1
00:00:00,640 --> 00:00:26,630
minus

2
00:00:30,790 --> 00:00:28,390
good morning endeavor and a special good

3
00:00:33,350 --> 00:00:30,800
morning to you today mike

4
00:00:35,510 --> 00:00:33,360
hey good morning to you all down in

5
00:00:37,670 --> 00:00:35,520
houston and across the planet just

6
00:00:40,950 --> 00:00:37,680
wanted to say uh thanks for the song

7
00:00:42,950 --> 00:00:40,960
that was by the band rush and my friends

8
00:00:46,069 --> 00:00:42,960
ken fisher and greg shirt sent that up

9
00:00:48,069 --> 00:00:46,079
for me and rush was really inspired by

10
00:00:50,150 --> 00:00:48,079
the launch of sts-1 so they included

11
00:00:51,990 --> 00:00:50,160
that in their music and it was really

12
00:00:54,229 --> 00:00:52,000
inspirational for them for the whole for

13
00:00:56,389 --> 00:00:54,239

the whole album but what's really cool

14
00:00:58,630 --> 00:00:56,399
about it is that that space shuttle

15
00:01:01,029 --> 00:00:58,640
program has really inspired everybody

16
00:01:03,349 --> 00:01:01,039
across our planet for such a long time

17
00:01:05,270 --> 00:01:03,359
so this song was a tribute to the space

18
00:01:10,789 --> 00:01:05,280
shuttle program and so we'd like to say

19
00:01:14,469 --> 00:01:13,510
hey houston uh endeavor on air to ground

20
00:01:17,270 --> 00:01:14,479
two

21
00:01:19,990 --> 00:01:17,280
looks like uh we've got uh our plan

22
00:01:22,230 --> 00:01:20,000
together and uh we're gonna start uh

23
00:01:25,429 --> 00:01:22,240
with the pdrs uh

24
00:01:29,830 --> 00:01:27,910
shuttle pilot greg johnson calling down

25
00:01:32,710 --> 00:01:29,840
that uh the crew is ready to get started

26
00:01:35,429 --> 00:01:32,720
with the uh docked late inspection

27
00:01:39,109 --> 00:01:35,439
ready to uh perform its last

28
00:01:41,749 --> 00:01:39,119
uh major task as a member of the

29
00:01:42,870 --> 00:01:41,759
space shuttle sts-134

30
00:01:43,670 --> 00:01:42,880
mission

31
00:01:45,030 --> 00:01:43,680
it

32
00:01:47,030 --> 00:01:45,040
will be delivered over to the

33
00:01:49,670 --> 00:01:47,040
international space station and become a

34
00:01:52,389 --> 00:01:49,680
permanent component of the iss during

35
00:01:53,990 --> 00:01:52,399
the fourth of the spacewalks fourth and

36
00:01:55,990 --> 00:01:54,000
final spacewalk planned during

37
00:01:57,429 --> 00:01:56,000
endeavour's mission

38
00:02:00,069 --> 00:01:57,439

this is gerhard dawn with the german

39
00:02:01,590 --> 00:02:00,079
space agency and space expo association

40
00:02:04,550 --> 00:02:01,600
question for box

41
00:02:06,550 --> 00:02:04,560
you're the prime operator of the smr rms

42
00:02:08,630 --> 00:02:06,560
what was your most challenging robotics

43
00:02:10,790 --> 00:02:08,640
task and what was it like working at the

44
00:02:15,990 --> 00:02:10,800
robotics station in the cupola with that

45
00:02:21,750 --> 00:02:19,030
well gerhard i'll tell you what

46
00:02:24,070 --> 00:02:21,760
the cupola was everything that i

47
00:02:25,510 --> 00:02:24,080
had heard from other people

48
00:02:28,390 --> 00:02:25,520
times 10.

49
00:02:31,350 --> 00:02:28,400
it's in a magnificent view

50
00:02:32,869 --> 00:02:31,360
you have a view of literally half of the

51
00:02:35,430 --> 00:02:32,879
space station

52
00:02:37,509 --> 00:02:35,440
operating from the cupola

53
00:02:39,190 --> 00:02:37,519
some of the robotic ops that we did on

54
00:02:40,790 --> 00:02:39,200
eva2

55
00:02:43,830 --> 00:02:40,800
didn't even need any cameras you could

56
00:02:46,710 --> 00:02:43,840
just look out the window

57
00:02:48,550 --> 00:02:46,720
a lot of the robotic stop robotic ops

58
00:02:51,030 --> 00:02:48,560
that we're doing on this mission are

59
00:02:53,030 --> 00:02:51,040
located on the other side of the station

60
00:02:54,630 --> 00:02:53,040
for example when we installed ams and

61
00:02:57,750 --> 00:02:54,640
elc-3

62
00:02:59,270 --> 00:02:57,760
so the advantage of the cupola uh wasn't

63
00:03:02,149 --> 00:02:59,280

apparent as far as looking out the

64
00:03:04,869 --> 00:03:02,159
window but just as a place to be as a

65
00:03:06,869 --> 00:03:04,879
place to operate the robotic arm it was

66
00:03:08,470 --> 00:03:06,879
a wonderful and it is a wonderful

67
00:03:10,470 --> 00:03:08,480
wonderful place to be

68
00:03:12,790 --> 00:03:10,480
mike fink on friday you guys are going

69
00:03:14,390 --> 00:03:12,800
to go over a thousand hours in eva time

70
00:03:17,270 --> 00:03:14,400
during assembly of

71
00:03:19,589 --> 00:03:17,280
iss or more than 40 days which is either

72
00:03:21,190 --> 00:03:19,599
an incredibly an incredible milestone or

73
00:03:22,949 --> 00:03:21,200
maybe it's just a trivial muscle i don't

74
00:03:28,390 --> 00:03:22,959
know how do you look at that a thousand

75
00:03:32,869 --> 00:03:30,630
yeah a thousand hours that's uh that's

76
00:03:34,630 --> 00:03:32,879
pretty impressive in fact we had

77
00:03:37,830 --> 00:03:34,640
concerns when we were first designing

78
00:03:40,949 --> 00:03:37,840
the space station of how much time eva

79
00:03:42,470 --> 00:03:40,959
zero g eva time uh it would take up at

80
00:03:45,350 --> 00:03:42,480
that point we weren't really as

81
00:03:47,670 --> 00:03:45,360
experienced with uh with eva the shuttle

82
00:03:50,309 --> 00:03:47,680
program paved the way with some of the

83
00:03:54,070 --> 00:03:50,319
earlier evas getting our extra vehicular

84
00:03:56,470 --> 00:03:54,080
mobility unit emu up and running and

85
00:03:58,390 --> 00:03:56,480
and then getting it to really shine

86
00:03:59,990 --> 00:03:58,400
some of the tools and techniques that

87
00:04:02,550 --> 00:04:00,000
came along for space station building

88
00:04:04,710 --> 00:04:02,560

are very helpful uh the the stints that

89
00:04:06,309 --> 00:04:04,720
we did at hubble space telescope we

90
00:04:08,149 --> 00:04:06,319
still use some of those tools to this

91
00:04:09,910 --> 00:04:08,159
day for the space station so we've

92
00:04:11,270 --> 00:04:09,920
really come a long way with space

93
00:04:12,630 --> 00:04:11,280
walking we've learned a lot from our

94
00:04:15,110 --> 00:04:12,640
russian partners and they've learned a

95
00:04:17,990 --> 00:04:15,120
lot from us and the new suits that we

96
00:04:20,550 --> 00:04:18,000
have and their capabilities allow us to

97
00:04:23,510 --> 00:04:20,560
do uh longer space walks i don't think

98
00:04:25,510 --> 00:04:23,520
anybody 10 20 30 years ago would imagine

99
00:04:27,670 --> 00:04:25,520
that we would have so many eight hour

100
00:04:29,030 --> 00:04:27,680
space walks even like the one we had

101
00:04:32,150 --> 00:04:29,040
just this week

102
00:04:35,590 --> 00:04:32,160
i wanted to ask uh mark kelly about uh

103
00:04:37,990 --> 00:04:35,600
the upcoming uh atmospheric reentry

104
00:04:40,070 --> 00:04:38,000
and and landing this is going to be a

105
00:04:41,590 --> 00:04:40,080
night landing and i i think it might be

106
00:04:42,550 --> 00:04:41,600
your first night landing and i'm

107
00:04:45,590 --> 00:04:42,560
wondering

108
00:04:48,070 --> 00:04:45,600
what you think the challenges uh are

109
00:04:49,990 --> 00:04:48,080
going to be and

110
00:04:55,670 --> 00:04:50,000
if you could kind of give us an idea

111
00:04:58,870 --> 00:04:57,510
well the biggest challenge is it's going

112
00:05:00,629 --> 00:04:58,880
to be dark

113
00:05:01,510 --> 00:05:00,639

you know that's uh

114
00:05:03,670 --> 00:05:01,520
um

115
00:05:04,870 --> 00:05:03,680
you know night landings

116
00:05:06,710 --> 00:05:04,880
uh the fact that you don't have a

117
00:05:07,510 --> 00:05:06,720
horizon out the window could be a little

118
00:05:09,830 --> 00:05:07,520
bit

119
00:05:11,590 --> 00:05:09,840
more of a challenge but these are mostly

120
00:05:14,469 --> 00:05:11,600
instrument approaches i mean they really

121
00:05:16,550 --> 00:05:14,479
are i mean we fly the equivalent of what

122
00:05:18,390 --> 00:05:16,560
an ils would be in an airplane it's a

123
00:05:20,710 --> 00:05:18,400
much steeper glide slope

124
00:05:22,070 --> 00:05:20,720
about 20 degrees instead of about two or

125
00:05:23,270 --> 00:05:22,080
three degrees

126
00:05:25,749 --> 00:05:23,280
so

127
00:05:26,950 --> 00:05:25,759
but we fly the approach exactly the same

128
00:05:29,270 --> 00:05:26,960
we have some

129
00:05:31,270 --> 00:05:29,280
uh very bright lights on the runway so

130
00:05:34,310 --> 00:05:31,280
once you get down below about

131
00:05:36,150 --> 00:05:34,320
100 or 50 feet it's almost like daytime

132
00:05:37,110 --> 00:05:36,160
there when you get get very close to the

133
00:05:40,150 --> 00:05:37,120
ground

134
00:05:42,310 --> 00:05:40,160
i've got a lot of night landings

135
00:05:44,150 --> 00:05:42,320
over i think about 100 on an aircraft

136
00:05:45,590 --> 00:05:44,160
carrier those are challenging too so

137
00:05:47,029 --> 00:05:45,600
i've kind of been in this position