experiment and

54
00:02:42,470 --> 00:02:39,840
it's really fun and interesting and you

55
00:02:44,309 --> 00:02:42,480
meet a lot of people

56
00:02:45,350 --> 00:02:44,319
well let me say something to you why you

57
00:02:46,869 --> 00:02:45,360
know this

58
00:02:48,309 --> 00:02:46,879
this isn't going to be free for you

59
00:02:49,350 --> 00:02:48,319
either we

60
00:02:50,869 --> 00:02:49,360
you know

61
00:02:55,190 --> 00:02:50,879
in the astronaut office we enjoy doing

62
00:03:00,869 --> 00:02:57,350
not because a lot of the times it's a

63
00:03:03,030 --> 00:03:00,879

nobel prize winning type science but but

64

00:03:05,509 --> 00:03:03,040

mostly because it involves young people

65

00:03:07,270 --> 00:03:05,519

like yourself getting involved very

66

00:03:08,550 --> 00:03:07,280

early in the space program and getting a

67

00:03:11,350 --> 00:03:08,560

chance to

68

00:03:13,030 --> 00:03:11,360

to work uh in the system and and getting

69

00:03:15,750 --> 00:03:13,040

us a chance to work with folks like you

70

00:03:17,430 --> 00:03:15,760

and we're always impressed with the

71

00:03:19,750 --> 00:03:17,440

with the caliber of students that we get

72

00:03:20,710 --> 00:03:19,760

to work with but we also want you to

73

00:03:22,550 --> 00:03:20,720

understand that you have a

74

00:03:24,229 --> 00:03:22,560

responsibility now to

75

00:03:26,070 --> 00:03:24,239

go back just like you said i like the

76

00:03:28,630 --> 00:03:26,080

works that you use

77

00:03:30,470 --> 00:03:28,640

to share your enthusiasm with the rest

78

00:03:33,110 --> 00:03:30,480

of your students and your

79

00:03:35,430 --> 00:03:33,120

faculty and people you work with to

80

00:03:37,589 --> 00:03:35,440

try and uh interest more

81

00:03:39,350 --> 00:03:37,599

young bright students to get involved in

82

00:03:41,270 --> 00:03:39,360

the in this program because we need all

83

00:03:42,789 --> 00:03:41,280

the good folks we can get all right we

84

00:03:44,789 --> 00:03:42,799

appreciate all the work you're doing too

85

00:03:47,030 --> 00:03:44,799

thank you

86

00:03:49,270 --> 00:03:47,040

charlie here will represent our student

87

00:03:51,670 --> 00:03:49,280

who unfortunately cannot be here

88

00:03:53,509 --> 00:03:51,680

as john indicated the

89

00:03:56,229 --> 00:03:53,519

purpose is to

90

00:03:58,149 --> 00:03:56,239

try to grow crystals in this case of

91

00:03:59,509 --> 00:03:58,159

lead iodide

92

00:04:00,789 --> 00:03:59,519

along a

93

00:04:02,789 --> 00:04:00,799

membrane

94

00:04:03,910 --> 00:04:02,799

which will be mounted

95

00:04:05,750 --> 00:04:03,920

at the

96

00:04:07,509 --> 00:04:05,760

edge where the

97

00:04:09,750 --> 00:04:07,519

inner o ring is

98

00:04:13,190 --> 00:04:09,760

on that middle bulkhead

99

00:04:15,990 --> 00:04:13,200

the membrane is actually a copolymer of

100

00:04:18,789 --> 00:04:16,000

polyethylene and polypropylene

101
00:04:21,749 --> 00:04:18,799
and it's simply there as a kind of a an

102
00:04:23,350 --> 00:04:21,759
orienter on which crystals can grow

103
00:04:26,070 --> 00:04:23,360
otherwise they would just grow

104
00:04:28,310 --> 00:04:26,080
throughout the solution and probably not

105
00:04:30,790 --> 00:04:28,320
get to any significant size and we're

106
00:04:32,070 --> 00:04:30,800
hoping to orient the growth on that

107
00:04:33,430 --> 00:04:32,080
membrane

108
00:04:35,350 --> 00:04:33,440
specifically

109
00:04:36,710 --> 00:04:35,360
it's an apparatus then with four

110
00:04:40,390 --> 00:04:36,720
chambers

111
00:04:42,870 --> 00:04:40,400
membrane in the center deionized water

112
00:04:45,030 --> 00:04:42,880
in these two inner chambers

113
00:04:46,469 --> 00:04:45,040

two valves

114

00:04:49,430 --> 00:04:46,479

and then the

115

00:04:51,749 --> 00:04:49,440

silver end will contain a lead acetate

116

00:04:55,189 --> 00:04:51,759

solution primarily the source of lead

117

00:04:57,990 --> 00:04:55,199

ion lead to plus ion and the right hand

118

00:05:00,310 --> 00:04:58,000

compartment is you see it the blue

119

00:05:03,030 --> 00:05:00,320

handle end if you like will contain

120

00:05:05,670 --> 00:05:03,040

a potassium iodide solution source of

121

00:05:08,230 --> 00:05:05,680

the iodide ions

122

00:05:10,790 --> 00:05:08,240

just before the 51 I flight rich was off

123

00:05:13,110 --> 00:05:10,800

on an internship in new york city

124

00:05:14,710 --> 00:05:13,120

at the time they needed to be loaded

125

00:05:17,110 --> 00:05:14,720

and now

126

00:05:19,830 --> 00:05:17,120

he's being in medical school

127

00:05:21,590 --> 00:05:19,840

i've tried to supervise the construction

128

00:05:23,990 --> 00:05:21,600

of the apparatus and

129

00:05:26,710 --> 00:05:24,000

he tells me when i'm wrong and things of

130

00:05:31,510 --> 00:05:28,790

i guess that outlines it

131

00:05:35,110 --> 00:05:33,350

are these crystals any

132

00:05:36,870 --> 00:05:35,120

color are they clear they are a fairly

133

00:05:38,950 --> 00:05:36,880

bright yellow color yes they'll be

134

00:05:41,110 --> 00:05:38,960

easily distinguishable to

135

00:05:42,150 --> 00:05:41,120

in their formation yeah thanks a lot

136

00:05:48,790 --> 00:05:42,160

sure

137

00:05:48,800 --> 00:06:02,150

we'll get this done soon anymore

138

00:06:08,230 --> 00:06:05,110

what has changed is they've got larger

139

00:06:09,830 --> 00:06:08,240

pure silver bromide crystals in that gel

140

00:06:13,029 --> 00:06:09,840

and that's how they increase their film

141

00:06:14,790 --> 00:06:13,039

sensitivity how they grew them i cannot

142

00:06:17,029 --> 00:06:14,800

for one find out

143

00:06:19,110 --> 00:06:17,039

but that's that's what happened now

144

00:06:22,150 --> 00:06:19,120

we're playing that same game not with

145

00:06:23,430 --> 00:06:22,160

visible film but with x-ray or gamma-ray

146

00:06:25,270 --> 00:06:23,440

film

147

00:06:27,029 --> 00:06:25,280

san francisco that is those elements

148

00:06:29,270 --> 00:06:27,039

that are near the bottom of the human's

149

00:06:31,430 --> 00:06:29,280

periodic table if that means anything to

150

00:06:33,430 --> 00:06:31,440

you

151

00:06:35,029 --> 00:06:33,440

and this should actually be so that's

152

00:06:36,629 --> 00:06:35,039

the first thing pick an element near the

153

00:06:39,029 --> 00:06:36,639

bottom of the periodic table both of

154

00:06:41,430 --> 00:06:39,039

which is lead and mercury are

155

00:06:43,430 --> 00:06:41,440

don't pick boron or carbon or something

156

00:06:44,870 --> 00:06:43,440

up near the top of the table all right

157

00:06:45,909 --> 00:06:44,880

that's a gross

158

00:06:48,390 --> 00:06:45,919

judgment

159

00:06:50,309 --> 00:06:48,400

now once having done that you can you

160

00:06:52,469 --> 00:06:50,319

can pick those ones at the bottom and