



1
00:00:07,670 --> 00:00:02,149

okay

2
00:00:15,110 --> 00:00:09,430

i have you loud and clear from the

3
00:00:19,349 --> 00:00:17,109

karen nyberg thank you so much i'm gonna

4
00:00:21,670 --> 00:00:19,359

start that over

5
00:00:23,670 --> 00:00:21,680

karen nyberg it is a pleasure to talk to

6
00:00:26,150 --> 00:00:23,680

you today uh we've seen in fact i've

7
00:00:28,870 --> 00:00:26,160

been watching you on twitter some really

8
00:00:32,310 --> 00:00:28,880

fantastic pictures from space we've seen

9
00:00:34,950 --> 00:00:32,320

uh the sunrise shot in peru san diego

10
00:00:38,150 --> 00:00:34,960

from space you've even shown us how

11
00:00:39,110 --> 00:00:38,160

installing new data cables can be fun so

12
00:00:41,590 --> 00:00:39,120

uh

13
00:00:43,430 --> 00:00:41,600

give us an idea of from your perspective

14

00:00:49,350 --> 00:00:43,440

what it's look like what it's like to

15

00:00:52,869 --> 00:00:51,110

one thing i can say is the earth is just

16

00:00:54,869 --> 00:00:52,879

absolutely beautiful and i think every

17

00:00:55,990 --> 00:00:54,879

time i go to look out the window

18

00:00:58,150 --> 00:00:56,000

everything looks a little different

19

00:00:59,750 --> 00:00:58,160

every time you pass over someplace it

20

00:01:01,349 --> 00:00:59,760

looks a little different the clouds are

21

00:01:03,750 --> 00:01:01,359

different the sun is at a different

22

00:01:05,750 --> 00:01:03,760

angle and so anytime you want to take a

23

00:01:07,590 --> 00:01:05,760

picture you're bound to find something

24

00:01:11,670 --> 00:01:07,600

beautiful to snap a shot

25

00:01:15,429 --> 00:01:13,510

what kind of experiments are you

26

00:01:20,149 --> 00:01:15,439

performing in space and kind of in

27

00:01:22,950 --> 00:01:21,429

we have a lot of different things that

28

00:01:23,749 --> 00:01:22,960

we're doing we're of course doing a lot

29

00:01:27,670 --> 00:01:23,759

of

30

00:01:29,990 --> 00:01:27,680

experiments with fluids and combustion

31

00:01:31,990 --> 00:01:30,000

and that type of thing we're also doing

32

00:01:33,270 --> 00:01:32,000

a lot of experiments on ourselves and

33

00:01:35,590 --> 00:01:33,280

that's a lot that we've been doing over

34

00:01:36,870 --> 00:01:35,600

the past couple weeks we're doing

35

00:01:38,069 --> 00:01:36,880

experiments

36

00:01:40,390 --> 00:01:38,079

looking at

37

00:01:42,390 --> 00:01:40,400

our bone density because astronauts tend

38

00:01:44,789 --> 00:01:42,400

to lose their bone density very quickly

39

00:01:47,030 --> 00:01:44,799

in orbit and we're doing a lot looking

40

00:01:48,630 --> 00:01:47,040

at how our diet might affect it and

41

00:01:51,030 --> 00:01:48,640

other ways we can mitigate that bone

42

00:01:52,469 --> 00:01:51,040

loss with exercise and things like that

43

00:01:54,789 --> 00:01:52,479

we're looking at our eyesight we've

44

00:01:56,149 --> 00:01:54,799

noticed changes in vision of astronauts

45

00:01:58,389 --> 00:01:56,159

for after they've been in space for a

46

00:01:59,749 --> 00:01:58,399

long time so we're doing a lot of tests

47

00:02:02,069 --> 00:01:59,759

and we're kind of hoping that a lot of

48

00:02:04,389 --> 00:02:02,079

these things will have applications for

49

00:02:06,550 --> 00:02:04,399

earth um certainly bone loss has

50

00:02:08,150 --> 00:02:06,560

applications for how we might mitigate

51
00:02:10,790 --> 00:02:08,160
bone loss for folks that have

52
00:02:12,869 --> 00:02:10,800
osteoporosis and with the eyesight there

53
00:02:14,390 --> 00:02:12,879
are a lot of eye problems

54
00:02:17,190 --> 00:02:14,400
in the world and hopefully some of the

55
00:02:20,710 --> 00:02:17,200
research we're doing will will help some

56
00:02:25,830 --> 00:02:22,710
well we know you've been uh preparing

57
00:02:27,670 --> 00:02:25,840
for this for years now but

58
00:02:30,229 --> 00:02:27,680
do you ever get used to the confinement

59
00:02:34,390 --> 00:02:30,239
that comes from being in space and being

60
00:02:39,110 --> 00:02:36,949
it's actually quite large we um we have

61
00:02:41,589 --> 00:02:39,120
quite a few modules each one is about

62
00:02:43,110 --> 00:02:41,599
the size of a school bus or beggar and

63
00:02:44,790 --> 00:02:43,120

there's actually quite a lot of quite

64

00:02:46,869 --> 00:02:44,800

quite a bit of space

65

00:02:48,630 --> 00:02:46,879

i've never felt confined

66

00:02:50,390 --> 00:02:48,640

it was a lot more confined obviously the

67

00:02:52,390 --> 00:02:50,400

soyuz vehicle that brought us up here is

68

00:02:54,790 --> 00:02:52,400

quite small and when i flew on the space

69

00:02:56,229 --> 00:02:54,800

shuttle back in 2008

70

00:03:01,190 --> 00:02:56,239

obviously a lot smaller but the space

71

00:03:05,430 --> 00:03:04,149

i was reading a tweet from you karen and

72

00:03:06,710 --> 00:03:05,440

you know you're doing a lot of work

73

00:03:08,309 --> 00:03:06,720

while you're up there

74

00:03:10,630 --> 00:03:08,319

you've discovered that when you lose

75

00:03:15,910 --> 00:03:10,640

something in space it eventually turns

76

00:03:19,990 --> 00:03:18,309

that's true i had uh put my i was

77

00:03:22,309 --> 00:03:20,000

wearing my glasses and i took them off

78

00:03:23,750 --> 00:03:22,319

to do something and i i put them down in

79

00:03:25,030 --> 00:03:23,760

a place that i thought they would stay

80

00:03:26,309 --> 00:03:25,040

and when i went back to get them they

81

00:03:28,309 --> 00:03:26,319

weren't there anymore and i kind of

82

00:03:29,589 --> 00:03:28,319

looked around and and didn't see them

83

00:03:31,030 --> 00:03:29,599

and of course you have to look in all

84

00:03:32,949 --> 00:03:31,040

directions because things aren't going

85

00:03:34,869 --> 00:03:32,959

to fall because of gravity and so i

86

00:03:36,949 --> 00:03:34,879

waited an hour or so and then i came

87

00:03:39,589 --> 00:03:36,959

back in and searched right along the the

88

00:03:41,910 --> 00:03:39,599

floor area where the the air is sucked

89

00:03:46,070 --> 00:03:41,920

into the ventilation system and sure

90

00:03:49,910 --> 00:03:47,509

well one thing here we know you're not a

91

00:03:51,750 --> 00:03:49,920

slacker just by looking at your resume

92

00:03:53,910 --> 00:03:51,760

but we understand you were also able to

93

00:03:55,990 --> 00:03:53,920

you know while you were up in the space

94

00:04:01,270 --> 00:03:56,000

station able to check in your class

95

00:04:05,509 --> 00:04:02,869

that was really fun i had actually

96

00:04:07,910 --> 00:04:05,519

during our 20th high school reunion i me

97

00:04:10,149 --> 00:04:07,920

and a friend had offered to organize the

98

00:04:11,509 --> 00:04:10,159

25th and once i got assigned to this

99

00:04:13,990 --> 00:04:11,519

mission and found out that it was going

100

00:04:15,670 --> 00:04:14,000

to take place in the summer of 2013

101
00:04:17,509 --> 00:04:15,680
which would have been the 25th i sent

102
00:04:19,830 --> 00:04:17,519
everybody a note and said sorry i'm not

103
00:04:21,590 --> 00:04:19,840
going to be able to help organize it but

104
00:04:25,830 --> 00:04:21,600
it would be really neat if i could call

105
00:04:29,909 --> 00:04:27,830
i can only imagine

106
00:04:31,749 --> 00:04:29,919
that's that that i mean

107
00:04:33,909 --> 00:04:31,759
you know that you just made their day by

108
00:04:35,270 --> 00:04:33,919
you yourself being there and then also

109
00:04:37,510 --> 00:04:35,280
for all the people that could see what

110
00:04:40,070 --> 00:04:37,520
it was like to talk to you in space now

111
00:04:42,230 --> 00:04:40,080
i know that you're oh you have one child

112
00:04:43,590 --> 00:04:42,240
and how are you keeping in touch with

113
00:04:48,070 --> 00:04:43,600

your child when you're obviously doing

114

00:04:52,310 --> 00:04:49,510

well we have a

115

00:04:54,950 --> 00:04:52,320

video conference once every weekend and

116

00:04:57,110 --> 00:04:54,960

sometimes on holidays where i can

117

00:04:59,030 --> 00:04:57,120

actually see my husband and my son i

118

00:05:01,830 --> 00:04:59,040

talk to my husband every day sometimes a

119

00:05:04,629 --> 00:05:01,840

couple times a day and i also make a

120

00:05:07,189 --> 00:05:04,639

little video every day for my son that i

121

00:05:09,350 --> 00:05:07,199

send down via email to my husband and he

122

00:05:11,670 --> 00:05:09,360

shows it to him usually in the evening

123

00:05:13,510 --> 00:05:11,680

before he goes to bed and

124

00:05:18,629 --> 00:05:13,520

and then i get pictures and videos of

125

00:05:24,150 --> 00:05:22,390

if is there one or a couple of visual

126
00:05:26,870 --> 00:05:24,160
images that will stay in your mind

127
00:05:32,390 --> 00:05:26,880
forever as you look out toward earth as

128
00:05:35,350 --> 00:05:33,670
i think

129
00:05:37,830 --> 00:05:35,360
the thing that i really hope sticks in

130
00:05:40,230 --> 00:05:37,840
my mind is the is the sunrises and

131
00:05:42,230 --> 00:05:40,240
sunsets it's it's quite an impressive

132
00:05:44,469 --> 00:05:42,240
thing to see the terminator on the earth

133
00:05:46,070 --> 00:05:44,479
as it travels along the earth where it

134
00:05:48,790 --> 00:05:46,080
is completely

135
00:05:51,270 --> 00:05:48,800
pitch black on one side and then these

136
00:05:53,189 --> 00:05:51,280
vibrant blue amazing colors on the other

137
00:05:55,749 --> 00:05:53,199
and it just travels very slowly across

138
00:05:58,070 --> 00:05:55,759

the earth and transitioning between day

139

00:06:01,830 --> 00:05:58,080

and night it is it is an unbelievable

140

00:06:06,230 --> 00:06:03,990

i i just can't imagine i mean i've been

141

00:06:08,309 --> 00:06:06,240

looking at your tweets and and so many

142

00:06:10,309 --> 00:06:08,319

beautiful pictures it's really

143

00:06:12,070 --> 00:06:10,319

incredible that we can have this kind of

144

00:06:13,670 --> 00:06:12,080

communication with you

145

00:06:18,469 --> 00:06:13,680

while you're there did you ever think

146

00:06:21,990 --> 00:06:20,390

yeah it's it's always it always seems

147

00:06:24,230 --> 00:06:22,000

like how did we ever get here you think

148

00:06:26,550 --> 00:06:24,240

back to like the time i was a kid and it

149

00:06:28,309 --> 00:06:26,560

it is unfathomable from that period of

150

00:06:29,909 --> 00:06:28,319

time to think where we've gotten but

151
00:06:32,790 --> 00:06:29,919
what i'm trying to do with my pictures

152
00:06:35,110 --> 00:06:32,800
is is give everybody the best view of

153
00:06:36,950 --> 00:06:35,120
what it really looks like for us so i

154
00:06:38,070 --> 00:06:36,960
try to use a lens that makes it look

155
00:06:39,909 --> 00:06:38,080
like it does

156
00:06:41,990 --> 00:06:39,919
for the to our naked eye as we're

157
00:06:44,150 --> 00:06:42,000
looking out the windows and i try to

158
00:06:47,510 --> 00:06:44,160
make sure that the final picture has the

159
00:06:49,590 --> 00:06:47,520
colors and the depth that we see

160
00:06:51,029 --> 00:06:49,600
as well and and

161
00:06:53,029 --> 00:06:51,039
i just really want to give other people

162
00:06:57,830 --> 00:06:53,039
the opportunity to see as close to what

163
00:07:02,950 --> 00:07:00,309

give us an idea of some of the unique

164

00:07:04,629 --> 00:07:02,960

challenges that you face day to day

165

00:07:06,309 --> 00:07:04,639

things that maybe you weren't prepared

166

00:07:08,550 --> 00:07:06,319

for once you finally made it up there

167

00:07:13,430 --> 00:07:08,560

and just maybe you know doing what

168

00:07:17,189 --> 00:07:15,830

i think my my biggest enemy right now is

169

00:07:19,990 --> 00:07:17,199

velcro

170

00:07:22,150 --> 00:07:20,000

friend

171

00:07:23,830 --> 00:07:22,160

of course because we use it a lot

172

00:07:26,710 --> 00:07:23,840

everything that we need to stick to a

173

00:07:29,110 --> 00:07:26,720

wall or anywhere we we use velcro but it

174

00:07:31,350 --> 00:07:29,120

also can be your worst enemy i my socks

175

00:07:33,110 --> 00:07:31,360

constantly sticking to to velcro and my

176
00:07:34,629 --> 00:07:33,120
hair this part of my hair if i'm working

177
00:07:36,309 --> 00:07:34,639
in close quarters i'll often wear

178
00:07:37,990 --> 00:07:36,319
headbands because

179
00:07:39,670 --> 00:07:38,000
it will stick to velcro so that's

180
00:07:43,990 --> 00:07:39,680
probably one of the biggest challenges

181
00:07:46,550 --> 00:07:44,870
um

182
00:07:48,790 --> 00:07:46,560
if you can just give us an idea for

183
00:07:51,589 --> 00:07:48,800
people who maybe maybe aren't

184
00:07:53,670 --> 00:07:51,599
sure what exactly nasa astronauts what

185
00:07:55,909 --> 00:07:53,680
what is your purpose for being there

186
00:07:58,469 --> 00:07:55,919
what do you hope to accomplish what are

187
00:07:59,749 --> 00:07:58,479
your goals and and you know give us a

188
00:08:00,710 --> 00:07:59,759

little bit more as far as what you're

189

00:08:04,710 --> 00:08:00,720

doing while you're up there on a

190

00:08:08,309 --> 00:08:06,309

well originally the goal was building

191

00:08:09,830 --> 00:08:08,319

the space station and not long ago we

192

00:08:11,830 --> 00:08:09,840

basically finished it we have one more

193

00:08:13,350 --> 00:08:11,840

russian module coming up soon but

194

00:08:15,990 --> 00:08:13,360

otherwise it's basically finished and

195

00:08:18,869 --> 00:08:16,000

now the goal is to do science and use it

196

00:08:20,469 --> 00:08:18,879

to make investigations

197

00:08:23,270 --> 00:08:20,479

there are a lot of things a lot of the

198

00:08:26,309 --> 00:08:23,280

science where gravity plays such a big

199

00:08:28,950 --> 00:08:26,319

role in how a fluid behaves how a fire

200

00:08:30,950 --> 00:08:28,960

behaves and if you can take out that

201
00:08:33,190 --> 00:08:30,960
variable it's easier for scientists to

202
00:08:37,190 --> 00:08:33,200
understand what is really happening with

203
00:08:39,670 --> 00:08:37,200
the rest of the of the problem and so it

204
00:08:41,430 --> 00:08:39,680
really you can get a lot of advances in

205
00:08:43,589 --> 00:08:41,440
the mathematical equations that are

206
00:08:45,190 --> 00:08:43,599
describing these processes

207
00:08:46,790 --> 00:08:45,200
for the engineers and scientists who are

208
00:08:49,190 --> 00:08:46,800
working on it and then also we're

209
00:08:50,949 --> 00:08:49,200
looking forward to further exploration

210
00:08:53,110 --> 00:08:50,959
and a lot of the equipment that is here

211
00:08:55,509 --> 00:08:53,120
on the space station is kind of a it's

212
00:08:57,670 --> 00:08:55,519
almost a test mode for future vehicles

213
00:08:59,750 --> 00:08:57,680

we're learning how to recycle water

214

00:09:02,150 --> 00:08:59,760

we're learning how to power completely

215

00:09:03,670 --> 00:09:02,160

off of solar energy um and again and a

216

00:09:05,509 --> 00:09:03,680

lot of these things also can be used for

217

00:09:07,590 --> 00:09:05,519

earth applications and then there's the

218

00:09:09,269 --> 00:09:07,600

aspect of the international partnership

219

00:09:12,230 --> 00:09:09,279

it's actually quite amazing to think

220

00:09:14,310 --> 00:09:12,240

that this space station came together um

221

00:09:16,790 --> 00:09:14,320

with all of these various countries and

222

00:09:18,790 --> 00:09:16,800

this thing was designed by various

223

00:09:20,630 --> 00:09:18,800

countries and throughout the world

224

00:09:23,190 --> 00:09:20,640

but built here together traveling over

225

00:09:24,790 --> 00:09:23,200

17 000 miles per hour in low earth orbit

226

00:09:28,310 --> 00:09:24,800

i think that aspect of it is pretty

227

00:09:32,310 --> 00:09:30,550

it is and so are you we appreciate you

228

00:09:33,910 --> 00:09:32,320

taking the time it is a pleasure and

229

00:09:36,470 --> 00:09:33,920

thanks for all the hard work that you're

230

00:09:38,949 --> 00:09:36,480

doing in the name of science and

231

00:09:40,870 --> 00:09:38,959

technology it's really incredible nasa

232

00:09:44,230 --> 00:09:40,880

astronaut karen nyberg thanks so much

233

00:09:49,350 --> 00:09:45,430

i'm glad you could join me on the