



1
00:01:07,910 --> 00:01:04,380
on the day I was born for this all

2
00:01:15,300 --> 00:01:07,920
gather round the keys and wide wonder

3
00:01:26,270 --> 00:01:21,090
you can tell right away here the ball

4
00:01:26,280 --> 00:01:30,930
Wow

5
00:01:30,940 --> 00:01:38,320
you

6
00:01:42,550 --> 00:01:41,030
Columbia Houston with some inspirational

7
00:01:51,590 --> 00:01:42,560
music for your musculoskeletal

8
00:01:54,260 --> 00:01:51,600
experiments today good morning this is

9
00:01:56,180 --> 00:01:54,270
Mission Control Houston a crew of space

10
00:01:58,610 --> 00:01:56,190
shuttle Columbia being awakened to the

11
00:02:00,530 --> 00:01:58,620
tunes of George Thorogood and the

12
00:02:03,290 --> 00:02:00,540
destroyers and a song called bad to the

13
00:02:05,840 --> 00:02:03,300

bone spacecraft communicator ki are

14

00:02:07,040 --> 00:02:05,850

indicating to the crew that that tune is

15

00:02:10,870 --> 00:02:07,050

in honor of their work with

16

00:02:12,740 --> 00:02:10,880

musculoskeletal research this and in

17

00:02:15,650 --> 00:02:12,750

particular one of the experiments

18

00:02:17,540 --> 00:02:15,660

onboard sdfs 78 this flight is the

19

00:02:19,930 --> 00:02:17,550

direct measurement of initial bone

20

00:02:21,770 --> 00:02:19,940

response to spaceflight investigation

21

00:02:24,080 --> 00:02:21,780

scientists are hoping to discover

22

00:02:26,380 --> 00:02:24,090

countermeasures for this detrimental

23

00:02:30,410 --> 00:02:26,390

effect of spaceflight and that research

24

00:02:32,270 --> 00:02:30,420

into the loss of bone mass on orbit

25

00:02:34,070 --> 00:02:32,280

could also lead to treatments for the

26

00:02:37,400 --> 00:02:34,080

debilitating effects of the disease

27

00:02:39,920 --> 00:02:37,410

osteoporosis on earth throughout the

28

00:02:41,540 --> 00:02:39,930

night experiments have continued to work

29

00:02:45,160 --> 00:02:41,550

in a space lab module while the crew

30

00:02:49,370 --> 00:02:45,170

slept included among those experiments

31

00:02:51,020 --> 00:02:49,380

is the bubble drop and particle unit

32

00:02:53,900 --> 00:02:51,030

which we're seeing some downlink video

33

00:02:56,600 --> 00:02:53,910

from right now this is a fundamental

34

00:02:59,000 --> 00:02:56,610

science research into theories of

35

00:03:02,410 --> 00:02:59,010

nucleation and boiling as a function of

36

00:03:05,830 --> 00:03:02,420

temperature and pressure and the

37

00:03:10,580 --> 00:03:05,840

long-term possibility of developing

38

00:03:12,530 --> 00:03:10,590

cooling mechanisms for electronic

39

00:03:15,830 --> 00:03:12,540

applications possibly even for

40

00:03:17,780 --> 00:03:15,840

spacecraft applications is the end

41

00:03:23,180 --> 00:03:17,790

result that's hopeful from these

42

00:03:29,810 --> 00:03:23,190

experiments know Bobby looks great on TV

43

00:03:32,680 --> 00:03:29,820

now and his TV d configuration climb be

44

00:11:47,519 --> 00:04:50,850

you

45

00:11:51,699 --> 00:11:49,869

this is Space Lab mission operations

46

00:11:53,949 --> 00:11:51,709

control we are continuing to receive

47

00:11:57,189 --> 00:11:53,959

live downlink from the shuttle Columbia

48

00:12:01,569 --> 00:11:57,199

and in particular the space lab module

49

00:12:03,879 --> 00:12:01,579

in the orbiters cargo bay and we see

50

00:12:06,519 --> 00:12:03,889

preparations continuing a pillow

51
00:12:10,749 --> 00:12:06,529
commander Susan Helms assisting mission

52
00:12:12,819 --> 00:12:10,759
specialist Rick lenihan & 2 getting into

53
00:13:15,150 --> 00:12:12,829
the torque velocity dynamometer for his

54
00:13:20,410 --> 00:13:18,280
and also in this live down like view we

55
00:13:24,190 --> 00:13:20,420
can see payload specialist John Jacques

56
00:13:26,170 --> 00:13:24,200
5ea in the striped shirt and payload

57
00:13:29,970 --> 00:13:26,180
specialist Bob Thirsk in the foreground

58
00:13:36,120 --> 00:13:29,980
here just performing last-minute

59
00:13:41,460 --> 00:13:36,130
activities prior to their lunch period

60
00:13:44,680 --> 00:13:41,470
again this view as live downlink from

61
00:13:48,070 --> 00:13:44,690
the shuttle Columbia and the life and

62
00:13:50,350 --> 00:13:48,080
microgravity Space Lab at a mission

63
00:13:52,450 --> 00:13:50,360

elapse time of two days three hours and