



1  
00:00:05,910 --> 00:00:04,070  
and if that wasn't enough while the crew

2  
00:00:07,990 --> 00:00:05,920  
dragon was at the space station

3  
00:00:09,990 --> 00:00:08,000  
cassidy also conducted four spacewalks

4  
00:00:11,990 --> 00:00:10,000  
with bob banking totaling a terrible uh

5  
00:00:13,509 --> 00:00:12,000  
spending a total of 23 hours and 37

6  
00:00:14,950 --> 00:00:13,519  
minutes outside the vacuum of space

7  
00:00:16,870 --> 00:00:14,960  
while the two replaced aging nickel

8  
00:00:17,910 --> 00:00:16,880  
hydrogen batteries with new lithium ion

9  
00:00:19,590 --> 00:00:17,920  
batteries

10  
00:00:20,870 --> 00:00:19,600  
that brought cassidy's spacewalking

11  
00:00:23,670 --> 00:00:20,880  
total to

12  
00:00:25,589 --> 00:00:23,680  
54 hours and 51 minutes over 10

13  
00:00:26,550 --> 00:00:25,599

spacewalks that spanned his three

14

00:00:28,630 --> 00:00:26,560

missions

15

00:00:30,950 --> 00:00:28,640

with that he is tied for most spacewalks

16

00:00:32,229 --> 00:00:30,960

by u.s astronaut and ninth on the

17

00:00:34,549 --> 00:00:32,239

all-time list

18

00:00:36,630 --> 00:00:34,559

of time spent spacewalking

19

00:00:39,750 --> 00:00:36,640

with his upcoming landing cassidy will

20

00:00:41,750 --> 00:00:39,760

spent a total of 378 days in space over

21

00:00:43,590 --> 00:00:41,760

his three missions putting him at fifth

22

00:00:46,069 --> 00:00:43,600

place on the list of most times spent in

23

00:00:48,310 --> 00:00:46,079

space by us astronaut

24

00:00:50,069 --> 00:00:48,320

anatoly ivanishin has also made three

25

00:00:51,910 --> 00:00:50,079

trips to space but since all of his were

26

00:00:53,630 --> 00:00:51,920

during long duration he is a total of

27

00:00:57,670 --> 00:00:53,640

468

28

00:01:01,029 --> 00:00:57,680

476 days in space putting him at 25 on

29

00:01:03,189 --> 00:01:01,039

the all-time list for time spin space

30

00:01:05,910 --> 00:01:03,199

and since this was his first spaceflight

31

00:01:25,429 --> 00:01:05,920

yvonne wagner will land today with 196

32

00:01:30,230 --> 00:01:28,230

cassidy ivanishin and wagner said

33

00:01:33,270 --> 00:01:30,240

goodbye to their crewmates kate rubin

34

00:01:35,030 --> 00:01:33,280

and sergey ryzikov earlier today

35

00:01:45,030 --> 00:01:35,040

with a

36

00:01:48,469 --> 00:01:46,710

this is some recorded

37

00:01:50,550 --> 00:01:48,479

video of that

38

00:01:54,550 --> 00:01:50,560

hatch closing you can see cassidy there

39

00:01:58,469 --> 00:01:56,230

they said goodbye to their crewmates

40

00:02:00,870 --> 00:01:58,479

kate rubens sergey rizzikov and sergey

41

00:02:03,749 --> 00:02:00,880

kuzkov earlier

42

00:02:06,069 --> 00:02:03,759

before closing those hatches

43

00:02:07,910 --> 00:02:06,079

and that was the last view that we'll

44

00:02:35,190 --> 00:02:07,920

get of them until we see them coming out

45

00:02:40,150 --> 00:02:37,750

then again was hatch closing at 3 24 and

46

00:02:42,550 --> 00:02:40,160

since then the soyuz undocked from the

47

00:02:44,070 --> 00:02:42,560

international space station at 6 32 pm

48

00:02:45,430 --> 00:02:44,080

central time

49

00:02:46,550 --> 00:02:45,440

for doing that they were able to get all

50

00:02:49,190 --> 00:02:46,560

the required leak checks and

51  
00:02:51,750 --> 00:02:49,200  
preparations done on time and that set

52  
00:02:55,190 --> 00:02:51,760  
them on their way for today's 9 55 pm

53  
00:02:58,149 --> 00:02:56,630  
they've since been moving into position

54  
00:02:59,750 --> 00:02:58,159  
about 20 miles away from the space

55  
00:03:01,350 --> 00:02:59,760  
station and are just about ready to go

56  
00:03:05,110 --> 00:03:01,360  
for the de-orbit burn which will take

57  
00:04:22,230 --> 00:03:05,120  
place at 9 00 pm central just 24 minutes

58  
00:04:22,240 --> 00:04:38,790  
foreign

59  
00:04:41,670 --> 00:04:40,390  
here in the international space station

60  
00:04:43,749 --> 00:04:41,680  
flight control room flight director

61  
00:04:45,270 --> 00:04:43,759  
chris edelen is leading the team here in

62  
00:04:47,430 --> 00:04:45,280  
houston as they follow along in

63  
00:04:50,469 --> 00:04:47,440

tonight's activities with european space

64  
00:04:53,909 --> 00:04:50,479  
agency astronaut andreas morgan mobinson

65  
00:04:55,990 --> 00:04:53,919  
beside him at the capcom capsule

66  
00:04:57,430 --> 00:04:56,000  
and in kazakhstan a number of officials

67  
00:04:59,430 --> 00:04:57,440  
and vehicles are standing by in

68  
00:05:01,430 --> 00:04:59,440  
preparation for the landing

69  
00:05:03,990 --> 00:05:01,440  
a total of

70  
00:05:05,909 --> 00:05:04,000  
12 mi-8 helicopters

71  
00:05:08,310 --> 00:05:05,919  
deployed to various sites across

72  
00:05:10,469 --> 00:05:08,320  
kazakhstan for soyuz landings eight are

73  
00:05:12,790 --> 00:05:10,479  
at the expected landing site southeast

74  
00:05:14,870 --> 00:05:12,800  
of jessica's gone kazakhstan and two

75  
00:05:16,629 --> 00:05:14,880  
more will be ready about 250 miles away

76  
00:05:17,670 --> 00:05:16,639  
in the area where touchdown would take

77  
00:05:19,749 --> 00:05:17,680  
place

78  
00:05:21,830 --> 00:05:19,759  
if a ballistic entry occurred

79  
00:05:24,070 --> 00:05:21,840  
the final two helicopters will loiter

80  
00:05:25,590 --> 00:05:24,080  
midway between the two

81  
00:05:27,670 --> 00:05:25,600  
we are not of course expecting a

82  
00:05:30,310 --> 00:05:27,680  
ballistic entry but we do always prepare

83  
00:05:32,390 --> 00:05:30,320  
for one just in case uh we need to we

84  
00:05:35,110 --> 00:05:32,400  
need to respond to it

85  
00:05:37,110 --> 00:05:35,120  
so that is part of the standard plan

86  
00:05:39,189 --> 00:05:37,120  
also deployed for landing are six

87  
00:05:41,110 --> 00:05:39,199  
all-terrain vehicles and three anatomic

88  
00:05:42,550 --> 00:05:41,120

airplanes that serve as playing command

89

00:05:43,830 --> 00:05:42,560

centers they'll have direct

90

00:05:45,350 --> 00:05:43,840

communication with the crew and will

91

00:06:04,710 --> 00:05:45,360

relay those communications back to

92

00:06:04,720 --> 00:06:41,510

oh

93

00:06:44,710 --> 00:06:43,029

we've been asking you to send in your

94

00:06:47,270 --> 00:06:44,720

questions about tonight's landing using

95

00:06:49,110 --> 00:06:47,280

the hashtag ask nasa on social media and

96

00:06:50,390 --> 00:06:49,120

you can keep sending those in and we'll

97

00:06:53,270 --> 00:06:50,400

keep trying to answer them when there's

98

00:06:55,589 --> 00:06:53,280

time starting now from isabella we

99

00:06:58,870 --> 00:06:55,599

received the question what's the current

100

00:07:00,070 --> 00:06:58,880

weather at the landing site

101  
00:07:01,589 --> 00:07:00,080  
weather-wise things are looking

102  
00:07:03,670 --> 00:07:01,599  
reasonably nice at the landing site

103  
00:07:05,909 --> 00:07:03,680  
temperatures today should be around 45

104  
00:07:07,909 --> 00:07:05,919  
degrees fahrenheit and breezy so it will

105  
00:07:10,150 --> 00:07:07,919  
be cool but not nearly as cold as it can

106  
00:07:12,710 --> 00:07:10,160  
be at soyuz landings

107  
00:07:14,710 --> 00:07:12,720  
they also have a few clouds at 5 000

108  
00:07:17,350 --> 00:07:14,720  
feet scattered clouds at 20

109  
00:07:18,710 --> 00:07:17,360  
20 000 feet and winds out of the west at

110  
00:07:21,589 --> 00:07:18,720  
14 knots

111  
00:07:22,870 --> 00:07:21,599  
the visibility should be uh six miles or

112  
00:07:24,390 --> 00:07:22,880  
more at the landing site by the time

113  
00:07:26,390 --> 00:07:24,400

soyuz arrives

114

00:07:28,390 --> 00:07:26,400

but the crew won't actually spend too

115

00:07:29,749 --> 00:07:28,400

much time outside regardless as soon as

116

00:07:31,510 --> 00:07:29,759

the helicopters with the landing team

117

00:07:32,950 --> 00:07:31,520

arrive at the landing site they'll begin

118

00:07:34,390 --> 00:07:32,960

setting up a medical tent where the crew

119

00:07:36,629 --> 00:07:34,400

can work through their

120

00:07:38,710 --> 00:07:36,639

regular post landing checkouts before

121

00:07:40,469 --> 00:07:38,720

boarding helicopters to jessica's gone

122

00:07:44,469 --> 00:07:40,479

where they'll board airplanes to take

123

00:07:47,749 --> 00:07:45,909

our next question is from raoul who

124

00:07:50,629 --> 00:07:47,759

wants to know how long it will take for

125

00:07:53,270 --> 00:07:50,639

the astronauts to reach earth

126  
00:07:55,189 --> 00:07:53,280  
well from this exact moment we have got

127  
00:07:57,670 --> 00:07:55,199  
about an hour and 13 minutes before

128  
00:07:59,670 --> 00:07:57,680  
tonight's 9 55 pm central landing but

129  
00:08:01,830 --> 00:07:59,680  
the point that determines when you land

130  
00:08:03,990 --> 00:08:01,840  
is actually the orbit burn that's when

131  
00:08:05,990 --> 00:08:04,000  
soyuz fires its engines to slow down and

132  
00:08:08,309 --> 00:08:06,000  
drop back into the earth's atmosphere

133  
00:08:09,749 --> 00:08:08,319  
and at that point there's no going back

134  
00:08:11,430 --> 00:08:09,759  
but it's a pretty quick trip once

135  
00:08:18,629 --> 00:08:11,440  
they've completed the orbit burn they'll

136  
00:08:21,990 --> 00:08:20,070  
next up is

137  
00:08:24,390 --> 00:08:22,000  
lucy who wants to know what happens to

138  
00:08:26,390 --> 00:08:24,400

the rest of the soyuz module after the

139

00:08:28,869 --> 00:08:26,400

descent module separates

140

00:08:30,950 --> 00:08:28,879

uh just 18 minutes after the orbit burn

141

00:08:32,790 --> 00:08:30,960

starts once the soyuz is on its way back

142

00:08:35,110 --> 00:08:32,800

to earth the descent module is going to

143

00:08:37,029 --> 00:08:35,120

separate from the orbital module

144

00:08:38,949 --> 00:08:37,039

in the propulsion module and the descent

145

00:08:40,630 --> 00:08:38,959

module lands back on the earth with the

146

00:08:42,709 --> 00:08:40,640

astronauts inside

147

00:08:44,389 --> 00:08:42,719

the other modules are left to burn up in

148

00:08:46,470 --> 00:08:44,399

the earth's atmosphere that is actually

149

00:08:48,949 --> 00:08:46,480

the fate of much of what is launched

150

00:08:50,870 --> 00:08:48,959

into space in fact for most of our cargo

151  
00:08:52,389 --> 00:08:50,880  
vehicles the entire spacecraft is filled

152  
00:08:53,750 --> 00:08:52,399  
with trash and then sent away to burn

153  
00:08:56,150 --> 00:08:53,760  
off as it falls through the earth's

154  
00:09:00,790 --> 00:08:56,160  
atmosphere it's a very convenient way to

155  
00:09:04,790 --> 00:09:03,350  
scott has a question about soyuz control

156  
00:09:07,829 --> 00:09:04,800  
he wants to know if the crew would be

157  
00:09:09,430 --> 00:09:07,839  
able to handle the orbit landing

158  
00:09:11,030 --> 00:09:09,440  
and landing procedures on their own

159  
00:09:12,710 --> 00:09:11,040  
without ground assistance if they lost

160  
00:09:15,110 --> 00:09:12,720  
communication with the ground

161  
00:09:17,030 --> 00:09:15,120  
but actually there's there's really very

162  
00:09:18,949 --> 00:09:17,040  
little for the ground or the crew to do

163  
00:09:20,949 --> 00:09:18,959

the vehicle does most of the work on its

164

00:09:23,030 --> 00:09:20,959

own uh because most of its actions are

165

00:09:25,030 --> 00:09:23,040

automated but the things that the crew

166

00:09:27,590 --> 00:09:25,040

doesn't require

167

00:09:29,190 --> 00:09:27,600

the things that the crew does do do not

168

00:09:32,790 --> 00:09:29,200

require assistance from the ground so

169

00:09:36,870 --> 00:09:34,550

and one more from now this one from

170

00:09:38,710 --> 00:09:36,880

kristen who wants to know how chris

171

00:09:41,350 --> 00:09:38,720

cassidy is going to be getting home

172

00:09:43,190 --> 00:09:41,360

after landing and this is actually the

173

00:09:44,790 --> 00:09:43,200

longer part of the trip for cassidy once

174

00:09:46,150 --> 00:09:44,800

he finishes his initial checkouts at the

175

00:09:47,990 --> 00:09:46,160

landing site he and his crewmates are

176

00:09:49,750 --> 00:09:48,000

going to be getting on helicopters

177

00:09:52,230 --> 00:09:49,760

deliver them back to jessica's gun which

178

00:09:54,389 --> 00:09:52,240

is the nearest town and there will be

179

00:09:56,310 --> 00:09:54,399

planes waiting for them there to take

180

00:09:59,190 --> 00:09:56,320

anatolia immigration and ivan wagner

181

00:10:00,710 --> 00:09:59,200

back to russia while cassidy is brought

182

00:10:01,750 --> 00:10:00,720

back here to johnson space center in

183

00:10:03,269 --> 00:10:01,760

houston

184

00:10:06,790 --> 00:10:03,279

and for cassidy that trip will take

185

00:10:10,389 --> 00:10:08,790

so that is all for now but keep sending

186

00:10:12,470 --> 00:10:10,399

in your questions and we will keep

187

00:10:14,389 --> 00:10:12,480

trying to answer a few before we get

188

00:10:16,870 --> 00:10:14,399

done for the night you can get yours to

189

00:13:45,509 --> 00:10:16,880

us on social media using the hashtag ask

190

00:13:50,790 --> 00:13:47,910

we're now less than 15 minutes away from

191

00:13:52,710 --> 00:13:50,800

the soyuz ms-16 deorbit burn that's

192

00:13:54,629 --> 00:13:52,720

scheduled for 9 pm central time when the

193

00:13:56,550 --> 00:13:54,639

soyuz will be about 20 miles away from

194

00:13:58,790 --> 00:13:56,560

the space station that burn is going to

195

00:14:01,269 --> 00:13:58,800

last five minutes and 20 seconds during

196

00:14:03,030 --> 00:14:01,279

which the thrusters firing will act as a

197

00:14:05,750 --> 00:14:03,040

break on the soyuz vehicle while it's

198

00:14:08,949 --> 00:14:05,760

still 260 miles above the earth

199

00:14:11,430 --> 00:14:08,959

slowing it down by 128 meters per second

200

00:14:13,350 --> 00:14:11,440

or 268 miles per hour

201  
00:14:15,030 --> 00:14:13,360  
and dropping it out of orbit

202  
00:14:17,030 --> 00:14:15,040  
you can see a

203  
00:14:19,269 --> 00:14:17,040  
graphic of how that will work here

204  
00:14:21,430 --> 00:14:19,279  
basically

205  
00:14:24,069 --> 00:14:21,440  
flips around turns uh and fires its

206  
00:14:25,910 --> 00:14:24,079  
thrusters into the direction that it was

207  
00:14:27,670 --> 00:14:25,920  
traveling to slow it down and drop it

208  
00:14:30,949 --> 00:14:27,680  
out of orbit

209  
00:14:32,629 --> 00:14:30,959  
about 23 minutes later at 9 28 p.m

210  
00:14:34,310 --> 00:14:32,639  
that's when the soyuz is at an altitude

211  
00:14:35,990 --> 00:14:34,320  
of 87 miles above the earth the

212  
00:14:38,150 --> 00:14:36,000  
vehicle's computer will command the

213  
00:14:39,590 --> 00:14:38,160

descent module of the soyuz to separate

214

00:14:41,269 --> 00:14:39,600

from the rest of the spacecraft just

215

00:14:43,269 --> 00:14:41,279

above the first traces of the earth's

216

00:14:44,389 --> 00:14:43,279

atmosphere it's what you saw just there

217

00:14:46,389 --> 00:14:44,399

a minute ago

218

00:14:48,150 --> 00:14:46,399

the orbital module on top which is where

219

00:14:50,310 --> 00:14:48,160

the crew has a small amount of room to

220

00:14:52,150 --> 00:14:50,320

move around during its flight to the

221

00:14:53,910 --> 00:14:52,160

space station after launch and the

222

00:14:55,829 --> 00:14:53,920

instrumentation and propulsion module on

223

00:14:57,990 --> 00:14:55,839

the bottom which house the

224

00:15:00,069 --> 00:14:58,000

oxygen storage tanks attitude control

225

00:15:01,910 --> 00:15:00,079

thrusters avionics and communications

226

00:15:03,350 --> 00:15:01,920

and control equipment those will all

227

00:15:05,350 --> 00:15:03,360

separate from the descent module in the

228

00:15:07,350 --> 00:15:05,360

middle where the crew is seated the

229

00:15:09,189 --> 00:15:07,360

descent module contains

230

00:15:11,269 --> 00:15:09,199

personally contoured seats for the crew

231

00:15:13,030 --> 00:15:11,279

members used during launch entry and

232

00:15:15,030 --> 00:15:13,040

landing as well as all the controls and

233

00:15:17,350 --> 00:15:15,040

displays needed for critical flight

234

00:15:19,350 --> 00:15:17,360

activities

235

00:15:21,269 --> 00:15:19,360

it also has life support provisions

236

00:15:23,030 --> 00:15:21,279

batteries for re-entry and landing and

237

00:15:25,110 --> 00:15:23,040

parachutes and soft landing rocket

238

00:15:27,350 --> 00:15:25,120

engines to slow the vehicle just before

239

00:15:29,749 --> 00:15:27,360

touchdown the orbital module in the

240

00:15:31,430 --> 00:15:29,759

instrumentation and propulsion module

241

00:15:32,870 --> 00:15:31,440

will burn up as we mentioned earlier in

242

00:15:34,470 --> 00:15:32,880

the earth's atmosphere

243

00:15:37,430 --> 00:15:34,480

while the scent module continues on with

244

00:15:40,949 --> 00:15:37,440

cassidy ignition wagner inside

245

00:15:42,310 --> 00:15:40,959

then three minutes later at 9 31 pm 60

246

00:15:45,430 --> 00:15:42,320

miles or

247

00:15:47,990 --> 00:15:45,440

316 000 feet above the earth soyuz will

248

00:15:49,509 --> 00:15:48,000

begin atmospheric re-entry

249

00:15:51,269 --> 00:15:49,519

that point the descent module's

250

00:15:53,030 --> 00:15:51,279

computers will orient the capsule with

251

00:15:55,509 --> 00:15:53,040

its ablative heat shield pointing

252

00:15:57,269 --> 00:15:55,519

forward to protect it from the heat

253

00:15:58,949 --> 00:15:57,279

as it begins to fly through the earth's

254

00:16:00,389 --> 00:15:58,959

atmosphere

255

00:16:01,829 --> 00:16:00,399

and the crew will begin to feel the

256

00:16:02,710 --> 00:16:01,839

first effects of gravity again at that

257

00:16:05,430 --> 00:16:02,720

point

258

00:16:06,550 --> 00:16:05,440

that's going to build through about 9 38

259

00:16:08,069 --> 00:16:06,560

pm

260

00:16:10,550 --> 00:16:08,079

when they'll experience a maximum

261

00:16:11,749 --> 00:16:10,560

pressure g-load for the descent that

262

00:16:13,590 --> 00:16:11,759

will probably

263

00:16:17,590 --> 00:16:13,600

briefly cause them to feel four to five

264

00:16:21,910 --> 00:16:19,749

just two minutes later 15 minutes before

265

00:16:23,030 --> 00:16:21,920

touchdown when the soy is

266

00:16:25,350 --> 00:16:23,040

35

267

00:16:28,790 --> 00:16:25,360

105 feet above the earth and traveling

268

00:16:30,949 --> 00:16:28,800

at a speed of about 514 miles per hour

269

00:16:33,430 --> 00:16:30,959

soyuz computers will command the first

270

00:16:35,590 --> 00:16:33,440

of a series of parachutes to deploy

271

00:16:39,509 --> 00:16:35,600

two pilot parachutes will come first one

272

00:16:41,189 --> 00:16:39,519

6.7 square feet and one 48.4 square feet

273

00:16:43,670 --> 00:16:41,199

and together then we'll drag out the

274

00:16:45,829 --> 00:16:43,680

drogue chute a 258 square foot parachute

275

00:16:46,949 --> 00:16:45,839

that slows the soyuz down to 178 miles

276

00:16:49,350 --> 00:16:46,959

per hour

277

00:16:52,389 --> 00:16:49,360

drove shoot also will create a gentle

278

00:16:54,150 --> 00:16:52,399

spin for the soyuz as it drank as it uh

279

00:16:56,790 --> 00:16:54,160

dangles underneath which will help

280

00:17:01,030 --> 00:16:56,800

stabilize the capsule in its final

281

00:17:04,390 --> 00:17:02,949

just before touchdown that drove shoot

282

00:17:06,110 --> 00:17:04,400

will be jettisoned to make way for the

283

00:17:09,669 --> 00:17:06,120

deployment of the

284

00:17:11,189 --> 00:17:09,679

3281 foot main parachute it continues

285

00:17:13,590 --> 00:17:11,199

slowing the capsule down to a speed of

286

00:17:15,750 --> 00:17:13,600

about 16 miles per hour

287

00:17:18,069 --> 00:17:15,760

at first the capsule hangs beneath it at

288

00:17:20,150 --> 00:17:18,079

a 30 degree angle to the horizon to help

289

00:17:21,669 --> 00:17:20,160

with aerodynamic stability but after one

290

00:17:24,230 --> 00:17:21,679

of the two harnesses connecting the

291

00:17:26,069 --> 00:17:24,240

parachute to the capsule is severed the

292

00:17:29,350 --> 00:17:26,079

soyuz will ride itself so that it's in a

293

00:17:31,270 --> 00:17:29,360

vertical position through touchdown

294

00:17:32,870 --> 00:17:31,280

when the capsule is just 16 thousand

295

00:17:34,549 --> 00:17:32,880

feet or three miles from the earth's

296

00:17:36,390 --> 00:17:34,559

surface the vehicle's heat shield will

297

00:17:38,470 --> 00:17:36,400

be jettisoned and any residual

298

00:17:41,190 --> 00:17:38,480

propellant will dissipate without the

299

00:17:43,270 --> 00:17:41,200

heat shield the soyuz altimeter

300

00:17:45,510 --> 00:17:43,280

an instrument that measures altitude by

301  
00:17:47,590 --> 00:17:45,520  
bouncing signals to the ground and back

302  
00:17:49,029 --> 00:17:47,600  
to the soyuz will be exposed to the

303  
00:17:51,110 --> 00:17:49,039  
surface of the earth and it will be used

304  
00:17:53,029 --> 00:17:51,120  
to provide the capsules computers

305  
00:17:55,590 --> 00:17:53,039  
updated information on altitude and rate

306  
00:17:57,029 --> 00:17:55,600  
of descent

307  
00:17:59,270 --> 00:17:57,039  
at that point the vehicle's computers

308  
00:18:01,590 --> 00:17:59,280  
will also arm the modules seat shock

309  
00:18:03,750 --> 00:18:01,600  
absorbers when the soyuz reaches an

310  
00:18:05,830 --> 00:18:03,760  
altitude of about 39 feet cockpit

311  
00:18:08,789 --> 00:18:05,840  
displays will tell anatoly ivanishin

312  
00:18:11,190 --> 00:18:08,799  
who's the soyuz commander to prepare for

313  
00:18:12,150 --> 00:18:11,200

the firing of the soft landing

314

00:18:16,230 --> 00:18:12,160

engines

315

00:18:17,909 --> 00:18:16,240

and they actually will be fired just

316

00:18:19,990 --> 00:18:17,919

three feet above the ground and two

317

00:18:22,310 --> 00:18:20,000

seconds before touchdown allowing the

318

00:18:24,549 --> 00:18:22,320

soyuz to slow down to five feet per

319

00:18:27,510 --> 00:18:24,559

second or about three and a half miles

320

00:18:28,789 --> 00:18:27,520

per hour for a landing at 9 55 pm

321

00:18:47,750 --> 00:18:28,799

central time

322

00:18:47,760 --> 00:19:49,830

so

323

00:19:49,840 --> 00:19:54,950

can we see the maneuver

324

00:19:59,350 --> 00:19:56,710

we see the maneuver

325

00:20:03,909 --> 00:20:01,830

and i am sending the

326  
00:20:13,590 --> 00:20:03,919  
three

327  
00:20:27,029 --> 00:20:15,990  
i sent the command at zero four fifty

328  
00:20:41,350 --> 00:20:29,190  
and can i send the next command a little

329  
00:20:44,230 --> 00:20:42,950  
activation

330  
00:20:46,310 --> 00:20:44,240  
i am

331  
00:20:51,510 --> 00:20:46,320  
sending the you have a go to send the

332  
00:20:56,310 --> 00:20:54,149  
and we have com sessions set up at

333  
00:21:14,870 --> 00:20:56,320  
0-4-53-52

334  
00:21:14,880 --> 00:21:23,110  
just

335  
00:21:27,190 --> 00:21:24,549  
and then the

336  
00:21:29,990 --> 00:21:27,200  
time of thruster activation and how long

337  
00:21:32,070 --> 00:21:30,000  
it worked for

338  
00:22:35,669 --> 00:21:32,080

how long was the burn

339

00:22:35,679 --> 00:22:51,990

foreign

340

00:22:52,000 --> 00:23:00,310

uh

341

00:23:00,320 --> 00:23:34,390

oh

342

00:23:37,830 --> 00:23:36,149

less than five minutes to go now before

343

00:23:40,710 --> 00:23:37,840

that uh 9

344

00:23:44,789 --> 00:23:40,720

p.m central time d-orbit burn coming up

345

00:23:46,950 --> 00:23:44,799

that's going to drop the soyuz ms-16

346

00:23:48,470 --> 00:23:46,960

out of the earth's atmosphere and begin

347

00:23:51,029 --> 00:23:48,480

the uh

348

00:23:53,750 --> 00:23:51,039

journey home for the for the crew on

349

00:23:59,190 --> 00:23:56,230

nasa's chris cassidy and horse cosmos is

350

00:24:01,750 --> 00:23:59,200

antoli ivanishin and of yvonne wagner

351  
00:24:03,590 --> 00:24:01,760  
who've all spent 196 days on board the

352  
00:24:06,470 --> 00:24:03,600  
international space station

353  
00:24:51,430 --> 00:24:06,480  
we wrapping that up today with a 9 55 pm

354  
00:24:51,440 --> 00:25:03,029  
three minuses

355  
00:25:03,039 --> 00:25:48,549  
so

356  
00:25:55,669 --> 00:25:51,430  
two minutes

357  
00:25:57,510 --> 00:25:55,679  
orbit burn begins it's going to last 5

358  
00:25:59,830 --> 00:25:57,520  
minutes and 20 seconds and that will

359  
00:26:02,549 --> 00:25:59,840  
slow the soyuz down enough to drop it

360  
00:26:04,630 --> 00:26:02,559  
back into the earth's atmosphere

361  
00:26:06,390 --> 00:26:04,640  
and allow it to continue on its journey

362  
00:26:50,789 --> 00:26:06,400  
towards the staff of kazakhstan where

363  
00:26:50,799 --> 00:27:05,669

and

364

00:27:05,679 --> 00:27:15,830

orbital maneuver engine covers are open

365

00:27:19,190 --> 00:27:17,590

okay recording all systems are ready for

366

00:27:20,950 --> 00:27:19,200

the dealer burn to begin that's less

367

00:27:23,430 --> 00:27:20,960

than 30 seconds away now and again

368

00:27:41,909 --> 00:27:23,440

that's gonna last five minutes and 20

369

00:28:01,350 --> 00:27:44,389

and we're not wasting any propellant

370

00:28:12,149 --> 00:28:03,029

on the nozzles

371

00:28:28,830 --> 00:28:14,630

printer

372

00:28:36,389 --> 00:28:31,590

parameters are nominal the combined

373

00:28:42,710 --> 00:28:38,870

45 19

374

00:28:47,909 --> 00:28:45,070

are nominal and

375

00:28:50,149 --> 00:28:47,919

13.7 on the nozzles one minute into

376

00:28:52,230 --> 00:28:50,159

today's deorbit burn can last five

377

00:28:55,590 --> 00:28:52,240

minutes and 20 seconds

378

00:28:55,600 --> 00:28:59,350

we have 12.5

379

00:28:59,360 --> 00:29:04,789

on the nozzles

380

00:29:38,710 --> 00:29:09,669

at 15 32 0.45 and 12 and a half

381

00:29:43,430 --> 00:29:41,430

12.6

382

00:29:45,990 --> 00:29:43,440

on the nozzle scado parameters are

383

00:29:47,510 --> 00:29:46,000

nominal copy

384

00:29:49,110 --> 00:29:47,520

two minutes into the burn now as you're

385

00:29:51,909 --> 00:29:49,120

hearing everything continuing to look

386

00:29:54,389 --> 00:29:51,919

good two minutes fifth to nine seconds

387

00:30:00,870 --> 00:29:54,399

so the parameters are nominal

388

00:30:00,880 --> 00:30:06,070

12.6 on the nozzles

389

00:30:06,080 --> 00:30:10,029

59.6

390

00:30:14,149 --> 00:30:11,750

0.46

391

00:30:19,990 --> 00:30:16,310

12.6

392

00:30:22,950 --> 00:30:20,000

and cadillac parameters are nominal

393

00:30:25,909 --> 00:30:22,960

236

394

00:30:27,830 --> 00:30:25,919

0.46

395

00:30:30,149 --> 00:30:27,840

for delta v

396

00:30:31,830 --> 00:30:30,159

12.6 on the nozzles and cadillac

397

00:30:38,870 --> 00:30:31,840

parameters are nominal

398

00:30:46,310 --> 00:30:42,070

and next point 46 and

399

00:30:48,389 --> 00:30:46,320

for the delta v and 13 on the nozzles

400

00:30:56,789 --> 00:30:48,399

now three minutes into the do orbit burn

401  
00:30:56,799 --> 00:31:03,990  
the parameters are nominally

402  
00:31:06,950 --> 00:31:05,909  
fifteen

403  
00:31:10,070 --> 00:31:06,960  
eight

404  
00:31:11,029 --> 00:31:10,080  
seventy six zero forty five twelve point

405  
00:31:12,230 --> 00:31:11,039  
two

406  
00:31:19,590 --> 00:31:12,240  
and

407  
00:31:24,750 --> 00:31:20,669  
330

408  
00:31:28,710 --> 00:31:24,760  
94.1 0.45

409  
00:31:38,950 --> 00:31:28,720  
12.8 and cadil parameters are nominal

410  
00:31:44,710 --> 00:31:40,950  
and thirteen point

411  
00:31:48,389 --> 00:31:44,720  
two and twelve point eight and kadu

412  
00:31:49,430 --> 00:31:48,399  
parameters are nominal copy four minutes

413  
00:31:51,430 --> 00:31:49,440

and now

414

00:31:54,149 --> 00:31:51,440

one minute and 20 seconds left

415

00:31:54,159 --> 00:31:58,630

point forty five for delta v

416

00:31:58,640 --> 00:32:10,870

copy

417

00:32:10,880 --> 00:32:15,029

and 12.9

418

00:32:25,230 --> 00:32:18,870

the parameters are nominal copy

419

00:32:25,240 --> 00:32:34,230

0.46 for delta

420

00:32:39,669 --> 00:32:36,630

we are done with the burn

421

00:32:42,870 --> 00:32:39,679

the burn is complete

422

00:32:45,750 --> 00:32:42,880

and there you go complete deorbit burned

423

00:32:47,830 --> 00:32:45,760

now that was about five minutes and 20

424

00:32:50,230 --> 00:32:47,840

seconds long and that

425

00:32:51,669 --> 00:32:50,240

was intended to drop the soyuz slow it

426  
00:32:53,669 --> 00:32:51,679  
down and drop it back into the earth's

427  
00:32:56,230 --> 00:32:53,679  
atmosphere so that it could begin its

428  
00:32:59,430 --> 00:32:56,240  
journey home to the step of kazakhstan

429  
00:33:21,990 --> 00:32:59,440  
today crews now on their way for a 9 55

430  
00:33:26,149 --> 00:33:24,070  
complete the next milestone that we that

431  
00:33:28,149 --> 00:33:26,159  
we'll be watching for is the separation

432  
00:33:29,750 --> 00:33:28,159  
of the soyuz descent modules from the

433  
00:33:31,669 --> 00:33:29,760  
other

434  
00:33:34,070 --> 00:33:31,679  
parts of the spacecraft

435  
00:33:35,590 --> 00:33:34,080  
that is going to be coming up at 9 28 pm

436  
00:33:37,750 --> 00:33:35,600  
central time and you can see how it

437  
00:33:39,029 --> 00:33:37,760  
works here that middle portion is where

438  
00:33:40,310 --> 00:33:39,039

the crew

439

00:33:42,310 --> 00:33:40,320

cassidy

440

00:33:45,190 --> 00:33:42,320

immunity and

441

00:33:47,110 --> 00:33:45,200

wagner are all inside of

442

00:33:48,549 --> 00:33:47,120

it separates from the other ports parts

443

00:34:37,589 --> 00:33:48,559

because it has the heat shield that will

444

00:34:41,190 --> 00:34:38,950

since we've got a little bit of time

445

00:34:43,190 --> 00:34:41,200

before the uh

446

00:34:45,430 --> 00:34:43,200

separation of the descent module occurs

447

00:34:48,069 --> 00:34:45,440

we can take a few minutes out for some

448

00:34:49,829 --> 00:34:48,079

more questions being sent in by users on

449

00:34:51,109 --> 00:34:49,839

social media if you have a question of

450

00:34:53,109 --> 00:34:51,119

your own you can send it in using the

451  
00:34:54,710 --> 00:34:53,119  
hashtag asknasa

452  
00:34:56,950 --> 00:34:54,720  
and we will try and answer a few more

453  
00:34:59,510 --> 00:34:56,960  
before the night's over

454  
00:35:01,829 --> 00:34:59,520  
right now our first question is coming

455  
00:35:03,750 --> 00:35:01,839  
from rebecca asking how long it's going

456  
00:35:06,150 --> 00:35:03,760  
to take for the astronauts coming back

457  
00:35:11,829 --> 00:35:06,160  
today to physically reacclimate to life

458  
00:35:15,109 --> 00:35:13,510  
that is um

459  
00:35:17,589 --> 00:35:15,119  
that is a good question and you will

460  
00:35:19,349 --> 00:35:17,599  
hear from the astronauts that gravity is

461  
00:35:21,349 --> 00:35:19,359  
is not a lot of fun to get really used

462  
00:35:23,190 --> 00:35:21,359  
to once you get to space you get used to

463  
00:35:24,950 --> 00:35:23,200

to zero gravity pretty quickly but

464

00:35:27,430 --> 00:35:24,960

getting used to gravity again can take a

465

00:35:28,550 --> 00:35:27,440

little bit of adjustment

466

00:35:31,910 --> 00:35:28,560

they have

467

00:35:32,870 --> 00:35:31,920

about two months uh 45 to 60 days set

468

00:35:35,430 --> 00:35:32,880

aside

469

00:35:38,069 --> 00:35:35,440

for re-acclimation

470

00:35:40,310 --> 00:35:38,079

and also uh some technical debriefs and

471

00:35:41,990 --> 00:35:40,320

that is basically their their job once

472

00:35:43,910 --> 00:35:42,000

they get back to earth for the first

473

00:35:46,550 --> 00:35:43,920

couple of months just getting um back

474

00:35:47,829 --> 00:35:46,560

into the groove of life here on

475

00:35:50,069 --> 00:35:47,839

the planet

476

00:35:53,190 --> 00:35:50,079

uh it doesn't take quite that long to to

477

00:35:54,630 --> 00:35:53,200

get totally reacclimated um that is

478

00:35:56,470 --> 00:35:54,640

probably more like a few weeks although

479

00:35:58,390 --> 00:35:56,480

it probably varies from from person to

480

00:36:01,270 --> 00:35:58,400

person but they do have that time set

481

00:36:02,790 --> 00:36:01,280

aside to really dig into just returning

482

00:36:07,829 --> 00:36:02,800

to life on earth and

483

00:36:11,030 --> 00:36:09,990

next question is coming from wilson who

484

00:36:12,790 --> 00:36:11,040

wants to know what the difference

485

00:36:14,150 --> 00:36:12,800

between ballistic injury and normal

486

00:36:15,990 --> 00:36:14,160

entry is

487

00:36:18,630 --> 00:36:16,000

a ballistic entry i mentioned earlier

488

00:36:20,550 --> 00:36:18,640

that we had some of the landing forces

489

00:36:22,870 --> 00:36:20,560

ready to support a ballistic injury if

490

00:36:24,630 --> 00:36:22,880

it did occur and that is when the soyuz

491

00:36:28,470 --> 00:36:24,640

comes in at a steeper

492

00:36:30,790 --> 00:36:29,270

for

493

00:36:33,030 --> 00:36:30,800

it is a

494

00:36:34,470 --> 00:36:33,040

mode of re-entry that the soyuz can

495

00:36:37,750 --> 00:36:34,480

support but it's not the preferred one

496

00:36:40,310 --> 00:36:37,760

it's a little bit of a rougher ride and

497

00:36:41,829 --> 00:36:40,320

takes the astronauts into a place where

498

00:36:44,230 --> 00:36:41,839

there are fewer there's

499

00:36:45,670 --> 00:36:44,240

less landing support staged to help them

500

00:36:47,589 --> 00:36:45,680

so we do

501  
00:36:49,349 --> 00:36:47,599  
always plan for

502  
00:36:52,470 --> 00:36:49,359  
an entry at our regular landing site but

503  
00:36:58,870 --> 00:36:52,480  
we stage some support at the ballistic

504  
00:37:02,710 --> 00:37:01,109  
and we've got a third question now from

505  
00:37:04,790 --> 00:37:02,720  
ken

506  
00:37:06,870 --> 00:37:04,800  
who is asking

507  
00:37:09,270 --> 00:37:06,880  
during re-entry do the astronauts

508  
00:37:11,109 --> 00:37:09,280  
communicate in english or russian so if

509  
00:37:14,310 --> 00:37:11,119  
you've been listening tonight

510  
00:37:16,230 --> 00:37:14,320  
what you are hearing on nasa tv is

511  
00:37:17,990 --> 00:37:16,240  
an interpreter who is

512  
00:37:20,069 --> 00:37:18,000  
interpreting both the astronauts who are

513  
00:37:21,589 --> 00:37:20,079

speaking in russian and the

514

00:37:23,430 --> 00:37:21,599

russian flight controllers on the ground

515

00:37:24,870 --> 00:37:23,440

who are talking back to them so most of

516

00:37:26,150 --> 00:37:24,880

what you are hearing is actually taking

517

00:37:28,470 --> 00:37:26,160

place in russian and then we have a

518

00:37:30,069 --> 00:37:28,480

translator who translates both parts of

519

00:37:31,109 --> 00:37:30,079

those conversations so sometimes it

520

00:37:34,069 --> 00:37:31,119

sounds a little bit like they're talking

521

00:37:36,069 --> 00:37:34,079

to themselves but that is um the

522

00:37:37,910 --> 00:37:36,079

the full conversation between the two

523

00:37:40,230 --> 00:37:37,920

the two groups um

524

00:37:42,230 --> 00:37:40,240

occurring entirely in russian for

525

00:37:43,829 --> 00:37:42,240

this since it is a russian vehicle and

526

00:38:06,230 --> 00:37:43,839

the russian flight controllers are

527

00:38:06,240 --> 00:38:15,829

i cannot even reach like this

528

00:38:15,839 --> 00:38:19,750

how do you read us

529

00:38:24,630 --> 00:38:23,109

we have interference we can hardly copy

530

00:38:43,349 --> 00:38:24,640

you

531

00:38:43,359 --> 00:38:49,270

is that correct

532

00:39:21,109 --> 00:38:51,990

we did not copy

533

00:39:21,119 --> 00:39:37,829

so

534

00:39:37,839 --> 00:39:54,150

it's basically zero

535

00:39:54,160 --> 00:40:22,150

fox

536

00:40:27,510 --> 00:40:24,710

about 15 minutes now until we do hit

537

00:40:29,270 --> 00:40:27,520

that point uh 9 28 p.m when the soyuz

538

00:40:31,190 --> 00:40:29,280

descent module separates from the other

539

00:40:33,510 --> 00:40:31,200

parts of the soyuz

540

00:40:35,670 --> 00:40:33,520

everything uh continuing to go smoothly

541

00:40:37,829 --> 00:40:35,680

as we head towards that

542

00:40:39,510 --> 00:40:37,839

and we're just 40 minutes away now from

543

00:40:41,270 --> 00:40:39,520

landing once we get to that point things

544

00:40:42,230 --> 00:40:41,280

will start happening pretty quickly with

545

00:40:45,670 --> 00:40:42,240

the

546

00:40:47,109 --> 00:40:45,680

atmospheric re-entry beginning at 9 31

547

00:40:48,790 --> 00:40:47,119

and then the max

548

00:40:56,790 --> 00:40:48,800

g load for the astronauts following that

549

00:41:18,950 --> 00:40:59,589

yes we confirm

550

00:41:22,870 --> 00:41:21,670

in below we have a

551  
00:41:25,990 --> 00:41:22,880  
zero

552  
00:41:28,950 --> 00:41:26,000  
in the sr defense module we have

553  
00:41:31,349 --> 00:41:28,960  
the pressure of seven six seven

554  
00:41:42,470 --> 00:41:31,359  
and after re-entry

555  
00:41:48,870 --> 00:41:45,109  
and we will be able to

556  
00:41:48,880 --> 00:43:11,270  
so you can report on the g-load

557  
00:43:11,280 --> 00:45:00,630  
are you ready yes

558  
00:45:00,640 --> 00:45:38,390  
foreign

559  
00:45:38,400 --> 00:45:51,430  
steps

560  
00:45:55,430 --> 00:45:53,510  
35 minutes left until today's landing

561  
00:45:57,829 --> 00:45:55,440  
and just 10 minutes to go until we get

562  
00:45:59,910 --> 00:45:57,839  
to that uh 10 minutes

563  
00:46:01,829 --> 00:45:59,920

and that separation point that you just

564

00:46:03,910 --> 00:46:01,839

heard them talking about uh that is

565

00:46:05,829 --> 00:46:03,920

again when the descent module that the

566

00:46:08,550 --> 00:46:05,839

crew members are in chris cassidy

567

00:46:10,309 --> 00:46:08,560

anatoly ivanishin and yvonne wagner uh

568

00:46:11,589 --> 00:46:10,319

separates from the other elements of the

569

00:46:13,510 --> 00:46:11,599

soyuz

570

00:46:15,990 --> 00:46:13,520

the descent module has both the heat

571

00:46:18,069 --> 00:46:16,000

shield and the parachutes which are key

572

00:46:18,950 --> 00:46:18,079

components of a safe landing of course

573

00:46:21,270 --> 00:46:18,960

so

574

00:46:22,790 --> 00:46:21,280

separation of the modules allows those

575

00:47:22,549 --> 00:46:22,800

elements to be exposed and then used

576  
00:47:22,559 --> 00:49:27,829  
hey guys

577  
00:49:27,839 --> 00:49:33,030  
six and a half minutes to separation

578  
00:49:38,069 --> 00:49:36,549  
please close your visors activate the

579  
00:49:50,950 --> 00:49:38,079  
rescue

580  
00:49:56,829 --> 00:49:52,710  
and then you have to

581  
00:50:06,549 --> 00:49:56,839  
talk to us by pushing the ptt button

582  
00:50:09,829 --> 00:50:08,390  
just five more minutes left before we

583  
00:50:11,670 --> 00:50:09,839  
get to that

584  
00:50:13,030 --> 00:50:11,680  
decent module separation and we are

585  
00:50:15,349 --> 00:50:13,040  
going to take a few more questions while

586  
00:50:17,109 --> 00:50:15,359  
we have a minute uh from the ask nasa

587  
00:50:19,750 --> 00:50:17,119  
group on social media you can send yours

588  
00:50:22,470 --> 00:50:19,760

in using that hashtag ask nasa

589

00:50:25,270 --> 00:50:22,480

and our first one um

590

00:50:28,150 --> 00:50:25,280

is from nasa wonderer who's asking what

591

00:50:30,150 --> 00:50:28,160

happens after the astronauts land

592

00:50:32,150 --> 00:50:30,160

they there will be a few minutes after

593

00:50:35,990 --> 00:50:32,160

they land while the helicopters with all

594

00:50:36,870 --> 00:50:36,000

the support personnel and the atvs

595

00:50:38,790 --> 00:50:36,880

will

596

00:50:41,030 --> 00:50:38,800

move in to meet them so they'll be on

597

00:50:42,230 --> 00:50:41,040

their own for a few minutes before they

598

00:50:43,349 --> 00:50:42,240

are then

599

00:50:46,790 --> 00:50:43,359

um

600

00:50:48,549 --> 00:50:46,800

converged on and uh the crew who's there

601  
00:50:50,230 --> 00:50:48,559  
to meet them begins working to get them

602  
00:50:52,710 --> 00:50:50,240  
out they'll set up a

603  
00:50:55,349 --> 00:50:52,720  
ladder um to help them help pull them

604  
00:50:57,430 --> 00:50:55,359  
out of the capsule and uh then they'll

605  
00:50:59,510 --> 00:50:57,440  
be moved into chairs well where they can

606  
00:51:01,910 --> 00:50:59,520  
sit and collect themselves a few minutes

607  
00:51:04,069 --> 00:51:01,920  
we'll be able to hopefully see all that

608  
00:51:05,030 --> 00:51:04,079  
from the videographer who will be on

609  
00:51:05,829 --> 00:51:05,040  
site

610  
00:51:08,309 --> 00:51:05,839  
um

611  
00:51:10,150 --> 00:51:08,319  
they will all gather in three chairs uh

612  
00:51:12,549 --> 00:51:10,160  
in front of the the small crowd that

613  
00:51:14,230 --> 00:51:12,559

meets them and then be taken to the

614

00:51:16,390 --> 00:51:14,240

medical tents after they are given a

615

00:51:17,990 --> 00:51:16,400

chance to make a few phone calls

616

00:51:20,549 --> 00:51:18,000

uh and the medical tents will have a few

617

00:51:23,190 --> 00:51:20,559

checkups and then they will go on

618

00:51:25,430 --> 00:51:23,200

the helicopters that met them there and

619

00:51:27,109 --> 00:51:25,440

moved to

620

00:51:29,750 --> 00:51:27,119

jessica's gun where planes will be

621

00:51:32,069 --> 00:51:29,760

waiting to meet them and take them to

622

00:51:37,430 --> 00:51:32,079

either moscow or

623

00:51:40,630 --> 00:51:39,190

next question from jane

624

00:51:41,910 --> 00:51:40,640

asking are the american astronauts

625

00:51:43,510 --> 00:51:41,920

fluent in russian and how long does it

626  
00:51:45,910 --> 00:51:43,520  
take them to learn

627  
00:51:47,750 --> 00:51:45,920  
all of the astronauts who go to the

628  
00:51:49,990 --> 00:51:47,760  
international space station regardless

629  
00:51:52,710 --> 00:51:50,000  
of nationality have to be fluent in both

630  
00:51:54,470 --> 00:51:52,720  
english and russian those are the two

631  
00:51:56,630 --> 00:51:54,480  
official languages on the international

632  
00:51:58,390 --> 00:51:56,640  
space station so even our

633  
00:52:00,790 --> 00:51:58,400  
international partners from

634  
00:52:03,270 --> 00:52:00,800  
japan and

635  
00:52:05,349 --> 00:52:03,280  
europe and canada all of them have to

636  
00:52:07,349 --> 00:52:05,359  
learn english and russian as well if

637  
00:52:08,230 --> 00:52:07,359  
they don't already know one another

638  
00:52:09,910 --> 00:52:08,240

um

639

00:52:11,109 --> 00:52:09,920

that does take a long time and a lot of

640

00:52:12,150 --> 00:52:11,119

the astronauts will tell you that that's

641

00:52:13,750 --> 00:52:12,160

one of the harder parts of their

642

00:52:15,910 --> 00:52:13,760

training they begin that

643

00:52:17,030 --> 00:52:15,920

as soon as they are chosen as astronaut

644

00:52:19,030 --> 00:52:17,040

candidates

645

00:52:21,270 --> 00:52:19,040

and spend a lot of their first two years

646

00:52:23,270 --> 00:52:21,280

of training getting the basics down but

647

00:52:24,630 --> 00:52:23,280

they continue that training once they're

648

00:52:26,470 --> 00:52:24,640

assigned to a mission to make sure that

649

00:52:28,470 --> 00:52:26,480

they are ready before they get to the

650

00:52:30,309 --> 00:52:28,480

international space station and able to

651  
00:52:37,510 --> 00:52:30,319  
communicate with some of the ground

652  
00:52:41,750 --> 00:52:39,670  
and finally this one from elizabeth

653  
00:52:42,790 --> 00:52:41,760  
asking whether or not the

654  
00:52:45,109 --> 00:52:42,800  
uh we

655  
00:52:48,390 --> 00:52:45,119  
how many times the soyuz capsules are

656  
00:52:51,109 --> 00:52:48,400  
reused and the soyuz is only used the

657  
00:52:53,990 --> 00:52:51,119  
one time we do um have

658  
00:52:55,990 --> 00:52:54,000  
some uh spacecraft that are reusable for

659  
00:52:59,510 --> 00:52:56,000  
the space shuttles were reused over and

660  
00:53:01,990 --> 00:52:59,520  
over and now um the space

661  
00:53:03,829 --> 00:53:02,000  
x crew dragons are also going to be

662  
00:53:05,990 --> 00:53:03,839  
reused now that we are beginning to use

663  
00:53:08,150 --> 00:53:06,000

them but the so we used uh just the one

664

00:53:13,349 --> 00:53:08,160  
time

665

00:53:15,510 --> 00:53:13,359  
before the

666

00:53:18,710 --> 00:53:15,520  
module separation begins but you can go

667

00:53:20,950 --> 00:53:18,720  
ahead and be pulling those in or sending

668

00:53:53,990 --> 00:53:20,960  
those into us using the hashtag ask nasa

669

00:53:54,000 --> 00:54:58,390  
copy

670

00:54:58,400 --> 00:55:47,270  
prepare for separation of modules

671

00:55:50,470 --> 00:55:48,950  
at this point the soyuz descent module

672

00:55:52,069 --> 00:55:50,480  
is separating from the orbital module

673

00:55:54,069 --> 00:55:52,079  
and the instrumentation and propulsion

674

00:55:55,750 --> 00:55:54,079  
module while the vehicle is about 87

675

00:55:57,270 --> 00:55:55,760  
miles above the earth

676  
00:55:59,270 --> 00:55:57,280  
orbital module and instrumentation and

677  
00:56:01,109 --> 00:55:59,280  
propulsion modules are going to burn up

678  
00:56:04,549 --> 00:56:01,119  
in the earth's atmosphere while the

679  
00:56:06,710 --> 00:56:04,559  
descent module with the crew inside

680  
00:56:11,910 --> 00:56:06,720  
goes on towards that landing site in

681  
00:56:16,630 --> 00:56:13,430  
and confirmation here on the ground that

682  
00:56:20,150 --> 00:56:16,640  
we did get module separation

683  
00:56:23,270 --> 00:56:20,160  
we see separation on our telemetry

684  
00:56:28,470 --> 00:56:23,280  
and two and a half minutes till

685  
00:56:32,710 --> 00:56:30,870  
that next milestone coming up at 9 31

686  
00:56:35,030 --> 00:56:32,720  
p.m central time

687  
00:56:36,230 --> 00:56:35,040  
by that point the soyuz will be 62 miles

688  
00:56:39,190 --> 00:56:36,240

above the earth and that's when the

689

00:56:40,710 --> 00:56:39,200

atmospheric injury begins the crew will

690

00:56:41,750 --> 00:56:40,720

begin to feel the first effects of

691

00:57:34,950 --> 00:56:41,760

gravity

692

00:57:38,470 --> 00:57:36,630

just about a minute left to go before we

693

00:57:39,829 --> 00:57:38,480

do read that reach that atmospheric

694

00:57:41,349 --> 00:57:39,839

entry point

695

00:57:43,510 --> 00:57:41,359

meanwhile teams here on the ground are

696

00:57:45,829 --> 00:57:43,520

reporting that all the support teams are

697

00:57:47,910 --> 00:57:45,839

in place and will be ready when the

698

00:58:17,990 --> 00:57:47,920

soyuz arrives back on earth in

699

00:58:18,000 --> 00:58:33,270

30 seconds till atmospheric re-entry

700

00:58:36,710 --> 00:58:35,109

now at that point where the soyuz

701  
00:58:38,230 --> 00:58:36,720  
capsule is going to be experiencing the

702  
00:58:40,470 --> 00:58:38,240  
atmosphere again again this is when the

703  
00:58:43,109 --> 00:58:40,480  
crew will first begin feeling gravity

704  
00:58:45,190 --> 00:58:43,119  
again 62 miles above the earth it's also

705  
00:58:46,789 --> 00:58:45,200  
when the descent module's computer will

706  
00:58:48,789 --> 00:58:46,799  
be orienting the capsule so that the

707  
00:58:50,390 --> 00:58:48,799  
heat shield is pointing forward

708  
00:58:51,750 --> 00:58:50,400  
protecting it from the heat generated as

709  
00:59:34,230 --> 00:58:51,760  
it begins to experience the earth's

710  
00:59:34,240 --> 00:59:58,230  
uh

711  
00:59:58,240 --> 01:00:05,270  
unintelligible

712  
01:00:09,750 --> 01:00:07,510  
at this point the soyuz is begin

713  
01:00:11,030 --> 01:00:09,760

beginning to injury beginning to enter

714

01:00:13,109 --> 01:00:11,040

the plasma

715

01:00:15,910 --> 01:00:13,119

as it makes its way through the earth's

716

01:00:17,910 --> 01:00:15,920

atmosphere that does cause the

717

01:00:18,710 --> 01:00:17,920

communications with the ground to get a

718

01:00:19,750 --> 01:00:18,720

bit

719

01:00:21,109 --> 01:00:19,760

broken

720

01:00:23,270 --> 01:00:21,119

at some points

721

01:00:33,589 --> 01:00:23,280

this point it's about 80 kilometers

722

01:00:33,599 --> 01:00:48,950

okay

723

01:00:48,960 --> 01:01:16,069

not intelligible

724

01:01:19,670 --> 01:01:17,589

still about four minutes before the

725

01:01:21,750 --> 01:01:19,680

soyuz exits this uh area where it's

726

01:01:23,030 --> 01:01:21,760

going through plasma as uh

727

01:01:25,109 --> 01:01:23,040

as the uh

728

01:01:27,670 --> 01:01:25,119

as the soyuz begins to experience the

729

01:01:29,829 --> 01:01:27,680

earth's atmosphere again and the uh

730

01:01:31,910 --> 01:01:29,839

air around it heats up as it as it's

731

01:01:36,630 --> 01:01:31,920

moving through the atmosphere that will

732

01:01:38,309 --> 01:01:36,640

uh end at about 9 30 8 p.m central time

733

01:01:41,430 --> 01:01:38,319

that's also when the crew will begin

734

01:02:36,309 --> 01:01:41,440

experiencing the heaviest g-loads as

735

01:02:40,069 --> 01:02:38,309

everything's still quiet as the squeeze

736

01:02:41,430 --> 01:02:40,079

uh still in this period where it's going

737

01:02:43,349 --> 01:02:41,440

through the plasma in the earth's

738

01:02:45,270 --> 01:02:43,359

atmosphere

739

01:02:47,190 --> 01:02:45,280

just about three minutes left of this

740

01:02:49,430 --> 01:02:47,200

but everything going as planned heading

741

01:02:51,349 --> 01:02:49,440

towards that 9 55 pm central time

742

01:02:58,069 --> 01:02:51,359

landing

743

01:03:03,829 --> 01:03:00,549

on board of course commander expedition

744

01:03:06,069 --> 01:03:03,839

63 commander chris cassidy and

745

01:03:07,430 --> 01:03:06,079

flight engineers anatoly ivanishin and

746

01:03:08,470 --> 01:03:07,440

yvonne wagner

747

01:03:11,270 --> 01:03:08,480

about to

748

01:04:37,829 --> 01:03:11,280

land back on earth after 196 days in

749

01:04:42,230 --> 01:04:39,510

little less than a minute before the

750

01:04:44,630 --> 01:04:42,240

soyuz exits the plasma and the crew

751  
01:04:46,230 --> 01:04:44,640  
experiences the heaviest g-loads that

752  
01:05:32,630 --> 01:04:46,240  
they will

753  
01:05:36,870 --> 01:05:34,710  
sony sms-16 should be coming out of the

754  
01:05:38,870 --> 01:05:36,880  
plasma now again the crew will be

755  
01:05:40,710 --> 01:05:38,880  
experiencing uh the highest g loads of

756  
01:05:43,109 --> 01:05:40,720  
their trip back to earth about four to

757  
01:06:02,950 --> 01:05:43,119  
five times what we experience

758  
01:06:02,960 --> 01:07:04,630  
everyone is eligible

759  
01:07:09,829 --> 01:07:07,190  
just 15 minutes now until the soyuz

760  
01:07:12,950 --> 01:07:09,839  
ms-16 touches down in kazakhstan at this

761  
01:07:15,190 --> 01:07:12,960  
point they're about 35

762  
01:07:18,309 --> 01:07:15,200  
105 feet above the earth traveling at a

763  
01:07:19,829 --> 01:07:18,319

speed just under 514 miles per hour

764

01:07:21,430 --> 01:07:19,839

computers will be commanding the first

765

01:07:24,710 --> 01:07:21,440

parachutes to deploy

766

01:07:27,829 --> 01:07:24,720

two pilot shoots one 6.7 square feet and

767

01:07:30,230 --> 01:07:27,839

one 48.4 square feet those will pull out

768

01:07:31,990 --> 01:07:30,240

eventually the 258 square foot drogue

769

01:07:34,309 --> 01:07:32,000

chute which will slow down the soyuz to

770

01:07:36,710 --> 01:07:34,319

178 miles per hour

771

01:09:49,110 --> 01:07:36,720

in only about 16 seconds and begin

772

01:09:53,829 --> 01:09:51,030

less than 12 minutes to go now until uh

773

01:09:59,110 --> 01:09:53,839

the soyuz ms-16 touchdown in kazakhstan

774

01:10:02,229 --> 01:10:00,790

as the soyuz makes its way back towards

775

01:10:04,470 --> 01:10:02,239

earth the drogue

776

01:10:07,990 --> 01:10:04,480

shoots uh parachutes will jettison make

777

01:10:10,470 --> 01:10:08,000

way for the 3281 foot main parachute

778

01:11:30,709 --> 01:10:10,480

which loads the soyuz down to about 15.6

779

01:11:34,790 --> 01:11:32,950

ten minutes now to go until today's 9 55

780

01:11:35,910 --> 01:11:34,800

p.m central time touchdown you can hear

781

01:11:37,830 --> 01:11:35,920

that we're

782

01:11:39,510 --> 01:11:37,840

experiencing some bad audio right now

783

01:11:41,350 --> 01:11:39,520

but uh waiting awaiting some

784

01:12:00,310 --> 01:11:41,360

confirmations from the teams at the

785

01:12:00,320 --> 01:12:08,709

yes

786

01:12:08,719 --> 01:12:30,550

atmosphere

787

01:12:33,750 --> 01:12:32,149

nine minutes to go now hearing a little

788

01:12:36,149 --> 01:12:33,760

bit more audio hopefully that'll

789

01:12:38,870 --> 01:12:36,159

continue uh improving and we'll be able

790

01:12:40,950 --> 01:12:38,880

to get some additional updates

791

01:12:58,870 --> 01:12:40,960

again we're heading towards that 9 55 pm

792

01:12:58,880 --> 01:13:05,430

hello

793

01:13:05,440 --> 01:13:32,950

um

794

01:13:37,430 --> 01:13:34,709

dean's here on the ground hearing from

795

01:13:39,270 --> 01:13:37,440

the forces uh the landing team that is

796

01:13:41,189 --> 01:13:39,280

uh gathering at the landing site that

797

01:13:43,510 --> 01:13:41,199

one of them does now have the crew

798

01:13:44,630 --> 01:13:43,520

inside and everything is looking nominal

799

01:13:46,630 --> 01:13:44,640

just uh

800

01:13:49,189 --> 01:13:46,640

seven and a half minutes away from

801  
01:13:51,110 --> 01:13:49,199  
today's landing time

802  
01:13:52,550 --> 01:13:51,120  
again getting reports from the team who

803  
01:14:12,790 --> 01:13:52,560  
is at the landing site that all is

804  
01:14:12,800 --> 01:14:41,510  
vhf1 is unintelligible

805  
01:14:41,520 --> 01:15:07,110  
okay

806  
01:15:07,120 --> 01:15:10,630  
um

807  
01:15:10,640 --> 01:15:29,270  
okay

808  
01:15:34,070 --> 01:15:31,110  
six minutes now until today's landing

809  
01:15:37,030 --> 01:15:34,080  
time 9 55 pm central time as you can

810  
01:15:39,510 --> 01:15:37,040  
tell we don't have great audio

811  
01:15:40,950 --> 01:15:39,520  
connections with the uh with the crew at

812  
01:15:43,750 --> 01:15:40,960  
the moment

813  
01:15:45,590 --> 01:15:43,760

and no video yet so we are relying on

814

01:15:47,830 --> 01:15:45,600

reports from the landing team who is

815

01:15:49,270 --> 01:15:47,840

gathering at the landing site to uh to

816

01:15:51,669 --> 01:15:49,280

let us know what's going on they did

817

01:15:53,270 --> 01:15:51,679

report that all is nominal looking well

818

01:15:55,510 --> 01:15:53,280

as the crew makes its way down towards

819

01:15:57,350 --> 01:15:55,520

that landing site we hope to get some

820

01:15:58,790 --> 01:15:57,360

video for you we'll keep trying on that

821

01:16:14,390 --> 01:15:58,800

and as soon as we have it we'll be sure

822

01:16:14,400 --> 01:16:27,990

oh

823

01:16:31,590 --> 01:16:29,830

in addition to reports from the team who

824

01:16:33,669 --> 01:16:31,600

is gathering at the landing site that

825

01:16:35,350 --> 01:16:33,679

everything is going well and normally

826

01:16:37,030 --> 01:16:35,360

they are also reporting that they have

827

01:16:38,870 --> 01:16:37,040

good communication back and forth with

828

01:16:41,030 --> 01:16:38,880

the crew despite the fact that we can't

829

01:16:42,870 --> 01:16:41,040

hear it at the moment so

830

01:16:44,630 --> 01:16:42,880

we'll continue uh giving you these

831

01:16:46,310 --> 01:16:44,640

updates as we get them and hopefully

832

01:16:48,790 --> 01:16:46,320

we'll be able to see it for ourselves

833

01:16:50,870 --> 01:16:48,800

before too long

834

01:16:53,510 --> 01:16:50,880

again we are heading down toward that 9

835

01:16:56,229 --> 01:16:53,520

55 pm central time plan landing that's

836

01:16:57,910 --> 01:16:56,239

uh four and a half minutes from now

837

01:17:04,709 --> 01:16:57,920

and reports are that everything is going

838

01:17:04,719 --> 01:17:17,990

um

839

01:17:18,000 --> 01:17:34,310

come on

840

01:17:34,320 --> 01:18:32,310

you know

841

01:18:35,990 --> 01:18:34,070

three minutes left to go before today's

842

01:18:37,910 --> 01:18:36,000

touchdown

843

01:18:40,149 --> 01:18:37,920

again although we don't have uh good

844

01:18:41,669 --> 01:18:40,159

communication with the crew here we do

845

01:18:44,790 --> 01:18:41,679

have reports that the team on the ground

846

01:18:46,310 --> 01:18:44,800

has good communication with them

847

01:18:48,550 --> 01:18:46,320

and that everything looks nominal at

848

01:19:06,950 --> 01:18:48,560

this point still continuing on towards

849

01:19:06,960 --> 01:19:57,350

foreign

850

01:20:00,870 --> 01:19:58,790

a minute and a half left to go until

851  
01:20:02,229 --> 01:20:00,880  
touchdown we still don't have video from

852  
01:20:03,750 --> 01:20:02,239  
the landing site at this point so we'll

853  
01:20:05,350 --> 01:20:03,760  
be waiting on confirmations from the

854  
01:20:08,149 --> 01:20:05,360  
team on the ground we'll pass those on

855  
01:20:10,229 --> 01:20:08,159  
as soon as we do hear them and if we are

856  
01:20:11,510 --> 01:20:10,239  
able to get video in the meantime we

857  
01:20:13,910 --> 01:20:11,520  
will definitely

858  
01:20:24,149 --> 01:20:13,920  
put that out as well

859  
01:20:28,070 --> 01:20:25,910  
and there's the video we've been waiting

860  
01:20:29,910 --> 01:20:28,080  
on so use under its parachute making its

861  
01:20:48,149 --> 01:20:29,920  
way down for today's landing that should

862  
01:20:51,030 --> 01:20:49,669  
just before landing ammunition will get

863  
01:20:52,870 --> 01:20:51,040

a notice from the computers to prepare

864

01:20:54,470 --> 01:20:52,880

to fire six solid propellant engines

865

01:20:56,229 --> 01:20:54,480

called the soft landing engines and slow

866

01:21:09,270 --> 01:20:56,239

the soyuz down to five feet per second

867

01:21:13,669 --> 01:21:11,270

and you can see soyuz has now touched

868

01:21:18,470 --> 01:21:13,679

down in kazakhstan 9

869

01:21:24,629 --> 01:21:21,629

after 196 days in space

870

01:21:26,550 --> 01:21:24,639

3136 orbits and 83 million miles chris

871

01:21:29,990 --> 01:21:26,560

cassidy anatoly ivanishin and even

872

01:21:40,830 --> 01:21:33,350

again that landing coming at 9 54 pm

873

01:21:40,840 --> 01:21:55,990

charlie um

874

01:22:01,030 --> 01:21:58,790

crew now safely on the ground 9 54 p.m

875

01:22:01,830 --> 01:22:01,040

central time was the the landing point

876

01:22:04,310 --> 01:22:01,840

uh

877

01:22:06,229 --> 01:22:04,320

that wraps up chris cassidy's third trip

878

01:22:08,470 --> 01:22:06,239

to space in his second long duration

879

01:22:13,189 --> 01:22:08,480

mission he spent 15 days in space during

880

01:22:15,110 --> 01:22:13,199

sts 127 in july of 2009 and another 166

881

01:22:18,149 --> 01:22:15,120

days during expedition

882

01:22:20,629 --> 01:22:18,159

25 in 2013.

883

01:22:22,629 --> 01:22:20,639

for the 196 days he added on with this

884

01:22:25,750 --> 01:22:22,639

trip cassidy now has a cumulative

885

01:22:27,910 --> 01:22:25,760

cumulative total of 378 days spent in

886

01:22:29,669 --> 01:22:27,920

space earning him the fifth spot on the

887

01:22:31,110 --> 01:22:29,679

list of most times spent in space by an

888

01:22:32,790 --> 01:22:31,120

american

889

01:22:34,709 --> 01:22:32,800

he also added four spacewalks to his

890

01:22:36,629 --> 01:22:34,719

previous six and with a total of ten is

891

01:22:40,629 --> 01:22:36,639

now tied for most spacewalks by nasa

892

01:22:43,430 --> 01:22:40,639

astronaut and ninth for all astronauts

893

01:22:45,110 --> 01:22:43,440

he has spent a total of 54 hours and 51

894

01:22:50,550 --> 01:22:45,120

minutes space walking over the course of

895

01:22:54,550 --> 01:22:52,790

anatomy ammunition also had two previous

896

01:22:56,310 --> 01:22:54,560

stays in space

897

01:22:57,910 --> 01:22:56,320

and they were both long duration

898

01:23:00,629 --> 01:22:57,920

missions so he is coming home with a

899

01:23:03,750 --> 01:23:00,639

total of 476 days in space enough to

900

01:23:06,310 --> 01:23:03,760

earn him the 25th place on the all-time

901  
01:23:08,950 --> 01:23:06,320  
list of time spent in space and this

902  
01:23:11,110 --> 01:23:08,960  
flight was a first for yvonne wagner

903  
01:23:16,310 --> 01:23:11,120  
his first trip to space so he has racked

904  
01:23:17,910 --> 01:23:16,320  
up a total of 196 days on this mission

905  
01:23:24,629 --> 01:23:17,920  
again the crew landed safely in

906  
01:23:30,149 --> 01:23:27,270  
saw them touch down here on this step of

907  
01:23:36,790 --> 01:23:34,870  
landing crews now will be moving in and

908  
01:23:39,350 --> 01:23:36,800  
making way to meet the crew help them

909  
01:23:41,189 --> 01:23:39,360  
out of the capsule and then eventually

910  
01:23:42,629 --> 01:23:41,199  
into the medical tents

911  
01:23:45,590 --> 01:23:42,639  
where they'll go through some

912  
01:23:50,629 --> 01:23:48,470  
tests and procedures and then get on

913  
01:24:04,149 --> 01:23:50,639

helicopters take them back to planes

914

01:24:07,510 --> 01:24:05,750

you can see some of the helicopters

915

01:24:09,590 --> 01:24:07,520

beginning to make their way

916

01:24:11,750 --> 01:24:09,600

to the landing site now

917

01:24:13,430 --> 01:24:11,760

total of eight mi eight helicopters with

918

01:24:15,189 --> 01:24:13,440

television equipment and inflatable in

919

01:24:17,750 --> 01:24:15,199

that inflatable medical tent as well as

920

01:25:44,149 --> 01:24:17,760

a number of nasa representatives on

921

01:25:50,310 --> 01:25:46,870

once again the soyuz ms-16 didn't touch

922

01:25:53,830 --> 01:25:50,320

down at 9 54 p.m central time that's 8

923

01:25:57,030 --> 01:25:53,840

54 a.m in kazakhstan where it landed you

924

01:26:00,709 --> 01:25:57,040

can see the uh recovery team making its

925

01:26:05,350 --> 01:26:02,550

to the landing spot uh

926

01:26:08,229 --> 01:26:06,629

landing and

927

01:26:09,350 --> 01:26:08,239

moving in to meet the crew help them out

928

01:26:14,550 --> 01:26:09,360

of the capsule

929

01:26:50,790 --> 01:26:15,990

once they do hopefully we'll be able to

930

01:26:53,750 --> 01:26:52,310

again there's a total of about eight of

931

01:26:55,350 --> 01:26:53,760

those helicopters that are moving in

932

01:26:57,750 --> 01:26:55,360

towards the landing site with a number

933

01:27:01,830 --> 01:26:59,669

nasa and risk cosmos representatives on

934

01:27:03,910 --> 01:27:01,840

board to help with various aspects of

935

01:27:05,669 --> 01:27:03,920

the landing procedures once they do

936

01:27:07,189 --> 01:27:05,679

arrive a portable medical tent will be

937

01:27:08,390 --> 01:27:07,199

set up near the capsule where the crew

938

01:27:10,070 --> 01:27:08,400

will be able to change out of their

939

01:27:11,750 --> 01:27:10,080

launch and entry suits

940

01:27:13,350 --> 01:27:11,760

and then russian technicians will open

941

01:27:16,310 --> 01:27:13,360

the soyuz hatch and help the crew

942

01:27:20,070 --> 01:27:17,590

since they've been living in zero

943

01:27:21,750 --> 01:27:20,080

gravity for the past 196 days they'll be

944

01:27:23,350 --> 01:27:21,760

feeling the effects of being back back

945

01:27:25,350 --> 01:27:23,360

on the earth's surface

946

01:27:27,030 --> 01:27:25,360

and so they'll be seated in special

947

01:27:31,590 --> 01:27:27,040

reclining chairs near the capsule for

948

01:27:34,149 --> 01:27:32,950

as tests as those have wrapped up and

949

01:27:36,390 --> 01:27:34,159

the crew is ready to go they'll be

950

01:27:39,189 --> 01:27:36,400

helped into helicopters for flight back

951  
01:27:40,870 --> 01:27:39,199  
to a staging site in jessica's con

952  
01:30:48,310 --> 01:27:40,880  
before boarding their planes and coming

953  
01:30:51,430 --> 01:30:50,310  
so he's ms-16 and it's three crew

954  
01:30:54,790 --> 01:30:51,440  
members have been on the ground for

955  
01:30:56,870 --> 01:30:54,800  
about 10 minutes now currently seeing a

956  
01:30:59,910 --> 01:30:56,880  
view of uh the

957  
01:31:03,189 --> 01:30:59,920  
step kazakhstan uh in the early morning

958  
01:31:05,110 --> 01:31:03,199  
southeast of jessica's gone

959  
01:31:05,990 --> 01:31:05,120  
can't really make it out here but uh

960  
01:31:10,709 --> 01:31:06,000  
just

961  
01:31:13,590 --> 01:31:10,719  
did touch down at 9 54 p.m central time

962  
01:31:16,470 --> 01:31:13,600  
that's 8 54 in the morning

963  
01:31:20,310 --> 01:31:16,480

local time

964

01:31:22,470 --> 01:31:20,320

and the soyuz uh the landing team

965

01:31:24,790 --> 01:31:22,480

has been uh steadily moving in we saw

966

01:31:26,709 --> 01:31:24,800

many of the helicopters land and so they

967

01:31:28,149 --> 01:31:26,719

should be setting up around the soyuz

968

01:31:28,950 --> 01:31:28,159

getting ready to help the crew members

969

01:31:31,350 --> 01:31:28,960

out

970

01:31:33,110 --> 01:31:31,360

and hopefully among them a videographer

971

01:31:35,110 --> 01:31:33,120

that will be able to send us some video

972

01:31:37,430 --> 01:31:35,120

back of the crew as they get on the

973

01:31:39,510 --> 01:31:37,440

soyuz as soon as we are able to to get

974

01:31:40,709 --> 01:31:39,520

that we'll we'll we'll get you that view

975

01:31:42,550 --> 01:31:40,719

as well

976

01:31:44,950 --> 01:31:42,560

there are a few um

977

01:31:46,870 --> 01:31:44,960

a few fewer

978

01:31:49,669 --> 01:31:46,880

people who than normal out at the

979

01:31:51,189 --> 01:31:49,679

landing site today with the the

980

01:31:53,669 --> 01:31:51,199

various uh quarantine related

981

01:31:55,350 --> 01:31:53,679

restrictions due to coven that does uh

982

01:31:57,510 --> 01:31:55,360

cut down on the number of people we send

983

01:32:00,550 --> 01:31:57,520

out um among the people who are there we

984

01:32:03,990 --> 01:32:00,560

have the deputy chief astronaut reid

985

01:32:05,430 --> 01:32:04,000

wiseman and flight surgeon joe schmidt

986

01:32:07,350 --> 01:32:05,440

some of the people who are normally

987

01:32:10,470 --> 01:32:07,360

there who are not include the nasa

988

01:32:12,709 --> 01:32:10,480

photographer bill ingles and nasa

989

01:32:14,950 --> 01:32:12,719

public affairs spokesperson uh rob

990

01:32:17,030 --> 01:32:14,960

navies they weren't able to make it out

991

01:32:19,030 --> 01:32:17,040

to the landing site although davius is

992

01:32:21,910 --> 01:32:19,040

in uh kazakhstan and may be able to give

993

01:32:24,310 --> 01:32:21,920

us a little bit of an update uh later

994

01:32:25,910 --> 01:32:24,320

he won't be on site with the crew at

995

01:32:28,229 --> 01:32:25,920

this point uh he will be waiting for

996

01:32:30,470 --> 01:32:28,239

them and jessica's gone but hopefully we

997

01:32:32,470 --> 01:32:30,480

will be able to get some video

998

01:32:34,950 --> 01:32:32,480

as uh as the team gets set up there at

999

01:32:37,270 --> 01:32:34,960

the landing site

1000

01:32:39,750 --> 01:32:37,280

again they touch down at 9 54 p.m

1001  
01:32:42,709 --> 01:32:39,760  
central time

1002  
01:32:44,550 --> 01:32:42,719  
chris cassidy of expedition 63 and

1003  
01:34:17,030 --> 01:32:44,560  
flight engineers anatoly ivanishin and

1004  
01:34:19,430 --> 01:34:18,070  
teams here on the ground are getting

1005  
01:34:21,350 --> 01:34:19,440  
reports from the

1006  
01:34:24,790 --> 01:34:21,360  
team members at the landing site that uh

1007  
01:34:25,590 --> 01:34:24,800  
the soyuz ms-16 did land vertically and

1008  
01:34:27,430 --> 01:34:25,600  
can

1009  
01:34:29,350 --> 01:34:27,440  
of course also land safely on its side

1010  
01:34:32,390 --> 01:34:29,360  
but in this case it landed

1011  
01:34:33,990 --> 01:34:32,400  
upright uh that will help the crew

1012  
01:34:36,229 --> 01:34:34,000  
members get out in the normal fashion

1013  
01:34:38,149 --> 01:34:36,239

and they also passed on that the crew is

1014

01:36:08,390 --> 01:34:38,159

doing well feeling good and everything

1015

01:36:11,590 --> 01:36:09,990

we've been taking uh questions over the

1016

01:36:14,229 --> 01:36:11,600

course of the night from

1017

01:36:15,669 --> 01:36:14,239

social media using the hashtag ask nasa

1018

01:36:16,950 --> 01:36:15,679

and you can send in your own question if

1019

01:36:18,390 --> 01:36:16,960

you'd like we'll try and get a few more

1020

01:36:20,870 --> 01:36:18,400

of them answered before we wrap up our

1021

01:36:23,109 --> 01:36:20,880

coverage uh while we are waiting for a

1022

01:36:25,109 --> 01:36:23,119

closer view of the crew we'll answer a

1023

01:36:26,149 --> 01:36:25,119

couple of that have come in last few

1024

01:36:29,189 --> 01:36:26,159

minutes

1025

01:38:45,030 --> 01:36:29,199

first one coming from idk who is asking

1026

01:38:48,470 --> 01:38:46,709

all right another question coming in

1027

01:38:50,550 --> 01:38:48,480

from social media can send your own

1028

01:38:53,030 --> 01:38:50,560

questions in using the

1029

01:38:54,550 --> 01:38:53,040

ask nasa this one coming from maggie and

1030

01:38:56,470 --> 01:38:54,560

asking will astronauts be able to see

1031

01:38:58,149 --> 01:38:56,480

their families right away

1032

01:38:59,910 --> 01:38:58,159

or do they have to be in quarantine for

1033

01:39:02,390 --> 01:38:59,920

a period of time

1034

01:39:04,070 --> 01:39:02,400

um the astronauts uh they'll all be

1035

01:39:06,229 --> 01:39:04,080

returning to

1036

01:39:08,709 --> 01:39:06,239

their home bases basically uh for chris

1037

01:39:09,990 --> 01:39:08,719

cassidy that is nasa and he will be able

1038

01:39:12,950 --> 01:39:10,000

to see at least some of his family

1039

01:39:15,350 --> 01:39:12,960

members who have been in quarantine

1040

01:39:17,270 --> 01:39:15,360

themselves so that they can have access

1041

01:39:18,790 --> 01:39:17,280

to him right away

1042

01:39:20,709 --> 01:39:18,800

people who haven't been able to

1043

01:39:23,109 --> 01:39:20,719

quarantine for

1044

01:39:24,950 --> 01:39:23,119

various reasons would need to spend a

1045

01:39:27,430 --> 01:39:24,960

little bit of extra time away from the

1046

01:39:28,310 --> 01:39:27,440

astronauts coming home to make sure that

1047

01:39:30,950 --> 01:39:28,320

they

1048

01:39:34,149 --> 01:39:30,960

don't expose them to any uh

1049

01:39:36,550 --> 01:39:34,159

any illnesses or germs while they are in

1050

01:39:38,470 --> 01:39:36,560

a state that we would consider immediate

1051  
01:39:40,709 --> 01:39:38,480  
compromise having been on the space

1052  
01:39:43,270 --> 01:39:40,719  
station where they don't have exposure

1053  
01:39:45,270 --> 01:39:43,280  
to germs on a on

1054  
01:39:47,030 --> 01:39:45,280  
on a regular basis like we do here on

1055  
01:39:49,350 --> 01:39:47,040  
the ground um

1056  
01:39:51,350 --> 01:39:49,360  
we want to be sure that once they are

1057  
01:39:52,870 --> 01:39:51,360  
back on earth and start to experience

1058  
01:39:54,550 --> 01:39:52,880  
that again that

1059  
01:39:57,189 --> 01:39:54,560  
they are eased back into that situation

1060  
01:40:01,030 --> 01:39:59,270  
again you can send in your own uh

1061  
01:40:02,310 --> 01:40:01,040  
questions for us using the hashtag ask

1062  
01:40:03,590 --> 01:40:02,320  
nasa

1063  
01:40:08,790 --> 01:40:03,600

hopefully we'll get a chance to answer a

1064

01:40:13,030 --> 01:40:10,629

and it's now been about 20 minutes since

1065

01:40:14,229 --> 01:40:13,040

the soyuz ms-16 touched down in

1066

01:40:16,390 --> 01:40:14,239

kazakhstan

1067

01:40:18,709 --> 01:40:16,400

uh although we can't quite see them in

1068

01:40:20,070 --> 01:40:18,719

this view we can see the area that they

1069

01:40:23,109 --> 01:40:20,080

landed in and hopefully we'll get a

1070

01:40:25,430 --> 01:40:23,119

closer view before before too long we

1071

01:40:27,910 --> 01:40:25,440

have gotten reports from the teams that

1072

01:40:28,950 --> 01:40:27,920

met them there on the ground that the

1073

01:40:31,109 --> 01:40:28,960

capsule

1074

01:40:51,750 --> 01:40:31,119

landed upright and that the crew on

1075

01:40:56,310 --> 01:40:53,990

as i mentioned earlier uh public affairs

1076

01:40:58,470 --> 01:40:56,320

specialist rob navies is

1077

01:41:00,870 --> 01:40:58,480

in kazakhstan although he's not able to

1078

01:41:02,790 --> 01:41:00,880

be at the landing site for this uh for

1079

01:41:04,550 --> 01:41:02,800

this particular landing we do have him

1080

01:41:06,709 --> 01:41:04,560

on the phone though to give us a report

1081

01:41:10,950 --> 01:41:06,719

from what he is hearing uh there in

1082

01:41:15,189 --> 01:41:12,709

hi brandi and uh good evening to

1083

01:41:17,030 --> 01:41:15,199

everybody uh we're actually in karaganda

1084

01:41:18,629 --> 01:41:17,040

at the airport i am aboard the nasa

1085

01:41:21,109 --> 01:41:18,639

gulfstream jet

1086

01:41:23,510 --> 01:41:21,119

preparing to take off for a short flight

1087

01:41:26,790 --> 01:41:23,520

to the forward staging city of jessica's

1088

01:41:29,109 --> 01:41:26,800

gun where other nasa personnel and

1089

01:41:31,030 --> 01:41:29,119

search and recovery forces belonging to

1090

01:41:33,189 --> 01:41:31,040

the russian ros aviation search and

1091

01:41:35,590 --> 01:41:33,199

recovery team deployed from in

1092

01:41:38,149 --> 01:41:35,600

helicopters to the landing site a few

1093

01:41:40,550 --> 01:41:38,159

hours ago we will be airborne very

1094

01:41:42,790 --> 01:41:40,560

shortly for that brief flight to jazz

1095

01:41:44,470 --> 01:41:42,800

gone there is a gagarin cosmonaut

1096

01:41:46,950 --> 01:41:44,480

training center aircraft that is parked

1097

01:41:49,030 --> 01:41:46,960

right next to us it too will be airborne

1098

01:41:51,189 --> 01:41:49,040

for jessica's gone where we will meet

1099

01:41:53,109 --> 01:41:51,199

the crew this is going to be a quick and

1100

01:41:55,590 --> 01:41:53,119

dirty recovery operation of the crew

1101  
01:41:58,709 --> 01:41:55,600  
members today the russians have elected

1102  
01:42:01,109 --> 01:41:58,719  
to scale down the usual uh hoopla that

1103  
01:42:03,030 --> 01:42:01,119  
surrounds the return of crew members due

1104  
01:42:05,590 --> 01:42:03,040  
to coated

1105  
01:42:07,350 --> 01:42:05,600  
cautionary procedures that they are

1106  
01:42:09,270 --> 01:42:07,360  
operating under with everybody wearing

1107  
01:42:12,310 --> 01:42:09,280  
masks maintaining

1108  
01:42:14,709 --> 01:42:12,320  
as much social distancing as possible

1109  
01:42:17,030 --> 01:42:14,719  
what will happen is uh cassidy ivanishin

1110  
01:42:19,590 --> 01:42:17,040  
and wagner will emerge uh

1111  
01:42:21,910 --> 01:42:19,600  
from the soyuz ms-16 they'll be loaded

1112  
01:42:23,990 --> 01:42:21,920  
into individual helicopters after

1113  
01:42:26,149 --> 01:42:24,000

medical tests and a nearby erected

1114

01:42:29,189 --> 01:42:26,159

medical tent and then they'll be flown

1115

01:42:31,510 --> 01:42:29,199

uh to uh from the landing site to

1116

01:42:33,990 --> 01:42:31,520

jessica's gone about a 40-minute

1117

01:42:36,229 --> 01:42:34,000

helicopter flight that will facilitate

1118

01:42:38,629 --> 01:42:36,239

and hasten their ability to get on these

1119

01:42:41,430 --> 01:42:38,639

respective planes cassidy on the nasa

1120

01:42:43,189 --> 01:42:41,440

plane uh ivanishin and wagner on the

1121

01:42:45,510 --> 01:42:43,199

gagarin cosmonaut training center

1122

01:42:47,830 --> 01:42:45,520

aircraft fly back to their respective

1123

01:42:50,470 --> 01:42:47,840

homes we'll be flying back of course to

1124

01:42:52,950 --> 01:42:50,480

houston they will be flying back to star

1125

01:42:55,270 --> 01:42:52,960

city to the gagarin cosmonaut training

1126

01:42:59,510 --> 01:42:55,280

center outside of moscow everything has

1127

01:43:01,669 --> 01:42:59,520

gone extremely smoothly the nasa team uh

1128

01:43:03,750 --> 01:43:01,679

deployed yesterday with other russian

1129

01:43:05,750 --> 01:43:03,760

search and recovery officials for an

1130

01:43:08,390 --> 01:43:05,760

overnight a quick overnight in jessica's

1131

01:43:11,350 --> 01:43:08,400

gun which has been a familiar landing

1132

01:43:14,390 --> 01:43:11,360

staging city uh jessica's gun

1133

01:43:16,470 --> 01:43:14,400

lies to the south west of karaganda

1134

01:43:18,470 --> 01:43:16,480

which is where everybody had gathered

1135

01:43:20,870 --> 01:43:18,480

earlier in the week for landing team

1136

01:43:22,229 --> 01:43:20,880

briefings and other preparations randy

1137

01:43:23,990 --> 01:43:22,239

randy hey

1138

01:43:26,470 --> 01:43:24,000

thanks rob we appreciate that and it

1139

01:43:27,830 --> 01:43:26,480

looks like uh in uh in moscow the flight

1140

01:43:30,229 --> 01:43:27,840

control team there is beginning to get

1141

01:43:32,550 --> 01:43:30,239

some video from the actual landing site

1142

01:43:35,189 --> 01:43:32,560

we just saw chris cassidy

1143

01:43:37,590 --> 01:43:35,199

being uh helped out of the soyuz capsule

1144

01:43:38,950 --> 01:43:37,600

and on to the to the uh

1145

01:43:40,390 --> 01:43:38,960

the tarp where he and the other crew

1146

01:43:42,470 --> 01:43:40,400

members will be gathering over the next

1147

01:43:44,229 --> 01:43:42,480

few minutes uh

1148

01:43:47,189 --> 01:43:44,239

try and get this

1149

01:43:49,510 --> 01:43:47,199

video for you directly as well but uh

1150

01:43:51,990 --> 01:43:49,520

but that was great to see him uh

1151  
01:43:53,510 --> 01:43:52,000  
see him emerging from the capsule

1152  
01:43:56,070 --> 01:43:53,520  
rob i know that this is a little bit

1153  
01:44:00,149 --> 01:43:56,080  
different for me for you what kind of

1154  
01:44:02,149 --> 01:44:00,159  
information are you able to to get there

1155  
01:44:04,709 --> 01:44:02,159  
we're getting we're getting information

1156  
01:44:07,189 --> 01:44:04,719  
as it becomes available on a moment by

1157  
01:44:08,790 --> 01:44:07,199  
moment basis uh no problem getting

1158  
01:44:10,709 --> 01:44:08,800  
information from the landing site to a

1159  
01:44:11,750 --> 01:44:10,719  
variety of sources

1160  
01:44:15,430 --> 01:44:11,760  
and

1161  
01:44:17,830 --> 01:44:15,440  
we heard the descent of the soyuz under

1162  
01:44:19,590 --> 01:44:17,840  
it shoots all the way down to touchdown

1163  
01:44:21,350 --> 01:44:19,600

just about the same time we arrived at

1164

01:44:23,910 --> 01:44:21,360

the airport

1165

01:44:26,070 --> 01:44:23,920

or boarding uh the nasa plane to head

1166

01:44:28,310 --> 01:44:26,080

down to jessica's gun so

1167

01:44:32,149 --> 01:44:28,320

it's basically the astronauts coming to

1168

01:44:34,950 --> 01:44:32,159

meet us in jessica's gun with cassidy uh

1169

01:44:35,830 --> 01:44:34,960

climbing aboard the g5 there will be a

1170

01:44:38,310 --> 01:44:35,840

pair of

1171

01:44:40,149 --> 01:44:38,320

nasa flight surgeons attending to him on

1172

01:44:43,030 --> 01:44:40,159

the flight all the way back to houston

1173

01:44:45,910 --> 01:44:43,040

with one refueling stop and we should be

1174

01:44:46,830 --> 01:44:45,920

back in houston on thursday evening a

1175

01:44:48,550 --> 01:44:46,840

central

1176

01:44:50,070 --> 01:44:48,560

time

1177

01:44:51,750 --> 01:44:50,080

that'll be a long trip but i'm sure

1178

01:44:53,350 --> 01:44:51,760

it'll be good for him to be home we're

1179

01:44:56,550 --> 01:44:53,360

getting a little bit more

1180

01:44:58,550 --> 01:44:56,560

video uh now as uh the crew continues to

1181

01:45:04,070 --> 01:44:58,560

be extracted now seeing yvonne wagner

1182

01:45:07,830 --> 01:45:05,590

looks like we've got two of the three

1183

01:45:10,950 --> 01:45:07,840

crew members out now and we'll keep

1184

01:45:12,550 --> 01:45:10,960

watching for uh anatoly ivanishin who

1185

01:45:14,629 --> 01:45:12,560

should be up next

1186

01:45:17,350 --> 01:45:14,639

you can see a few of the nasa personnel

1187

01:45:19,430 --> 01:45:17,360

who are gathered out at the landing site

1188

01:45:20,790 --> 01:45:19,440

all these uh groups will be making their

1189

01:45:22,629 --> 01:45:20,800

way back to

1190

01:45:24,390 --> 01:45:22,639

robnavius and

1191

01:45:32,870 --> 01:45:24,400

meeting them and jessica's gone as he

1192

01:45:36,709 --> 01:45:35,109

and there is antony ignition as well out

1193

01:45:43,030 --> 01:45:36,719

of the capsule

1194

01:45:47,430 --> 01:45:45,990

as you can see as a as rob mentioned all

1195

01:45:49,669 --> 01:45:47,440

the people who were meeting them there

1196

01:45:51,990 --> 01:45:49,679

wearing masks to help protect them an

1197

01:45:55,430 --> 01:45:52,000

additional layer of protection and uh

1198

01:45:56,870 --> 01:45:55,440

beyond uh the quarantine that these

1199

01:46:34,470 --> 01:45:56,880

these members of the landing team would

1200

01:46:34,480 --> 01:46:44,709

yep

1201

01:46:48,310 --> 01:46:46,790

rob if you're still there i i i don't

1202

01:46:51,030 --> 01:46:48,320

know um

1203

01:46:52,070 --> 01:46:51,040

what it is for you and karaganda but it

1204

01:46:53,430 --> 01:46:52,080

looks like the weather is pretty

1205

01:46:55,510 --> 01:46:53,440

pleasant for the team at the landing

1206

01:46:57,350 --> 01:46:55,520

site

1207

01:46:59,830 --> 01:46:57,360

yeah the landing time temperature brandy

1208

01:47:02,229 --> 01:46:59,840

was about 45 degrees fahrenheit a cold

1209

01:47:04,950 --> 01:47:02,239

front moved through this region

1210

01:47:07,189 --> 01:47:04,960

late yesterday and overnight and passed

1211

01:47:09,910 --> 01:47:07,199

just to the east of the landing zone

1212

01:47:12,229 --> 01:47:09,920

just in time for touchdown it is cloudy

1213

01:47:14,229 --> 01:47:12,239

here in tarragonda uh but uh we're in

1214

01:47:16,709 --> 01:47:14,239

jessica's gone we're headed here a short

1215

01:47:18,629 --> 01:47:16,719

time from now uh the sun should be out

1216

01:47:22,550 --> 01:47:18,639

the landing occurring one hour and three

1217

01:47:24,709 --> 01:47:22,560

minutes after sunrise and uh as we speak

1218

01:47:26,629 --> 01:47:24,719

uh the pilots the nasa pilots out of

1219

01:47:28,790 --> 01:47:26,639

wellington field nearby the johnson

1220

01:47:30,870 --> 01:47:28,800

space center are revving up the engines

1221

01:47:34,709 --> 01:47:30,880

of this nasa gulfstream jet and we'll be

1222

01:47:37,750 --> 01:47:36,149

it's looking like the crew members might

1223

01:47:39,990 --> 01:47:37,760

be moving into the medical tent before

1224

01:47:41,350 --> 01:47:40,000

too long as well we just saw the landing

1225

01:47:43,189 --> 01:47:41,360

team there

1226

01:47:45,109 --> 01:47:43,199

uh

1227

01:47:47,590 --> 01:47:45,119

pausing for a group photo again

1228

01:47:51,830 --> 01:47:47,600

everybody looking really good for having

1229

01:47:54,310 --> 01:47:51,840

just spent 196 days in space

1230

01:47:56,229 --> 01:47:54,320

though we didn't get uh video of the

1231

01:47:57,830 --> 01:47:56,239

landing itself we did get reports and

1232

01:48:00,629 --> 01:47:57,840

you can just make it out there in the

1233

01:48:03,270 --> 01:48:00,639

background uh behind the crowd the the

1234

01:48:04,390 --> 01:48:03,280

soyuz did land upright and

1235

01:48:06,709 --> 01:48:04,400

we're able to get

1236

01:48:08,950 --> 01:48:06,719

confirmation from the teams who met them

1237

01:48:10,709 --> 01:48:08,960

that uh the crew was feeling well now

1238

01:48:12,310 --> 01:48:10,719

we're able to see that for ourselves

1239

01:48:14,149 --> 01:48:12,320

everybody looking

1240

01:48:15,830 --> 01:48:14,159

like they are uh

1241

01:48:16,790 --> 01:48:15,840

they are feeling good and should be able

1242

01:48:42,550 --> 01:48:16,800

to

1243

01:48:45,669 --> 01:48:43,830

rob do you know if

1244

01:48:47,590 --> 01:48:45,679

cassidy has made any special requests

1245

01:48:50,950 --> 01:48:47,600

for food that the team members might

1246

01:48:54,790 --> 01:48:52,390

that's a great question brandi and

1247

01:48:57,910 --> 01:48:54,800

actually in true steel fashion he made

1248

01:49:00,470 --> 01:48:57,920

no request he said whatever was on board

1249

01:49:02,790 --> 01:49:00,480

would be just fine as i mentioned we

1250

01:49:04,550 --> 01:49:02,800

will have one refueling stop on route to

1251

01:49:06,070 --> 01:49:04,560

houston in which there'll be some

1252

01:49:07,990 --> 01:49:06,080

catering of food

1253

01:49:10,229 --> 01:49:08,000

for the passengers on board including

1254

01:49:14,470 --> 01:49:10,239

cassidy i think he's just happy to be

1255

01:49:17,030 --> 01:49:14,480

home after 196 days in space

1256

01:49:18,390 --> 01:49:17,040

seeing anatoly ignition right now but

1257

01:49:28,470 --> 01:49:18,400

yes all the crew members are looking

1258

01:49:32,229 --> 01:49:30,149

team members still uh

1259

01:49:47,430 --> 01:49:32,239

unloading some of the limited cargo that

1260

01:49:50,470 --> 01:49:48,229

and

1261

01:49:54,390 --> 01:49:50,480

evolution there being the first to move

1262

01:49:59,910 --> 01:49:57,669

this again is a tent that is uh brought

1263

01:50:02,950 --> 01:49:59,920

with the team that meets the soyuz at

1264

01:50:05,669 --> 01:50:02,960

the landing site so that they can

1265

01:50:08,310 --> 01:50:05,679

get into a protected area to change out

1266

01:50:11,189 --> 01:50:08,320

of their so-called spacesuits and uh go

1267

01:50:13,030 --> 01:50:11,199

through a few uh preliminary tests

1268

01:50:15,750 --> 01:50:13,040

before they then will get on the

1269

01:50:17,189 --> 01:50:15,760

helicopters for that 40 minute ride that

1270

01:50:19,189 --> 01:50:17,199

rob mentioned

1271

01:50:22,149 --> 01:50:19,199

back to jessica's gun where they'll be

1272

01:50:28,470 --> 01:50:22,159

met by planes to take them back

1273

01:50:32,390 --> 01:50:30,390

ivanishin and wagner both on their way

1274

01:50:33,990 --> 01:50:32,400

now to the medical tent

1275

01:50:38,070 --> 01:50:34,000

you can see what that tent looks like in

1276

01:50:42,310 --> 01:50:40,149

cassidy looks like uh making a phone

1277

01:50:44,470 --> 01:50:42,320

call back to home and now on his way to

1278

01:50:46,790 --> 01:50:44,480

the tent as well

1279

01:50:48,550 --> 01:50:46,800

crew members are uh are carried in the

1280

01:50:51,109 --> 01:50:48,560

chairs just to be

1281

01:50:53,910 --> 01:50:51,119

extra safe and prevent any possibility

1282

01:50:56,790 --> 01:50:53,920

of a trip as they are experiencing

1283

01:51:41,030 --> 01:50:56,800

gravity again for the first time in 196

1284

01:51:41,040 --> 01:51:52,070

okay

1285

01:51:56,229 --> 01:51:54,470

so there the crew members uh making

1286

01:51:59,030 --> 01:51:56,239

their way into the medical tent that is

1287

01:52:01,750 --> 01:51:59,040

the last that we'll see of them tonight

1288

01:52:06,950 --> 01:52:05,510

today's landing wraps up 196 day stay in

1289

01:52:10,229 --> 01:52:06,960

space for the members of the expedition

1290

01:52:15,510 --> 01:52:12,790

with that 196 days added to his total

1291

01:52:17,350 --> 01:52:15,520

chris cassidy has now spent 378 days in

1292

01:52:18,870 --> 01:52:17,360

space over the course of three missions

1293

01:52:20,950 --> 01:52:18,880

that puts him

1294

01:52:30,870 --> 01:52:20,960

number at number five on the list of

1295

01:52:35,870 --> 01:52:33,270

meanwhile also having made it three

1296

01:52:38,470 --> 01:52:35,880

journeys to space now now has a total of

1297

01:52:42,830 --> 01:52:38,480

476 days in space

1298

01:52:47,030 --> 01:52:42,840

landing him a spot on uh the all-time

1299

01:52:49,990 --> 01:52:47,040

uh list at uh at the 25th place

1300

01:52:52,310 --> 01:52:50,000

and ivan wagner uh

1301  
01:54:59,350 --> 01:52:52,320  
just completing his first space flight

1302  
01:55:03,669 --> 01:55:01,750  
with grew safely in the medical tent and

1303  
01:55:05,270 --> 01:55:03,679  
going undergoing the final preparations

1304  
01:55:07,589 --> 01:55:05,280  
before they get on their helicopters

1305  
01:55:09,350 --> 01:55:07,599  
that are the first leg of their journey

1306  
01:55:11,270 --> 01:55:09,360  
back to their homes

1307  
01:55:13,910 --> 01:55:11,280  
we are ready to wrap up our coverage for

1308  
01:55:17,030 --> 01:55:13,920  
the night we have the crew again safely

1309  
01:55:20,070 --> 01:55:17,040  
landing in kazakhstan at 9 54

1310  
01:55:23,189 --> 01:55:20,080  
pm central time today that's 8 54 am in

1311  
01:55:25,669 --> 01:55:23,199  
kazakhstan and now they will begin

1312  
01:55:29,189 --> 01:55:25,679  
making their way back to moscow and in

1313  
01:55:31,589 --> 01:55:29,199

the case of chris cassidy houston

1314

01:55:34,629 --> 01:55:31,599

it's been a

1315

01:55:37,510 --> 01:55:34,639

momentous night of uh of coverage with

1316

01:55:40,070 --> 01:55:37,520

the hatch closure and the

1317

01:55:42,149 --> 01:55:40,080

undocking deorbit and landing so we will

1318

01:55:43,830 --> 01:55:42,159

be replaying recapping all of that for

1319

01:55:46,390 --> 01:55:43,840

you in a video file that will be airing

1320

01:55:47,990 --> 01:55:46,400

at 1am central time here on nasa tv so

1321

01:55:49,350 --> 01:55:48,000

if you haven't gotten enough yet you can

1322

01:55:50,550 --> 01:55:49,360

take a look at that a little later

1323

01:55:51,830 --> 01:55:50,560

tonight

1324

01:55:55,189 --> 01:55:51,840

and with that we are going to wrap up

1325

01:55:57,350 --> 01:55:55,199

our coverage of the expedition 63

1326

01:55:59,430 --> 01:55:57,360

landing in kazakhstan again chris

1327

01:56:03,350 --> 01:55:59,440

cassidy anatoly ivanishin and ivan

1328

01:56:04,550 --> 01:56:03,360

wagner now safely home after 196 days in

1329

01:56:06,070 --> 01:56:04,560

space

1330

01:56:30,870 --> 01:56:06,080

thanks so much for joining us this is

1331

01:56:30,880 --> 01:56:42,070

uh

1332

01:56:46,229 --> 01:56:44,310

many pilots today don't go out with an

1333

01:56:47,669 --> 01:56:46,239

immediate concern on their flight that

1334

01:56:50,709 --> 01:56:47,679

they're going to run into the ground

1335

01:56:52,229 --> 01:56:50,719

there is a problem in aviation of

1336

01:56:54,470 --> 01:56:52,239

controlled flight interior terrain