



1  
00:01:23,920 --> 00:01:20,470  
good morning Columbia good boy and we're

2  
00:01:26,530 --> 00:01:23,930  
happy to stay Roger we know you're all

3  
00:01:31,300 --> 00:01:26,540  
flying high and I have one more day to

4  
00:01:35,740 --> 00:01:31,310  
go and we're ready to give you a good

5  
00:01:39,280 --> 00:01:35,750  
day's work out of it run to that this is

6  
00:01:40,870 --> 00:01:39,290  
Mission Control Houston the shift of

7  
00:01:43,300 --> 00:01:40,880  
flight controllers here on duty and

8  
00:01:44,950 --> 00:01:43,310  
mission control awakening the crew on

9  
00:01:47,410 --> 00:01:44,960  
board Columbia this morning to the

10  
00:01:49,690 --> 00:01:47,420  
Electric Light orchestras don't bring me

11  
00:01:51,340 --> 00:01:49,700  
down this is scheduled to be the final

12  
00:01:54,700 --> 00:01:51,350  
full day on orbit for the crew members

13  
00:01:56,260 --> 00:01:54,710

of Columbia in anticipation of a Sunday

14

00:01:58,960 --> 00:01:56,270

morning landing at the Kennedy Space

15

00:04:41,910 --> 00:01:58,970

center and setting a new record for and

16

00:04:50,980 --> 00:04:49,450

Columbia the reboost go ahead are you

17

00:04:58,690 --> 00:04:50,990

happy with the data or do you need some

18

00:07:11,140 --> 00:04:58,700

more data looks good okay we're

19

00:07:15,130 --> 00:07:13,330

this is Mission Control Houston this

20

00:07:17,770 --> 00:07:15,140

television now coming from the space lab

21

00:07:19,750 --> 00:07:17,780

science module aboard Columbia showing

22

00:07:22,930 --> 00:07:19,760

the astronauts in the final phase of

23

00:07:26,050 --> 00:07:22,940

their exercise and scientific research

24

00:07:28,030 --> 00:07:26,060

work in the module itself at the rear of

25

00:07:30,490 --> 00:07:28,040

the picture is payload commander and

26  
00:07:32,680 --> 00:07:30,500  
flight engineer Susan Helms Bob Thirsk

27  
00:07:35,110 --> 00:07:32,690  
Oh without the shirt on is the Canadian

28  
00:07:37,180 --> 00:07:35,120  
payload specialist on board in the

29  
00:07:40,990 --> 00:07:37,190  
foreground pumping away in the bicycle

30  
00:07:42,940 --> 00:07:41,000  
ergometer is pilot Kevin Kregel French

31  
00:07:44,590 --> 00:07:42,950  
payload specialist jean-jacques Xavier

32  
00:07:46,390 --> 00:07:44,600  
is working with a lung function

33  
00:07:49,150 --> 00:07:46,400  
experiment on the right side of the

34  
00:07:50,950 --> 00:07:49,160  
picture again all of this coming from

35  
00:07:53,860 --> 00:07:50,960  
the space lab science module where

36  
00:07:56,470 --> 00:07:53,870  
research has gone on for the past 17

37  
00:08:00,490 --> 00:07:56,480  
days and is continuing now in the final

38  
00:08:02,260 --> 00:08:00,500

hours of of that work before payload and

39

00:08:04,240 --> 00:08:02,270

experiment hardware and finally the

40

00:08:07,210 --> 00:08:04,250

space lab systems are deactivated later

41

00:08:08,950 --> 00:08:07,220

this morning wrapping up the science

42

00:08:11,680 --> 00:08:08,960

phase of this mission as the astronauts

43

00:08:13,810 --> 00:08:11,690

transition to the pre landing

44

00:08:16,420 --> 00:08:13,820

preparations which began earlier this

45

00:08:19,450 --> 00:08:16,430

morning with the reaction control system

46

00:08:21,730 --> 00:08:19,460

hot fire test and the flight control

47

00:08:23,020 --> 00:08:21,740

system check out all of that activity by

48

00:08:24,760 --> 00:08:23,030

the flight controllers here in Mission

49

00:08:30,830 --> 00:08:24,770

Control successfully completed several

50

00:08:34,579 --> 00:08:32,810

this is Mission Control Houston in the

51  
00:08:36,860 --> 00:08:34,589  
center of your view from the space lab

52  
00:08:41,350 --> 00:08:36,870  
module is Canadian payload specialist

53  
00:08:43,370 --> 00:08:41,360  
Bob Thirsk wearing the hockey jersey of

54  
00:08:46,340 --> 00:08:43,380  
National Hockey League Hall of Famer

55  
00:08:47,980 --> 00:08:46,350  
Bobby or a Boston Bruins all-star for

56  
00:08:50,810 --> 00:08:47,990  
many years in the National Hockey League

57  
00:08:52,760 --> 00:08:50,820  
they're squaring that in tribute of the

58  
00:08:55,280 --> 00:08:52,770  
game that he loves and the national

59  
00:08:57,019 --> 00:08:55,290  
sport of Canada again that Jersey

60  
00:08:59,840 --> 00:08:57,029  
belonging to National Hockey League

61  
00:09:02,329 --> 00:08:59,850  
great Bobby Orr carried onboard colombia

62  
00:09:04,090 --> 00:09:02,339  
by Bob Thirsk contribute to the game of

63  
00:09:06,710 --> 00:09:04,100

hockey in the National Hockey League

64

00:09:09,710 --> 00:09:06,720

hello commander Susan Helms is right

65

00:09:11,570 --> 00:09:09,720

above thirsk pulling out some gear from

66

00:09:13,250 --> 00:09:11,580

an overhead Locker Kevin kriegel at the

67

00:09:14,829 --> 00:09:13,260

bottom of the picture continuing to

68

00:09:17,060 --> 00:09:14,839

pedal along on the bicycle ergometer

69

00:09:19,460 --> 00:09:17,070

while French payload specialist

70

00:09:20,930 --> 00:09:19,470

jean-jacques 5ea continues to operate at

71

00:09:23,090 --> 00:09:20,940

the lung function experiment on the

72

00:09:24,980 --> 00:09:23,100

right side of your picture at the rear

73

00:09:26,930 --> 00:09:24,990

of the picture coming into view is a

74

00:09:28,730 --> 00:09:26,940

mission specialist Chuck Brady he'll be

75

00:09:31,250 --> 00:09:28,740

holding the camcorder on the flight deck

76

00:09:33,410 --> 00:09:31,260

tomorrow for the first in cabin views

77

00:09:35,420 --> 00:09:33,420

aboard Columbia about 11 or 12 minutes

78

00:09:37,250 --> 00:09:35,430

before landing while the orbiter is

79

00:09:39,440 --> 00:09:37,260

traveling at about 11 times the speed of

80

00:09:41,420 --> 00:09:39,450

sound in the final minutes before

81

00:09:43,820 --> 00:09:41,430

touchdown at the Kennedy Space Center

82

00:09:45,530 --> 00:09:43,830

mission specialist Rick Linehan is at

83

00:09:48,140 --> 00:09:45,540

the rear of the picture near the tunnel

84

00:09:50,000 --> 00:09:48,150

that connects the space lab science

85

00:10:34,810 --> 00:09:50,010

module to the flight deck and the mid

86

00:10:38,930 --> 00:10:37,040

payload specialist Bob Thirsk is

87

00:10:40,640 --> 00:10:38,940

performing a final calibration on the

88

00:10:44,750 --> 00:10:40,650

astronaut lung function experiment and

89

00:10:47,660 --> 00:10:44,760

he'll use a syringe containing a known

90

00:11:47,499 --> 00:10:47,670

volume of air to calibrate the

91

00:11:52,220 --> 00:11:49,939

crew and we just wanted to let you know

92

00:11:54,559 --> 00:11:52,230

how much we appreciate it and how we

93

00:11:58,309 --> 00:11:54,569

wish you were with us because we really

94

00:12:19,189 --> 00:11:58,319

missed you thanks a lot very heartfelt

95

00:12:21,980 --> 00:12:19,199

thank you okay yes I'm here I was not

96

00:12:25,460 --> 00:12:21,990

laughing but i'm loving now and thank

97

00:12:27,439 --> 00:12:25,470

you very much for everything and we

98

00:12:29,090 --> 00:12:27,449

really didn't think that you are going

99

00:12:44,900 --> 00:12:29,100

to make a hundred percent but you did

100

00:12:46,249 --> 00:12:44,910

110 so it's a lot of joy here and

101  
00:12:48,439 --> 00:12:46,259  
there's only one thing wrong with this

102  
00:12:51,499 --> 00:12:48,449  
flight and f that you guys went with us

103  
00:12:53,329 --> 00:12:51,509  
so we know you did good work down there

104  
00:12:55,189 --> 00:12:53,339  
and we really appreciate the great job

105  
00:12:56,629 --> 00:12:55,199  
you did but it would have been a perfect

106  
00:13:01,340 --> 00:12:56,639  
brightest that have been a flight of

107  
00:13:04,669 --> 00:13:01,350  
time as I think we can only agree to

108  
00:13:09,429 --> 00:13:04,679  
that and where we will make a proposal

109  
00:13:16,440 --> 00:13:12,499  
you get your chance we just hope we get

110  
00:13:33,449 --> 00:13:19,330  
okay then see you tomorrow somewhere in

111  
00:13:39,499 --> 00:13:36,210  
the payload crew saying they're on orbit

112  
00:13:42,150 --> 00:13:39,509  
farewells to Italian space agency

113  
00:13:47,819 --> 00:13:42,160

alternate payload specialist dr. Luka or

114

00:13:51,419 --> 00:13:47,829

Bonnie and for later from a perspective

115

00:13:53,280 --> 00:13:51,429

of not having a video from on orbit

116

00:13:59,389 --> 00:13:53,290

they've also said they're on orbit

117

00:14:04,739 --> 00:13:59,399

farewells to ISA payload specialist dr.

118

00:14:07,109 --> 00:14:04,749

Pedro Duque of course the alternate

119

00:14:09,299 --> 00:14:07,119

payload specialists do train alongside

120

00:14:11,879 --> 00:14:09,309

the payload crew during all the

121

00:14:15,389 --> 00:14:11,889

pre-mission preparation for the Space

122

00:14:17,069 --> 00:14:15,399

Lab mission and support the on-orbit

123

00:14:21,449 --> 00:14:17,079

operations from here in the Space Lab

124

00:14:23,340 --> 00:14:21,459

mission operations control the life and

125

00:14:28,609 --> 00:14:23,350

microgravity Space Lab now in flight day

126

00:14:31,470 --> 00:14:28,619

17 the final day of payload operations

127

00:14:33,540 --> 00:14:31,480

which are drawing to a close as the crew