



1  
00:02:39,640 --> 00:01:50,990

you

2  
00:02:44,690 --> 00:02:42,440

and goodmorning discovery now for those

3  
00:02:46,399 --> 00:02:44,700

of us down here with gravity not looking

4  
00:02:47,599 --> 00:02:46,409

down there's probably good advice but I

5  
00:02:56,509 --> 00:02:47,609

guess you folks don't have to worry

6  
00:02:59,000 --> 00:02:56,519

about it I got my pill since this thing

7  
00:03:02,059 --> 00:02:59,010

is action-packed there's not much time

8  
00:03:03,679 --> 00:03:02,069

to do much else besides fulfill all all

9  
00:03:06,110 --> 00:03:03,689

of this mission can you can you give us

10  
00:03:10,399 --> 00:03:06,120

a brief synopsis of the duties you have

11  
00:03:11,690 --> 00:03:10,409

over the next few days bet in that I'd

12  
00:03:13,129 --> 00:03:11,700

actually like to start out with a five

13  
00:03:15,379 --> 00:03:13,139

day one and you're right this is an

14

00:03:16,789 --> 00:03:15,389

extremely packed mission I'll be more so

15

00:03:19,309 --> 00:03:16,799

than most just with all the scientific

16

00:03:21,800 --> 00:03:19,319

experiments we have on board so we had a

17

00:03:23,979 --> 00:03:21,810

very aggressive flight day one in which

18

00:03:26,629 --> 00:03:23,989

we have a satellite called crystals fast

19

00:03:28,909 --> 00:03:26,639

but essentially it's a telescope that we

20

00:03:30,319 --> 00:03:28,919

deployed on Friday one which takes a

21

00:03:32,270 --> 00:03:30,329

certain amount of maneuvering of

22

00:03:34,490 --> 00:03:32,280

preparations to go ahead and deploy it

23

00:03:36,740 --> 00:03:34,500

we use a robotic arm to hook up to it

24

00:03:39,379 --> 00:03:36,750

Florida powder payload Bay release it

25

00:03:41,780 --> 00:03:39,389

and then we fire some jets to maneuver

26

00:03:43,729 --> 00:03:41,790

the orbiter away from it the event just

27

00:03:46,369 --> 00:03:43,739

started everything off we've got plenty

28

00:03:47,629 --> 00:03:46,379

of other experiments I this morning

29

00:03:50,119 --> 00:03:47,639

recently fired up a combustion

30

00:03:52,580 --> 00:03:50,129

experiment we do combustion experiments

31

00:03:55,580 --> 00:03:52,590

in space because up here Mike on earth

32

00:03:57,770 --> 00:03:55,590

we don't have convection lighter gases

33

00:03:59,780 --> 00:03:57,780

don't rise so on earth and a lot of gas

34

00:04:02,960 --> 00:03:59,790

Rises it pulls oxygen into the plane

35

00:04:04,640 --> 00:04:02,970

sees the fire and helps it travel and

36

00:04:07,309 --> 00:04:04,650

burn you don't have that up here so

37

00:04:09,469 --> 00:04:07,319

flames burn differently they tend to

38

00:04:11,929 --> 00:04:09,479

burn themselves out more rapidly but

39

00:04:13,879 --> 00:04:11,939

they also tend to burn harder is that

40

00:04:15,819 --> 00:04:13,889

oxygen is not there to cool the flame or

41

00:04:18,800 --> 00:04:15,829

take the heat away from the surface

42

00:04:22,700 --> 00:04:18,810

there are also many experiments you're

43

00:04:24,860 --> 00:04:22,710

doing and exercises studying the Earth's

44

00:04:27,649 --> 00:04:24,870

atmosphere in the ozone layer how will

45

00:04:31,909 --> 00:04:27,659

that data be used or what what kind of

46

00:04:33,920 --> 00:04:31,919

data are you looking for a first yeah

47

00:04:35,659 --> 00:04:33,930

the telescope Christmas files that we

48

00:04:37,760 --> 00:04:35,669

deployed on Friday one is primarily

49

00:04:39,920 --> 00:04:37,770

doing that and the it's looking back at

50

00:04:42,170 --> 00:04:39,930

the Earth's medium atmosphere where

51  
00:04:43,620 --> 00:04:42,180  
those gases are such as ozone and it's

52  
00:04:46,230 --> 00:04:43,630  
looking at the dynamics

53  
00:04:48,090 --> 00:04:46,240  
you know sometime at any time on earth

54  
00:04:50,370 --> 00:04:48,100  
we can look up at those gases and see

55  
00:04:53,730 --> 00:04:50,380  
what the ozone layer is or where the

56  
00:04:55,200 --> 00:04:53,740  
holes tend to be in the ozone layer so

57  
00:04:57,480 --> 00:04:55,210  
we don't really know with almost

58  
00:05:00,600 --> 00:04:57,490  
certainly why that moves around or the

59  
00:05:02,580 --> 00:05:00,610  
dynamics of such the apsara satellite is

60  
00:05:05,520 --> 00:05:02,590  
covering most of the earth it's looking

61  
00:05:07,800 --> 00:05:05,530  
from 70 degrees north 47 degrees south

62  
00:05:10,020 --> 00:05:07,810  
approximately to try to look at these

63  
00:05:12,480 --> 00:05:10,030

dynamics on the nine days it's out there

64

00:05:15,210 --> 00:05:12,490

flying so we can better predict how the

65

00:05:16,830 --> 00:05:15,220

gas dynamics affects the earth and when

66

00:05:19,170 --> 00:05:16,840

where these holes are going to move and

67

00:05:20,700 --> 00:05:19,180

when they're going to fall so how are

68

00:05:22,440 --> 00:05:20,710

you doing up there this is your third

69

00:05:25,560 --> 00:05:22,450

flight yeah you're the pilot of this

70

00:05:30,030 --> 00:05:25,570

flight is there any time to do anything

71

00:05:31,890 --> 00:05:30,040

else but all these experiments hey I'm

72

00:05:33,750 --> 00:05:31,900

doing very Richard I've gotta admit

73

00:05:35,700 --> 00:05:33,760

though this is only find a three and

74

00:05:37,920 --> 00:05:35,710

I've been busy enough I've had very

75

00:05:39,240 --> 00:05:37,930

little time to look out the window and

76

00:05:41,730 --> 00:05:39,250

take photos and that's kind of a

77

00:05:43,590 --> 00:05:41,740

secondary mission of ours we photograph

78

00:05:45,750 --> 00:05:43,600

as much as the earth as we can which

79

00:05:48,500 --> 00:05:45,760

goes to meteorologist and earth

80

00:05:50,460 --> 00:05:48,510

scientists and just NASA in general and

81

00:05:51,960 --> 00:05:50,470

haven't really had enough time to get

82

00:05:54,810 --> 00:05:51,970

into that yet because we've been busy

83

00:05:56,520 --> 00:05:54,820

but from the time the main engines cut

84

00:05:57,750 --> 00:05:56,530

off up here I felt at home since it

85

00:06:01,580 --> 00:05:57,760

hasn't been all along since I've been

86

00:06:06,750 --> 00:06:04,860

tell me about the work day if it is

87

00:06:09,570 --> 00:06:06,760

indeed the day I assume it's more than

88

00:06:13,650 --> 00:06:09,580

an eight-hour day up there how does it

89

00:06:15,930 --> 00:06:13,660

go what's a schedule look like yeah we

90

00:06:18,300 --> 00:06:15,940

have 16 hour days and we're scheduled

91

00:06:20,820 --> 00:06:18,310

for nine hours of sleep will soon as we

92

00:06:23,550 --> 00:06:20,830

get up we have a couple hours to what we

93

00:06:26,070 --> 00:06:23,560

call post ly but we get ready we get up

94

00:06:28,320 --> 00:06:26,080

we bathed we wash our hair we eat

95

00:06:30,450 --> 00:06:28,330

breakfast and we started and organized

96

00:06:32,220 --> 00:06:30,460

the they send up message traffic that

97

00:06:33,870 --> 00:06:32,230

changes the timeline the original one

98

00:06:35,850 --> 00:06:33,880

it's kind of flexible it changes

99

00:06:37,320 --> 00:06:35,860

somewhat so we start looking the message

100

00:06:39,690 --> 00:06:37,330

traffic and getting organized for the

101  
00:06:41,190 --> 00:06:39,700  
day then after a couple hours we started

102  
00:06:42,720 --> 00:06:41,200  
the events that we're scheduled the ones

103  
00:06:45,300 --> 00:06:42,730  
you've been talking about which actually

104  
00:06:47,070 --> 00:06:45,310  
includes teal that's probably one of

105  
00:06:49,440 --> 00:06:47,080  
these every other day as the average is

106  
00:06:50,520 --> 00:06:49,450  
my guess on this mission and then

107  
00:06:52,830 --> 00:06:50,530  
towards the end of the day a couple

108  
00:06:55,510 --> 00:06:52,840  
hours before we go to sleep for 14 hours

109  
00:06:56,830 --> 00:06:55,520  
into our day now we have pre sleep

110  
00:06:59,800 --> 00:06:56,840  
tivities and now we start configuring

111  
00:07:02,050 --> 00:06:59,810  
the space shuttle for us all to go to

112  
00:07:04,119 --> 00:07:02,060  
bed and it's the left with just the

113  
00:07:05,200 --> 00:07:04,129

ground watching after it and again

114

00:07:07,990 --> 00:07:05,210

during that time we'll eat our dinner

115

00:07:12,309 --> 00:07:08,000

meal get our little sleeping bunks out

116

00:07:14,469 --> 00:07:12,319

and they get ready to go to sleep how

117

00:07:16,960 --> 00:07:14,479

about your personal division of labor as

118

00:07:19,570 --> 00:07:16,970

the the pilot on duty is there much good

119

00:07:21,189 --> 00:07:19,580

to do when it comes to monitoring the

120

00:07:25,659 --> 00:07:21,199

craft itself as opposed to all these

121

00:07:27,460 --> 00:07:25,669

experiments during the nine days on this

122

00:07:29,649 --> 00:07:27,470

flight along with the experiments such

123

00:07:31,719 --> 00:07:29,659

as a Christa satellite we deployed there

124

00:07:34,360 --> 00:07:31,729

is some a fair amount of Paula Deen

125

00:07:36,700 --> 00:07:34,370

duties to do a couple times a day we are

126

00:07:38,980 --> 00:07:36,710

burning the big cats the reaction

127

00:07:41,409 --> 00:07:38,990

control system jets on board to make

128

00:07:43,360 --> 00:07:41,419

sure we were phasing anywhere from 25 to

129

00:07:45,670 --> 00:07:43,370

45 miles we want to maintain that

130

00:07:47,320 --> 00:07:45,680

distance from spas we also there's a

131

00:07:48,370 --> 00:07:47,330

fair amount of pointing maneuvers the

132

00:07:50,920 --> 00:07:48,380

instruments that I mentioned earlier

133

00:07:52,659 --> 00:07:50,930

that may look at Jupiter or the Sun or

134

00:07:56,469 --> 00:07:52,669

when we point to the earth for a

135

00:07:58,839 --> 00:07:56,479

different laser ops on board that sets

136

00:08:00,309 --> 00:07:58,849

the polity the pirate or a commander's

137

00:08:02,080 --> 00:08:00,319

job to go ahead and put in those

138

00:08:04,959 --> 00:08:02,090

attitudes to moon but it was the shuttle

139

00:08:07,300 --> 00:08:04,969

to point it in the right direction and

140

00:08:10,930 --> 00:08:07,310

they also wanted you to make aware of a

141

00:08:12,580 --> 00:08:10,940

son word jet or spike on the comment and

142

00:08:19,120 --> 00:08:12,590

that will cause the shape to be a little

143

00:08:21,550 --> 00:08:19,130

bit asymmetric okay that matches what's

144

00:08:23,980 --> 00:08:21,560

my plan to call down each obstinate

145

00:08:28,050 --> 00:08:23,990

number I'll be looking for that in the

146

00:08:31,749 --> 00:08:28,060

comet I was able to see the comet a

147

00:08:36,370 --> 00:08:31,759

couple of hours ago visually as a very

148

00:08:39,100 --> 00:08:36,380

very faint targeted by I and was not

149

00:08:41,469 --> 00:08:39,110

able to get the binoculars on it in time

150

00:08:44,650 --> 00:08:41,479

but at least we did cite the comet the

151  
00:08:46,930 --> 00:08:44,660  
setup has gone very smoothly and we'll

152  
00:08:48,910 --> 00:08:46,940  
be putting the telescope on the window

153  
00:08:52,930 --> 00:08:48,920  
in just a couple of minutes here there's

154  
00:08:54,970 --> 00:08:52,940  
a lot of first sign that's even though

155  
00:08:57,370 --> 00:08:54,980  
the shadowing seems to be effective and

156  
00:08:59,440 --> 00:08:57,380  
does Jan has done a really good job

157  
00:09:01,730 --> 00:08:59,450  
putting the shadow right over the window

158  
00:09:03,110 --> 00:09:01,740  
there's a tremendous amount of hers