



1  
00:00:21,109 --> 00:00:09,310

[Music]

2  
00:00:23,189 --> 00:00:21,119

thanks for joining us for the landing of

3  
00:00:26,230 --> 00:00:23,199

the three crew members aboard the soyuz

4  
00:00:28,070 --> 00:00:26,240

ms-15 spacecraft nasa astronaut jessica

5  
00:00:30,950 --> 00:00:28,080

muir rose cosmos cosmonaut alex

6  
00:00:32,069 --> 00:00:30,960

gracochka and nasa astronaut andrew

7  
00:00:34,870 --> 00:00:32,079

morgan

8  
00:00:37,830 --> 00:00:34,880

after undocking at 8 53 and 30 seconds

9  
00:00:39,830 --> 00:00:37,840

pm central time from the zvezda module

10  
00:00:41,670 --> 00:00:39,840

aboard the international space station

11  
00:00:43,590 --> 00:00:41,680

the soyuz is approaching the 32

12  
00:00:45,830 --> 00:00:43,600

kilometer distance away from the station

13  
00:00:48,869 --> 00:00:45,840

where it will conduct its deorbit burn

14

00:00:50,549 --> 00:00:48,879

scheduled for 11 22 pm central time

15

00:00:53,510 --> 00:00:50,559

tonight we'll be looking forward to the

16

00:00:57,430 --> 00:00:53,520

landing scheduled for 12 16 pm

17

00:00:59,349 --> 00:00:57,440

12 16 a.m central time on april 17th i'm

18

00:01:00,869 --> 00:00:59,359

leah cheshire of nasa and we're live in

19

00:01:03,270 --> 00:01:00,879

the international space station flight

20

00:01:05,429 --> 00:01:03,280

control room here in houston texas at

21

00:01:06,789 --> 00:01:05,439

nasa's johnson space center

22

00:01:07,590 --> 00:01:06,799

teams on the ground tonight are being

23

00:01:11,590 --> 00:01:07,600

led

24

00:01:13,830 --> 00:01:11,600

by flight director marcos flores

25

00:01:16,310 --> 00:01:13,840

to his right you can see capcom andreas

26

00:01:17,990 --> 00:01:16,320

mogensen a european space agency

27

00:01:20,550 --> 00:01:18,000

astronaut he's communicating with the

28

00:01:22,230 --> 00:01:20,560

astronauts still aboard the station

29

00:01:25,109 --> 00:01:22,240

meanwhile the visiting vehicle officer

30

00:01:26,630 --> 00:01:25,119

or mike campion is keeping tabs of

31

00:01:31,990 --> 00:01:26,640

everything happening with the soyuz

32

00:01:35,350 --> 00:01:33,590

you've got a live look here from the

33

00:01:37,830 --> 00:01:35,360

balcony of the russian mission control

34

00:01:39,270 --> 00:01:37,840

center in koryov this is a town outside

35

00:01:41,270 --> 00:01:39,280

of moscow that

36

00:01:45,109 --> 00:01:41,280

where the team will be controlling all

37

00:01:46,630 --> 00:01:45,119

of tonight's landing operations

38

00:01:48,230 --> 00:01:46,640

both the houston and moscow flight

39

00:01:51,030 --> 00:01:48,240

control teams are fully focused on the

40

00:01:52,870 --> 00:01:51,040

landing of the soyuz ms-15 spacecraft

41

00:01:55,190 --> 00:01:52,880

currently almost 19 miles away from the

42

00:01:57,590 --> 00:01:55,200

space station inside that spacecraft are

43

00:01:59,749 --> 00:01:57,600

nasa's jessica mear and andrew morgan

44

00:02:02,550 --> 00:01:59,759

enrich cosmos cosmonaut alex krapochka

45

00:02:04,550 --> 00:02:02,560

commander of the soyuz spacecraft

46

00:02:05,990 --> 00:02:04,560

meanwhile the landing team here on earth

47

00:02:08,229 --> 00:02:06,000

is preparing to depart aboard

48

00:02:10,389 --> 00:02:08,239

helicopters for the landing site from

49

00:02:13,510 --> 00:02:10,399

the airport from the airfield in

50

00:02:15,430 --> 00:02:13,520

jessica's gun kazakhstan the antonom 26'

51  
00:02:17,589 --> 00:02:15,440  
fixed-wing aircraft that will serve as a

52  
00:02:19,830 --> 00:02:17,599  
sort of command and control center

53  
00:02:21,670 --> 00:02:19,840  
relaying voice and data once the soyuz

54  
00:02:24,070 --> 00:02:21,680  
is in range has already departed

55  
00:02:37,270 --> 00:02:24,080  
baikonur and is enroute to the landing

56  
00:02:42,949 --> 00:02:40,470  
after soyuz hatch closer at 5 44 p.m

57  
00:02:45,190 --> 00:02:42,959  
central time tonight the crew performed

58  
00:02:47,190 --> 00:02:45,200  
leak checks and system checks ensuring

59  
00:02:49,190 --> 00:02:47,200  
their spacecraft was ready to go and

60  
00:02:51,430 --> 00:02:49,200  
then donned their white so-called launch

61  
00:02:54,630 --> 00:02:51,440  
and entry suits

62  
00:02:56,630 --> 00:02:54,640  
at 8 53 and 30 seconds pm central time

63  
00:02:59,110 --> 00:02:56,640

the hooks on the soyuz spacecraft were

64

00:03:00,949 --> 00:02:59,120

opened and it undocked from the station

65

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

taking with it jessica meer in the left

66

00:03:05,910 --> 00:03:03,599

seat as board engineer 1 drew morgan in

67

00:03:07,589 --> 00:03:05,920

the right seat as board engineer 2 and

68

00:03:10,309 --> 00:03:07,599

commander of the spacecraft oleg

69

00:03:12,070 --> 00:03:10,319

skripochka in the center seat and it's

70

00:03:21,990 --> 00:03:12,080

going to be at

71

00:03:26,149 --> 00:03:24,149

the soyuz performed a successful

72

00:03:27,589 --> 00:03:26,159

separation burn one

73

00:03:29,509 --> 00:03:27,599

making it depart faster from the

74

00:03:32,309 --> 00:03:29,519

international space station and now it's

75

00:03:34,550 --> 00:03:32,319

approaching that 19 mile distance

76  
00:03:36,710 --> 00:03:34,560  
necessary for it to execute the deorbit

77  
00:03:39,350 --> 00:03:36,720  
burn that'll slow the soyuz down by

78  
00:03:41,589 --> 00:03:39,360  
about 128 meters per second allowing it

79  
00:04:07,589 --> 00:03:41,599  
to drop out of earth's orbit and

80  
00:04:12,550 --> 00:04:09,429  
as the soyuz departed tonight at the

81  
00:04:14,149 --> 00:04:12,560  
moment of undocking expedition 63

82  
00:04:16,069 --> 00:04:14,159  
officially began aboard the

83  
00:04:18,710 --> 00:04:16,079  
international space station with nasa

84  
00:04:21,030 --> 00:04:18,720  
astronaut chris cassidy as the commander

85  
00:04:23,590 --> 00:04:21,040  
joined by roscosmos cosmonauts anatoly

86  
00:04:25,909 --> 00:04:23,600  
ivanishin and ivan wagner this crew

87  
00:04:28,469 --> 00:04:25,919  
having just arrived last week on the

88  
00:04:31,590 --> 00:04:28,479

soyuz ms-16 vehicle

89

00:05:24,070 --> 00:04:31,600

they'll they will be aboard until

90

00:05:27,510 --> 00:05:25,909

for a look at how tonight's events will

91

00:05:29,830 --> 00:05:27,520

unfold let's take a look at this

92

00:05:32,469 --> 00:05:29,840

animation earlier we saw the undocking

93

00:05:35,350 --> 00:05:32,479

of the spacecraft from the zvezda module

94

00:05:37,909 --> 00:05:35,360

at 8 53 pm central time the next thing

95

00:05:40,390 --> 00:05:37,919

is that deorbit burn scheduled for 11 22

96

00:05:42,550 --> 00:05:40,400

pm central time this evening that burn

97

00:05:44,790 --> 00:05:42,560

will last four minutes and 41 seconds

98

00:05:47,189 --> 00:05:44,800

dropping the soyuz out of

99

00:05:49,590 --> 00:05:47,199

orbit and into the earth's atmosphere

100

00:05:51,749 --> 00:05:49,600

at 11 50 the three portions of the soyuz

101  
00:05:53,670 --> 00:05:51,759  
will power technically separate and the

102  
00:05:55,510 --> 00:05:53,680  
descent module will have its heat shield

103  
00:05:56,950 --> 00:05:55,520  
forward to the direction of travel

104  
00:05:59,749 --> 00:05:56,960  
protecting the crew from the heat

105  
00:06:01,590 --> 00:05:59,759  
buildup reaching about 2500 degrees

106  
00:06:02,950 --> 00:06:01,600  
fahrenheit outside

107  
00:06:05,430 --> 00:06:02,960  
once the crew is out of the plasma

108  
00:06:07,110 --> 00:06:05,440  
regime a series of parachutes will open

109  
00:06:09,270 --> 00:06:07,120  
first two pilot parachutes and then a

110  
00:06:11,110 --> 00:06:09,280  
drogue shoot and last the main shoots

111  
00:06:15,270 --> 00:06:11,120  
that will guide the spacecraft down in a

112  
00:06:19,590 --> 00:06:17,029  
just about two seconds before the crew

113  
00:06:22,550 --> 00:06:19,600

touches down on the step of kazakhstan

114

00:06:24,550 --> 00:06:22,560

there will be a soft engine firing

115

00:06:27,590 --> 00:06:24,560

slowing it down just a bit more for a

116

00:06:33,830 --> 00:06:29,590

the soyuz will land about 92 miles

117

00:06:35,430 --> 00:06:33,840

southeast of the town of jezkasgan

118

00:06:37,430 --> 00:06:35,440

reduced number of nasa personnel are

119

00:06:39,670 --> 00:06:37,440

supporting landing some who were in

120

00:06:41,830 --> 00:06:39,680

kazakhstan last week to support the

121

00:06:44,469 --> 00:06:41,840

soyuz launch and were joined by a small

122

00:06:46,390 --> 00:06:44,479

nasa team that flew in on the gulfstream

123

00:06:49,029 --> 00:06:46,400

plane to the city of quizlorda in

124

00:06:51,189 --> 00:06:49,039

central kazakhstan because the airport

125

00:06:53,270 --> 00:06:51,199

in karaganda which is the normal staging

126

00:06:54,870 --> 00:06:53,280

location was closed by kazakhstan

127

00:06:56,629 --> 00:06:54,880

authorities the russian search and

128

00:06:58,870 --> 00:06:56,639

recovery forces reworked landing

129

00:07:00,710 --> 00:06:58,880

logistics and decided to stage landing

130

00:07:02,790 --> 00:07:00,720

operations with helicopters at the

131

00:07:04,790 --> 00:07:02,800

airport in baikonur since they were

132

00:07:07,350 --> 00:07:04,800

already there to support launch last

133

00:07:10,070 --> 00:07:07,360

week in event of a contingency

134

00:07:12,150 --> 00:07:10,080

the nasa team has departed baikonur and

135

00:07:14,469 --> 00:07:12,160

actually is in jessica's gun

136

00:07:16,150 --> 00:07:14,479

having departed earlier on helicopters

137

00:07:18,070 --> 00:07:16,160

tonight there will be eight helicopters

138

00:07:20,710 --> 00:07:18,080

deployed two are dispatched to the

139

00:07:23,830 --> 00:07:20,720

ballistic landing site east of baikonur

140

00:07:25,749 --> 00:07:23,840

and six are in jessica's gone refueling

141

00:07:27,990 --> 00:07:25,759

and they'll prepare to depart soon for

142

00:07:36,309 --> 00:07:28,000

the landing site about a 35 minute

143

00:07:40,550 --> 00:07:38,230

and an update those helicopters are

144

00:07:44,150 --> 00:07:40,560

actually already in route to the landing

145

00:07:47,589 --> 00:07:45,589

they'll be arriving in a racetrack

146

00:07:48,950 --> 00:07:47,599

fashion making an oval around the

147

00:07:54,390 --> 00:07:48,960

landing site and then landing

148

00:07:59,350 --> 00:07:57,270

two antonov fixed wing aircraft are

149

00:08:01,029 --> 00:07:59,360

employed one is in the area of the

150

00:08:03,270 --> 00:08:01,039

ballistic site and the other as we

151  
00:08:05,270 --> 00:08:03,280  
mentioned earlier is already on route

152  
00:08:07,029 --> 00:08:05,280  
from baikonur to the landing site it

153  
00:08:09,270 --> 00:08:07,039  
will serve as sort of a command and

154  
00:08:10,869 --> 00:08:09,280  
control center between the spacecraft

155  
00:08:13,350 --> 00:08:10,879  
back to russian mission control

156  
00:08:15,909 --> 00:08:13,360  
personnel that'll relay voice and data

157  
00:08:18,469 --> 00:08:15,919  
from the soyuz to the flight controllers

158  
00:08:20,629 --> 00:08:18,479  
at their mission control center

159  
00:08:26,869 --> 00:08:20,639  
and it'll be able to pick up that data

160  
00:08:30,869 --> 00:08:28,629  
after landing the crew will return by

161  
00:08:32,870 --> 00:08:30,879  
russian helicopters to the recovery

162  
00:08:34,949 --> 00:08:32,880  
staging city in baikonur which is about

163  
00:08:37,110 --> 00:08:34,959

a two and a half hour flight and this is

164

00:08:39,029 --> 00:08:37,120

where the crew will split up after six

165

00:08:40,550 --> 00:08:39,039

months in orbit together

166

00:08:42,389 --> 00:08:40,560

the nasa crew will move to ground

167

00:08:44,550 --> 00:08:42,399

transportation for about a three hour

168

00:08:46,230 --> 00:08:44,560

ride to the airport in kiss florida

169

00:08:48,230 --> 00:08:46,240

where they will board a nasa plane

170

00:08:50,230 --> 00:08:48,240

located there for a flight back to

171

00:08:52,389 --> 00:08:50,240

ellington field in houston

172

00:08:54,389 --> 00:08:52,399

skripocha will stay in baikonur where he

173

00:08:56,310 --> 00:08:54,399

will board a gagarin cosmonaut training

174

00:08:58,790 --> 00:08:56,320

center or gctc

175

00:09:03,590 --> 00:08:58,800

aircraft in baikonur to return to his

176  
00:09:07,750 --> 00:09:05,269  
we're expecting good weather for landing

177  
00:09:10,310 --> 00:09:07,760  
today at about 61 degrees fahrenheit

178  
00:09:12,949 --> 00:09:10,320  
with clear skies and some winds from the

179  
00:09:14,630 --> 00:09:12,959  
southeast a nice welcome home for this

180  
00:09:28,949 --> 00:09:14,640  
crew that has spent so much time in

181  
00:09:33,190 --> 00:09:30,949  
yesterday jessica muir spoke about the

182  
00:09:35,190 --> 00:09:33,200  
extensive measures nasa has taken to

183  
00:09:37,590 --> 00:09:35,200  
ensure the safety of the landing team

184  
00:09:39,269 --> 00:09:37,600  
and of course the crew listen in to

185  
00:09:41,910 --> 00:09:39,279  
learn a little bit more about all the

186  
00:09:46,150 --> 00:09:41,920  
preparations for their return trip to

187  
00:09:50,150 --> 00:09:47,990  
yeah this situation has dramatically

188  
00:09:51,910 --> 00:09:50,160

affected our plans nasa has done an

189

00:09:53,350 --> 00:09:51,920

incredible job our support people on the

190

00:09:55,590 --> 00:09:53,360

ground have been working very hard to

191

00:09:57,509 --> 00:09:55,600

figure out even how to come pick us up

192

00:09:59,829 --> 00:09:57,519

so as you know we launch in the soyuz

193

00:10:02,150 --> 00:09:59,839

spacecraft from baikonur in kazakhstan

194

00:10:04,470 --> 00:10:02,160

and we land in kazakhstan as well so

195

00:10:06,150 --> 00:10:04,480

normally what happens is a nasa aircraft

196

00:10:08,630 --> 00:10:06,160

comes over to pick us up and gets us

197

00:10:10,550 --> 00:10:08,640

back to houston within 24 hours but of

198

00:10:12,069 --> 00:10:10,560

course even getting that nasa aircraft

199

00:10:14,230 --> 00:10:12,079

over there with all the international

200

00:10:16,870 --> 00:10:14,240

stops involved has been quite in an

201  
00:10:18,310 --> 00:10:16,880  
effort and we're taking a different path

202  
00:10:20,150 --> 00:10:18,320  
it's going to be kind of like a planes

203  
00:10:21,670 --> 00:10:20,160  
trains and automobile scenario where i

204  
00:10:23,509 --> 00:10:21,680  
think we're going to even end up riding

205  
00:10:25,190 --> 00:10:23,519  
in an ambulance for several hours across

206  
00:10:26,870 --> 00:10:25,200  
the kazakhstan in order to get to our

207  
00:10:28,630 --> 00:10:26,880  
airplane so it'll be a little bit

208  
00:10:30,389 --> 00:10:28,640  
different than normal but this is the

209  
00:10:31,910 --> 00:10:30,399  
first time landing for both me and my

210  
00:10:33,269 --> 00:10:31,920  
and my crewmate drew morgan so we don't

211  
00:10:35,430 --> 00:10:33,279  
really have anything to compare it to

212  
00:10:37,670 --> 00:10:35,440  
it'll just be the way that it is for us

213  
00:10:39,430 --> 00:10:37,680

once we get home normally we have you

214

00:10:41,110 --> 00:10:39,440

know a little bit of a quarantine period

215

00:10:42,710 --> 00:10:41,120

which is has been a little bit soft in

216

00:10:44,870 --> 00:10:42,720

the past in terms of we can still kind

217

00:10:46,949 --> 00:10:44,880

of go about our daily routine but

218

00:10:48,790 --> 00:10:46,959

because one of the hallmarks of space

219

00:10:50,949 --> 00:10:48,800

flight physiologically is actually a

220

00:10:52,630 --> 00:10:50,959

dysregulation of our immune system we

221

00:10:54,790 --> 00:10:52,640

actually can come back potentially a bit

222

00:10:56,389 --> 00:10:54,800

immuno compromise so of course that

223

00:10:58,069 --> 00:10:56,399

makes everybody at nasa concerned and

224

00:10:59,990 --> 00:10:58,079

they want to make sure that they keep us

225

00:11:01,670 --> 00:11:00,000

safe and healthy so we'll have a more

226

00:11:03,590 --> 00:11:01,680

strict quarantine this time where we'll

227

00:11:05,910 --> 00:11:03,600

be actually staying and living at nasa

228

00:11:08,069 --> 00:11:05,920

for at least a week after we land with

229

00:11:11,750 --> 00:11:08,079

very limited access to make sure that uh

230

00:11:17,110 --> 00:11:13,910

nasa astronaut andrew morgan actually

231

00:11:19,430 --> 00:11:17,120

launched on july 20th 2019 the 50th

232

00:11:22,949 --> 00:11:19,440

anniversary of the apollo 11 lunar

233

00:11:25,190 --> 00:11:22,959

landing today he jessica meer and alex

234

00:11:29,269 --> 00:11:25,200

grapochka land 50 years to the day of

235

00:11:31,190 --> 00:11:29,279

the apollo 13 safe landing in 1970 50

236

00:11:32,630 --> 00:11:31,200

years ago the crisis was in space as

237

00:11:35,110 --> 00:11:32,640

flight controllers worked to bring the

238

00:11:36,790 --> 00:11:35,120

apollo 13 crew safely home

239

00:11:38,630 --> 00:11:36,800

50 years later things are a little more

240

00:11:41,269 --> 00:11:38,640

difficult on this side of the atmosphere

241

00:11:43,110 --> 00:11:41,279

as we navigate life during a pandemic in

242

00:11:45,829 --> 00:11:43,120

both circumstances we are united

243

00:12:02,310 --> 00:11:45,839

worldwide as we work to move forward to

244

00:12:07,269 --> 00:12:03,829

we're about 10 minutes away from that

245

00:12:09,670 --> 00:12:07,279

deorbit burn a four minute and 41 second

246

00:12:12,790 --> 00:12:09,680

burn that will bring the soyuz slowing

247

00:12:14,470 --> 00:12:12,800

it down by 128 meters per second that's

248

00:12:16,069 --> 00:12:14,480

enough to drop it out of the earth's

249

00:12:18,389 --> 00:12:16,079

atmosph or out of the earth's orbit

250

00:12:20,150 --> 00:12:18,399

which is exactly what we want tonight to

251  
00:12:34,790 --> 00:12:20,160  
bring it home safely to the step of

252  
00:12:38,870 --> 00:12:36,310  
at the time of the deorbit burn the

253  
00:12:40,790 --> 00:12:38,880  
soyuz will be about 32 kilometers or 19

254  
00:12:42,870 --> 00:12:40,800  
miles away from the international space

255  
00:12:44,470 --> 00:12:42,880  
station

256  
00:12:46,710 --> 00:12:44,480  
about five minutes after that do orbit

257  
00:12:49,590 --> 00:12:46,720  
burn is completed the orbital module the

258  
00:12:51,350 --> 00:12:49,600  
bulbous portion on top of the

259  
00:12:53,990 --> 00:12:51,360  
the descent module where the crew is

260  
00:12:55,350 --> 00:12:54,000  
seated will be depressurized to vacuum

261  
00:13:02,629 --> 00:12:55,360  
that sets up the systems for the

262  
00:13:06,069 --> 00:13:03,990  
once the modules power technically

263  
00:13:08,470 --> 00:13:06,079

separate that orbital module will depart

264

00:13:10,069 --> 00:13:08,480

at 0.82 meters per second and the

265

00:13:12,470 --> 00:13:10,079

propulsion module at the bottom will

266

00:13:15,190 --> 00:13:12,480

depart at 0.58 meters per second leaving

267

00:13:16,949 --> 00:13:15,200

the descent module and the crew inside

268

00:13:21,509 --> 00:13:16,959

with their heat shield exposed in the

269

00:13:25,269 --> 00:13:23,190

that's important to note because the

270

00:13:27,829 --> 00:13:25,279

temperatures around the descent module

271

00:13:29,110 --> 00:13:27,839

will build up to about 2 500 degrees

272

00:13:30,230 --> 00:13:29,120

fahrenheit

273

00:13:33,350 --> 00:13:30,240

the heat shield will protect the

274

00:13:35,990 --> 00:13:33,360

astronauts inside as they enter that

275

00:13:37,590 --> 00:13:36,000

plasma regime

276

00:13:39,590 --> 00:13:37,600

at that time it's expected that we won't

277

00:13:41,990 --> 00:13:39,600

have any communications with the soyuz

278

00:13:44,550 --> 00:13:42,000

crew but those should be restored upon

279

00:13:46,470 --> 00:13:44,560

exit once the spacecraft is in range of

280

00:13:48,069 --> 00:13:46,480

the antonov aircraft

281

00:13:49,910 --> 00:13:48,079

you'll hear a beacon signal once that

282

00:13:52,310 --> 00:13:49,920

occurs just before the parachute

283

00:13:58,629 --> 00:13:52,320

deployment and about 15 minutes prior to

284

00:14:02,069 --> 00:14:00,230

the command to open the shoots should

285

00:14:04,870 --> 00:14:02,079

come about two minutes after midnight

286

00:14:15,590 --> 00:14:04,880

when the soyuz is at an altitude of 6.5

287

00:14:18,550 --> 00:14:16,949

that command is triggered by a

288

00:14:21,030 --> 00:14:18,560

barometric pressure sensor at an

289

00:14:23,030 --> 00:14:21,040

altitude of 41 000 feet

290

00:14:25,509 --> 00:14:23,040

two pilot parachutes are first deployed

291

00:14:27,430 --> 00:14:25,519

the second of which extracts the drogue

292

00:14:29,829 --> 00:14:27,440

chute the drogue shoot is then released

293

00:14:32,230 --> 00:14:29,839

and that measures about 24 square meters

294

00:14:35,430 --> 00:14:32,240

slowing down the soyuz from a descent

295

00:14:37,430 --> 00:14:35,440

rate of 230 meters a second down to 80

296

00:14:39,269 --> 00:14:37,440

meters a second

297

00:14:41,990 --> 00:14:39,279

the main parachute is then released

298

00:14:44,629 --> 00:14:42,000

covering an area of 1 000 meters a

299

00:14:47,750 --> 00:14:44,639

massive parachute it allows the soyuz to

300

00:14:51,829 --> 00:14:47,760

slow to a descent rate of 7.2 meters per

301  
00:14:51,839 --> 00:14:59,820  
oxygen

302  
00:14:59,830 --> 00:15:05,430  
[Music]

303  
00:15:05,440 --> 00:15:14,310  
s9 commands

304  
00:15:19,110 --> 00:15:16,230  
we'll be coming up on that deorbit burn

305  
00:15:21,110 --> 00:15:19,120  
at 11 22 pm central time

306  
00:15:23,110 --> 00:15:21,120  
a little bit more about the crew until

307  
00:15:26,069 --> 00:15:23,120  
then uh as we mentioned drew morgan is

308  
00:15:27,750 --> 00:15:26,079  
actually wrapping up a 272-day mission

309  
00:15:29,990 --> 00:15:27,760  
aboard the international space station

310  
00:15:31,829 --> 00:15:30,000  
his first mission to the space station

311  
00:15:34,150 --> 00:15:31,839  
and the fourth longest single space

312  
00:15:36,150 --> 00:15:34,160  
flight by a u.s astronaut

313  
00:15:38,949 --> 00:15:36,160

he also completed seven spacewalks on

314

00:15:40,949 --> 00:15:38,959

this mission with over 45 hours and 48

315

00:15:46,069 --> 00:15:40,959

minutes outside the hatch

316

00:15:49,590 --> 00:15:48,230

nasa astronaut jessica mear was on her

317

00:15:52,310 --> 00:15:49,600

first

318

00:15:54,949 --> 00:15:52,320

space flight this mission racking up 205

319

00:15:57,350 --> 00:15:54,959

days and three spacewalks all completed

320

00:16:00,389 --> 00:15:57,360

with nasa astronaut christina cook for

321

00:16:02,790 --> 00:16:00,399

the first all-female space walks alex

322

00:16:04,389 --> 00:16:02,800

grapochka the commander of today's soyuz

323

00:16:06,629 --> 00:16:04,399

spacecraft and the commander of

324

00:16:10,069 --> 00:16:06,639

expedition 62

325

00:16:12,189 --> 00:16:10,079

added another in 205 days totaling his

326

00:16:16,230 --> 00:16:12,199

career flight time to

327

00:16:20,189 --> 00:16:18,550

marion's grow poached good added up

328

00:16:23,030 --> 00:16:20,199

about

329

00:16:45,670 --> 00:16:23,040

86.86.9 million statute miles traveled

330

00:16:45,680 --> 00:16:49,310

foreign

331

00:16:49,320 --> 00:17:01,430

[Music]

332

00:17:07,350 --> 00:17:03,350

and

333

00:17:35,190 --> 00:17:07,360

propellant was used

334

00:17:40,390 --> 00:17:36,789

about five minutes away now from that

335

00:18:26,549 --> 00:17:40,400

deorbit burn committing soyuz to deorbit

336

00:18:30,230 --> 00:18:28,470

though three space farers are coming

337

00:18:31,750 --> 00:18:30,240

home tonight three more are still living

338

00:18:33,830 --> 00:18:31,760

and working on the space station for

339

00:18:35,990 --> 00:18:33,840

about six months that includes nasa's

340

00:18:39,029 --> 00:18:36,000

chris cassidy and yvonne wagner and

341

00:18:41,190 --> 00:18:39,039

anatoly ivanishin of roscosmos this trio

342

00:18:42,950 --> 00:18:41,200

arrived just eight days ago beginning

343

00:18:45,029 --> 00:18:42,960

the journey scheduled to last until

344

00:18:47,830 --> 00:18:45,039

october and they'll see the visit of the

345

00:18:49,510 --> 00:18:47,840

spacex crew dragon on its dm2 mission

346

00:18:51,029 --> 00:18:49,520

the first launch of humans from space

347

00:19:26,470 --> 00:18:51,039

since the retirement of the space

348

00:19:31,430 --> 00:19:28,310

a good view here of the world map as the

349

00:19:34,310 --> 00:19:31,440

space station and soyuz cross over the

350

00:19:37,430 --> 00:19:34,320

southern tip of chile the space station

351  
00:19:44,230 --> 00:19:37,440  
at 273 statute miles above the earth

352  
00:19:49,029 --> 00:19:46,070  
the space station orbits the earth every

353  
00:20:06,310 --> 00:19:49,039  
90 minutes seeing 16 sunrises and

354  
00:20:11,430 --> 00:20:08,710  
just two minutes now until soyu's next

355  
00:20:13,909 --> 00:20:11,440  
major milestone the deorbit burn for

356  
00:21:20,390 --> 00:20:13,919  
four min four minutes and 41 seconds in

357  
00:22:09,350 --> 00:21:21,990  
and we're about one minute away from

358  
00:22:13,590 --> 00:22:10,830  
in 30

359  
00:22:16,390 --> 00:22:13,600  
seconds 30 seconds until the deorbit

360  
00:22:16,400 --> 00:22:39,510  
we copy

361  
00:22:46,070 --> 00:22:44,070  
combined gesso and escade activation

362  
00:22:48,310 --> 00:22:46,080  
at 232

363  
00:22:51,110 --> 00:22:48,320

and the orbit burn is in progress that

364

00:22:53,510 --> 00:22:51,120

retrograde firing lasting four minutes

365

00:22:56,470 --> 00:22:53,520

and 41 seconds this will slow down the

366

00:22:59,029 --> 00:22:56,480

soyuz spacecraft by 128 meters per

367

00:23:03,990 --> 00:22:59,039

second allowing it to drop out of orbit

368

00:23:04,000 --> 00:23:17,750

0 45 and i confirm escada

369

00:23:25,590 --> 00:23:20,230

and we confirmed that

370

00:23:47,750 --> 00:23:28,870

delta v was 14.8

371

00:23:47,760 --> 00:23:51,430

and

372

00:23:51,440 --> 00:24:20,870

we've used up 0-62

373

00:24:20,880 --> 00:24:41,190

we copy

374

00:24:48,630 --> 00:24:43,350

two minutes into the deorbit burn about

375

00:24:54,390 --> 00:24:50,470

i confirm um

376

00:25:17,830 --> 00:24:56,070

delta v notable

377

00:25:43,990 --> 00:25:19,990

delta v 0 46

378

00:25:47,830 --> 00:25:45,830

the orbit burn continues and the crew is

379

00:26:21,990 --> 00:25:47,840

now committed to entry of the earth's

380

00:26:22,000 --> 00:26:25,029

0.47

381

00:26:25,039 --> 00:26:28,950

we copy

382

00:26:32,390 --> 00:26:30,870

the commander reporting down to russian

383

00:26:34,710 --> 00:26:32,400

mission control the amount of fuel that

384

00:26:40,070 --> 00:26:34,720

has been used so far for the orbit burn

385

00:26:45,110 --> 00:26:41,750

four minutes into the orbit burn there

386

00:26:48,549 --> 00:26:45,120

will be 41 seconds left

387

00:26:52,549 --> 00:26:48,559

used up 251 kilograms of propellant burn

388

00:27:18,789 --> 00:26:52,559

is 110 and delta forty seven we got be

389

00:27:26,070 --> 00:27:22,070

we confirm gekka thrust the firing

390

00:27:28,950 --> 00:27:26,080

propellants used at 283 burn 125 delta v

391

00:27:31,430 --> 00:27:28,960

is 0 47. we copy all

392

00:27:33,750 --> 00:27:31,440

and at 11 27 pm central time that

393

00:27:35,990 --> 00:27:33,760

deorbit burn is complete the crew is

394

00:27:37,750 --> 00:27:36,000

committed to deorbiting and entering

395

00:27:39,590 --> 00:27:37,760

earth's atmosphere

396

00:27:41,590 --> 00:27:39,600

about five minutes from now the orbital

397

00:27:44,070 --> 00:27:41,600

module the bulmas module on top of the

398

00:27:46,149 --> 00:27:44,080

soyuz will be depressurized to vacuum

399

00:27:50,549 --> 00:27:46,159

preparing for the pyrotechnic separation

400

00:28:03,190 --> 00:27:53,110

and we confirm separation here

401  
00:28:07,110 --> 00:28:04,789  
and with that five minutes from the

402  
00:28:09,430 --> 00:28:07,120  
start of the burn the d orbital or the

403  
00:28:36,789 --> 00:28:09,440  
orbital module has been depressurized to

404  
00:28:40,710 --> 00:28:38,230  
with the orbit burn complete and

405  
00:28:42,630 --> 00:28:40,720  
depressurization of the orbital module

406  
00:28:44,870 --> 00:28:42,640  
the next step for soyuz will be the

407  
00:28:48,230 --> 00:28:44,880  
separation of the modules

408  
00:28:50,470 --> 00:28:48,240  
that will be at 11 50 pm central time

409  
00:28:52,470 --> 00:28:50,480  
the orbital module will depart at eight

410  
00:28:54,789 --> 00:28:52,480  
at 0.82 meters per second and the

411  
00:28:57,110 --> 00:28:54,799  
propulsion module will depart at 0.58

412  
00:28:58,950 --> 00:28:57,120  
meters per second leaving behind only

413  
00:29:07,029 --> 00:28:58,960

the descent module in which the crew is

414

00:29:07,039 --> 00:29:16,549

please

415

00:29:21,830 --> 00:29:19,830

that needs to be done at -6

416

00:29:25,350 --> 00:29:21,840

please make sure that

417

00:29:26,950 --> 00:29:25,360

your c's are primed

418

00:29:29,029 --> 00:29:26,960

almost three minutes after the

419

00:29:31,269 --> 00:29:29,039

separation of the modules the crew will

420

00:29:33,830 --> 00:29:31,279

begin to feel the first pulls of gravity

421

00:29:35,750 --> 00:29:33,840

during the entry interface the first

422

00:29:37,990 --> 00:29:35,760

time that andrew morgan will have felt

423

00:29:41,110 --> 00:29:38,000

gravity in almost nine months

424

00:29:43,269 --> 00:29:41,120

and six months for nasa astronaut

425

00:30:01,510 --> 00:29:43,279

jessica muir and rose cosmos cosmonaut

426  
00:30:05,350 --> 00:30:03,110  
just about 20 minutes from that

427  
00:30:07,590 --> 00:30:05,360  
separation of the soyuz modules

428  
00:30:11,669 --> 00:30:07,600  
everything moving as planned for an

429  
00:32:12,070 --> 00:30:11,679  
on-time landing at 12 16 a.m april 17th

430  
00:32:17,909 --> 00:32:15,509  
the returnings will use ms-15 crew of

431  
00:32:20,549 --> 00:32:17,919  
nasa astronaut jessica mir is in the

432  
00:32:22,470 --> 00:32:20,559  
left seat of the soyuz descent module

433  
00:32:25,110 --> 00:32:22,480  
she's board engineer one serving as the

434  
00:32:26,950 --> 00:32:25,120  
backup to olegs grapochka the soyuz

435  
00:32:28,549 --> 00:32:26,960  
commander in the middle seat

436  
00:32:32,870 --> 00:32:28,559  
and on his right side

437  
00:32:34,870 --> 00:32:32,880  
drew morgan who just spent 272 days in

438  
00:32:38,070 --> 00:32:34,880

space in the right seat as board

439

00:32:41,990 --> 00:32:39,909

meanwhile on the ground

440

00:32:43,350 --> 00:32:42,000

nasa and russian search and recovery

441

00:32:45,750 --> 00:32:43,360

forces are

442

00:32:48,149 --> 00:32:45,760

in the air aboard the russian mi8

443

00:32:51,269 --> 00:32:48,159

helicopters on the way from jessica's

444

00:32:53,669 --> 00:32:51,279

gone to the landing site about 92 miles

445

00:32:54,789 --> 00:32:53,679

away that's about a 35 minute flight and

446

00:32:57,029 --> 00:32:54,799

they will

447

00:33:00,149 --> 00:32:57,039

circle the landing site in a racetrack

448

00:33:22,149 --> 00:33:00,159

fashion awaiting for the arrival of the

449

00:33:27,190 --> 00:33:23,830

next milestone for soyuz will be that

450

00:33:31,269 --> 00:33:28,710

and following that they'll hit the first

451  
00:33:33,509 --> 00:33:31,279  
traces of the earth's atmosphere about

452  
00:33:35,590 --> 00:33:33,519  
three minutes later they'll then enter

453  
00:33:37,430 --> 00:33:35,600  
the plasma regime which lasts about five

454  
00:33:40,389 --> 00:33:37,440  
minutes when the temperatures around the

455  
00:33:42,310 --> 00:33:40,399  
soyuz spacecraft build to about 2500

456  
00:33:44,230 --> 00:33:42,320  
degrees fahrenheit

457  
00:33:46,389 --> 00:33:44,240  
this is that time that we expect to lose

458  
00:33:48,070 --> 00:33:46,399  
communication between the

459  
00:33:51,269 --> 00:33:48,080  
soyuz and

460  
00:33:55,190 --> 00:33:53,509  
but those will be restored upon the exit

461  
00:33:57,830 --> 00:33:55,200  
of the plasma regime when the soyuz

462  
00:34:00,950 --> 00:33:57,840  
spacecraft is in range of that antonov

463  
00:34:44,710 --> 00:34:00,960

26 aircraft on its way to the landing

464

00:34:44,720 --> 00:34:50,869

oh

465

00:34:55,349 --> 00:34:53,990

is zero and descent module pressure is

466

00:34:59,510 --> 00:34:55,359

stable

467

00:35:03,910 --> 00:35:01,349

everything moving along as planned for

468

00:36:55,030 --> 00:35:03,920

soyuz tonight about 15 minutes until

469

00:36:59,270 --> 00:36:57,109

you're looking at a live view of the

470

00:37:01,510 --> 00:36:59,280

russian mission control center in korea

471

00:37:03,030 --> 00:37:01,520

a town just outside of moscow where

472

00:37:04,390 --> 00:37:03,040

teams are in communication with the

473

00:37:06,630 --> 00:37:04,400

soyuz crew

474

00:37:09,750 --> 00:37:06,640

you may hear this team report refer to

475

00:37:11,750 --> 00:37:09,760

the soyuz ms-15s sarmat that's the call

476  
00:37:43,510 --> 00:37:11,760  
sign that all excre pochko the commander

477  
00:37:47,109 --> 00:37:45,109  
it's been about 10 minutes since the

478  
00:37:49,589 --> 00:37:47,119  
successful completion of that deorbit

479  
00:38:20,550 --> 00:37:49,599  
burn and we're looking about 40 minutes

480  
00:38:23,910 --> 00:38:21,910  
landing of the crew tonight will look a

481  
00:38:27,589 --> 00:38:23,920  
little bit different as it is usually

482  
00:38:29,030 --> 00:38:27,599  
staged out of the uh karaganda location

483  
00:38:31,670 --> 00:38:29,040  
that airport has been closed by

484  
00:38:34,230 --> 00:38:31,680  
kazakhstan authorities and so the

485  
00:38:35,829 --> 00:38:34,240  
landing is being staged out of baikonur

486  
00:38:37,670 --> 00:38:35,839  
that's uh

487  
00:38:40,950 --> 00:38:37,680  
about a two and a half hour helicopter

488  
00:38:42,630 --> 00:38:40,960

flight from the landing site

489

00:38:44,710 --> 00:38:42,640

after landing the crew will return by

490

00:38:47,829 --> 00:38:44,720

russian helicopters to that staging city

491

00:38:50,790 --> 00:38:47,839

of baikonur and then we'll split up

492

00:38:53,430 --> 00:38:50,800

the nasa crew will move in a three-hour

493

00:38:54,630 --> 00:38:53,440

ride on the ground to the airport in his

494

00:38:56,630 --> 00:38:54,640

lord

495

00:38:58,710 --> 00:38:56,640

where they will depart

496

00:39:00,550 --> 00:38:58,720

for ellington field in houston aboard a

497

00:39:02,390 --> 00:39:00,560

gulfstream aircraft

498

00:39:04,950 --> 00:39:02,400

meanwhile

499

00:39:06,790 --> 00:39:04,960

uh oleg skripal board of gagarin

500

00:40:12,069 --> 00:39:06,800

cosmonaut training center aircraft in

501  
00:40:16,309 --> 00:40:13,910  
we're about 10 minutes away from module

502  
00:40:18,950 --> 00:40:16,319  
separation things will start moving very

503  
00:40:20,870 --> 00:40:18,960  
quickly for the soyuz crew after that

504  
00:40:23,510 --> 00:40:20,880  
at 11 53

505  
00:40:25,990 --> 00:40:23,520  
we they will hit the first traces of

506  
00:40:32,950 --> 00:40:26,000  
earth's atmosphere and then two minutes

507  
00:40:37,589 --> 00:40:35,270  
that plasma regime is when we expect to

508  
00:40:41,190 --> 00:40:37,599  
lose communications with the crew

509  
00:40:44,550 --> 00:40:41,200  
and then they'll exit that regime at 12

510  
00:40:47,190 --> 00:40:44,560  
at midnight uh central time experiencing

511  
00:40:48,950 --> 00:40:47,200  
about four to five g's at that time

512  
00:40:50,829 --> 00:40:48,960  
that's the maximum g loads the crew

513  
00:40:53,510 --> 00:40:50,839

should feel during their return to earth

514

00:40:55,910 --> 00:40:53,520

tonight two minutes after midnight the

515

00:40:58,390 --> 00:40:55,920

command to open the parachutes will

516

00:41:00,710 --> 00:40:58,400

begin we'll first see those two pilot

517

00:41:03,109 --> 00:41:00,720

parachutes the second of which extracts

518

00:41:05,670 --> 00:41:03,119

the drogue chute the drill shoot is then

519

00:41:07,910 --> 00:41:05,680

released and that

520

00:41:10,870 --> 00:41:07,920

extracts the main parachute covering an

521

00:41:13,829 --> 00:41:10,880

area of 1000 meters that'll slow the

522

00:41:24,470 --> 00:41:13,839

soyuz to a descent rate of 7.2 meters

523

00:41:28,790 --> 00:41:26,470

just about two seconds before soyuz

524

00:41:31,589 --> 00:41:28,800

touches down its soft landing engines

525

00:41:34,069 --> 00:41:31,599

will fire that's six inches engines to

526

00:41:42,150 --> 00:41:34,079

slow the soyuz descent rate to 1.5

527

00:41:45,270 --> 00:41:44,230

once again landing is scheduled for 12

528

00:41:49,349 --> 00:41:45,280

16

529

00:41:51,950 --> 00:41:49,359

am central time at 47.19

530

00:41:55,910 --> 00:41:51,960

degrees north latitude

531

00:41:57,910 --> 00:41:55,920

69.34 degrees east longitude about 92

532

00:44:56,170 --> 00:41:57,920

miles away from jessica's gone

533

00:44:56,180 --> 00:45:01,510

[Music]

534

00:45:01,520 --> 00:45:15,430

we closed our visors

535

00:45:15,440 --> 00:45:20,230

unintelligible

536

00:45:23,750 --> 00:45:21,829

the crew has reported that they have

537

00:45:26,150 --> 00:45:23,760

closed their helmet visors

538

00:45:28,950 --> 00:45:26,160

as we are about five minutes away from

539

00:45:30,470 --> 00:45:28,960

the module separation of the soyuz the

540

00:45:32,710 --> 00:45:30,480

orbital module has already been

541

00:45:34,710 --> 00:45:32,720

depressurized to a vacuum and the

542

00:45:37,270 --> 00:45:34,720

systems are ready for the pyrotechnic

543

00:45:41,349 --> 00:45:37,280

separation

544

00:45:42,790 --> 00:45:41,359

please report if there is a possible

545

00:45:45,750 --> 00:45:42,800

calm pass

546

00:45:48,309 --> 00:45:45,760

please tell us what was the maximum g

547

00:46:25,430 --> 00:45:50,550

at that time and how in report how are

548

00:46:30,150 --> 00:46:27,670

as the soyuz approaches its module

549

00:46:33,270 --> 00:46:30,160

separation here on the ground

550

00:46:35,829 --> 00:46:33,280

the helicopters are at the landing site

551  
00:46:38,309 --> 00:46:35,839  
circling the landing zone in a racetrack

552  
00:46:41,349 --> 00:46:38,319  
fashion having departed jessica's gone

553  
00:46:42,950 --> 00:46:41,359  
earlier about a 35-minute flight away

554  
00:46:45,349 --> 00:46:42,960  
once the spacecraft lands the

555  
00:46:59,589 --> 00:46:45,359  
helicopters will then land sequentially

556  
00:46:59,599 --> 00:48:27,349  
hey

557  
00:48:33,510 --> 00:48:29,270  
coming up on two minutes until module

558  
00:48:51,430 --> 00:48:33,520  
separation at 11 50 and 44 seconds p.m

559  
00:48:58,870 --> 00:48:53,990  
and we are confirming

560  
00:49:02,549 --> 00:48:58,880  
separation we are sending l5 command

561  
00:49:02,559 --> 00:49:24,630  
unintelligible we copy

562  
00:49:29,030 --> 00:49:27,030  
only one minute remains until the soyuz

563  
00:49:30,790 --> 00:49:29,040

spacecraft is divided into three

564

00:49:32,309 --> 00:49:30,800

portions the descent module

565

00:49:34,630 --> 00:49:32,319

pyrotechnically separating from the

566

00:49:36,390 --> 00:49:34,640

orbital module and propulsion module

567

00:49:49,810 --> 00:49:36,400

preparing it for re-entry into the

568

00:49:49,820 --> 00:49:59,510

[Music]

569

00:49:59,520 --> 00:50:58,549

b

570

00:51:03,510 --> 00:51:00,710

and we have module separation right on

571

00:51:06,549 --> 00:51:03,520

time the descent module now apart from

572

00:51:09,910 --> 00:51:06,559

the orbital module and propulsion module

573

00:51:17,510 --> 00:51:12,230

in about three minutes the crew will hit

574

00:51:20,790 --> 00:51:19,030

that'll be their first time to feel

575

00:51:22,309 --> 00:51:20,800

gravity in months

576

00:51:23,829 --> 00:51:22,319

and then a minute and a half later we'll

577

00:51:26,150 --> 00:51:23,839

see that heat ablated from the heat

578

00:51:27,829 --> 00:51:26,160

shield as they entered the plasma regime

579

00:51:32,150 --> 00:51:27,839

that's when we will lose communication

580

00:51:38,630 --> 00:51:33,670

about two minutes after midnight the

581

00:51:42,630 --> 00:51:40,470

two pilot parachutes first and then the

582

00:51:45,190 --> 00:51:42,640

drogue chute and the main parachute and

583

00:51:47,270 --> 00:51:45,200

then those soft landing engines firing

584

00:52:47,510 --> 00:51:47,280

just seconds before

585

00:52:51,910 --> 00:52:49,910

about one minute away

586

00:52:53,750 --> 00:52:51,920

until the crew enters the entry

587

00:52:55,910 --> 00:52:53,760

interface portion of their return the

588

00:52:57,750 --> 00:52:55,920

first time to feel gravity

589

00:54:17,430 --> 00:52:57,760

they can expect to feel about four to

590

00:54:21,829 --> 00:54:19,589

the soyuz crew of

591

00:54:24,069 --> 00:54:21,839

astronauts andrew morgan jessica muir

592

00:54:25,910 --> 00:54:24,079

and rose cosmos cosmonaut alex grapochka

593

00:54:28,870 --> 00:54:25,920

should now be in the entry interface

594

00:54:31,990 --> 00:54:28,880

portion of their return to earth

595

00:54:35,109 --> 00:54:32,000

at 11 55 pm central time they will enter

596

00:54:36,549 --> 00:54:35,119

the plasma regime

597

00:54:39,109 --> 00:54:36,559

this is when the temperatures will build

598

00:54:41,349 --> 00:54:39,119

to about 2 500 degrees fahrenheit

599

00:54:43,190 --> 00:54:41,359

outside of the capsule but the heat

600

00:54:54,950 --> 00:54:43,200

shield is protecting the astronauts and

601  
00:54:59,349 --> 00:54:57,670  
upon the exit from the plasma regime

602  
00:55:01,109 --> 00:54:59,359  
the soyuz will have the opportunity to

603  
00:55:03,910 --> 00:55:01,119  
restore its communication once it's in

604  
00:55:05,589 --> 00:55:03,920  
the range of the antonov aircraft

605  
00:55:07,190 --> 00:55:05,599  
we'll be looking to hear a beacon signal

606  
00:55:08,630 --> 00:55:07,200  
once that occurs

607  
00:55:10,390 --> 00:55:08,640  
that'll be just before the parachute

608  
00:55:46,630 --> 00:55:10,400  
deployment scheduled for two minutes

609  
00:55:50,950 --> 00:55:49,270  
the soyuz is now in that plasma regime

610  
00:55:52,870 --> 00:55:50,960  
this should last about five minutes and

611  
00:55:55,190 --> 00:55:52,880  
the astronauts are feeling the maximum g

612  
00:56:00,309 --> 00:55:55,200  
loads of four to five g's the most they

613  
00:56:04,470 --> 00:56:02,390

meanwhile on the ground the mi8

614

00:56:07,670 --> 00:56:04,480

helicopters and the nasa and russian

615

00:56:35,829 --> 00:56:07,680

crews are awaiting the spacecraft to

616

00:56:40,710 --> 00:56:37,910

the soyuz spacecraft is now only about

617

00:56:43,190 --> 00:56:40,720

20 minutes from landing scheduled for 12

618

00:56:45,270 --> 00:56:43,200

16 a.m central time

619

00:58:09,430 --> 00:56:45,280

on the steps of kazakhstan about 92

620

00:59:54,470 --> 00:58:11,829

about two minutes until the crew exits

621

00:59:58,710 --> 00:59:56,549

and just moments away from the exit from

622

01:00:00,470 --> 00:59:58,720

the plasma regime for the crew and the

623

01:00:27,349 --> 01:00:00,480

end of the maximum g loads they will

624

01:00:30,870 --> 01:00:29,109

the crew should now be out of the plasma

625

01:00:33,030 --> 01:00:30,880

regime and the next step for the soyuz

626  
01:00:36,069 --> 01:00:33,040  
is to open those parachutes that should

627  
01:00:42,360 --> 01:00:36,079  
happen at about 1202 and 12 seconds

628  
01:00:42,370 --> 01:00:47,030  
[Music]

629  
01:00:50,789 --> 01:00:48,870  
and we've regained communications with

630  
01:00:57,270 --> 01:00:50,799  
the crew they have reported that they

631  
01:00:57,280 --> 01:01:06,470  
[Music]

632  
01:01:06,480 --> 01:01:11,910  
unintelligible

633  
01:01:17,349 --> 01:01:14,710  
those data and flight voice being

634  
01:01:19,990 --> 01:01:17,359  
relayed from the antonov fixed wing

635  
01:01:21,750 --> 01:01:20,000  
aircraft flying near the landing site in

636  
01:01:24,309 --> 01:01:21,760  
about one minute soyuz will open its

637  
01:02:24,870 --> 01:01:24,319  
parachutes and we are currently about 15

638  
01:02:28,150 --> 01:02:26,710

and the command to open the parachutes

639

01:02:30,390 --> 01:02:28,160

on the soyuz should be coming right

640

01:02:45,109 --> 01:02:30,400

about now as it is 6.5

641

01:02:49,109 --> 01:02:46,630

the first of those parachutes will be

642

01:02:52,789 --> 01:02:49,119

two pilot parachutes the second of which

643

01:02:56,870 --> 01:02:54,309

the drogue chute is then released which

644

01:02:59,109 --> 01:02:56,880

measures 24 square meters that'll slow

645

01:03:01,990 --> 01:02:59,119

the soyuz down from a descent rate of

646

01:03:13,109 --> 01:03:02,000

230 meters per second to just 80 meters

647

01:03:17,109 --> 01:03:14,789

after the drogue chute is released the

648

01:03:19,910 --> 01:03:17,119

main parachute will be released covering

649

01:03:23,109 --> 01:03:19,920

an area of 1 000 meters that slows the

650

01:03:27,829 --> 01:03:23,119

soyuz to a descent rate of 7.2 meters

651  
01:03:31,990 --> 01:03:29,589  
the harnesses on the main parachute will

652  
01:03:34,789 --> 01:03:32,000  
first allow the soyuz to descend at an

653  
01:03:37,109 --> 01:03:34,799  
angle of 30 degrees to expel heat it

654  
01:03:55,670 --> 01:03:37,119  
will then shift the soyuz to a straight

655  
01:04:00,630 --> 01:03:58,789  
about 21 325 feet above the earth a

656  
01:04:02,870 --> 01:04:00,640  
barometric pressure sensor starts a

657  
01:04:26,630 --> 01:04:02,880  
timer triggering most of the remaining

658  
01:04:29,750 --> 01:04:28,390  
only 12 minutes away from a scheduled

659  
01:04:32,230 --> 01:04:29,760  
landing

660  
01:04:34,789 --> 01:04:32,240  
under a clear blue sky for the soyuz

661  
01:04:39,270 --> 01:04:36,549  
we would typically be seeing something

662  
01:04:40,390 --> 01:04:39,280  
called venting all the valves will be

663  
01:04:42,390 --> 01:04:40,400

vented to

664

01:04:45,349 --> 01:04:42,400

or will be open to vent the hydrogen

665

01:04:48,069 --> 01:04:45,359

peroxide or h<sub>2</sub>o<sub>2</sub> fuel for the entry

666

01:04:50,710 --> 01:04:48,079

control thrusters and the oxygen in the

667

01:04:52,630 --> 01:04:50,720

life support system tank due to this a

668

01:04:54,630 --> 01:04:52,640

white vapor is emitted that's a

669

01:04:58,150 --> 01:04:54,640

combination of the hydrogen peroxide and

670

01:05:00,470 --> 01:04:58,160

oxygen venting into the air

671

01:05:01,990 --> 01:05:00,480

that is intended to safe the vehicle for

672

01:05:04,150 --> 01:05:02,000

landing so there aren't any hazardous

673

01:05:06,710 --> 01:05:04,160

gases remaining in the tanks when those

674

01:05:46,390 --> 01:05:06,720

soft landing thrusters fire just about

675

01:05:49,430 --> 01:05:47,829

surgeon recovery teams are in

676  
01:05:51,270 --> 01:05:49,440  
communication with the soyuz crew and

677  
01:06:54,549 --> 01:05:51,280  
they continue to be feeling well during

678  
01:06:58,309 --> 01:06:56,470  
the crew is now about 10 minutes away

679  
01:06:59,910 --> 01:06:58,319  
from scheduled landing

680  
01:07:01,990 --> 01:06:59,920  
he should be floating under clear and

681  
01:07:04,630 --> 01:07:02,000  
cloudless blue skies

682  
01:07:10,069 --> 01:07:04,640  
south of jessica's gone kazakhstan about

683  
01:07:15,990 --> 01:07:13,190  
that's 7.2 foot wide and 6.9 foot high

684  
01:07:18,230 --> 01:07:16,000  
descent module suspended underneath a

685  
01:07:20,789 --> 01:07:18,240  
white and orange striped parachute

686  
01:07:22,870 --> 01:07:20,799  
covering an area of 1000 meters and

687  
01:07:35,829 --> 01:07:22,880  
making the capsule below it appear

688  
01:08:24,630 --> 01:07:37,589

ground team's reporting that the vehicle

689

01:08:29,269 --> 01:08:26,309

we're about eight minutes away from the

690

01:08:32,149 --> 01:08:29,279

scheduled landing of the soyuz ms-15

691

01:08:34,950 --> 01:08:32,159

crew nasa's jessica mirren andrew morgan

692

01:08:38,229 --> 01:08:34,960

and rose cosmos cosmonaut alex grapochka

693

01:08:40,470 --> 01:08:38,239

making their return to earth

694

01:08:43,829 --> 01:08:40,480

search and recovery forces are currently

695

01:08:45,669 --> 01:08:43,839

in air in the mi-8 helicopters circling

696

01:09:09,189 --> 01:08:45,679

the landing site and waiting for the

697

01:09:09,199 --> 01:09:29,749

hello

698

01:09:29,759 --> 01:09:44,230

okay

699

01:10:05,910 --> 01:09:47,990

[Music]

700

01:10:05,920 --> 01:10:12,070

come on

701  
01:10:12,080 --> 01:10:26,470

[Music]

702  
01:10:31,189 --> 01:10:27,910

and we are six minutes away from the

703  
01:10:32,950 --> 01:10:31,199

scheduled landing of the soyuz ms-15

704  
01:10:35,189 --> 01:10:32,960

the spacecraft should be currently

705  
01:10:37,590 --> 01:10:35,199

hanging symmetrically underneath that

706  
01:10:39,990 --> 01:10:37,600

orange and white striped main parachute

707  
01:11:09,240 --> 01:10:40,000

rather than at the angle it was before

708  
01:11:09,250 --> 01:11:18,270

[Applause]

709  
01:11:18,280 --> 01:11:31,590

[Music]

710  
01:11:31,600 --> 01:12:01,510

unintelligible

711  
01:12:08,630 --> 01:12:03,400

um

712  
01:12:33,430 --> 01:12:08,640

[Music]

713  
01:12:37,270 --> 01:12:35,590

as you can hear the search and recovery

714

01:12:40,550 --> 01:12:37,280

forces are in communication with the

715

01:12:42,870 --> 01:12:40,560

crew still floating down to land

716

01:12:45,590 --> 01:12:42,880

about 92 miles southeast of jessica's

717

01:12:47,350 --> 01:12:45,600

gone kazakhstan in the steps that very

718

01:12:49,270 --> 01:12:47,360

desolate area but with great weather

719

01:12:54,070 --> 01:12:49,280

today looking at about 61 degrees

720

01:12:59,669 --> 01:12:56,790

soyuz will continue on its descent with

721

01:13:01,669 --> 01:12:59,679

its parachute the next milestone and the

722

01:13:04,149 --> 01:13:01,679

last milestone before landing being that

723

01:13:06,470 --> 01:13:04,159

soft landing engine firing that'll be

724

01:13:09,189 --> 01:13:06,480

six engines which will fire to slow the

725

01:13:11,430 --> 01:13:09,199

soyuz descent rate to 1.5 meters per

726

01:13:21,590 --> 01:13:11,440

second when it's less than one meter

727

01:13:26,630 --> 01:13:25,030

the soy are the mi8 helicopters have

728

01:13:28,950 --> 01:13:26,640

eyes on the vehicle they are now

729

01:13:30,550 --> 01:13:28,960

following it to the landing site and

730

01:14:32,149 --> 01:13:30,560

everyone reports that they are feeling

731

01:15:24,310 --> 01:14:34,149

just two minutes away from the scheduled

732

01:15:24,320 --> 01:15:44,550

okay

733

01:15:48,870 --> 01:15:46,790

about one minute away from the scheduled

734

01:17:05,189 --> 01:15:48,880

landing of jessica mirra alex krapochka

735

01:18:18,310 --> 01:17:06,950

we're awaiting confirmation of the

736

01:18:22,229 --> 01:18:19,830

again we're waiting for confirmation of

737

01:18:24,149 --> 01:18:22,239

the return of andrew morgan alex

738

01:18:26,550 --> 01:18:24,159

krapochka and jessica muir aboard the

739

01:18:28,470 --> 01:18:26,560

soyuz ms-15 spacecraft

740

01:18:30,310 --> 01:18:28,480

we're without our usual landing footage

741

01:20:27,030 --> 01:18:30,320

today and so we are awaiting that

742

01:20:32,550 --> 01:20:29,510

and we have confirmed landing of the

743

01:20:36,950 --> 01:20:32,560

crew at approximately 12 16 a.m central

744

01:20:40,070 --> 01:20:36,960

time 1 16 a.m eastern time and 11 16 a.m

745

01:20:42,149 --> 01:20:40,080

kazakhstan time almost five hours after

746

01:20:44,310 --> 01:20:42,159

sunrise at the landing site

747

01:20:46,870 --> 01:20:44,320

jessica mir olix krapochka and drew

748

01:20:48,470 --> 01:20:46,880

morgan have returned the vehicle has

749

01:20:57,510 --> 01:20:48,480

been reported by the russian search and

750

01:21:02,390 --> 01:20:59,830

those mi-8 helicopters should be landing

751  
01:22:15,910 --> 01:21:02,400  
near the vehicle shortly to extract the

752  
01:22:15,920 --> 01:22:43,990  
okay

753  
01:22:50,310 --> 01:22:47,189  
to recap the soyuz ms-15 crew landed at

754  
01:22:54,310 --> 01:22:50,320  
approximately 12 16 a.m central time 1

755  
01:22:56,229 --> 01:22:54,320  
16 a.m eastern and 11 16 a.m local time

756  
01:22:58,149 --> 01:22:56,239  
kazakhstan time

757  
01:23:00,390 --> 01:22:58,159  
the russian search and recovery forces

758  
01:23:04,070 --> 01:23:00,400  
reported that the vehicle is on its side

759  
01:23:06,870 --> 01:23:04,080  
and the mi-8 helicopters have now landed

760  
01:23:31,030 --> 01:23:06,880  
and will begin the recovery process of

761  
01:26:12,070 --> 01:23:32,629  
this is a view of the russian mission

762  
01:26:17,270 --> 01:26:14,629  
to recap the soyuz ms-15 is on the

763  
01:26:19,910 --> 01:26:17,280

ground in kazakhstan having landed at

764

01:26:25,350 --> 01:26:19,920

its scheduled time approximately 12 16

765

01:26:29,270 --> 01:26:27,110

the vehicle landed on its side as

766

01:26:33,669 --> 01:26:29,280

reported by russian search and recovery

767

01:26:35,750 --> 01:26:33,679

forces not an unprecedented uh landing

768

01:26:37,830 --> 01:26:35,760

and the mi-8 helicopters have now landed

769

01:28:12,950 --> 01:26:37,840

around the capsule and are working to

770

01:28:16,790 --> 01:28:15,030

this is a view from the balcony of the

771

01:28:20,390 --> 01:28:16,800

russian mission control center outside

772

01:28:22,229 --> 01:28:20,400

of moscow in a town of koryov

773

01:28:32,550 --> 01:28:22,239

this is where landing operations will

774

01:28:37,350 --> 01:28:35,110

we continue to await information about

775

01:28:38,790 --> 01:28:37,360

the soyuz crew and their landing after

776

01:30:01,990 --> 01:28:38,800

it touching down

777

01:30:06,709 --> 01:30:04,149

again as we reported earlier russian

778

01:30:07,830 --> 01:30:06,719

search and recovery forces have reported

779

01:30:10,629 --> 01:30:07,840

that the

780

01:30:13,270 --> 01:30:10,639

soyuz spacecraft is on its side again

781

01:30:14,790 --> 01:30:13,280

not an unusual thing for the soyuz it

782

01:30:17,430 --> 01:30:14,800

landed and then was potentially pulled

783

01:30:19,990 --> 01:30:17,440

over by its orange and white parachute

784

01:30:33,990 --> 01:30:20,000

that large parachute covering an area of

785

01:30:37,189 --> 01:30:35,590

we're hoping to get a video of the

786

01:30:39,510 --> 01:30:37,199

landing site to see some footage of the

787

01:30:41,510 --> 01:30:39,520

crew being extracted prior for their

788

01:30:43,590 --> 01:30:41,520

prior to their departure for uh baikonur

789

01:30:46,149 --> 01:30:43,600

and eventually their respective homes in

790

01:31:10,390 --> 01:30:46,159

houston texas and star city outside of

791

01:31:14,070 --> 01:31:12,149

it was reported earlier that search and

792

01:31:16,709 --> 01:31:14,080

recovery forces are on the ground with

793

01:31:19,750 --> 01:31:16,719

the soyuz capsule having landed on those

794

01:31:21,590 --> 01:31:19,760

mi-8 helicopters they will first safe

795

01:31:23,910 --> 01:31:21,600

the vehicle and then begin extracting

796

01:31:25,910 --> 01:31:23,920

the crew it'll be the first time outside

797

01:31:28,390 --> 01:31:25,920

in six months for alex krapochka and

798

01:31:31,270 --> 01:31:28,400

jessica meer in nine months for nasa

799

01:31:34,310 --> 01:31:31,280

astronaut andrew morgan now with the

800

01:32:26,070 --> 01:31:34,320

fourth longest single duration mission

801  
01:32:30,310 --> 01:32:28,229  
and we have video at the landing site

802  
01:32:32,629 --> 01:32:30,320  
you can see the soyuz is indeed on its

803  
01:32:34,709 --> 01:32:32,639  
side and search and recovery forces are

804  
01:33:23,750 --> 01:32:34,719  
working to extract the crew from the

805  
01:33:27,830 --> 01:33:26,229  
you can see the teams wearing masks

806  
01:33:29,910 --> 01:33:27,840  
these this is a precautionary measure

807  
01:33:31,430 --> 01:33:29,920  
it's part of the pre-planned measures

808  
01:33:33,990 --> 01:33:31,440  
implemented by the russian search and

809  
01:33:35,910 --> 01:33:34,000  
recovery forces in order to protect all

810  
01:34:04,550 --> 01:33:35,920  
involved in the recovery of the crew and

811  
01:34:04,560 --> 01:34:09,750  
we've got the commander

812  
01:34:21,189 --> 01:34:12,070  
and we've got a view of commander alex

813  
01:34:21,199 --> 01:34:30,390

welcome back guys

814

01:34:42,470 --> 01:34:31,669

please

815

01:34:53,510 --> 01:34:42,480

president

816

01:34:56,790 --> 01:34:55,430

oh like you probably can't recognize

817

01:35:06,629 --> 01:34:56,800

anybody

818

01:35:11,109 --> 01:35:09,270

again that's commander alex grubhochka

819

01:35:14,149 --> 01:35:11,119

getting his first breath of fresh air in

820

01:35:16,310 --> 01:35:14,159

six months after having spent 205 days

821

01:35:18,229 --> 01:35:16,320

aboard the international space station

822

01:35:34,229 --> 01:35:18,239

bringing his career total of days in

823

01:35:34,239 --> 01:35:48,709

welcome back

824

01:35:53,270 --> 01:35:51,109

you can see skripochka is seated outside

825

01:35:55,189 --> 01:35:53,280

of the capsule it's a beautiful day at

826

01:35:57,189 --> 01:35:55,199

the landing site about 61 degrees

827

01:35:59,270 --> 01:35:57,199

fahrenheit

828

01:36:00,629 --> 01:35:59,280

once nasa astronauts andrew morgan and

829

01:36:02,229 --> 01:36:00,639

jessica meir are brought out of the

830

01:36:04,629 --> 01:36:02,239

capsule they'll have a chance to sit

831

01:36:06,709 --> 01:36:04,639

down as well to regain their equilibrium

832

01:36:46,470 --> 01:36:06,719

after such a long time in microgravity

833

01:36:46,480 --> 01:36:52,310

do you recognize us

834

01:36:57,030 --> 01:36:54,229

commander alex grapoche good now donning

835

01:36:58,470 --> 01:36:57,040

some sunglasses to help him readjust to

836

01:37:06,390 --> 01:36:58,480

that bright sunlight that he hasn't

837

01:37:06,400 --> 01:37:21,270

daniel would you say

838

01:37:21,280 --> 01:37:29,590

put him right here right here

839

01:37:33,830 --> 01:37:31,430  
and now out of the capsule nasa

840

01:37:37,109 --> 01:37:33,840  
astronaut jessica muir having returned

841

01:37:47,270 --> 01:37:37,119  
from 205 days in space her first mission

842

01:37:47,280 --> 01:38:02,790  
that's jessica

843

01:38:06,870 --> 01:38:05,189  
jessica mayer sharing some smiles as

844

01:38:49,830 --> 01:38:06,880  
nasa flight doctors conduct a

845

01:38:54,109 --> 01:38:51,990  
and we have the extraction of andrew

846

01:38:56,870 --> 01:38:54,119  
morgan having returned from

847

01:38:59,990 --> 01:38:56,880  
272 days aboard the international space

848

01:39:19,990 --> 01:39:00,000  
station almost nine months on his first

849

01:39:25,350 --> 01:39:22,390  
with that landing at approximately 12 16

850

01:39:27,750 --> 01:39:25,360  
a.m central time and 11 16 a.m

851  
01:39:30,229 --> 01:39:27,760  
kazakhstan time earth has regained three

852  
01:39:32,229 --> 01:39:30,239  
of its residents rose cosmos alex

853  
01:39:49,510 --> 01:39:32,239  
krapochka and nasa's jessica mear and

854  
01:39:52,550 --> 01:39:50,870  
crew members are now getting the chance

855  
01:39:53,510 --> 01:39:52,560  
to talk with family members on the

856  
01:39:55,189 --> 01:39:53,520  
phones

857  
01:39:57,189 --> 01:39:55,199  
they will soon board helicopters in

858  
01:39:59,750 --> 01:39:57,199  
their white circle suits those launch

859  
01:40:00,870 --> 01:39:59,760  
energy suits you see them wearing now

860  
01:40:02,629 --> 01:40:00,880  
they will then change inside the

861  
01:40:04,550 --> 01:40:02,639  
helicopters for a two and a half hour

862  
01:40:06,470 --> 01:40:04,560  
flight to baikonur that's where they'll

863  
01:40:08,550 --> 01:40:06,480

split up for the first time in six

864

01:40:10,390 --> 01:40:08,560

months marin morgan will be driven to

865

01:40:12,950 --> 01:40:10,400

the nasa plane in kieslorda and

866

01:40:15,590 --> 01:40:12,960

scrippocho will board the gctc plane or

867

01:41:02,149 --> 01:40:15,600

gagarin cosmonaut training center in

868

01:41:02,159 --> 01:41:18,310

come on

869

01:41:23,109 --> 01:41:20,629

nasa astronaut jessica muir

870

01:41:25,270 --> 01:41:23,119

back on earth after 205 days and three

871

01:41:27,030 --> 01:41:25,280

historic space walks the first

872

01:41:35,510 --> 01:41:27,040

all-female space walks with her friend

873

01:42:18,629 --> 01:41:49,510

yes

874

01:42:23,750 --> 01:42:20,870

and another look at nasa astronaut drew

875

01:42:25,910 --> 01:42:23,760

morgan smiling getting his first breath

876

01:42:27,189 --> 01:42:25,920

of fresh air and the feeling of sunlight

877

01:42:34,629 --> 01:42:27,199

after nine months aboard the

878

01:42:40,149 --> 01:42:36,790

you can see the nasa doctors conducting

879

01:42:43,189 --> 01:42:40,159

that post landing medical check

880

01:42:45,669 --> 01:42:43,199

ensuring everything is going well for

881

01:42:47,910 --> 01:42:45,679

andrew morgan and jessica mir

882

01:42:49,590 --> 01:42:47,920

after their return to earth the soyuz

883

01:42:52,470 --> 01:42:49,600

spacecraft having touched down at

884

01:44:14,790 --> 01:42:52,480

approximately 12 16 a.m central time 11

885

01:44:20,070 --> 01:44:17,510

commander alex grapochka no stranger to

886

01:44:22,790 --> 01:44:20,080

a return to earth wrapping up his third

887

01:45:18,229 --> 01:44:22,800

space flight with 536

888

01:45:18,239 --> 01:45:32,950

um

889

01:45:37,189 --> 01:45:35,109

nasa astronaut andrew morgan

890

01:45:39,510 --> 01:45:37,199

reclining in his chair regaining that

891

01:45:45,350 --> 01:45:39,520

equilibrium those land legs

892

01:45:49,669 --> 01:45:47,510

next up the crew will move to those

893

01:45:52,310 --> 01:45:49,679

helicopters for a two and a half hour

894

01:45:53,830 --> 01:45:52,320

flight to baikonur

895

01:45:55,590 --> 01:45:53,840

they'll change out of their circle suits

896

01:45:58,070 --> 01:45:55,600

into some more comfortable flight suits

897

01:46:00,629 --> 01:45:58,080

along the way before splitting up upon

898

01:46:03,189 --> 01:46:00,639

landing and returning to their

899

01:46:05,430 --> 01:46:03,199

respective homes in star city

900

01:46:31,669 --> 01:46:05,440

in moscow and

901  
01:46:31,679 --> 01:47:05,830  
um

902  
01:47:05,840 --> 01:47:28,229  
right are you ready

903  
01:47:28,239 --> 01:47:32,629  
and what about the tent

904  
01:47:32,639 --> 01:47:37,189  
they get

905  
01:47:37,199 --> 01:47:57,030  
david

906  
01:48:02,790 --> 01:47:59,750  
only four hours ago

907  
01:48:05,030 --> 01:48:02,800  
this trio undocked from the zvezda port

908  
01:48:07,590 --> 01:48:05,040  
of the international space station the

909  
01:48:10,070 --> 01:48:07,600  
soyuz performing well on the way down

910  
01:48:13,510 --> 01:48:10,080  
and bringing them to land about 92 miles

911  
01:48:17,030 --> 01:48:13,520  
southeast of jessica's gun kazakhstan

912  
01:48:20,149 --> 01:48:17,040  
that landing time confirmed at 12 16 a.m

913  
01:48:22,390 --> 01:48:20,159

central time 11 16 a.m kazakhstan time

914

01:48:34,709 --> 01:48:22,400

about five hours after sunrise at the

915

01:48:39,430 --> 01:48:37,189

the crew appearing to be doing well

916

01:48:42,070 --> 01:48:39,440

and in good spirits and now andrew

917

01:49:13,430 --> 01:48:42,080

morgan speaking on the telephone likely

918

01:49:17,030 --> 01:49:15,189

some more smiles from nasa astronaut

919

01:49:20,149 --> 01:49:17,040

jessica meer and first photos from

920

01:49:25,270 --> 01:49:22,629

and you now see commander alex krapochka

921

01:49:27,350 --> 01:49:25,280

being carried

922

01:49:31,030 --> 01:49:27,360

to some atvs that will drive him a short

923

01:49:33,510 --> 01:49:31,040

distance to the mi8 helicopters once

924

01:49:35,189 --> 01:49:33,520

inside this helicopter the crew will

925

01:49:37,750 --> 01:49:35,199

change out of their circle suits into

926  
01:49:55,270 --> 01:49:37,760  
more comfortable flight suits before

927  
01:50:00,229 --> 01:49:57,430  
already on his feet climbing into that

928  
01:50:05,750 --> 01:50:00,239  
atv and preparing for a helicopter ride

929  
01:50:05,760 --> 01:50:14,950  
careful watch his head

930  
01:50:14,960 --> 01:50:33,830  
stop filming yes

931  
01:50:40,070 --> 01:50:36,550  
and jessica mir now being moved waving

932  
01:50:41,830 --> 01:50:40,080  
at the camera on her way to an atv

933  
01:50:43,669 --> 01:50:41,840  
that will also drive her just a very

934  
01:51:09,589 --> 01:50:43,679  
short distance to the helicopter waiting

935  
01:51:14,629 --> 01:51:11,990  
as we mentioned successful landing at a

936  
01:51:16,790 --> 01:51:14,639  
confirmed time of 12 16 a.m central time

937  
01:51:19,430 --> 01:51:16,800  
11 16 a.m

938  
01:51:21,830 --> 01:51:19,440

local time which is in kazakhstan about

939

01:51:24,629 --> 01:51:21,840

five hours after sunrise at the landing

940

01:51:26,709 --> 01:51:24,639

site we just got a good view of the

941

01:51:28,950 --> 01:51:26,719

three crew members alex krapochka

942

01:51:30,550 --> 01:51:28,960

commander of that soyuz spacecraft and

943

01:51:33,270 --> 01:51:30,560

nasa astronauts

944

01:51:35,990 --> 01:51:33,280

andrew morgan and jessica mear having

945

01:51:38,790 --> 01:51:36,000

been extracted from the soyuz spacecraft

946

01:51:40,790 --> 01:51:38,800

it did land and was then tilted to its

947

01:51:43,990 --> 01:51:40,800

side but the crew appears to be feeling

948

01:51:45,910 --> 01:51:44,000

well and their next step is to uh

949

01:51:47,589 --> 01:51:45,920

doff their circle suits those white

950

01:51:50,070 --> 01:51:47,599

launch and entry suits

951  
01:51:52,550 --> 01:51:50,080  
as soon as they arrive in those

952  
01:51:53,910 --> 01:51:52,560  
mi-8 helicopters

953  
01:51:56,229 --> 01:51:53,920  
those helicopters will take them on a

954  
01:51:57,990 --> 01:51:56,239  
two and a half hour to three hour flight

955  
01:52:00,790 --> 01:51:58,000  
to baikonur

956  
01:52:02,950 --> 01:52:00,800  
that's the staging city for tonight

957  
01:52:05,350 --> 01:52:02,960  
and after landing they will split up

958  
01:52:07,430 --> 01:52:05,360  
scrippocho boarding a gagarin cosmonaut

959  
01:52:10,070 --> 01:52:07,440  
training center plane to star city

960  
01:52:13,510 --> 01:52:10,080  
russia and the nasa team

961  
01:52:16,149 --> 01:52:13,520  
uh going on about a three hour ride

962  
01:52:18,310 --> 01:52:16,159  
in some vehicles that will drive them to

963  
01:54:51,750 --> 01:52:18,320

the nasa plane and kiss lorda for their

964

01:54:55,990 --> 01:54:53,830

you're looking at a live view in the

965

01:54:59,270 --> 01:54:56,000

russian mission control center in korea

966

01:55:01,109 --> 01:54:59,280

outside of moscow where the teams

967

01:55:04,149 --> 01:55:01,119

controlled a successful landing

968

01:55:06,070 --> 01:55:04,159

operation of the soyuz ms-15 spacecraft

969

01:55:09,830 --> 01:55:06,080

bringing with it nasa astronaut andrew

970

01:55:12,149 --> 01:55:09,840

morgan returning from 272 days in space

971

01:55:14,390 --> 01:55:12,159

his first mission as well as nasa

972

01:55:17,189 --> 01:55:14,400

astronaut jessica and commander of the

973

01:55:24,070 --> 01:55:17,199

soyuz spacecraft alex krapochka both

974

01:55:29,750 --> 01:55:26,070

landing was successful and touched down

975

01:55:31,350 --> 01:55:29,760

at 12 16 a.m central time 11 16 a.m

976

01:55:33,669 --> 01:55:31,360

kazakhstan time the crew has been

977

01:55:35,669 --> 01:55:33,679

extracted from the vehicle

978

01:55:37,510 --> 01:55:35,679

they will now board helicopters and make

979

01:56:51,589 --> 01:55:37,520

their way toward the staging city of

980

01:56:56,550 --> 01:56:54,550

today's journey home for the soyuz ms-15

981

01:56:59,109 --> 01:56:56,560

and its crew of andrew morgan alex

982

01:57:01,990 --> 01:56:59,119

krapochka and jessica mear began with

983

01:57:03,669 --> 01:57:02,000

the soyuz hatch closer at 5 44 p.m

984

01:57:06,229 --> 01:57:03,679

central time

985

01:57:08,149 --> 01:57:06,239

just a few hours later at 8 53 and 30

986

01:57:10,390 --> 01:57:08,159

seconds p.m central time the hooks on

987

01:57:12,870 --> 01:57:10,400

the spacecraft were opened and the soyuz

988

01:57:16,790 --> 01:57:12,880

ms-15 undocked from the station taking

989

01:57:21,510 --> 01:57:18,950

all systems executed successfully

990

01:57:23,510 --> 01:57:21,520

tonight and the soyuz touched down on

991

01:57:27,270 --> 01:57:23,520

the kazakhstan steppe

992

01:57:29,750 --> 01:57:27,280

at 12 16 a.m central time 11 16 a.m

993

01:57:32,629 --> 01:57:29,760

kazakhstan time that brings andrew

994

01:57:35,589 --> 01:57:32,639

morgan's mission to an end after 272

995

01:57:37,270 --> 01:57:35,599

days he is now the holder of the title

996

01:57:39,830 --> 01:57:37,280

for the fourth longest single space

997

01:57:42,790 --> 01:57:39,840

flight by a u.s astronaut

998

01:57:44,470 --> 01:57:42,800

jessica muir's mission ended after 205

999

01:57:46,709 --> 01:57:44,480

days her first trip to the international

1000

01:57:49,589 --> 01:57:46,719

space station and commander of the soyuz

1001  
01:57:51,750 --> 01:57:49,599  
alex krapochka ended his mission after

1002  
01:57:52,390 --> 01:57:51,760  
205 days aboard the space station as

1003  
01:57:54,669 --> 01:57:52,400  
well

1004  
01:58:03,030 --> 01:57:54,679  
his third flight now totaling

1005  
01:58:07,830 --> 01:58:05,109  
the crew was successfully extracted from

1006  
01:58:09,750 --> 01:58:07,840  
the soyuz spacecraft and the next steps

1007  
01:58:11,830 --> 01:58:09,760  
for them are a two and a half to three

1008  
01:58:13,350 --> 01:58:11,840  
hour helicopter flight to baikonur

1009  
01:58:14,870 --> 01:58:13,360  
they'll change out of those circle

1010  
01:58:16,790 --> 01:58:14,880  
launch and entry suits into more

1011  
01:58:18,470 --> 01:58:16,800  
comfortable flight suits but after

1012  
01:58:21,189 --> 01:58:18,480  
landing in baikonur the crew will split

1013  
01:58:23,669 --> 01:58:21,199

up for the first time in six months alex

1014

01:58:26,470 --> 01:58:23,679

krapochka will board the gctc plane back

1015

01:58:28,550 --> 01:58:26,480

to star city and his home while the nasa

1016

01:58:30,950 --> 01:58:28,560

team will move to ground vehicles that

1017

01:58:32,390 --> 01:58:30,960

will take them to the nasa plane in kiss

1018

01:58:39,270 --> 01:58:32,400

florida for their flight back to

1019

01:58:43,589 --> 01:58:41,270

and with their landing tonight earth has

1020

01:58:46,149 --> 01:58:43,599

regained three of its residents

1021

01:58:47,990 --> 01:58:46,159

and thanks for joining us on our journey