1
00:00:07,110 --> 00:00:04,309
station this is seven oaks and nick

2
00:00:15,110 --> 00:00:07,120
patrick here with about 450 very excited

3
00:00:17,750 --> 00:00:16,390
hi nick uh

4
00:00:19,189 --> 00:00:17,760
hope you're doing well out there and we

5
00:00:20,630 --> 00:00:19,199
look forward to talking to all the

6
00:00:22,310 --> 00:00:20,640
students and uh

7
00:00:27,109 --> 00:00:22,320
welcome on board the international space

8
00:00:29,669 --> 00:00:28,470
thank you very much scott it looks like

9
00:00:32,150 --> 00:00:29,679
you're all having a lot of fun up there

10
00:00:34,870 --> 00:00:32,160
i wish i was with you as i think there's

11
00:00:36,229 --> 00:00:34,880
everybody down here we have uh many

12
00:00:37,350 --> 00:00:36,239
students who've got great questions for

13
00:00:39,270 --> 00:00:37,360

you if there's anything you'd like to

14
00:00:41,110 --> 00:00:39,280
start with first though we'd love to

15
00:00:47,510 --> 00:00:41,120
hear a little bit about what your day

16
00:00:51,990 --> 00:00:48,790
well uh

17
00:00:53,670 --> 00:00:52,000
so far um today it's uh

18
00:00:56,229 --> 00:00:53,680
well it's around 2 30 in the afternoon

19
00:00:58,069 --> 00:00:56,239
so most of our day is over and on the

20
00:01:00,069 --> 00:00:58,079
russian segment the cosmonauts are

21
00:01:01,110 --> 00:01:00,079
preparing for a spacewalk we have

22
00:01:02,229 --> 00:01:01,120
tomorrow

23
00:01:04,630 --> 00:01:02,239
and uh

24
00:01:06,710 --> 00:01:04,640
over here on the u.s segment most of the

25
00:01:08,550 --> 00:01:06,720
day i think has been spent doing the

26
00:01:09,910 --> 00:01:08,560
kind of routine maintenance but uh

27
00:01:11,830 --> 00:01:09,920
pretty soon

28
00:01:14,950 --> 00:01:11,840
apollo and katie will be flying the

29
00:01:15,590 --> 00:01:14,960
space station robot arm in anticipation

30
00:01:16,950 --> 00:01:15,600
of

31
00:01:19,030 --> 00:01:16,960
grappling the

32
00:01:24,710 --> 00:01:19,040
japanese cargo ship that will be here

33
00:01:27,590 --> 00:01:26,230
it sounds like things are busy and very

34
00:01:29,429 --> 00:01:27,600
interesting could you take a minute to

35
00:01:34,230 --> 00:01:29,439
introduce to us each of the crew members

36
00:01:40,950 --> 00:01:37,830
yeah um to my right is uh sasha coleri

37
00:01:41,990 --> 00:01:40,960
um and to my left oleg skripochka and we

38
00:01:49,670 --> 00:01:42,000

uh

39
00:01:52,149 --> 00:01:49,680
this is oleg's first flight in sasha's

40
00:01:53,830 --> 00:01:52,159
fifth flight i believe and uh

41
00:01:57,590 --> 00:01:53,840
during this time i think he'll go over

42
00:02:05,429 --> 00:01:58,630
soon

43
00:02:07,910 --> 00:02:05,439
to my right is uh paulo nisboli he's an

44
00:02:10,309 --> 00:02:07,920
issa astronaut and this is a second

45
00:02:12,390 --> 00:02:10,319
flight uh dima condratev

46
00:02:15,830 --> 00:02:12,400
uh behind me

47
00:02:18,309 --> 00:02:15,840
is the uh commander of uh 25 soyuz and

48
00:02:21,510 --> 00:02:18,319
they uh all three of them including

49
00:02:23,910 --> 00:02:21,520
katie coleman got up here

50
00:02:26,390 --> 00:02:23,920
about a month ago and and uh

51
00:02:32,790 --> 00:02:26,400
katie is a american astronaut and this

52
00:02:35,509 --> 00:02:34,550
it's good to see you all looking so very

53
00:02:37,190 --> 00:02:35,519
well

54
00:02:38,550 --> 00:02:37,200
i think with that we have many eager

55
00:02:40,470 --> 00:02:38,560
students who have questions for you so

56
00:02:45,110 --> 00:02:40,480
we'll pass the mic around down here and

57
00:02:50,550 --> 00:02:48,229
hi my name is edmund borted i'm 17 years

58
00:02:52,229 --> 00:02:50,560
old and this is a question for scott

59
00:02:54,309 --> 00:02:52,239
what are the resulting logistical

60
00:02:56,070 --> 00:02:54,319
implications that you have to deal with

61
00:03:02,710 --> 00:02:56,080
due to the switch between the american

62
00:03:07,750 --> 00:03:04,949
well certainly the the shuttle provides

63
00:03:11,430 --> 00:03:07,760

a pretty significant um upmass

64
00:03:13,509 --> 00:03:11,440
capability uh to launch uh cargo

65
00:03:15,750 --> 00:03:13,519
that is both uh pressurized cargo

66
00:03:18,149 --> 00:03:15,760
meaning it's inside a pressurized volume

67
00:03:20,390 --> 00:03:18,159
and for the inside of the space station

68
00:03:21,509 --> 00:03:20,400
and also unpressurized cargo for the

69
00:03:23,430 --> 00:03:21,519
outside

70
00:03:25,670 --> 00:03:23,440
and the other very significant

71
00:03:27,509 --> 00:03:25,680
capability it has is the the ability to

72
00:03:32,309 --> 00:03:27,519
bring things home

73
00:03:34,390 --> 00:03:32,319
uh specifically large large items and um

74
00:03:37,270 --> 00:03:34,400
so when we retire the space shuttle we

75
00:03:39,030 --> 00:03:37,280
do lose some of that capability although

76
00:03:41,430 --> 00:03:39,040
you know between the russian progress

77
00:03:44,710 --> 00:03:41,440
which is very reliable and

78
00:03:46,630 --> 00:03:44,720
a japanese and european resupply vehicle

79
00:03:49,670 --> 00:03:46,640
and hopefully soon some commercial

80
00:03:51,910 --> 00:03:49,680
vehicles will have the capability to can

81
00:03:54,710 --> 00:03:51,920
continue to resupply the space station

82
00:03:56,949 --> 00:03:54,720
but also have uh you know in addition to

83
00:03:59,030 --> 00:03:56,959
the little uh the small amount of cargo

84
00:04:01,589 --> 00:03:59,040
a soyuz can bring home

85
00:04:04,149 --> 00:04:01,599
some of these commercial vehicles may uh

86
00:04:06,710 --> 00:04:04,159
you know demonstrate an ability to bring

87
00:04:09,270 --> 00:04:06,720
larger volumes of cargo back to the

88
00:04:10,390 --> 00:04:09,280

earth science experiments or stuff that

89
00:04:13,350 --> 00:04:10,400
we need to

90
00:04:15,910 --> 00:04:13,360
refurbish on the ground and fly again so

91
00:04:17,270 --> 00:04:15,920
it makes things more challenging but you

92
00:04:19,349 --> 00:04:17,280
know between all the international

93
00:04:29,189 --> 00:04:19,359
partners it's a challenge that we will

94
00:04:33,430 --> 00:04:31,590
hi my name is victoria robson and i'm 11

95
00:04:36,070 --> 00:04:33,440
years old i have a question for

96
00:04:37,909 --> 00:04:36,080
alexandra what time zone are you in and

97
00:04:46,629 --> 00:04:37,919
do you keep track of the time zone

98
00:04:50,870 --> 00:04:48,390
you see it's a

99
00:04:52,310 --> 00:04:50,880
difficult problem because

100
00:04:53,990 --> 00:04:52,320
participants of

101
00:04:56,469 --> 00:04:54,000
iss project

102
00:04:57,990 --> 00:04:56,479
allocates from japan to united to the

103
00:04:58,950 --> 00:04:58,000
united states

104
00:05:02,550 --> 00:04:58,960
so

105
00:05:04,870 --> 00:05:02,560
during the designing of the station

106
00:05:06,070 --> 00:05:04,880
all international partners had an

107
00:05:07,029 --> 00:05:06,080
agreement

108
00:05:09,270 --> 00:05:07,039
to

109
00:05:10,390 --> 00:05:09,280
use onboard space station and for

110
00:05:11,909 --> 00:05:10,400
controlling

111
00:05:15,270 --> 00:05:11,919
the international space station

112
00:05:17,830 --> 00:05:15,280
greenwich mean time so we are living in

113
00:05:21,590 --> 00:05:17,840

london time zone we never

114
00:05:22,950 --> 00:05:21,600
changed this zone this time except

115
00:05:25,590 --> 00:05:22,960
some

116
00:05:27,670 --> 00:05:25,600
no time but our activities and sleeping

117
00:05:29,990 --> 00:05:27,680
zones during the

118
00:05:32,710 --> 00:05:30,000
special activities like evas like

119
00:05:35,510 --> 00:05:32,720
dockings with shuttles i use progress

120
00:05:40,710 --> 00:05:37,189
and

121
00:05:42,070 --> 00:05:40,720
we never changed the time even in winter

122
00:05:50,469 --> 00:05:42,080
or summer

123
00:05:55,270 --> 00:05:52,629
hi my name is ishan patel and i'm 14

124
00:05:57,029 --> 00:05:55,280
years old i have a question for oled how

125
00:06:06,790 --> 00:05:57,039
do you keep enough air for eight months

126
00:06:08,710 --> 00:06:07,590
so

127
00:06:12,950 --> 00:06:08,720
we

128
00:06:15,029 --> 00:06:12,960
oxygen generators to provide oxygen for

129
00:06:16,390 --> 00:06:15,039
breathing so

130
00:06:18,950 --> 00:06:16,400
generator

131
00:06:20,870 --> 00:06:18,960
provides oxygen by

132
00:06:24,309 --> 00:06:20,880
water

133
00:06:27,990 --> 00:06:24,319
separating into hydrogen and oxygen so

134
00:06:29,590 --> 00:06:28,000
and we use oxygen for breathing and

135
00:06:31,270 --> 00:06:29,600
cargo vehicles

136
00:06:34,150 --> 00:06:31,280
provide

137
00:06:34,950 --> 00:06:34,160
nitrogen and oxygen

138
00:06:38,469 --> 00:06:34,960

for

139
00:06:38,479 --> 00:06:46,070
very good

140
00:06:49,830 --> 00:06:48,070
hello my name is nicholas mccarthy i'm

141
00:06:50,950 --> 00:06:49,840
14 years old and my question is for

142
00:06:52,790 --> 00:06:50,960
katie

143
00:06:58,550 --> 00:06:52,800
which way is up or down on the space

144
00:07:02,390 --> 00:07:00,230
well it all depends on your point of

145
00:07:04,710 --> 00:07:02,400
view because you know it doesn't really

146
00:07:06,629 --> 00:07:04,720
matter if i want to talk to you i can be

147
00:07:08,230 --> 00:07:06,639
up here or i can be

148
00:07:10,950 --> 00:07:08,240
on my side and what's kind of

149
00:07:12,469 --> 00:07:10,960
interesting i think for us is that it

150
00:07:13,830 --> 00:07:12,479
depends you know right now i'm looking

151
00:07:15,830 --> 00:07:13,840
at the camera and to me it looks like

152
00:07:17,990 --> 00:07:15,840
the camera's on the floor but of course

153
00:07:18,870 --> 00:07:18,000
i look like i'm on the ceiling for you

154
00:07:19,909 --> 00:07:18,880
so

155
00:07:21,670 --> 00:07:19,919
we uh

156
00:07:23,670 --> 00:07:21,680
adjust our meaning of up or down

157
00:07:25,510 --> 00:07:23,680
depending on what we want to work on and

158
00:07:27,510 --> 00:07:25,520
what are the most convenient places to

159
00:07:37,029 --> 00:07:27,520
hang on or be in a good position to do

160
00:07:41,830 --> 00:07:39,990
um hello my name is jennifer

161
00:07:43,350 --> 00:07:41,840
i'm 14 years old and i have a question

162
00:07:45,830 --> 00:07:43,360
for dmitry

163
00:07:48,309 --> 00:07:45,840

um are there any long-term injuries that

164
00:07:50,550 --> 00:07:48,319
can be stained from being in space for

165
00:07:52,550 --> 00:07:50,560
example pressure build up and if you

166
00:07:58,309 --> 00:07:52,560
have a serious injury in space how do

167
00:08:01,589 --> 00:07:59,189
uh

168
00:08:03,749 --> 00:08:01,599
yes we are all humans and we can be

169
00:08:05,830 --> 00:08:03,759
injured and or get sick here on the

170
00:08:06,790 --> 00:08:05,840
station and

171
00:08:11,670 --> 00:08:06,800
uh

172
00:08:15,350 --> 00:08:12,950
experiments

173
00:08:18,309 --> 00:08:15,360
to do a lot of other things

174
00:08:21,110 --> 00:08:18,319
and here on the station we have

175
00:08:24,070 --> 00:08:21,120
several means special means to treat

176
00:08:25,670 --> 00:08:24,080
ourselves and of course we have

177
00:08:27,110 --> 00:08:25,680
capability to talk to doctors on the

178
00:08:28,550 --> 00:08:27,120
ground

179
00:08:29,350 --> 00:08:28,560
and

180
00:08:32,949 --> 00:08:29,360
if

181
00:08:34,389 --> 00:08:32,959
a serious injury

182
00:08:37,509 --> 00:08:34,399
so we have a

183
00:08:40,070 --> 00:08:37,519
space vehicle to get us to the ground

184
00:08:42,550 --> 00:08:40,080
but this is the worst case scenario and

185
00:08:51,750 --> 00:08:42,560
we hope it won't happen

186
00:08:57,030 --> 00:08:55,030
hello my name is amanda may i'm 13 and

187
00:08:58,630 --> 00:08:57,040
my question is for paulo

188
00:09:05,910 --> 00:08:58,640

how do you use the toilet without

189
00:09:10,389 --> 00:09:08,389
yes amanda yes we we are human after all

190
00:09:13,190 --> 00:09:10,399
and we need to use it to eat and to use

191
00:09:15,750 --> 00:09:13,200
the toilet um well we use the toilet in

192
00:09:18,230 --> 00:09:15,760
the same way we use it on the ground we

193
00:09:20,550 --> 00:09:18,240
sit on it but uh the problem there is a

194
00:09:22,550 --> 00:09:20,560
technical problem is that uh here

195
00:09:24,710 --> 00:09:22,560
without gravity things tend to float

196
00:09:27,190 --> 00:09:24,720
around so we have the turret there's a

197
00:09:30,630 --> 00:09:27,200
special one that has some kind of uh uh

198
00:09:32,949 --> 00:09:30,640
electrical suction or or there is a fan

199
00:09:35,350 --> 00:09:32,959
in there they kind of draw the things

200
00:09:37,110 --> 00:09:35,360
inside and keeps them inside things that

201
00:09:38,550 --> 00:09:37,120
you really you don't want to get to be

202
00:09:47,829 --> 00:09:38,560
floating around

203
00:09:52,310 --> 00:09:50,389
hi my name is matthew maitre and i'm 16

204
00:09:54,310 --> 00:09:52,320
and my question is for scott

205
00:09:59,670 --> 00:09:54,320
what is day-to-day life like on the

206
00:10:04,150 --> 00:10:01,430
well it's

207
00:10:06,630 --> 00:10:04,160
all the days are different um you know

208
00:10:08,630 --> 00:10:06,640
we're very busy here so we generally get

209
00:10:10,949 --> 00:10:08,640
up around six in the morning and i go to

210
00:10:15,269 --> 00:10:10,959
try to go to sleep uh you know sometimes

211
00:10:18,150 --> 00:10:15,279
between 10 and 11 o'clock at night and

212
00:10:19,269 --> 00:10:18,160
you know most days are spent probably

213
00:10:21,509 --> 00:10:19,279

doing

214
00:10:23,750 --> 00:10:21,519
you know one of three things either

215
00:10:26,069 --> 00:10:23,760
scientific experiments and we have over

216
00:10:28,310 --> 00:10:26,079
130 of them operating

217
00:10:29,269 --> 00:10:28,320
on board the space station during this

218
00:10:30,230 --> 00:10:29,279
increment

219
00:10:32,470 --> 00:10:30,240
or

220
00:10:34,470 --> 00:10:32,480
kind of general maintenance activities

221
00:10:36,949 --> 00:10:34,480
you have to do just on a weekly or

222
00:10:39,430 --> 00:10:36,959
monthly monthly basis kind of like uh

223
00:10:40,230 --> 00:10:39,440
you know housekeeping or taking care of

224
00:10:44,069 --> 00:10:40,240
your

225
00:10:47,190 --> 00:10:44,079
and the equipment on board

226
00:10:49,350 --> 00:10:47,200
and the other major activity we do is um

227
00:10:51,110 --> 00:10:49,360
you know we fix things when uh when

228
00:10:53,030 --> 00:10:51,120
things break and uh

229
00:10:54,389 --> 00:10:53,040
you know they inevitably do but uh you

230
00:10:55,910 --> 00:10:54,399
know we're prepared to fix them and the

231
00:10:58,470 --> 00:10:55,920
other thing we spend a lot of time doing

232
00:11:01,829 --> 00:10:58,480
is exercise we have uh various different

233
00:11:03,829 --> 00:11:01,839
types of exercise equipment and we spend

234
00:11:05,750 --> 00:11:03,839
you know upwards of uh two hours a day

235
00:11:08,150 --> 00:11:05,760
doing exercise and we have to do that

236
00:11:10,150 --> 00:11:08,160
practically every day to avoid the uh

237
00:11:19,350 --> 00:11:10,160
you know negative effects on our bodies

238
00:11:24,150 --> 00:11:21,430

hello my name is elizabeth shaw and i'm

239
00:11:26,870 --> 00:11:24,160
12 12 years old my question is for

240
00:11:28,949 --> 00:11:26,880
alexander in 10 years time what do you

241
00:11:42,310 --> 00:11:28,959
think we will do in space that we do on

242
00:11:44,230 --> 00:11:43,269
you know

243
00:11:46,230 --> 00:11:44,240
the

244
00:11:47,990 --> 00:11:46,240
space station it's a very interesting

245
00:11:51,030 --> 00:11:48,000
place we are

246
00:11:55,750 --> 00:11:51,040
living and working here and it looks

247
00:11:55,760 --> 00:11:58,389
maybe

248
00:12:03,670 --> 00:12:00,949
i don't know it's very similar to the

249
00:12:05,190 --> 00:12:03,680
earth maybe in polar uh

250
00:12:07,430 --> 00:12:05,200
areas um

251
00:12:08,310 --> 00:12:07,440
see arctic or antarctic

252
00:12:11,430 --> 00:12:08,320
uh

253
00:12:12,470 --> 00:12:11,440
here we have

254
00:12:16,310 --> 00:12:12,480
email

255
00:12:17,269 --> 00:12:16,320
for example we can we can use iphone and

256
00:12:19,030 --> 00:12:17,279
we can

257
00:12:22,470 --> 00:12:19,040
ring out to

258
00:12:25,269 --> 00:12:22,480
anybody on the earth who has a phone so

259
00:12:28,389 --> 00:12:25,279
phone calls are not a problem for us

260
00:12:31,670 --> 00:12:28,399
we can watch movie we can see

261
00:12:33,030 --> 00:12:31,680
some tv translations

262
00:12:35,350 --> 00:12:33,040
and so on

263
00:12:37,829 --> 00:12:35,360

of course we don't need

264
00:12:39,110 --> 00:12:37,839
say cell phones here because it's much

265
00:12:41,350 --> 00:12:39,120
easier to

266
00:12:42,470 --> 00:12:41,360
find out some somebody

267
00:12:45,750 --> 00:12:42,480
uh

268
00:12:49,110 --> 00:12:45,760
visually and not looking him by cell

269
00:12:50,069 --> 00:12:49,120
phone and so on so i think that now we

270
00:12:52,949 --> 00:12:50,079
use

271
00:12:54,470 --> 00:12:52,959
in our living here and working we can

272
00:12:57,670 --> 00:12:54,480
use

273
00:12:58,710 --> 00:12:57,680
many of decisions on the ground and i

274
00:13:00,150 --> 00:12:58,720
think that

275
00:13:01,990 --> 00:13:00,160
it will be

276
00:13:05,030 --> 00:13:02,000
the same

277
00:13:06,389 --> 00:13:05,040
situation maybe in 10 years in time

278
00:13:07,190 --> 00:13:06,399
it's my opinion

279
00:13:08,949 --> 00:13:07,200
but

280
00:13:10,550 --> 00:13:08,959
if we'll

281
00:13:12,710 --> 00:13:10,560
have to

282
00:13:15,350 --> 00:13:12,720
to utilize the space station maybe not

283
00:13:16,870 --> 00:13:15,360
iss but a different station for another

284
00:13:18,310 --> 00:13:16,880
purposes say

285
00:13:23,350 --> 00:13:18,320
not uh

286
00:13:26,069 --> 00:13:23,360
preferably for working but maybe for

287
00:13:28,629 --> 00:13:26,079
uh vacation or for

288
00:13:31,509 --> 00:13:28,639

something else for relaxation for maybe

289
00:13:32,870 --> 00:13:31,519
uh tourism and so on so

290
00:13:35,110 --> 00:13:32,880
they will have

291
00:13:37,750 --> 00:13:35,120
some other possibilities

292
00:13:38,629 --> 00:13:37,760
for comfort comfortable life and so on

293
00:13:42,870 --> 00:13:38,639
so

294
00:13:44,470 --> 00:13:42,880
but i think it's possible to use the

295
00:13:46,310 --> 00:13:44,480
achievements and

296
00:13:49,430 --> 00:13:46,320
some things

297
00:13:57,110 --> 00:13:49,440
from the ground here it's not a real

298
00:14:00,389 --> 00:13:58,550
iss crew

299
00:14:03,670 --> 00:14:00,399
this is nick again i'm told we're down

300
00:14:05,750 --> 00:14:03,680
to our very last uh 45 seconds or so

301
00:14:08,790 --> 00:14:05,760
so thank you very much from all of us

302
00:14:11,990 --> 00:14:08,800
here at seven oaks uh alexander scott

303
00:14:13,670 --> 00:14:12,000
oleg paolo lima and katie for taking

304
00:14:16,310 --> 00:14:13,680
time out of your busy day to answer our

305
00:14:21,430 --> 00:14:16,320
questions um it's really been a a

306
00:14:25,430 --> 00:14:23,829
you're welcome uh nick and uh enjoyed

307
00:14:27,990 --> 00:14:25,440
your questions they were all really good

308
00:14:42,389 --> 00:14:28,000
and uh have a great day there at seven