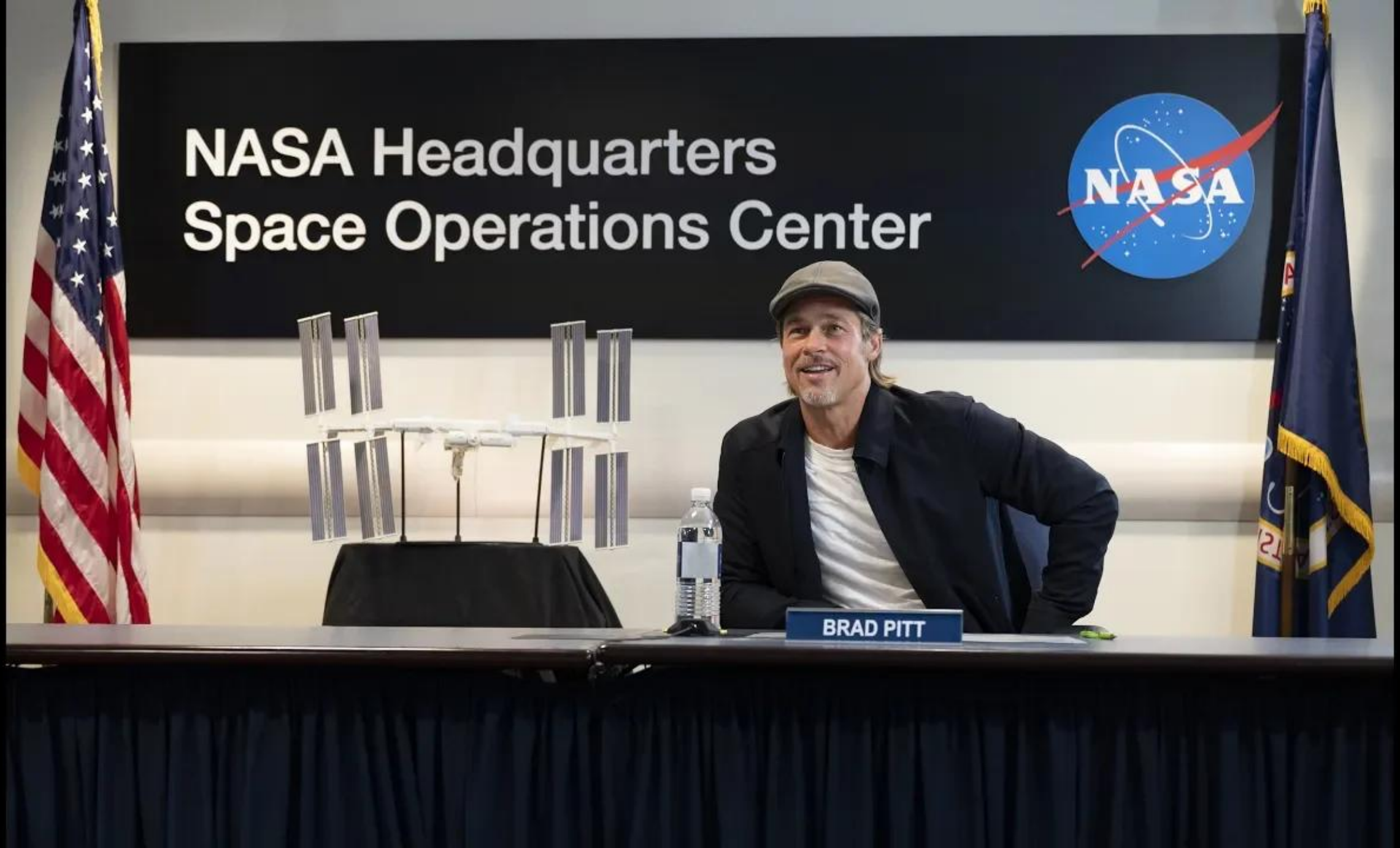
NASA Headquarters
Space Operations Center
NASA
BRAD PITT

1
00:00:00,199 --> 00:00:05,040
Station, this is Houston. Are you ready
for the event? Houston this is station. I am

2
00:00:05,040 --> 00:00:09,210
ready for the event. Brad Pitt, this is
Mission Control Houston. Please call

3
00:00:09,210 --> 00:00:13,639
station for a voice check. Station, this
is Brad. How do you hear me?

4
00:00:13,639 --> 00:00:17,160
Hey Brad, this is Nick. I've got you loud
and clear.

5
00:00:17,160 --> 00:00:21,930
Welcome to the International Space
Station. Thank you very much. I got to

6
00:00:21,930 --> 00:00:26,150
tell you this is a real treat, a real
pleasure to be talking to you up there.

7
00:00:26,150 --> 00:00:32,579
Likewise. A treat for us. Actually, we
got a chance to sneak preview the

8
00:00:32,579 --> 00:00:37,710
movie a few weeks back. And I just want to start off by saying thank you for what

9
00:00:37,710 --> 00:00:43,440
you're doing to contribute to the
mission of awareness and to set that, you

10
00:00:43,440 --> 00:00:47,450
know, that fire in the imaginations
of the next generation of explorers.

11

00:00:47,450 --> 00:00:52,770
Thank you Nick. Thank you very much and
now that I have you all the way up at

12
00:00:52,770 --> 00:01:01,789
the space station, let's talk about me.
How did we do? How was our zero-g?

13
00:01:02,570 --> 00:01:08,670
I gotta tell you, it was really good.
And the depictions, the

14
00:01:08,670 --> 00:01:12,930
settings, all as you can tell, look very
similar to the type of setting

15
00:01:12,930 --> 00:01:17,790
you've got. You know I've got around me - I got to imagine it was a lot easier for

16
00:01:17,790 --> 00:01:23,220
for me to kind of enjoy the
zero-g than it was you,

17
00:01:23,220 --> 00:01:29,220
whether it was CGI or hooked to strings.
I'll tell you what our ship was a bit

18
00:01:29,220 --> 00:01:33,509
cleaner. Can you - do you know what
everything is on the walls there behind

19
00:01:33,509 --> 00:01:39,900
you? You know, when I first got up here it
looked similar but very

20
00:01:39,900 --> 00:01:43,799
different if you can imagine that, to
what we trained on the ground. We had

21
00:01:43,799 --> 00:01:47,130

lots of photos on the ground but up here
everything hangs off the walls. And

22
00:01:47,130 --> 00:01:51,780
there's cables everywhere. But yeah, you
know you get very familiar with it and

23
00:01:51,780 --> 00:01:56,969
you know exactly what's going on. A lot
of it is storage of equipment and

24
00:01:56,969 --> 00:02:00,780
then we've got different facilities. For
instance, this one right here, this wall

25
00:02:00,780 --> 00:02:06,030
helps us research how flames burn in
space. Which is very different than on

26
00:02:06,030 --> 00:02:11,459
the ground and by removing the effect of
gravity, forcing a certain shape to a

27
00:02:11,459 --> 00:02:15,700
flame we can study exactly what goes on to -inside a

28
00:02:15,700 --> 00:02:19,510
flame to a greater detail. It helps us
figure out how to make cleaner burning

29
00:02:19,510 --> 00:02:27,340
engines and get more
out of the energy that we do consume.

30
00:02:27,340 --> 00:02:33,760
You know, I was curious what are the
certainty - what are the

31
00:02:33,760 --> 00:02:39,200
repercussions on your body in zero-g? What - first of all, is it, would it be

32
00:02:39,320 --> 00:02:44,500
morning for you there? Would it be night
for you there? How do you gauge your

33
00:02:44,500 --> 00:02:53,530
waking hours if you see 16 sunrises and
sunsets a day. So we do a lot to try to

34
00:02:53,530 --> 00:02:57,609
manage that circadian rhythm one thing
we do is we use different hues of the

35
00:02:57,609 --> 00:03:02,590
the color spectrum, so that we have
morning very bright blue light that we

36
00:03:02,590 --> 00:03:06,819
switch and then later in the day it goes
to a more normal more balanced spectrum.

37
00:03:06,819 --> 00:03:11,560
And then at night we get rid of that
blue light and we all follow the

38
00:03:11,560 --> 00:03:16,000
Greenwich Mean Time. And that's to help
synchronize the international

39
00:03:16,000 --> 00:03:19,959
aspect of this. We've got a control
station in Houston, in Huntsville, Alabama

40
00:03:19,959 --> 00:03:25,629
Then we've got control centers and in
Japan and in Germany and in Russia and

41
00:03:25,629 --> 00:03:29,859
up in Montreal. And all of them need to
operate on the same time, so we picked

42
00:03:29,859 --> 00:03:35,319
Greenwich Mean Time. But you know really, if you're not smart and

43
00:03:35,319 --> 00:03:38,229
you're new to the station you run to
the windows and you want to check things

44
00:03:38,229 --> 00:03:41,769
out right after you get done with your
workday. You get a face full of sun -

45
00:03:41,769 --> 00:03:45,099
it gets very difficult to go to sleep
for a couple hours with all that blue

46
00:03:45,099 --> 00:03:51,639
light. Wow I would think so. So is anyone,
is there a night shift or is everyone on

47
00:03:51,639 --> 00:03:58,719
that - on those hours? Yes, we try to
stay - the crew stays on the same work day

48
00:03:58,719 --> 00:04:03,549
hours and so we work a 12-hour workday.
Starts at about 7:30 in the morning and

49
00:04:03,549 --> 00:04:08,349
finishes at about 7:30 in the evening.
But there is a night shift, there's

50
00:04:08,349 --> 00:04:13,569
actually a massive team on the ground
that is that is controlling about 95% of

51
00:04:13,569 --> 00:04:19,900
what happens on the space station 24
hours a day 7 days a week 365 days a

52
00:04:19,900 --> 00:04:26,870
year. It is
an amazing orchestration of an

53
00:04:26,870 --> 00:04:30,259
international program that comes
together to truly achieve something that

54
00:04:30,259 --> 00:04:36,500
that we can't do alone. And it's through
that strength and diversity and strength

55
00:04:36,500 --> 00:04:40,490
through diversity that we're able to
have successfully operated this

56
00:04:40,490 --> 00:04:49,580
station for two decades. It's incredible
I got to go to JPL last week and it

57
00:04:49,580 --> 00:04:57,199
was on the day when India was landing on
the moon, and the United States were

58
00:04:57,199 --> 00:05:03,110
assisting them in that effort. Could you
see that from where you are?

59
00:05:03,110 --> 00:05:06,560
No, unfortunately so I, along with
the rest of the crew just had to follow

60
00:05:06,560 --> 00:05:10,970
along with the news reports and it's one of those things

61
00:05:10,970 --> 00:05:14,960
where international cooperation is so
important. Because a saying we've got up

62

00:05:14,960 --> 00:05:19,099
here is, space is hard.
Things that should be easy, when you

63
00:05:19,099 --> 00:05:23,030
try to do them in space, they just get
harder. And the things that we're

64
00:05:23,030 --> 00:05:28,310
trying to do everyday, the
team on the ground, NASA and its

65
00:05:28,310 --> 00:05:34,190
international partners, do a great job of
making really hard, almost impossible

66
00:05:34,190 --> 00:05:39,050
things look routine. And it's it's one of
those things where you can get some

67
00:05:39,050 --> 00:05:43,219
complacency. But the things that
we're able to achieve together -

68
00:05:43,219 --> 00:05:48,620
it's something special. For me,
that is the biggest thing that

69
00:05:48,620 --> 00:05:54,409
I've pulled from this mission, is that
idea of cooperation at a global scale is

70
00:05:54,409 --> 00:06:00,469
what's going to propel humanity into the
future. I got to see a little of that.

71
00:06:00,469 --> 00:06:04,130
They were working on the new rover
that's going to go to Mars. And it was an

72

00:06:04,130 --> 00:06:09,020
international effort, which was really
impressive to see everyone working

73
00:06:09,020 --> 00:06:14,599
together to build different components
to this rover. What is your - what are your

74
00:06:14,599 --> 00:06:22,460
current missions at this point? So
I'm actually on the tail end of my time

75
00:06:22,460 --> 00:06:28,430
up here. I've got a 200 day mission
onboard the space station and I'm north

76
00:06:28,430 --> 00:06:34,070
of 180 days now. Only a few weeks left
before I return early in October and on

77
00:06:34,070 --> 00:06:36,980
a routine week it's a lot of
difference

78
00:06:36,980 --> 00:06:41,750
science experiments. We do maintenance to maintain the station. I was fortunate

79
00:06:41,750 --> 00:06:47,570
enough a few weeks back to be able to do
my third spacewalk. And those are all

80
00:06:47,570 --> 00:06:52,970
just amazing experiences. And
you know every day is full of something

81
00:06:52,970 --> 00:06:58,970
new and exciting. If you look
at the spectrum of experiments that

82
00:06:58,970 --> 00:07:03,080

you get to do over the course of the
mission, I've gotten to be involved

83
00:07:03,080 --> 00:07:09,920
with looking at different ways to
develop new types of rubber that will

84
00:07:09,920 --> 00:07:15,650
change the way potentially we make tires,
and make cars more fuel efficient.

85
00:07:15,650 --> 00:07:21,110
Or how we extrude fiber optics to help
improve communications technology on the

86
00:07:21,110 --> 00:07:24,890
ground and make it more cost-effective.
All the way to the other end of the

87
00:07:24,890 --> 00:07:29,510
spectrum where we've done gene editing
and we're looking at things

88
00:07:29,510 --> 00:07:33,800
that are gonna help us push for cures
for Alzheimer's and cancer. And so it just

89
00:07:33,800 --> 00:07:38,180
spans this whole spectrum. And growing up on a farm I never would have

90
00:07:38,180 --> 00:07:41,980
thought that I'd be able to be involved
with things like that.

91
00:07:41,980 --> 00:07:46,340
It really is extraordinary. By the way,
you're from Kansas I'm from Missouri so

92
00:07:46,340 --> 00:07:55,130
we're neighbors. It's a good part of the

country. I've taken lots of photos of it

93
00:07:55,130 --> 00:08:04,280
over the the past six months. I bet.
Congratulations on 200 days. And what is

94
00:08:04,280 --> 00:08:10,010
that like on the psyche what is that -
I'm sure you're always busy, but at the

95
00:08:10,010 --> 00:08:15,980
same time, missing family and loved ones
at home. How how do you keep your mental

96
00:08:15,980 --> 00:08:23,660
state at peace? Yeah absolutely. You know, being apart from your family, your

97
00:08:23,660 --> 00:08:28,730
friends, your loved ones is a
challenge. And one of

98
00:08:28,730 --> 00:08:33,590
the luxuries I think we have of working
in low Earth orbit close to the Earth is

99
00:08:33,590 --> 00:08:38,570
the amount of connectivity that we have.
The ability to make phone calls and

100
00:08:38,570 --> 00:08:42,229
check in on a routine basis - every
weekend being able to do a video

101
00:08:42,229 --> 00:08:46,580
conference with my kids and share a
little bit of the experience up here

102
00:08:46,580 --> 00:08:50,570
with them. But also be a part of their
life and understand what they're going

103
00:08:50,570 --> 00:08:54,710
through on the ground. So that we have shared experience and at

104
00:08:54,710 --> 00:08:59,110
the end of 200 days, you can come home
and return to being a normal family.

105
00:08:59,110 --> 00:09:04,550
Those are the challenges. It's
easier here in low Earth orbit, because

106
00:09:04,550 --> 00:09:09,260
communications is almost without delay.
As we as we push further and deeper into

107
00:09:09,260 --> 00:09:13,850
space those challenges will become more
difficult, with communications delays and

108
00:09:13,850 --> 00:09:17,660
just being able to stay in
contact with those friends and loved

109
00:09:17,660 --> 00:09:27,820
ones. Yeah, to me it sounds harrowing and really challenging. I've read astronauts

110
00:09:27,820 --> 00:09:33,020
speak about looking back on the Earth
and really being aware how

111
00:09:33,020 --> 00:09:36,770
insignificant we are in the grand scheme
of things. Did you have a similar

112
00:09:36,770 --> 00:09:42,860
experience or something different? You
know that's one of the special things

113

00:09:42,860 --> 00:09:46,640
about being up here, is being able to
float over to the window and see the

114
00:09:46,640 --> 00:09:52,730
Earth below. To look down 250 miles and
and with your naked eye you can

115
00:09:52,730 --> 00:09:59,600
see the crop circles in Kansas, in
Missouri and you can see

116
00:09:59,600 --> 00:10:03,710
humanity below you and you can see it
glide by as we go screaming through the

117
00:10:03,710 --> 00:10:09,740
sky at five miles a second. And
just take in - you get a

118
00:10:09,740 --> 00:10:12,240
perspective that you're away from the

119
00:10:12,240 --> 00:10:16,740
Earth and the same view you
can see the Moon rising over the horizon

120
00:10:16,740 --> 00:10:21,420
and you get this idea that, I'm
not on the Earth and I'm not

121
00:10:21,420 --> 00:10:25,649
at the Moon, but I'm just kind of in
the cosmos. And then that perspective

122
00:10:25,649 --> 00:10:30,390
really challenges you because now you're
looking down at everything that you've

123
00:10:30,390 --> 00:10:35,970

ever known. All of humanity right there.
And you have this deep appreciation for

124
00:10:35,970 --> 00:10:43,410
how big the universe really is. And for
me it's just made me cherish and

125
00:10:43,410 --> 00:10:51,570
appreciate how delicate and how precious
the little island we live on really is.

126
00:10:51,570 --> 00:10:57,899
I think that's really beautiful to hear.
Okay most important question. Who

127
00:10:57,899 --> 00:11:09,589
controls the jam box? So we have a a rotating playlist. We take turns

128
00:11:09,589 --> 00:11:13,830
and it's nice because
we have the international flair as well.

129
00:11:13,830 --> 00:11:17,910
So we have an Italian astronaut on board
along with the US astronauts and then

130
00:11:17,910 --> 00:11:23,310
two cosmonauts. And so getting to hear
some traditional music from

131
00:11:23,310 --> 00:11:28,620
Russia over dinner is a nice
change, exposure and helps us really

132
00:11:28,620 --> 00:11:36,029
appreciate that international feel that
the crew has. Yes, but every now and then

133
00:11:36,029 --> 00:11:39,120
I'm sure someone's going I wish Nick

wouldn't play that country-and-western

134
00:11:39,120 --> 00:11:48,779
anymore. There's that and to have me
stop telling my bad dad jokes.

135
00:11:48,779 --> 00:11:53,430
Now how are you able to stay in a single space this way? I see you tapping your feet

136
00:11:53,430 --> 00:11:59,010
every now and then. Are you in a foothold?
Yeah I've got a foothold and I

137
00:11:59,010 --> 00:12:03,839
can change that up, but basically there's
handrails everywhere and I can just hook

138
00:12:03,839 --> 00:12:09,480
my foot underneath there. And it's one of
the unique you talked about challenges

139
00:12:09,480 --> 00:12:14,670
for the body being up here. This is
one of those unique adaptations. The

140
00:12:14,670 --> 00:12:20,100
calluses on my feet basically have
gone away because I don't walk on the

141
00:12:20,100 --> 00:12:23,820
bottoms of my feet. But now I have
calluses across the top of my foot

142
00:12:23,820 --> 00:12:27,940
around my big toe because I'm constantly hanging on things with my big

143
00:12:27,940 --> 00:12:33,339
toe to hold me in place. One of those
strange things that you don't really

144
00:12:33,339 --> 00:12:36,940
think about on the ground. And then you
get up here and it's like wow the body

145
00:12:36,940 --> 00:12:42,899
is this amazing constantly evolving
thing. And space changes everything.

146
00:12:42,899 --> 00:12:48,519
That's incredible to see and I imagine
when you're upside down for us it feels

147
00:12:48,519 --> 00:12:53,620
exactly the same as the other way. You
know, one of the things we were playing

148
00:12:53,620 --> 00:12:57,550
with in the film which we really
didn't get to was this idea of 3D

149
00:12:57,550 --> 00:13:05,380
printing. We were going to this idea that
everything would be 3D printed on

150
00:13:05,380 --> 00:13:12,279
location. And I understand you all have
already adopted some of that. Yes,

151
00:13:12,279 --> 00:13:16,990
absolutely we've had several experiments
up here. So some of the experiments we're

152
00:13:16,990 --> 00:13:22,120
doing here are technology demonstrations
to prove out a concept that we hope to

153
00:13:22,120 --> 00:13:26,230
apply, as we go back to - back
to the Moon, and as part of the

154
00:13:26,230 --> 00:13:31,329
Artemis program. And so things like tools
and simple things that that might be

155
00:13:31,329 --> 00:13:35,740
easy to print on demand when you need
them, so that you don't have to launch

156
00:13:35,740 --> 00:13:39,670
every conceivable object with you when
you're going on that long trip to the

157
00:13:39,670 --> 00:13:44,920
Moon, or that extremely long trip to Mars.
You can just take some some stock with

158
00:13:44,920 --> 00:13:48,490
you, some feedstock and then
just throw that in the printer and then

159
00:13:48,490 --> 00:13:52,930
print out what you need. So we've done
those things and we continue to

160
00:13:52,930 --> 00:13:58,600
experiment with those. One of the more
interesting ideas behind 3D printing

161
00:13:58,600 --> 00:14:04,720
that we just wrapped up an experiment
session with was 3D printing organs. And

162
00:14:04,720 --> 00:14:10,420
so we had cardiac muscle and veins and
there was a ink printer that we loaded

163
00:14:10,420 --> 00:14:16,149
in the inks, if you wil,l into the printer
and watched it try to print out samples

164
00:14:16,149 --> 00:14:23,399
of tissue. it's just incredible to
think what the future is going to bring.

165
00:14:23,399 --> 00:14:28,690
I got to ask you, they tell me my times
almost up this is such a pleasure, I

166
00:14:28,690 --> 00:14:34,870
could talk - I could ask questions for
hours. Please tell me what's a spacewalk

167
00:14:34,870 --> 00:14:39,270
like? What do you feel?

168
00:14:41,040 --> 00:14:46,209
You see - you really are, when you get
in your spacesuit, you're putting on your

169
00:14:46,209 --> 00:14:52,660
own spacecraft. And so as you embark out through the hatchway, the first

170
00:14:52,660 --> 00:14:56,889
thing you see is the Earth, 250 miles
below. And different than the

171
00:14:56,889 --> 00:15:02,049
perspective you get inside the the space
station. The helmet really

172
00:15:02,049 --> 00:15:07,269
provides almost this 180 panoramic view
that's unobstructed and you very quickly

173
00:15:07,269 --> 00:15:12,220
forget that there's anything between you
and the vacuum of space. Really the only

174
00:15:12,220 --> 00:15:17,410

noise you hear is the the quiet hum of
the ventilation system blowing fresh air

175
00:15:17,410 --> 00:15:24,309
behind your head to support - that's your
life support system. And then you

176
00:15:24,309 --> 00:15:28,119
find yourself going to work, working with
the team on the ground and being focused

177
00:15:28,119 --> 00:15:32,920
on the task. But there are these special
moments. I can remember one from my last

178
00:15:32,920 --> 00:15:38,049
EVA where I was out on the very front of
the space station and I was

179
00:15:38,049 --> 00:15:42,220
getting ready to pack up a bag and come
back inside. And I looked up and and

180
00:15:42,220 --> 00:15:47,199
there was just the Earth. The curve of
the Earth and terrain coming

181
00:15:47,199 --> 00:15:52,860
underneath me and I could feel the speed
of the station. We're going

182
00:15:52,860 --> 00:15:58,059
17,000 miles per hour through space and
I could feel the speed of that as

183
00:15:58,059 --> 00:16:01,689
I'm riding on the front just looking
out over everything in front of us and

184
00:16:01,689 --> 00:16:11,759

it's just - the emotions that just wash
over you, it's hard to describe.

185
00:16:11,759 --> 00:16:16,329
Amazing.
Nick, last question, and I call on your

186
00:16:16,329 --> 00:16:30,759
expertise. Who was more believable,
Clooney or Pitt? You were absolutely. Nick

187
00:16:30,759 --> 00:16:35,739
thank you so much. It's been an absolute
pleasure, a real dream of mine. I can't

188
00:16:35,739 --> 00:16:39,759
wait to brag to my kids and thank you
for taking time out of your busy

189
00:16:39,759 --> 00:16:45,669
schedule to to speak with me and to watch our film. And all my respect to what you

190
00:16:45,669 --> 00:16:50,710
guys are doing up there.
Well thank you. Thank you again for

191
00:16:50,710 --> 00:16:56,830
what you do, and what you're able to do
through storytelling to inspire the next

192
00:16:56,830 --> 00:17:01,510
generation, is so critical to the success
of our programs in the future.

193
00:17:01,510 --> 00:17:05,640
You know, my generation, I am not going to be the person that steps foot on Mars

194
00:17:05,640 --> 00:17:11,650
but the children that are
watching your movies, those young adults

195
00:17:11,650 --> 00:17:15,310
that are watching your movies are the
ones that are going to be inspired to

196
00:17:15,310 --> 00:17:21,190
achieve great things. And it's the power
of those dreams that you inspire that is

197
00:17:21,190 --> 00:17:27,189
going to propel us successfully into the
future, so thank you very much.

198
00:17:27,189 --> 00:17:31,270
Thank you Nick, all the best and all the best to everyone up there. Station this is

199
00:17:31,270 --> 00:17:35,310
Houston ACR that concludes the event.

200
00:17:36,030 --> 00:17:40,480
We'd like to thank Brad Pitt for
participating today. Station, we are now