



1
00:00:06,230 --> 00:00:02,149
three thousand orbits of the earth

2
00:00:09,509 --> 00:00:06,240
emission of 78.4 million miles

3
00:00:11,589 --> 00:00:09,519
we are just uh less than 31 minutes away

4
00:00:14,629 --> 00:00:11,599
from the engine firing of four minutes

5
00:00:17,990 --> 00:00:14,639
and 39 seconds now that will slow the

6
00:00:20,550 --> 00:00:18,000
soyuz down by 128 meters per second to

7
00:00:22,310 --> 00:00:20,560
enable the soyuz to drop out of orbit to

8
00:00:25,429 --> 00:00:22,320
begin its entry back into the earth's

9
00:00:28,550 --> 00:00:25,439
atmosphere and a landing just one hour

10
00:00:31,509 --> 00:00:28,560
and 24 minutes from now on the step of

11
00:00:33,990 --> 00:00:31,519
kazakhstan 91 miles to the southeast of

12
00:00:35,750 --> 00:00:34,000
the town of zhezkazgan where russian

13
00:00:38,069 --> 00:00:35,760

search and recovery forces will be

14

00:00:40,790 --> 00:00:38,079

awaiting the arrival of these three crew

15

00:00:42,069 --> 00:00:40,800

members who have spent uh half a year in

16

00:00:44,150 --> 00:00:42,079

space

17

00:00:47,029 --> 00:00:44,160

everything is in great shape aboard the

18

00:00:49,830 --> 00:00:47,039

soyuz spacecraft all the systems are

19

00:00:52,069 --> 00:00:49,840

checked out ready to go just a short

20

00:00:54,150 --> 00:00:52,079

time ago just a few minutes ago the

21

00:00:57,270 --> 00:00:54,160

director of the cosmonaut uh training

22

00:00:59,430 --> 00:00:57,280

center in star city russia pavel vlassof

23

00:01:00,630 --> 00:00:59,440

who directs the gagarin cosmonaut

24

00:01:02,470 --> 00:01:00,640

training center

25

00:01:04,789 --> 00:01:02,480

radioed up to the crew

26

00:01:07,830 --> 00:01:04,799

that conditions at the landing site are

27

00:01:11,030 --> 00:01:07,840

calm and peaceful he's described the air

28

00:01:13,510 --> 00:01:11,040

as fresh with low humidity and said

29

00:01:16,390 --> 00:01:13,520

the landing site has the smell of spring

30

00:01:19,109 --> 00:01:16,400

it smells like freshly cut grass have a

31

00:01:21,590 --> 00:01:19,119

good flight home to your home planet

32

00:01:23,510 --> 00:01:21,600

those words coming from pavel vlassoff

33

00:01:24,830 --> 00:01:23,520

the director of the gagarin cosmonaut

34

00:01:26,870 --> 00:01:24,840

training

35

00:01:30,550 --> 00:01:26,880

center we are standing by at the airport

36

00:01:32,710 --> 00:01:30,560

in uh jazz gun uh the forward uh staging

37

00:01:33,910 --> 00:01:32,720

site for tonight's landing and recovery

38

00:01:37,030 --> 00:01:33,920

operations

39

00:01:39,429 --> 00:01:37,040

a dozen m.i.a helicopters are set to

40

00:01:41,350 --> 00:01:39,439

take off a short time from now

41

00:01:43,190 --> 00:01:41,360

most of them heading for the prime

42

00:01:44,710 --> 00:01:43,200

landing site to to the southeast of

43

00:01:46,789 --> 00:01:44,720

jessica's gone

44

00:01:49,830 --> 00:01:46,799

two of the helicopters to move to the

45

00:01:52,550 --> 00:01:49,840

midpoint between the landing site and

46

00:01:54,710 --> 00:01:52,560

the baikonur cosmodrome in kazakhstan in

47

00:01:57,270 --> 00:01:54,720

the event of a ballistic landing the

48

00:02:00,149 --> 00:01:57,280

unlikely event of a shortfall in the uh

49

00:02:02,789 --> 00:02:00,159

trajectory of the soyuz back to earth

50

00:02:06,149 --> 00:02:02,799

and uh two additional helicopters uh

51
00:02:08,389 --> 00:02:06,159
will be poised uh in the vicinity uh all

52
00:02:10,550 --> 00:02:08,399
of the bases covered to recover the crew

53
00:02:13,510 --> 00:02:10,560
as quickly as possible following their

54
00:02:15,030 --> 00:02:13,520
touchdown in their soyuz ms-17

55
00:02:17,110 --> 00:02:15,040
spacecraft

56
00:02:18,949 --> 00:02:17,120
the three returning crew members kate

57
00:02:22,710 --> 00:02:18,959
rubins of nasa

58
00:02:24,949 --> 00:02:22,720
sergey uh rizhikov who's the soyuz ms-17

59
00:02:28,550 --> 00:02:24,959
commander and who was also the

60
00:02:29,830 --> 00:02:28,560
expedition 64 commander during this long

61
00:02:32,309 --> 00:02:29,840
duration mission aboard the

62
00:02:34,790 --> 00:02:32,319
international space station and flight

63
00:02:37,430 --> 00:02:34,800

engineer sergey kud zverchkov

64

00:02:38,790 --> 00:02:37,440

are in the home stretch of their flight

65

00:02:41,589 --> 00:02:38,800

reuben's uh

66

00:02:44,470 --> 00:02:41,599

when she lands will have logged 300 days

67

00:02:47,430 --> 00:02:44,480

in space on her two flights the fourth

68

00:02:50,229 --> 00:02:47,440

most days in space by a u.s female

69

00:02:52,550 --> 00:02:50,239

astronaut behind peggy whitson christina

70

00:02:55,670 --> 00:02:52,560

cook and sonny williams

71

00:02:56,710 --> 00:02:55,680

sergey ryzekov will have logged 185 days

72

00:02:58,790 --> 00:02:56,720

in space

73

00:03:01,390 --> 00:02:58,800

on his two missions uh

74

00:03:05,110 --> 00:03:01,400

over this increment expeditions

75

00:03:08,229 --> 00:03:05,120

6364 and will have totaled 358 days in

76
00:03:10,710 --> 00:03:08,239
space on his two flights good sverchkoff

77
00:03:27,670 --> 00:03:10,720
is wrapping up his first flight

78
00:03:31,750 --> 00:03:29,430
some five hours ago aboard the

79
00:03:33,509 --> 00:03:31,760
international space station the three

80
00:03:35,670 --> 00:03:33,519
departing crew members

81
00:03:38,149 --> 00:03:35,680
had an opportunity one final time to say

82
00:03:39,990 --> 00:03:38,159
goodbye to the crew members who are

83
00:03:43,110 --> 00:03:40,000
remaining on board the station now part

84
00:03:45,430 --> 00:03:43,120
of expedition 65 that officially began

85
00:03:47,910 --> 00:03:45,440
with the undocking of the soyuz

86
00:03:50,630 --> 00:03:47,920
from the international outpost they had

87
00:03:53,030 --> 00:03:50,640
a chance to say farewell to one another

88
00:03:55,110 --> 00:03:53,040

and then make their way into the soyuz

89

00:03:56,630 --> 00:03:55,120

spacecraft where they subsequently

90

00:04:00,550 --> 00:03:56,640

closed the hatches

91

00:04:01,750 --> 00:04:00,560

those hatches swung closed at 5 24 pm

92

00:04:04,309 --> 00:04:01,760

central time

93

00:04:06,149 --> 00:04:04,319

6 24 pm eastern time

94

00:04:09,270 --> 00:04:06,159

after which the three departing crew

95

00:04:11,190 --> 00:04:09,280

members began a series of leak checks on

96

00:04:13,509 --> 00:04:11,200

their side of the docking interface as

97

00:04:15,910 --> 00:04:13,519

did the station crew on their side in

98

00:04:17,270 --> 00:04:15,920

the poisk module of the international

99

00:04:18,550 --> 00:04:17,280

space station

100

00:04:19,590 --> 00:04:18,560

the uh

101
00:04:21,909 --> 00:04:19,600
three uh

102
00:04:23,590 --> 00:04:21,919
expedition 64 crew members who are

103
00:04:27,830 --> 00:04:23,600
coming back to earth this evening kate

104
00:04:29,749 --> 00:04:27,840
rubins sergey rizhikov and sergey kood

105
00:04:31,990 --> 00:04:29,759
then donned their russian circle launch

106
00:04:35,110 --> 00:04:32,000
and entry suits conducted leak checks on

107
00:04:38,150 --> 00:04:35,120
those suits closed the hatches to the

108
00:04:40,790 --> 00:04:38,160
uppermost portion of the soyuz

109
00:04:41,749 --> 00:04:40,800
spacecraft the orbital module section

110
00:04:44,070 --> 00:04:41,759
and

111
00:04:46,390 --> 00:04:44,080
configured all of their systems

112
00:04:48,390 --> 00:04:46,400
conducted communications checks and

113
00:04:58,230 --> 00:04:48,400

everything is in great shape

114

00:05:04,310 --> 00:05:02,150

at 8 34 pm central time 9 34 pm eastern

115

00:05:07,350 --> 00:05:04,320

time as the international space station

116

00:05:09,909 --> 00:05:07,360

flew over the mongolian chinese border

117

00:05:12,390 --> 00:05:09,919

hooks were opened between the soyuz and

118

00:05:13,990 --> 00:05:12,400

the poisk module springs on both sides

119

00:05:16,390 --> 00:05:14,000

of the docking interface pushed off

120

00:05:17,350 --> 00:05:16,400

against one another and the soyuz was

121

00:05:20,230 --> 00:05:17,360

free

122

00:05:23,270 --> 00:05:20,240

backing away from the docking port to

123

00:05:26,070 --> 00:05:23,280

which it had relocated just a month ago

124

00:05:28,070 --> 00:05:26,080

to free up the rassvet module on the

125

00:05:31,350 --> 00:05:28,080

earth-facing side of the russian segment

126
00:05:33,749 --> 00:05:31,360
of the station for the arrival last week

127
00:05:36,070 --> 00:05:33,759
of three new crew members who

128
00:05:39,670 --> 00:05:36,080
made their way to the space station that

129
00:05:41,830 --> 00:05:39,680
being oleg novitskiy piotr dubrov and

130
00:05:44,629 --> 00:05:41,840
nasa's mark vande high

131
00:05:47,670 --> 00:05:44,639
the soyuz slowly backed away there were

132
00:05:50,550 --> 00:05:47,680
two firings of soyuz thrusters and a

133
00:05:52,310 --> 00:05:50,560
pair of separation burns to maintain an

134
00:05:53,270 --> 00:05:52,320
opening rate and increase that opening

135
00:05:55,909 --> 00:05:53,280
rate

136
00:05:59,029 --> 00:05:55,919
from the international space station

137
00:06:01,350 --> 00:05:59,039
the soyuz has now moved to a position

138
00:06:03,189 --> 00:06:01,360

some 32 kilometers away from the

139

00:06:05,510 --> 00:06:03,199

international space station in

140

00:06:08,469 --> 00:06:05,520

preparation for the deorbit burn that

141

00:06:15,990 --> 00:06:08,479

will be coming up less than 25 minutes

142

00:06:21,110 --> 00:06:18,629

25 minutes of rust deactivation attitude

143

00:06:29,270 --> 00:06:21,120

is nominal and the angle is currently

144

00:06:34,710 --> 00:06:32,870

the deorbit burn is scheduled at 1101 pm

145

00:06:38,230 --> 00:06:34,720

central time it again will be a four

146

00:06:40,790 --> 00:06:38,240

minute 39 second retrograde firing a

147

00:06:43,510 --> 00:06:40,800

breaking maneuver of the soyuz engines

148

00:06:45,510 --> 00:06:43,520

to slow the vehicle down by 128 meters

149

00:06:46,629 --> 00:06:45,520

per second allowing it to drop out of

150

00:06:52,070 --> 00:06:46,639

orbit

151
00:06:54,469 --> 00:06:52,080
pyrotechnics will fire to separate the

152
00:06:56,070 --> 00:06:54,479
three sections of the soyuz the three

153
00:06:58,950 --> 00:06:56,080
crew members on the center section or

154
00:07:00,870 --> 00:06:58,960
descent module will feel the g-forces

155
00:07:03,189 --> 00:07:00,880
building up around them as they move

156
00:07:06,629 --> 00:07:03,199
through the plasma regime of the earth's

157
00:07:07,670 --> 00:07:06,639
atmosphere once they exit the plasma

158
00:07:08,390 --> 00:07:07,680
regime

159
00:07:12,629 --> 00:07:08,400
the

160
00:07:14,950 --> 00:07:12,639
parachutes 15 minutes before touchdown

161
00:07:17,990 --> 00:07:14,960
first a drogue chute followed by a giant

162
00:07:19,990 --> 00:07:18,000
main chute and the soyuz will be canted

163
00:07:22,469 --> 00:07:20,000

into the correct position for its

164

00:07:25,270 --> 00:07:22,479

altimeter to measure its rate of descent

165

00:07:27,430 --> 00:07:25,280

and its altitude from the landing site

166

00:07:30,309 --> 00:07:27,440

just a few seconds before touchdown soft

167

00:07:31,510 --> 00:07:30,319

landing engines will fire and the soyuz

168

00:07:34,550 --> 00:07:31,520

will be home

169

00:07:35,909 --> 00:07:34,560

with landings scheduled at 11 56 pm

170

00:07:39,990 --> 00:07:35,919

central time

171

00:07:41,430 --> 00:07:40,000

10 56 a.m kazakhstan time on saturday

172

00:07:44,390 --> 00:07:41,440

morning

173

00:07:47,430 --> 00:07:44,400

at the landing site just a few clouds

174

00:07:50,150 --> 00:07:47,440

are noticed at about the 25 000 foot

175

00:07:52,150 --> 00:07:50,160

level visibility in excess of 6 miles

176

00:07:54,150 --> 00:07:52,160

the temperature at landing time is

177

00:07:57,350 --> 00:07:54,160

expected to be about 64 degrees

178

00:08:00,150 --> 00:07:57,360

fahrenheit and ideal saturday spring

179

00:08:07,110 --> 00:08:00,160

morning for the homecoming of rubens

180

00:08:12,790 --> 00:08:09,589

again the russian search and recovery

181

00:08:14,309 --> 00:08:12,800

forces are ready to go from the jazz cuz

182

00:08:15,270 --> 00:08:14,319

gone airport

183

00:08:16,230 --> 00:08:15,280

the

184

00:08:18,070 --> 00:08:16,240

various

185

00:08:21,749 --> 00:08:18,080

recovery team members that includes

186

00:08:24,390 --> 00:08:21,759

embedded nasa personnel are already on

187

00:08:26,469 --> 00:08:24,400

their respective helicopters

188

00:08:28,550 --> 00:08:26,479

at the time of the deorbit burn rotors

189

00:08:31,510 --> 00:08:28,560

will be spinning and the helicopters

190

00:08:33,509 --> 00:08:31,520

will set off for about a 35 minute

191

00:08:36,389 --> 00:08:33,519

helicopter ride from jessica's gone to

192

00:08:37,750 --> 00:08:36,399

the landing zone some 91 miles to the

193

00:08:40,310 --> 00:08:37,760

southeast

194

00:08:43,029 --> 00:08:40,320

they will arrive in a sequential fashion

195

00:08:45,590 --> 00:08:43,039

will begin to circle in a racetrack

196

00:08:48,150 --> 00:08:45,600

fashion around the landing zone waiting

197

00:08:49,430 --> 00:08:48,160

uh for the arrival of the soyuz under

198

00:08:51,990 --> 00:08:49,440

its shoots

199

00:08:55,030 --> 00:08:52,000

after touchdown those helicopters will

200

00:08:56,389 --> 00:08:55,040

land very quickly in a sequential

201
00:08:58,310 --> 00:08:56,399
fashion again

202
00:09:01,030 --> 00:08:58,320
the first of the helicopters will be

203
00:09:04,310 --> 00:09:01,040
down to erect an inflatable orange

204
00:09:06,150 --> 00:09:04,320
medical tent near the capsule to which

205
00:09:07,750 --> 00:09:06,160
the three crew members will be carried

206
00:09:10,389 --> 00:09:07,760
in their chairs

207
00:09:12,389 --> 00:09:10,399
once they are extracted from the soyuz

208
00:09:14,630 --> 00:09:12,399
and have a chance to sit in those chairs

209
00:09:16,870 --> 00:09:14,640
for a few minutes to get their land legs

210
00:09:19,190 --> 00:09:16,880
back again they'll be carried in those

211
00:09:21,190 --> 00:09:19,200
chairs into the medical tent where

212
00:09:23,110 --> 00:09:21,200
they'll be helped out of their circle

213
00:09:24,790 --> 00:09:23,120

launch and entry suits they'll get into

214

00:09:27,829 --> 00:09:24,800

more comfortable clothing they'll

215

00:09:30,150 --> 00:09:27,839

undergo a series of medical tests before

216

00:09:32,870 --> 00:09:30,160

boarding three helicopters one for each

217

00:09:33,829 --> 00:09:32,880

crew member for a two-hour 15-minute

218

00:09:35,269 --> 00:09:33,839

flight

219

00:09:37,670 --> 00:09:35,279

back to

220

00:09:40,949 --> 00:09:37,680

karaganda kazakhstan

221

00:09:43,350 --> 00:09:40,959

which was the initial staging city for

222

00:09:46,150 --> 00:09:43,360

tonight's landing operations in

223

00:09:48,470 --> 00:09:46,160

karaganda is a nasa jet

224

00:09:50,630 --> 00:09:48,480

and gagarin cosmonaut training center

225

00:09:52,550 --> 00:09:50,640

aircraft those uh

226

00:09:54,389 --> 00:09:52,560

two aircraft will be waiting for the

227

00:09:56,870 --> 00:09:54,399

arrival of the crew members who will

228

00:09:58,630 --> 00:09:56,880

split up at that point with kate rubins

229

00:09:59,829 --> 00:09:58,640

boarding the nasa jet for a flight back

230

00:10:02,550 --> 00:09:59,839

to houston

231

00:10:04,550 --> 00:10:02,560

and the two cosmonauts boarding their

232

00:10:06,710 --> 00:10:04,560

aircraft for a flight back to their

233

00:10:36,389 --> 00:10:06,720

training base in star city russia

234

00:10:42,310 --> 00:10:38,630

two uh milestones uh following the

235

00:10:44,630 --> 00:10:42,320

deorbit burn and you will be hearing uh

236

00:10:46,550 --> 00:10:44,640

soyuz commander sergey rizhikov through

237

00:10:48,790 --> 00:10:46,560

an interpreter calling out

238

00:10:51,990 --> 00:10:48,800

the duration of the burn and tank

239

00:10:55,269 --> 00:10:52,000

pressures uh and the uh delta v or the

240

00:10:57,670 --> 00:10:55,279

change in velocity as the burn continues

241

00:10:58,829 --> 00:10:57,680

for the duration of its four minutes and

242

00:11:00,550 --> 00:10:58,839

39

243

00:11:02,630 --> 00:11:00,560

seconds

244

00:11:04,710 --> 00:11:02,640

once the burn is completed the upper

245

00:11:06,870 --> 00:11:04,720

most section of the three section soyuz

246

00:11:09,990 --> 00:11:06,880

spacecraft the orbital module will be

247

00:11:12,069 --> 00:11:10,000

depressurized about 10 seconds after the

248

00:11:14,870 --> 00:11:12,079

completion of the burn that will set the

249

00:11:17,670 --> 00:11:14,880

stage for its pyrotechnic separation

250

00:11:18,949 --> 00:11:17,680

from the rest of the soyuz vehicle

251
00:11:20,790 --> 00:11:18,959
once

252
00:11:23,190 --> 00:11:20,800
we have completed the burn about 28

253
00:11:25,670 --> 00:11:23,200
minutes after the deorbit burn prior to

254
00:11:27,190 --> 00:11:25,680
the entrance of the descent module with

255
00:11:29,269 --> 00:11:27,200
the three crew members back into the

256
00:11:31,269 --> 00:11:29,279
earth's atmosphere

257
00:11:33,829 --> 00:11:31,279
once the soyluz has moved to a distance

258
00:11:36,069 --> 00:11:33,839
of about 120 kilometers away from the

259
00:11:39,350 --> 00:11:36,079
international space station we are

260
00:11:42,470 --> 00:11:39,360
expecting vhf voice communications to

261
00:11:44,630 --> 00:11:42,480
become ratty and perhaps unavailable

262
00:11:47,030 --> 00:11:44,640
because of the distance involved in the

263
00:11:48,870 --> 00:11:47,040

geometry between the antennas on the

264

00:11:50,790 --> 00:11:48,880

soyuz spacecraft and the international

265

00:11:53,030 --> 00:11:50,800

space station

266

00:11:55,350 --> 00:11:53,040

it will be

267

00:11:57,430 --> 00:11:55,360

sometimes we get lucky and the

268

00:11:59,590 --> 00:11:57,440

communications hang in there sometimes

269

00:12:02,870 --> 00:11:59,600

not so much so we'll see what happens

270

00:12:05,269 --> 00:12:02,880

this evening but once the soyuz uh moves

271

00:12:08,150 --> 00:12:05,279

toward the vicinity of the landing site

272

00:12:12,069 --> 00:12:08,160

there is a russian antonov

273

00:12:15,110 --> 00:12:12,079

26 space fixed-wing aircraft that

274

00:12:16,069 --> 00:12:15,120

operates as a flying command and control

275

00:12:18,790 --> 00:12:16,079

center

276

00:12:20,790 --> 00:12:18,800

through which uh voice and data will be

277

00:12:22,550 --> 00:12:20,800

relayed back to russian flight

278

00:12:25,030 --> 00:12:22,560

controllers at the russian mission

279

00:12:26,790 --> 00:12:25,040

control center outside of moscow

280

00:12:27,990 --> 00:12:26,800

so we'll be standing by to see whether

281

00:12:30,069 --> 00:12:28,000

or not

282

00:12:32,389 --> 00:12:30,079

we hang in there with communications all

283

00:12:34,629 --> 00:12:32,399

the way down or lose communications

284

00:12:36,550 --> 00:12:34,639

don't be surprised if we go

285

00:12:38,870 --> 00:12:36,560

with a loss of signal for a period of

286

00:12:41,350 --> 00:12:38,880

time and then reacquire communications

287

00:12:54,310 --> 00:12:41,360

with the soyuz as it approaches the

288

00:12:57,910 --> 00:12:55,990

as we've mentioned in our earlier

289

00:12:59,910 --> 00:12:57,920

broadcast tonight this is an

290

00:13:02,310 --> 00:12:59,920

unprecedented period

291

00:13:05,509 --> 00:13:02,320

of human spaceflight activity at the

292

00:13:08,230 --> 00:13:05,519

international space station

293

00:13:10,310 --> 00:13:08,240

with 14 astronauts and cosmonauts coming

294

00:13:12,389 --> 00:13:10,320

and going from the outpost in four

295

00:13:14,629 --> 00:13:12,399

different spacecraft over a three-week

296

00:13:17,509 --> 00:13:14,639

period

297

00:13:20,470 --> 00:13:17,519

this uh landing tonight uh

298

00:13:22,710 --> 00:13:20,480

is the second of a four act series

299

00:13:25,430 --> 00:13:22,720

that will continue next week at the

300

00:13:27,350 --> 00:13:25,440

kennedy space center with the schedule

301

00:13:29,509 --> 00:13:27,360

launch next thursday

302

00:13:31,670 --> 00:13:29,519

on a spacex dragon

303

00:13:34,710 --> 00:13:31,680

vehicle the endeavor

304

00:13:37,509 --> 00:13:34,720

of shane kimbrough megan mcarthur haki

305

00:13:40,470 --> 00:13:37,519

hoshide and tomah pesquet

306

00:13:43,189 --> 00:13:40,480

as that multinational crew launches from

307

00:13:45,110 --> 00:13:43,199

launch pad 39a at the cape

308

00:13:47,269 --> 00:13:45,120

to rendezvous and dock to the

309

00:13:49,509 --> 00:13:47,279

international space station

310

00:13:52,870 --> 00:13:49,519

to expand of the station's population

311

00:13:55,509 --> 00:13:52,880

from its current uh seven person crew

312

00:13:58,310 --> 00:13:55,519

to an 11 person crew

313

00:13:59,269 --> 00:13:58,320

for a period of time a short period of

314

00:14:02,470 --> 00:13:59,279

time

315

00:14:04,790 --> 00:14:02,480

until the crew one astronauts who

316

00:14:07,269 --> 00:14:04,800

launched back in november

317

00:14:09,269 --> 00:14:07,279

mike hopkins victor glover

318

00:14:11,430 --> 00:14:09,279

soichi niguchi

319

00:14:12,790 --> 00:14:11,440

and

320

00:14:14,389 --> 00:14:12,800

shannon walker who's the current

321

00:14:15,509 --> 00:14:14,399

commander of the international space

322

00:14:17,670 --> 00:14:15,519

station

323

00:14:19,590 --> 00:14:17,680

until they return their their scheduled

324

00:14:25,910 --> 00:14:19,600

undocking and splashdown is scheduled

325

00:14:29,590 --> 00:14:27,670

so a busy time at the international

326

00:14:31,670 --> 00:14:29,600

space station air traffic control

327

00:14:34,870 --> 00:14:31,680

definitely uh

328

00:14:38,230 --> 00:14:34,880

is uh the uh prevailing activity

329

00:14:40,389 --> 00:14:38,240

for uh not only the station

330

00:14:42,829 --> 00:14:40,399

astronauts and cosmonauts but for uh

331

00:14:45,430 --> 00:14:42,839

program officials and the international

332

00:14:48,389 --> 00:14:45,440

partnership as they make their way

333

00:14:50,710 --> 00:14:48,399

methodically step by step to ensure the

334

00:14:53,670 --> 00:14:50,720

safe launch and landing and return to

335

00:14:56,470 --> 00:14:53,680

earth of all of these crew members in

336

00:15:13,590 --> 00:14:56,480

the continuing permanent human occupancy

337

00:15:16,870 --> 00:15:15,430

to give you a sense of all of the

338

00:15:18,629 --> 00:15:16,880

vehicles are currently at the

339

00:15:19,910 --> 00:15:18,639

international space station you can see

340

00:15:22,870 --> 00:15:19,920

in this graphic

341

00:15:26,470 --> 00:15:22,880

uh the current configuration the soyuz

342

00:15:29,110 --> 00:15:26,480

ms-17 of course undocked a few hours ago

343

00:15:32,150 --> 00:15:29,120

so it's gone ready for its deorbit burn

344

00:15:35,670 --> 00:15:32,160

to begin the trip back to earth

345

00:15:38,069 --> 00:15:35,680

the soyuz ms-18 that carried mark vande

346

00:15:39,829 --> 00:15:38,079

high oleg novitskiy and piotr dubrov to

347

00:15:41,829 --> 00:15:39,839

the station a week ago

348

00:15:44,230 --> 00:15:41,839

is docked to the earth-facing side of

349

00:15:45,590 --> 00:15:44,240

the russian segment of the international

350

00:15:47,030 --> 00:15:45,600

space station

351
00:15:50,310 --> 00:15:47,040
also present

352
00:15:52,550 --> 00:15:50,320
the crew won dragon spacecraft at the

353
00:15:55,269 --> 00:15:52,560
zenith or space-facing port of the

354
00:15:58,230 --> 00:15:55,279
harmony module soon to be joined by a

355
00:16:00,710 --> 00:15:58,240
second crew dragon the crew

356
00:16:02,550 --> 00:16:00,720
the crew ii dragon that will dock to the

357
00:16:04,470 --> 00:16:02,560
forward port of harmony

358
00:16:06,870 --> 00:16:04,480
and you see two uh

359
00:16:09,509 --> 00:16:06,880
unpiloted uh russian progress cargo

360
00:16:11,670 --> 00:16:09,519
ships and the northrop grumman cygnus

361
00:16:18,389 --> 00:16:11,680
cargo ship also present at the

362
00:16:22,470 --> 00:16:20,230
we're now 14 and a half minutes away

363
00:16:25,509 --> 00:16:22,480

from the start of the deorbit burn again

364

00:16:27,189 --> 00:16:25,519

a four minute 39 second firing of the

365

00:16:31,350 --> 00:16:27,199

soyuz engines

366

00:16:33,189 --> 00:16:31,360

to slow it down by 128 meters per second

367

00:16:35,030 --> 00:16:33,199

enabling it to drop out of orbit to

368

00:17:48,470 --> 00:16:35,040

begin its high speed return back to

369

00:17:53,270 --> 00:17:50,950

the russian search and recovery forces

370

00:17:56,230 --> 00:17:53,280

that belong to the russian civilian

371

00:17:59,270 --> 00:17:56,240

agency called rosaviatsa

372

00:18:02,230 --> 00:17:59,280

are all at the jazkasgan airport those

373

00:18:04,390 --> 00:18:02,240

personnel all aboard russian mi8

374

00:18:07,590 --> 00:18:04,400

military helicopters

375

00:18:09,590 --> 00:18:07,600

with rotors about to spin up the first

376

00:18:12,150 --> 00:18:09,600

of those helicopters to depart the

377

00:18:14,230 --> 00:18:12,160

airport for the landing site at about

378

00:18:57,909 --> 00:18:14,240

the time of the deorbit burn some 12 and

379

00:19:04,870 --> 00:19:01,029

amongst the nasa contingent

380

00:19:06,470 --> 00:19:04,880

participating in kazakhstan tonight

381

00:19:08,310 --> 00:19:06,480

for tonight's landing and recovery

382

00:19:10,390 --> 00:19:08,320

operations include

383

00:19:13,029 --> 00:19:10,400

trisha mack who's the director of human

384

00:19:15,110 --> 00:19:13,039

space flight programs in russia

385

00:19:17,190 --> 00:19:15,120

bill spech from the international space

386

00:19:18,950 --> 00:19:17,200

station program office

387

00:19:20,789 --> 00:19:18,960

representing mission integration and

388

00:19:23,110 --> 00:19:20,799

operations for tonight's

389

00:19:25,750 --> 00:19:23,120

recovery operations

390

00:19:27,909 --> 00:19:25,760

dr natasha cho who is a cade rubin's

391

00:19:30,150 --> 00:19:27,919

flight surgeon

392

00:19:31,669 --> 00:19:30,160

a series of russian nurses attending to

393

00:19:34,950 --> 00:19:31,679

the three crew members with their own

394

00:19:37,270 --> 00:19:34,960

respective flight surgeons as well

395

00:19:39,750 --> 00:19:37,280

nasa public affairs officer courtney

396

00:19:42,950 --> 00:19:39,760

beasley will be on one of the first

397

00:19:45,029 --> 00:19:42,960

helicopters down to the landing site

398

00:19:49,430 --> 00:19:45,039

along with bill ingles nasa's chief

399

00:19:53,830 --> 00:19:51,909

astronaut drew morgan is representing

400

00:19:55,990 --> 00:19:53,840

the astronaut office for tonight's

401
00:19:57,830 --> 00:19:56,000
recovery operations

402
00:19:59,350 --> 00:19:57,840
a veteran of a long-duration mission

403
00:20:00,630 --> 00:19:59,360
aboard the international space station

404
00:20:02,870 --> 00:20:00,640
that launched

405
00:20:04,149 --> 00:20:02,880
on the 50th anniversary

406
00:20:06,149 --> 00:20:04,159
of

407
00:20:27,110 --> 00:20:06,159
america's landing on the moon on apollo

408
00:20:31,750 --> 00:20:29,669
coming up on the 10 minute mark before

409
00:20:34,470 --> 00:20:31,760
the deorbit burn everything quiet aboard

410
00:20:36,870 --> 00:20:34,480
the soyuz vehicle

411
00:20:38,950 --> 00:20:36,880
the soyuz commander sergey ryjikov

412
00:20:41,029 --> 00:20:38,960
seated in the center seat

413
00:20:43,270 --> 00:20:41,039

of the descent module the center most

414

00:20:44,710 --> 00:20:43,280

section of the three-section soyuz

415

00:20:46,470 --> 00:20:44,720

spacecraft

416

00:20:48,630 --> 00:20:46,480

flanked on his left

417

00:20:57,909 --> 00:20:48,640

by sergey kood sverchkoff and kate

418

00:21:03,350 --> 00:21:00,789

and there's a cutaway view of the

419

00:21:04,070 --> 00:21:03,360

descent module again the crew strapped

420

00:21:09,590 --> 00:21:04,080

in

421

00:21:10,390 --> 00:21:09,600

entry suits

422

00:21:12,230 --> 00:21:10,400

soon

423

00:21:13,270 --> 00:21:12,240

to feel the first effects of earth's

424

00:21:15,430 --> 00:21:13,280

gravity

425

00:21:24,149 --> 00:21:15,440

for the first time in more than six

426
00:21:56,549 --> 00:21:26,390
but the power has been

427
00:21:56,559 --> 00:22:01,590
one minute has passed

428
00:22:01,600 --> 00:22:05,669
but the flag is still there

429
00:22:10,430 --> 00:22:07,350
and we have um

430
00:22:12,470 --> 00:22:10,440
we did send the command though for the

431
00:22:14,470 --> 00:22:12,480
deactivation um

432
00:22:16,149 --> 00:22:14,480
and

433
00:22:18,070 --> 00:22:16,159
you got independent so

434
00:22:20,200 --> 00:22:18,080
power supply to

435
00:22:22,149 --> 00:22:20,210
the eaway is

436
00:22:25,110 --> 00:22:22,159
[Music]

437
00:22:26,470 --> 00:22:25,120
not being supplied but you still have

438
00:22:32,149 --> 00:22:26,480

the

439

00:22:35,430 --> 00:22:33,830

and we confirm

440

00:22:40,230 --> 00:22:35,440

the thrusters

441

00:22:40,240 --> 00:23:06,549

copy

442

00:23:11,270 --> 00:23:08,950

and on the in

443

00:23:15,590 --> 00:23:13,909

right info we're sending

444

00:23:20,549 --> 00:23:15,600

the command

445

00:23:23,510 --> 00:23:20,559

and d9 delta 9 is illuminated if sierra

446

00:23:27,270 --> 00:23:23,520

9 is illuminated copy sierra 9 is

447

00:23:27,280 --> 00:23:31,669

unintelligible

448

00:23:31,679 --> 00:23:50,070

300

449

00:23:54,870 --> 00:23:52,710

countdown clocks uh now hit the seven

450

00:23:58,230 --> 00:23:54,880

minute mark prior to the deorbit burn

451
00:24:01,110 --> 00:23:58,240
four minutes and 39 second engine firing

452
00:24:03,269 --> 00:24:01,120
to slow the soyuz down and enable it to

453
00:24:45,909 --> 00:24:03,279
drop out of orbit to begin its trip back

454
00:24:50,470 --> 00:24:47,909
coming up on the six minute mark prior

455
00:25:05,350 --> 00:24:50,480
to the deorbit burn just about one hour

456
00:25:25,510 --> 00:25:07,830
i have the parameters written down

457
00:25:25,520 --> 00:25:30,630
155 for the first

458
00:25:30,640 --> 00:25:35,269
and 157

459
00:25:40,149 --> 00:25:36,710
for the second one

460
00:25:42,630 --> 00:25:40,159
prop is nominal

461
00:25:48,710 --> 00:25:42,640
and 18 points

462
00:25:58,310 --> 00:25:50,789
seven seven four is the pressure in the

463
00:26:20,310 --> 00:26:02,230

we have 18.1 and 18.2 did you say 18.1

464

00:26:24,549 --> 00:26:21,830

four and a half minutes now until the

465

00:26:26,630 --> 00:26:24,559

deorbit burn sergey ryzekov just a

466

00:26:28,230 --> 00:26:26,640

moment ago reading off

467

00:26:30,149 --> 00:26:28,240

propulsion

468

00:26:32,470 --> 00:26:30,159

parameters for the russian flight

469

00:26:34,549 --> 00:26:32,480

controllers in karl yaff

470

00:26:36,870 --> 00:26:34,559

everything in good shape the stage is

471

00:26:59,990 --> 00:26:36,880

set for the start of the journey home

472

00:27:00,000 --> 00:27:36,230

and everything's fine on board we copy

473

00:27:41,750 --> 00:27:39,909

you can depress the transmit button

474

00:27:42,870 --> 00:27:41,760

during the

475

00:27:51,510 --> 00:27:42,880

portal

476
00:27:55,029 --> 00:27:53,750
flight controllers uh in corey off uh

477
00:27:57,350 --> 00:27:55,039
will be

478
00:27:59,269 --> 00:27:57,360
expecting uh rizhikov to provide

479
00:28:02,310 --> 00:27:59,279
continuous commentary

480
00:28:04,389 --> 00:28:02,320
of the progress of the deorbit burn so

481
00:28:07,669 --> 00:28:04,399
that his uh

482
00:28:09,110 --> 00:28:07,679
his reports uh can match up to uh all of

483
00:28:11,830 --> 00:28:09,120
the parameters that the flight

484
00:28:14,710 --> 00:28:11,840
controllers are seeing at their consoles

485
00:28:17,269 --> 00:28:14,720
in carliaoff you're looking at a live

486
00:28:23,269 --> 00:28:17,279
view from a balcony camera overlooking

487
00:28:55,909 --> 00:28:24,950
two and a half minutes away now from the

488
00:29:02,149 --> 00:28:59,830

one minute to escape tig

489

00:29:25,029 --> 00:29:02,159

on board everything is

490

00:29:30,070 --> 00:29:27,990

90 seconds now until the deorbit burn

491

00:29:31,590 --> 00:29:30,080

we're getting close to

492

00:29:55,450 --> 00:29:31,600

one minute

493

00:29:55,460 --> 00:30:01,269

[Applause]

494

00:30:05,669 --> 00:30:02,710

less than a minute uh before the

495

00:30:07,990 --> 00:30:05,679

initiation of the deorbit burn

496

00:30:10,070 --> 00:30:08,000

the russian mi8 helicopters at the

497

00:30:12,389 --> 00:30:10,080

airport in jez khazgan have their rotors

498

00:30:19,029 --> 00:30:12,399

spinning ready to take off in sequential

499

00:30:19,039 --> 00:30:40,149

going to page 51 30

500

00:31:02,160 --> 00:30:42,149

10 seconds away standing by for the

501
00:31:02,170 --> 00:31:07,269

[Music]

502
00:31:11,430 --> 00:31:09,190
0 47

503
00:31:13,110 --> 00:31:11,440
0 48 seconds

504
00:31:16,230 --> 00:31:13,120
five and a half

505
00:31:21,830 --> 00:31:19,029
change in velocity being reported now by

506
00:31:24,470 --> 00:31:21,840
sergey ryzikov the soyuz commander this

507
00:31:25,750 --> 00:31:24,480
is a four-minute 39 second retrograde

508
00:31:29,750 --> 00:31:25,760
maneuver

509
00:31:32,389 --> 00:31:29,760
13 decimal 8 over 30 seconds

510
00:31:34,149 --> 00:31:32,399
and we're on page 53

511
00:31:39,350 --> 00:31:34,159
working for the table

512
00:31:56,470 --> 00:31:43,110
o2 supply uh is activated from the gas

513
00:31:56,480 --> 00:32:01,650

decimal two delta v

514

00:32:01,660 --> 00:32:09,830

[Music]

515

00:32:13,669 --> 00:32:12,230

one minute 15 seconds

516

00:32:14,549 --> 00:32:13,679

33

517

00:32:15,750 --> 00:32:14,559

and

518

00:32:17,110 --> 00:32:15,760

0.8

519

00:32:21,350 --> 00:32:17,120

delta v

520

00:32:26,830 --> 00:32:21,360

soyuz continues to decelerate as planned

521

00:32:32,230 --> 00:32:28,389

firing

522

00:32:33,909 --> 00:32:32,240

one minute 30 seconds into the

523

00:32:37,430 --> 00:32:33,919

thruster operation

524

00:32:39,990 --> 00:32:37,440

41 decimal zero delta v

525

00:32:42,950 --> 00:32:40,000

video parameters are nominal

526
00:32:47,029 --> 00:32:42,960
copy surrogate the second one minute

527
00:32:47,039 --> 00:32:54,070
uh delta v after one minute 47 seconds

528
00:32:54,080 --> 00:33:07,430
two minutes

529
00:33:12,950 --> 00:33:11,830
the burn is going nominally 2 minutes 15

530
00:33:20,630 --> 00:33:12,960
seconds

531
00:33:25,669 --> 00:33:23,269
2 and a half minutes into the burn

532
00:33:26,549 --> 00:33:25,679
about two minutes to go two minutes 30

533
00:33:31,110 --> 00:33:26,559
seconds

534
00:33:34,149 --> 00:33:33,029
all parameters

535
00:33:36,549 --> 00:33:34,159
and

536
00:33:41,269 --> 00:33:36,559
propellant

537
00:33:50,710 --> 00:33:44,870
2 minutes 45 seconds 74 decimal 8 delta

538
00:33:54,950 --> 00:33:52,870

3 minutes into the burn everything is

539

00:33:56,070 --> 00:33:54,960

going as planned

540

00:33:57,669 --> 00:33:56,080

at the

541

00:34:01,190 --> 00:33:57,679

specified time

542

00:34:02,630 --> 00:34:01,200

at three minutes 83

543

00:34:04,870 --> 00:34:02,640

decimal

544

00:34:08,149 --> 00:34:04,880

zero

545

00:34:14,950 --> 00:34:08,159

delta v and all cadup

546

00:34:18,950 --> 00:34:16,950

system parameters are nominal at 3

547

00:34:24,230 --> 00:34:18,960

minutes 15 seconds

548

00:34:27,430 --> 00:34:24,240

a delta v gained 88 decimal niner

549

00:34:27,440 --> 00:34:33,990

96 decimal nine

550

00:34:48,149 --> 00:34:36,550

prevalent consumption is nominal

551
00:34:58,390 --> 00:34:49,990
approaching the four-minute mark into

552
00:35:02,870 --> 00:35:00,069
four minutes of

553
00:35:06,390 --> 00:35:02,880
escada firing uh

554
00:35:07,910 --> 00:35:06,400
ltv gained 109 decimal 9.

555
00:35:11,750 --> 00:35:07,920
all cadillac parameters are still

556
00:35:15,430 --> 00:35:14,290
we're standing by

557
00:35:17,829 --> 00:35:15,440
[Music]

558
00:35:19,510 --> 00:35:17,839
main engine cut off command in about 20

559
00:35:27,470 --> 00:35:19,520
seconds

560
00:35:36,950 --> 00:35:27,480
command

561
00:35:42,550 --> 00:35:38,870
and the deorbit burn is complete and

562
00:35:45,270 --> 00:35:42,560
reported to have been perfectly executed

563
00:35:47,589 --> 00:35:45,280

kate rubins sergey kud sverchkov and

564

00:35:57,030 --> 00:35:47,599

soyuz commander sergey ryzhikov on their

565

00:35:57,040 --> 00:36:02,550

at zero seven zero six thirteen uh

566

00:36:02,560 --> 00:36:05,670

is open

567

00:36:12,230 --> 00:36:08,950

in a docking compartment

568

00:36:15,430 --> 00:36:12,240

uh we have

569

00:36:16,790 --> 00:36:15,440

stable pressure at seven

570

00:36:19,990 --> 00:36:16,800

44

571

00:36:21,829 --> 00:36:20,000

and the pressure is dropping in

572

00:36:26,550 --> 00:36:21,839

orbital module

573

00:36:28,710 --> 00:36:26,560

top most section

574

00:36:30,310 --> 00:36:28,720

of the three section soyuz vehicle being

575

00:36:31,109 --> 00:36:30,320

depressurized

576

00:36:32,470 --> 00:36:31,119

this

577

00:36:34,790 --> 00:36:32,480

in advance

578

00:36:36,150 --> 00:36:34,800

of the pyrotechnic separation of the

579

00:36:38,390 --> 00:36:36,160

three

580

00:36:41,349 --> 00:36:38,400

portions of the soyuz spacecraft coming

581

00:36:45,990 --> 00:36:41,359

up

582

00:36:48,390 --> 00:36:46,000

at 11 29 about 22 minutes or so from now

583

00:36:50,790 --> 00:36:48,400

that uh will leave the descent module

584

00:36:52,310 --> 00:36:50,800

and the three crew members on their own

585

00:36:54,550 --> 00:36:52,320

with the heat shield

586

00:36:57,990 --> 00:36:54,560

in the direction of travel toward the

587

00:37:54,310 --> 00:36:58,000

landing site southeast of jezkasgan

588

00:37:59,430 --> 00:37:56,790

right now uh we're continuing to draw

589

00:38:02,710 --> 00:37:59,440

pressure in the orbital module

590

00:38:06,710 --> 00:38:02,720

currently the orbital module pressure

591

00:38:11,270 --> 00:38:08,470

and um

592

00:38:14,790 --> 00:38:11,280

the docking compartment

593

00:38:16,630 --> 00:38:14,800

uh pressure is stable at 744.

594

00:38:27,750 --> 00:38:16,640

copy we can

595

00:38:33,510 --> 00:38:30,150

if you can hear us the pressure in

596

00:38:36,069 --> 00:38:33,520

orbital module is less than

597

00:38:49,270 --> 00:38:36,079

100.

598

00:38:53,430 --> 00:38:50,150

um

599

00:38:57,109 --> 00:38:53,440

we

600

00:38:59,430 --> 00:38:57,119

uh

601
00:39:02,069 --> 00:38:59,440
seal our pressure helmets

602
00:39:04,790 --> 00:39:02,079
at the zero seven twenty

603
00:39:06,390 --> 00:39:04,800
four by zero seven twenty three fifty

604
00:39:09,190 --> 00:39:06,400
five no later

605
00:39:12,310 --> 00:39:09,200
um but we're planning to do so a little

606
00:39:14,390 --> 00:39:12,320
bit earlier at zero seven

607
00:39:15,510 --> 00:39:14,400
uh 21

608
00:39:18,390 --> 00:39:15,520
ish

609
00:39:20,870 --> 00:39:18,400
copy we have you loud and clear

610
00:39:26,069 --> 00:39:20,880
we have 20 minutes

611
00:39:26,079 --> 00:39:31,589
and o2 supply is continuing

612
00:39:35,670 --> 00:39:33,670
soyuz commander sergey rizhikov

613
00:39:37,109 --> 00:39:35,680

maintaining a running dialogue with

614

00:39:38,710 --> 00:39:37,119

flight controllers at the russian

615

00:39:41,109 --> 00:39:38,720

mission control center

616

00:39:42,550 --> 00:39:41,119

reporting on soyuz systems the crew

617

00:39:43,589 --> 00:39:42,560

putting their visors down on their

618

00:39:45,910 --> 00:39:43,599

helmets

619

00:39:48,310 --> 00:39:45,920

this in preparation

620

00:39:50,710 --> 00:39:48,320

for the pyrotechnic separation of the

621

00:39:52,630 --> 00:39:50,720

three sections of the soyuz

622

00:39:54,790 --> 00:39:52,640

the topmost section called the orbital

623

00:39:57,270 --> 00:39:54,800

module and the lower section the

624

00:39:58,470 --> 00:39:57,280

instrumentation and propulsion module

625

00:40:00,550 --> 00:39:58,480

they will be

626
00:40:03,430 --> 00:40:00,560
separating soon

627
00:40:05,270 --> 00:40:03,440
the separation pyrotechnics expected at

628
00:40:07,829 --> 00:40:05,280
about 11

629
00:40:10,150 --> 00:40:07,839
30 p.m central time

630
00:40:11,990 --> 00:40:10,160
that will allow the descent module to

631
00:40:14,550 --> 00:40:12,000
fly on its own

632
00:40:17,349 --> 00:40:14,560
with its computers honed in on the

633
00:40:36,069 --> 00:40:17,359
landing site about 91 miles to the

634
00:40:36,079 --> 00:40:44,230
follow super mosquito

635
00:40:47,990 --> 00:40:46,309
we hear you through the noise

636
00:40:51,990 --> 00:40:48,000
how would you read us

637
00:40:55,990 --> 00:40:53,910
we can verify

638
00:40:59,430 --> 00:40:56,000

viewers power

639

00:41:02,550 --> 00:40:59,440
and abuse readiness

640

00:41:04,470 --> 00:41:02,560
everything is in order on board

641

00:41:06,550 --> 00:41:04,480
the pressure is

642

00:41:07,430 --> 00:41:06,560
rising a little

643

00:41:09,109 --> 00:41:07,440
bit

644

00:41:13,030 --> 00:41:09,119
on board

645

00:41:16,150 --> 00:41:13,040
in the docking compartment um because of

646

00:41:18,470 --> 00:41:16,160
o2 being supplied into the cabin

647

00:41:20,390 --> 00:41:18,480
right now at 748

648

00:41:24,470 --> 00:41:20,400
otherwise everything is

649

00:41:27,750 --> 00:41:25,349
and

650

00:41:30,630 --> 00:41:27,760
in 10 minutes we're planning to seal the

651
00:41:31,670 --> 00:41:30,640
pressure helmet

652
00:41:33,349 --> 00:41:31,680
please

653
00:41:41,910 --> 00:41:33,359
go through the

654
00:41:53,829 --> 00:41:44,390
straps are

655
00:41:56,870 --> 00:41:55,510
that your knee pads are positioned

656
00:41:58,470 --> 00:41:56,880
properly

657
00:42:04,390 --> 00:41:58,480
moscow we cannot

658
00:42:08,630 --> 00:42:07,190
the soyuz is moving further and further

659
00:42:11,670 --> 00:42:08,640
away

660
00:42:14,069 --> 00:42:11,680
from the international space station to

661
00:42:15,910 --> 00:42:14,079
a point to a point where vhf voice

662
00:42:18,950 --> 00:42:15,920
communications is expected to become

663
00:42:19,750 --> 00:42:18,960

ratty if not unavailable for a period of

664

00:42:22,390 --> 00:42:19,760

time

665

00:42:25,349 --> 00:42:22,400

until the spacecraft approaches

666

00:42:27,430 --> 00:42:25,359

the landing site

667

00:42:30,150 --> 00:42:27,440

and begins to

668

00:42:32,150 --> 00:42:30,160

provide communications capability with

669

00:42:34,309 --> 00:42:32,160

the antonov 26

670

00:42:36,870 --> 00:42:34,319

airborne command center

671

00:42:38,470 --> 00:42:36,880

the fixed-wing aircraft

672

00:42:39,589 --> 00:42:38,480

that is part of the search and recovery

673

00:42:41,109 --> 00:42:39,599

forces

674

00:42:43,670 --> 00:42:41,119

that is

675

00:42:46,390 --> 00:42:43,680

airborne flying around the landing zone

676
00:42:47,829 --> 00:42:46,400
to act as a relay station for data and

677
00:42:50,630 --> 00:42:47,839
voice back to the russian mission

678
00:42:52,950 --> 00:42:50,640
control center 15 seconds left to module

679
00:42:55,990 --> 00:42:52,960
separation

680
00:42:57,349 --> 00:42:56,000
a copy please check your

681
00:42:58,790 --> 00:42:57,359
knee pads

682
00:42:59,750 --> 00:42:58,800
make sure that

683
00:43:01,670 --> 00:42:59,760
the

684
00:43:02,950 --> 00:43:01,680
odf books are

685
00:43:05,750 --> 00:43:02,960
the heart

686
00:43:07,589 --> 00:43:05,760
copies are secured well

687
00:43:10,790 --> 00:43:07,599
moscow

688
00:43:54,710 --> 00:43:10,800

we cannot understand what you're saying

689

00:43:59,190 --> 00:43:56,309

everything quiet uh here in mission

690

00:44:01,750 --> 00:43:59,200

control in houston as

691

00:44:04,390 --> 00:44:01,760

the voice communications begins to

692

00:44:06,710 --> 00:44:04,400

diminish between the soyuz spacecraft

693

00:44:08,390 --> 00:44:06,720

and the russian flight control team

694

00:44:10,309 --> 00:44:08,400

simply because of the distance now that

695

00:44:12,230 --> 00:44:10,319

the soyuz has moved away from the

696

00:44:13,829 --> 00:44:12,240

international space station

697

00:44:16,470 --> 00:44:13,839

and the uh

698

00:44:18,950 --> 00:44:16,480

location and positioning of the antennas

699

00:44:21,270 --> 00:44:18,960

on the soyuz relative to the relay

700

00:44:25,260 --> 00:44:21,280

antennas for vhf communications through

701
00:44:25,270 --> 00:44:28,950

[Music]

702
00:44:34,150 --> 00:44:31,829

before module separation please verify

703
00:44:37,230 --> 00:44:34,160

uh the positioning of your

704
00:44:37,240 --> 00:44:49,750

[Music]

705
00:44:54,550 --> 00:44:52,630

bungees or straps

706
00:44:57,430 --> 00:44:54,560

we cannot hear you moscow we don't

707
00:45:00,470 --> 00:44:57,440

understand what you're saying

708
00:45:03,670 --> 00:45:00,480

i'm just letting you know that

709
00:45:03,680 --> 00:45:07,109

that we have

710
00:45:14,230 --> 00:45:12,470

module separation coming up at 07 29.55

711
00:45:16,829 --> 00:45:14,240

everything's still

712
00:45:20,150 --> 00:45:16,839

ready on board

713
00:45:21,750 --> 00:45:20,160

copy sergey rizzakov reassuring flight

714

00:45:23,190 --> 00:45:21,760

controllers in moscow even though they

715

00:45:25,589 --> 00:45:23,200

cannot hear

716

00:45:26,870 --> 00:45:25,599

uh the flight controllers calling them

717

00:45:29,589 --> 00:45:26,880

at this point

718

00:45:30,550 --> 00:45:29,599

they understand that we're within 14

719

00:45:32,950 --> 00:45:30,560

minutes

720

00:45:34,390 --> 00:45:32,960

of the scheduled separation of the three

721

00:47:17,589 --> 00:45:34,400

sections of the soyuz through

722

00:47:21,990 --> 00:47:19,910

this is mission control houston uh based

723

00:47:24,470 --> 00:47:22,000

on the last report from sergey rizhikov

724

00:47:26,710 --> 00:47:24,480

everything going very well on board the

725

00:47:28,069 --> 00:47:26,720

soyuz ms-17

726

00:47:30,069 --> 00:47:28,079

the next

727

00:47:31,510 --> 00:47:30,079

major event coming up in about 11

728

00:47:33,750 --> 00:47:31,520

minutes

729

00:47:35,430 --> 00:47:33,760

the separation of the three sections of

730

00:47:37,349 --> 00:47:35,440

the soyuz

731

00:47:39,109 --> 00:47:37,359

has the descent module with the three

732

00:47:40,950 --> 00:47:39,119

crew members strapped inside that will

733

00:47:43,349 --> 00:47:40,960

then fly free

734

00:47:46,230 --> 00:47:43,359

with its onboard computers uh targeting

735

00:47:48,230 --> 00:47:46,240

uh the landing site to the south east of

736

00:47:50,549 --> 00:47:48,240

the town of jezkasgan

737

00:47:52,870 --> 00:47:50,559

this is an animation of the separation

738

00:47:54,630 --> 00:47:52,880

of those three sections the orbital

739

00:47:56,230 --> 00:47:54,640

module and the instrumentation and

740

00:47:58,630 --> 00:47:56,240

propulsion module

741

00:48:01,109 --> 00:47:58,640

separate from the descent module

742

00:48:02,870 --> 00:48:01,119

that then enters the earth's atmosphere

743

00:48:05,030 --> 00:48:02,880

building up heat

744

00:48:07,510 --> 00:48:05,040

repelling the heat through its heat

745

00:48:12,950 --> 00:48:07,520

shield before the deployment of a drogue

746

00:48:17,270 --> 00:48:15,589

we'll talk more about the physics of the

747

00:48:20,309 --> 00:48:17,280

shoot deployment and the behavior of the

748

00:48:23,670 --> 00:48:20,319

soyuz spacecraft once we get past module

749

00:48:29,349 --> 00:48:25,829

landing

750

00:48:31,670 --> 00:48:29,359

is still scheduled for 11 56 pm central

751

00:48:34,470 --> 00:48:31,680

time 10 56 a.m

752

00:48:38,470 --> 00:48:34,480

kazakhstan time on saturday morning

753

00:48:40,230 --> 00:48:38,480

the weather reports indicate clear skies

754

00:49:11,910 --> 00:48:40,240

a very light winds

755

00:49:17,030 --> 00:49:13,910

and with the completion of the deorbit

756

00:49:19,430 --> 00:49:17,040

burn a short time ago the russian mi8

757

00:49:21,670 --> 00:49:19,440

helicopters are all airborne

758

00:49:24,470 --> 00:49:21,680

on route to the landing site this is all

759

00:49:26,230 --> 00:49:24,480

very carefully choreographed and timed

760

00:49:28,069 --> 00:49:26,240

so that the helicopters arrive in a

761

00:49:29,430 --> 00:49:28,079

circular racetrack pattern around the

762

00:49:31,589 --> 00:49:29,440

landing zone

763

00:50:43,190 --> 00:49:31,599

shortly before the arrival of the soyuz

764

00:50:47,670 --> 00:50:45,670

the separation of the three sections of

765

00:50:51,670 --> 00:50:47,680

the soyuz will occur at an altitude of

766

00:50:55,510 --> 00:50:53,190

all done

767

00:50:58,870 --> 00:50:55,520

by automatic commanding from the onboard

768

00:51:00,950 --> 00:50:58,880

computers firing pyrotechnics to enable

769

00:51:01,910 --> 00:51:00,960

the three sections to separate from one

770

00:51:05,030 --> 00:51:01,920

another

771

00:51:07,510 --> 00:51:05,040

in the center section or descent module

772

00:51:10,470 --> 00:51:07,520

soyuz commander sergey rizhikov flying

773

00:51:12,309 --> 00:51:10,480

under the call sign of favorite

774

00:51:14,630 --> 00:51:12,319

in the center seat flanked on his left

775

00:52:11,910 --> 00:51:14,640

by sergey kud zverchkoff and on his

776

00:52:16,950 --> 00:52:14,950

the landing site coordinates uh

777

00:52:19,270 --> 00:52:16,960

calculated by the russian flight control

778

00:52:21,910 --> 00:52:19,280

team in corey off

779

00:52:23,670 --> 00:52:21,920

call for the soyuz to be targeting a

780

00:52:27,589 --> 00:52:23,680

landing spot

781

00:52:30,230 --> 00:52:27,599

at 47.2 north 69.3

782

00:52:33,670 --> 00:52:31,349

the pressure

783

00:52:36,069 --> 00:52:33,680

are sealed

784

00:52:46,150 --> 00:52:37,270

the

785

00:52:48,309 --> 00:52:46,160

activated

786

00:52:52,630 --> 00:52:48,319

and you have the roof handle in your

787

00:52:56,870 --> 00:52:55,109

so visors are now down for the three

788

00:53:06,069 --> 00:52:56,880

crew members in the descent module of

789

00:53:47,750 --> 00:53:08,230

some six minutes away from the expected

790

00:53:51,589 --> 00:53:49,750

countdown clocks here in mission control

791

00:53:54,470 --> 00:53:51,599

in houston ticking backward toward the

792

00:54:42,370 --> 00:53:54,480

expected landing time just over 31

793

00:54:42,380 --> 00:54:46,069

[Music]

794

00:55:01,670 --> 00:54:49,750

a separation of the modules is in four

795

00:55:06,950 --> 00:55:05,270

so a bit of continuing communications

796

00:55:09,030 --> 00:55:06,960

confirming uh

797

00:55:10,630 --> 00:55:09,040

the expected time for the module

798

00:56:09,589 --> 00:55:10,640

separation

799

00:56:14,309 --> 00:56:13,190

our push to talk button is

800

00:56:15,670 --> 00:56:14,319

depressed

801
00:56:20,309 --> 00:56:15,680
and the

802
00:56:20,319 --> 00:56:40,470
how do you read this

803
00:56:46,069 --> 00:56:43,109
again these intermittent

804
00:56:48,870 --> 00:56:46,079
communications between the soyuz and the

805
00:56:53,030 --> 00:56:48,880
russian mission control center

806
00:56:55,109 --> 00:56:53,040
expected this is a nominal uh occurrence

807
00:56:58,150 --> 00:56:55,119
because of the distance the soyuz is

808
00:57:00,390 --> 00:56:58,160
away from vhf communications capability

809
00:57:56,470 --> 00:57:00,400
from the international space station

810
00:58:02,630 --> 00:57:58,710
we're about a minute or so away from the

811
00:58:04,549 --> 00:58:02,640
anticipated time for module separation

812
00:58:06,470 --> 00:58:04,559
russian search and recovery forces

813
00:58:08,390 --> 00:58:06,480

airborne on route to the landing site

814

00:59:25,829 --> 00:58:08,400

southeast of jessica's gun everything

815

00:59:29,510 --> 00:59:27,829

the reports are now in from the russian

816

00:59:32,390 --> 00:59:29,520

mission control center that module

817

00:59:34,710 --> 00:59:32,400

separation has occurred on time

818

00:59:36,309 --> 00:59:34,720

the soyuz descent module with the three

819

00:59:39,349 --> 00:59:36,319

crew members strapped in their seats in

820

00:59:41,349 --> 00:59:39,359

their circle launch and entry suits

821

00:59:43,349 --> 00:59:41,359

are barreling toward the landing site

822

00:59:46,069 --> 00:59:43,359

southeast of jezkasgan

823

00:59:48,470 --> 00:59:46,079

the next major event some three minutes

824

00:59:50,710 --> 00:59:48,480

from now when the vehicle enters the

825

00:59:55,829 --> 00:59:50,720

earth's atmosphere at an altitude of 100

826
01:00:01,510 --> 00:59:58,549
once the soyuz approaches the landing

827
01:00:02,630 --> 01:00:01,520
site some 15 minutes before touchdown

828
01:00:05,750 --> 01:00:02,640
there is a

829
01:00:07,910 --> 01:00:05,760
intricate parachute deployment sequence

830
01:00:09,510 --> 01:00:07,920
that is triggered by a barometric

831
01:00:11,910 --> 01:00:09,520
pressure sensor

832
01:00:13,430 --> 01:00:11,920
when the vehicle is about 41 000 feet

833
01:00:15,670 --> 01:00:13,440
above the ground

834
01:00:18,069 --> 01:00:15,680
at that point the main parachute covers

835
01:00:19,510 --> 01:00:18,079
first jettison by pyrotechnic devices

836
01:00:21,990 --> 01:00:19,520
and springs

837
01:00:22,950 --> 01:00:22,000
this will pull out a pair of extraction

838
01:00:25,109 --> 01:00:22,960

chutes

839

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

which in turns pull which in turn pulls

840

01:00:28,549 --> 01:00:26,640

out the drogue chute

841

01:00:31,190 --> 01:00:28,559

which in turn pulls out the main

842

01:00:32,870 --> 01:00:31,200

parachute takes about 20 seconds for all

843

01:00:35,190 --> 01:00:32,880

of this to happen

844

01:00:38,549 --> 01:00:35,200

when the atmospheric pressure that is

845

01:00:40,950 --> 01:00:38,559

measured around the soyuz

846

01:00:43,430 --> 01:00:40,960

reaches the proper levels

847

01:00:44,710 --> 01:00:43,440

a barometric pressure sensor starts a

848

01:00:48,150 --> 01:00:44,720

timer that triggers most of the

849

01:00:50,710 --> 01:00:48,160

remaining events in the landing sequence

850

01:00:52,230 --> 01:00:50,720

at an altitude of about 18 000 feet off

851
01:00:54,309 --> 01:00:52,240
the ground commands are issued to

852
01:00:56,230 --> 01:00:54,319
jettison the heat shield

853
01:00:57,510 --> 01:00:56,240
and to open valves to vent hydrogen

854
01:00:59,750 --> 01:00:57,520
peroxide

855
01:01:02,549 --> 01:00:59,760
fuel for the entry control thrusters and

856
01:01:04,870 --> 01:01:02,559
oxygen of the life support system tank

857
01:01:07,589 --> 01:01:04,880
if we're fortunate enough to get video

858
01:01:10,390 --> 01:01:07,599
of the soyuz under the shoots

859
01:01:11,750 --> 01:01:10,400
we may be seeing that white smoke that

860
01:01:14,470 --> 01:01:11,760
is the venting

861
01:01:16,549 --> 01:01:14,480
the normal venting of hydrogen peroxide

862
01:01:19,190 --> 01:01:16,559
and oxygen into the air

863
01:01:20,150 --> 01:01:19,200

so that the vehicle can be safe for

864

01:01:22,309 --> 01:01:20,160

landing

865

01:01:25,589 --> 01:01:22,319

without an abundance of hazardous

866

01:01:27,589 --> 01:01:25,599

hazardous gases remaining in the tanks

867

01:01:45,109 --> 01:01:27,599

when the soft landing thrusters fire

868

01:01:45,119 --> 01:01:54,380

anything

869

01:01:54,390 --> 01:01:58,950

[Music]

870

01:02:03,510 --> 01:02:01,670

the soyuz are now beginning to enter the

871

01:02:05,829 --> 01:02:03,520

earth's atmosphere

872

01:02:07,589 --> 01:02:05,839

this will mark the first effects of

873

01:02:09,029 --> 01:02:07,599

earth's gravity against the bodies of

874

01:02:18,230 --> 01:02:09,039

the three crew members for the first

875

01:02:23,349 --> 01:02:20,549

we're inside 23 minutes until the

876
01:02:26,630 --> 01:02:23,359
anticipated touchdown of the soyuz on

877
01:02:27,390 --> 01:02:26,640
the step of kazakhstan to wrap up

878
01:03:13,750 --> 01:02:27,400
a

879
01:03:13,760 --> 01:03:39,430
unintelligible

880
01:04:06,870 --> 01:03:40,930
oh

881
01:04:11,510 --> 01:04:08,870
the three crew members in the descent

882
01:04:13,270 --> 01:04:11,520
module of the soyuz ms-17

883
01:04:14,470 --> 01:04:13,280
should be seeing the first effects of

884
01:04:16,150 --> 01:04:14,480
plasma

885
01:04:19,109 --> 01:04:16,160
a fireball building around the

886
01:04:21,829 --> 01:04:19,119
spacecraft where temperatures

887
01:04:28,710 --> 01:04:21,839
rise to about 2500 degrees ablated by

888
01:04:34,950 --> 01:04:31,750

soyuz computers also uh

889

01:04:36,630 --> 01:04:34,960

providing entry guidance to fine-tune

890

01:04:44,470 --> 01:04:36,640

the path of the spacecraft toward the

891

01:04:49,829 --> 01:04:45,349

the

892

01:05:43,029 --> 01:04:49,839

be emerging from this plasma regime in

893

01:05:43,039 --> 01:06:09,750

foreign

894

01:06:09,760 --> 01:06:20,870

moscow

895

01:06:24,230 --> 01:06:22,470

flight controllers uh the russian

896

01:06:27,349 --> 01:06:24,240

mission control center attempting to

897

01:06:30,150 --> 01:06:27,359

contact the soyuz but uh as expected

898

01:06:33,190 --> 01:06:30,160

communications uh not expected uh to

899

01:06:34,309 --> 01:06:33,200

provide a response as the soyuz descends

900

01:06:37,109 --> 01:06:34,319

in the

901
01:06:38,549 --> 01:06:37,119
heat peaking regime during its entry

902
01:06:40,470 --> 01:06:38,559
back to earth

903
01:07:20,390 --> 01:06:40,480
touchdown expected about 18 and a half

904
01:07:20,400 --> 01:07:47,270
moscow

905
01:07:51,510 --> 01:07:49,589
the soyuz spacecraft should be emerging

906
01:07:52,549 --> 01:07:51,520
from this plasma regime about a minute

907
01:07:56,230 --> 01:07:52,559
from now

908
01:07:59,829 --> 01:07:56,240
and as it approaches the landing site

909
01:08:03,109 --> 01:07:59,839
communications should be established

910
01:08:06,069 --> 01:08:03,119
through the search and recovery forces

911
01:08:08,309 --> 01:08:06,079
in the antonov 26 fixed-wing aircraft

912
01:08:30,750 --> 01:08:08,319
around the landing zone serving as a

913
01:08:30,760 --> 01:08:35,349

[Music]

914

01:08:35,359 --> 01:08:42,800

uh

915

01:08:42,810 --> 01:08:50,550

[Music]

916

01:08:50,560 --> 01:08:55,800

plus

917

01:09:07,990 --> 01:09:05,030

[Music]

918

01:09:11,110 --> 01:09:08,000

seven seven two four pressure what's the

919

01:09:11,120 --> 01:09:17,510

it was 3.8

920

01:09:28,070 --> 01:09:18,789

maybe 3

921

01:09:34,550 --> 01:09:30,149

please make sure that the

922

01:09:37,749 --> 01:09:35,910

and once the

923

01:09:40,709 --> 01:09:37,759

these are primed

924

01:09:42,550 --> 01:09:40,719

make sure that you put the

925

01:09:44,149 --> 01:09:42,560

translation and the rotational hand

926

01:09:53,250 --> 01:09:44,159

controllers in the corresponding

927

01:09:53,260 --> 01:10:01,030

[Music]

928

01:10:04,630 --> 01:10:02,790

this is mission control houston almost

929

01:10:06,870 --> 01:10:04,640

like clockwork uh communications

930

01:10:09,830 --> 01:10:06,880

reestablished between mission control uh

931

01:10:11,430 --> 01:10:09,840

in karioff and uh sergey rizhikov the

932

01:10:14,390 --> 01:10:11,440

soyuz commander

933

01:10:16,550 --> 01:10:14,400

the uh crew now out of the plasma regime

934

01:10:17,830 --> 01:10:16,560

atmospheric entry was a nominal

935

01:10:20,870 --> 01:10:17,840

occurrence

936

01:10:21,910 --> 01:10:20,880

and we're standing by now uh for the

937

01:10:23,910 --> 01:10:21,920

opening

938

01:10:29,189 --> 01:10:23,920

of the parachutes the command to begin

939

01:10:33,669 --> 01:10:31,910

time to touch down about 14 and a half

940

01:11:51,189 --> 01:10:33,679

minutes

941

01:11:53,189 --> 01:11:51,199

touchdown

942

01:13:09,510 --> 01:11:53,199

parachutes should have been commanded to

943

01:13:13,110 --> 01:13:11,189

this is mission control houston 12

944

01:13:17,430 --> 01:13:13,120

minutes until touchdown of the soyuz

945

01:13:18,709 --> 01:13:17,440

ms-17 on the step of kazakhstan

946

01:13:20,310 --> 01:13:18,719

we uh

947

01:13:21,830 --> 01:13:20,320

fully expect that the shoots have been

948

01:13:23,510 --> 01:13:21,840

deployed by now although we're still

949

01:13:59,669 --> 01:13:23,520

awaiting confirmation of that from the

950

01:14:04,470 --> 01:14:01,430

this is mission control houston and

951
01:14:07,270 --> 01:14:04,480
there it is soyuz ms-17 under its main

952
01:14:10,070 --> 01:14:07,280
parachute and as we described before the

953
01:14:12,870 --> 01:14:10,080
white smoke is the nominal venting

954
01:14:15,030 --> 01:14:12,880
of hydrogen peroxide and oxygen

955
01:14:16,630 --> 01:14:15,040
into the atmosphere right on time right

956
01:14:18,390 --> 01:14:16,640
on schedule

957
01:14:20,870 --> 01:14:18,400
with landing

958
01:14:39,110 --> 01:14:20,880
planned about 10 minutes and 50 seconds

959
01:14:39,120 --> 01:14:43,030
foreign

960
01:14:47,430 --> 01:14:45,189
reports now uh from the landing site

961
01:14:49,830 --> 01:14:47,440
from the antonov 26 uh command and

962
01:14:51,669 --> 01:14:49,840
control flying aircraft indicate that

963
01:14:54,310 --> 01:14:51,679

the crew is in great shape they've

964

01:14:56,430 --> 01:14:54,320

reported everything is nominal on board

965

01:15:11,750 --> 01:14:56,440

the soyuz

966

01:15:26,470 --> 01:15:14,940

don't worry this is not a fire

967

01:15:30,709 --> 01:15:28,550

descending through a cloudless sky on a

968

01:15:33,590 --> 01:15:30,719

saturday morning in kazakhstan soyuz

969

01:15:35,270 --> 01:15:33,600

ms-17 with rubens rzhikov and kudz

970

01:15:36,870 --> 01:15:35,280

vertkoff aboard

971

01:15:43,270 --> 01:15:36,880

now nine and a half minutes from

972

01:15:43,280 --> 01:15:47,130

are you ready

973

01:15:53,430 --> 01:15:52,310

[Music]

974

01:16:02,690 --> 01:15:53,440

yes

975

01:16:02,700 --> 01:16:13,910

[Music]

976
01:16:18,470 --> 01:16:16,310
one more time five minutes passed let's

977
01:16:20,870 --> 01:16:18,480
do it one more time

978
01:16:23,590 --> 01:16:20,880
less than nine minutes until touchdown

979
01:16:25,110 --> 01:16:23,600
the soyuz altimeter soon to be activated

980
01:16:29,350 --> 01:16:25,120
to measure

981
01:16:31,350 --> 01:16:29,360
the distance between the soyuz and land

982
01:16:33,110 --> 01:16:31,360
and the rate of descent all that

983
01:16:34,709 --> 01:16:33,120
information being fed into the soyuz

984
01:16:36,870 --> 01:16:34,719
computers that will trigger the soft

985
01:16:39,540 --> 01:16:36,880
landing engines firing just milliseconds

986
01:16:46,310 --> 01:16:39,550
before touchdown

987
01:16:54,790 --> 01:16:49,350
descent is in progress

988
01:17:01,430 --> 01:16:57,910

s 0 4

989

01:17:01,440 --> 01:17:03,910

copy

990

01:17:07,430 --> 01:17:06,229

altitude three

991

01:17:09,930 --> 01:17:07,440

eight

992

01:17:17,350 --> 01:17:09,940

nine zero

993

01:17:19,189 --> 01:17:17,360

[Music]

994

01:17:22,390 --> 01:17:19,199

the beeping sound you hear is a radio

995

01:17:26,630 --> 01:17:22,400

beacon on the soyuz spacecraft

996

01:17:27,669 --> 01:17:26,640

that is relaying its position

997

01:17:31,030 --> 01:17:27,679

back

998

01:17:32,550 --> 01:17:31,040

for telemetry on the ground the soyuz

999

01:17:34,390 --> 01:17:32,560

very stable

1000

01:17:37,910 --> 01:17:34,400

the winds are

1001
01:17:39,430 --> 01:17:37,920
virtually non-existent on the ground

1002
01:17:42,470 --> 01:17:39,440
at the landing site according to the

1003
01:17:42,480 --> 01:17:50,390
put down the kneecaps

1004
01:17:54,229 --> 01:17:52,470
russian mi8 helicopters over the search

1005
01:17:56,709 --> 01:17:54,239
and recovery forces and the embedded

1006
01:17:58,470 --> 01:17:56,719
nasa personnel are now circling the

1007
01:18:00,310 --> 01:17:58,480
landing zone

1008
01:18:01,350 --> 01:18:00,320
preparing to touch down in sequential

1009
01:18:04,270 --> 01:18:01,360
fashion

1010
01:18:13,189 --> 01:18:04,280
within minutes after the soyuz lands

1011
01:18:16,950 --> 01:18:14,950
those search and recovery forces are

1012
01:18:20,180 --> 01:18:16,960
maintaining good two-way communications

1013
01:18:34,200 --> 01:18:20,190

with the crew on board

1014

01:18:34,210 --> 01:18:39,350

[Music]

1015

01:18:39,360 --> 01:18:42,790

control altitude

1016

01:18:42,800 --> 01:18:48,229

standing by for landing

1017

01:19:06,790 --> 01:18:50,709

stopwatches are on

1018

01:19:06,800 --> 01:19:10,709

bye

1019

01:19:10,719 --> 01:19:24,300

my

1020

01:19:49,270 --> 01:19:32,550

[Music]

1021

01:19:51,669 --> 01:19:49,280

in the descent module the three crew

1022

01:19:53,830 --> 01:19:51,679

members have cocked their seats in the

1023

01:19:56,310 --> 01:19:53,840

landing position

1024

01:19:57,910 --> 01:19:56,320

tighten their uh straps

1025

01:19:59,830 --> 01:19:57,920

against their their

1026

01:20:11,430 --> 01:19:59,840

circle launch and entry suits just a bit

1027

01:20:21,189 --> 01:20:15,189

300 difference is 60 meters

1028

01:20:21,199 --> 01:20:36,629

thank you

1029

01:20:36,639 --> 01:20:51,830

up

1030

01:20:55,669 --> 01:20:54,310

sandwiched between the launch of a soyuz

1031

01:20:58,470 --> 01:20:55,679

vehicle

1032

01:21:01,590 --> 01:20:58,480

and next week's launch of a spacex crew

1033

01:21:03,750 --> 01:21:01,600

dragon vehicle soyuz spacecraft is

1034

01:21:06,190 --> 01:21:03,760

minutes away from touchdown on the step

1035

01:21:23,300 --> 01:21:06,200

of kazakhstan

1036

01:21:23,310 --> 01:21:31,110

[Music]

1037

01:21:42,390 --> 01:21:32,510

past one

1038

01:21:42,400 --> 01:21:55,430

happy

1039

01:21:55,440 --> 01:21:58,870

[Music]

1040

01:22:02,790 --> 01:22:00,950

one of the russian mi8 helicopters are

1041

01:22:06,149 --> 01:22:02,800

now in view

1042

01:22:07,910 --> 01:22:06,159

that uh is the foreshadowing of uh

1043

01:22:12,790 --> 01:22:07,920

you're being able to see the horizon

1044

01:22:44,470 --> 01:22:28,660

[Music]

1045

01:22:48,050 --> 01:22:45,910

some two and a half minutes until

1046

01:22:56,229 --> 01:22:48,060

touchdown

1047

01:22:56,239 --> 01:23:02,070

copy 800.

1048

01:23:02,080 --> 01:23:17,830

[Music]

1049

01:23:43,350 --> 01:23:19,540

copy 700

1050

01:23:43,360 --> 01:23:54,390

get ready for landing

1051
01:23:59,860 --> 01:23:56,229
just over a minute until touchdown

1052
01:24:09,260 --> 01:23:59,870
everything looking good

1053
01:24:09,270 --> 01:24:29,189
[Music]

1054
01:24:39,270 --> 01:24:31,590
touchdown

1055
01:24:41,990 --> 01:24:39,280
time 12 55 a.m eastern time

1056
01:24:43,110 --> 01:24:42,000
10 55 a.m in kazakhstan on a saturday

1057
01:24:45,990 --> 01:24:43,120
morning

1058
01:24:47,950 --> 01:24:46,000
after 185 days in space

1059
01:24:51,990 --> 01:24:47,960
in a mission spanning

1060
01:24:53,510 --> 01:24:52,000
2960 orbits of the earth and 78.4

1061
01:24:56,870 --> 01:24:53,520
million miles

1062
01:24:58,870 --> 01:24:56,880
kate rubens sergey ryzikov and sergey

1063
01:25:21,910 --> 01:24:58,880

kudz-vertkov sverchgov are back on terra

1064

01:25:25,990 --> 01:25:24,229

at this point the russian mi-8

1065

01:25:27,910 --> 01:25:26,000

helicopters with the search and recovery

1066

01:25:30,229 --> 01:25:27,920

forces in tow

1067

01:25:32,149 --> 01:25:30,239

will begin to descend

1068

01:25:34,709 --> 01:25:32,159

one by one

1069

01:25:37,030 --> 01:25:34,719

first to erect an inflatable medical

1070

01:25:39,030 --> 01:25:37,040

tent nearby the capsule

1071

01:27:24,790 --> 01:25:39,040

and then begin the process of extracting

1072

01:27:29,350 --> 01:27:27,030

a view of the landing site

1073

01:27:32,390 --> 01:27:29,360

about 91 miles to the southeast of the

1074

01:27:35,270 --> 01:27:32,400

town of jezkasgan kazakhstan

1075

01:27:37,510 --> 01:27:35,280

russian mi8 helicopters uh

1076

01:27:39,910 --> 01:27:37,520

circling of the landing zone

1077

01:27:42,709 --> 01:27:39,920

where the soyuz ms-17 touched down about

1078

01:27:43,830 --> 01:27:42,719

three minutes or so ago at 11 55 pm

1079

01:27:47,590 --> 01:27:43,840

central time

1080

01:27:50,629 --> 01:27:47,600

12 55 a.m eastern time on saturday

1081

01:27:53,189 --> 01:27:50,639

as uh the soyuz ms-17 is back on earth

1082

01:28:39,750 --> 01:27:53,199

with kate rubins sergey ryzekov and

1083

01:28:43,669 --> 01:28:41,590

confirmation now being received from the

1084

01:28:47,430 --> 01:28:43,679

search and recovery forces that the

1085

01:28:50,390 --> 01:28:47,440

soyuz ms-17 landed upright

1086

01:28:53,350 --> 01:28:50,400

so the crew will be extracted from the

1087

01:28:56,070 --> 01:28:53,360

top hatch on the soyuz once

1088

01:28:57,430 --> 01:28:56,080

a ladder is erected alongside the

1089

01:28:59,510 --> 01:28:57,440

spacecraft

1090

01:29:02,310 --> 01:28:59,520

again you can see uh

1091

01:29:03,350 --> 01:29:02,320

three of the russian mit helicopters on

1092

01:29:05,669 --> 01:29:03,360

the ground

1093

01:29:07,830 --> 01:29:05,679

to begin the process of erecting this

1094

01:29:09,750 --> 01:29:07,840

inflatable medical tent to which the

1095

01:29:10,950 --> 01:29:09,760

crew members will be brought inside

1096

01:29:12,790 --> 01:29:10,960

following

1097

01:29:15,510 --> 01:29:12,800

their extraction from the vehicle and a

1098

01:29:18,070 --> 01:29:15,520

few minutes to sit in chairs

1099

01:29:19,669 --> 01:29:18,080

to get their land legs back a bit

1100

01:30:37,189 --> 01:29:19,679

once they are pulled out of the

1101

01:30:43,110 --> 01:30:39,030

this is mission control houston once

1102

01:30:46,310 --> 01:30:43,120

again the soyuz ms-17 landed at 11 55 pm

1103

01:30:49,030 --> 01:30:46,320

central time 12 55 a.m eastern time

1104

01:30:50,390 --> 01:30:49,040

about 91 miles uh to the southeast of

1105

01:30:51,990 --> 01:30:50,400

jezka's gun

1106

01:30:55,669 --> 01:30:52,000

following a

1107

01:30:57,830 --> 01:30:55,679

normal uneventful entry all of the

1108

01:31:00,709 --> 01:30:57,840

entry sequence of events went by the

1109

01:31:01,669 --> 01:31:00,719

book as planned

1110

01:31:03,669 --> 01:31:01,679

the

1111

01:31:07,430 --> 01:31:03,679

three crew members uh

1112

01:31:09,590 --> 01:31:07,440

in the descent module of the soyuz

1113

01:31:11,350 --> 01:31:09,600

following the undocking earlier this

1114

01:31:13,510 --> 01:31:11,360

evening from the international space

1115

01:31:15,669 --> 01:31:13,520

station

1116

01:31:17,270 --> 01:31:15,679

they are back on earth awaiting their

1117

01:31:19,030 --> 01:31:17,280

extraction

1118

01:31:21,830 --> 01:31:19,040

compliments of the search and recovery

1119

01:31:23,830 --> 01:31:21,840

forces whose russian mi8 helicopters are

1120

01:31:26,550 --> 01:31:23,840

now landing one by one

1121

01:31:28,310 --> 01:31:26,560

to move their way toward the spacecraft

1122

01:31:30,870 --> 01:31:28,320

and begin the process of

1123

01:31:34,070 --> 01:31:30,880

getting the crew out putting them in

1124

01:31:36,229 --> 01:31:34,080

chairs near this capsule itself

1125

01:31:36,950 --> 01:31:36,239

so that they can have an opportunity to

1126

01:31:39,270 --> 01:31:36,960

uh

1127

01:31:41,430 --> 01:31:39,280

get their land legs back a bit before

1128

01:31:44,709 --> 01:31:41,440

they're carried in their chairs

1129

01:31:46,629 --> 01:31:44,719

inside the inflatable medical tent to

1130

01:31:48,229 --> 01:31:46,639

get out of their social launch and entry

1131

01:31:51,669 --> 01:31:48,239

suits and into more comfortable clothing

1132

01:31:55,189 --> 01:31:53,110

the three crew members then will be

1133

01:31:57,270 --> 01:31:55,199

flown by helicopters

1134

01:32:01,830 --> 01:31:57,280

some two hours and 15 minutes to the

1135

01:32:05,590 --> 01:32:04,149

where the crew members will split up

1136

01:32:08,070 --> 01:32:05,600

ruben's

1137

01:32:09,830 --> 01:32:08,080

boarding a nasa plane to fly back to

1138

01:32:12,629 --> 01:32:09,840

houston

1139

01:32:14,790 --> 01:32:12,639

with rizakov and kud zverchkov boarding

1140

01:32:16,950 --> 01:32:14,800

a gagarin cosmonaut training aircraft to

1141

01:32:20,070 --> 01:32:16,960

fly back to their training base in their

1142

01:32:33,669 --> 01:32:20,080

homes in star city russia just outside

1143

01:32:37,669 --> 01:32:34,709

with us

1144

01:32:39,750 --> 01:32:37,679

on a satellite phone from the landing

1145

01:32:41,350 --> 01:32:39,760

site is nasa public affairs officer

1146

01:32:43,590 --> 01:32:41,360

courtney beasley

1147

01:32:46,070 --> 01:32:43,600

courtney uh you are down on the ground

1148

01:32:48,629 --> 01:32:46,080

very quickly as well just within minutes

1149

01:32:50,149 --> 01:32:48,639

of touchdown we do we are looking at

1150

01:32:52,950 --> 01:32:50,159

helicopters

1151

01:32:54,709 --> 01:32:52,960

not yet seeing tv of the spacecraft at

1152

01:32:58,070 --> 01:32:54,719

the landing site so fill us in on what

1153

01:33:02,310 --> 01:32:59,830

rob it's great to hear from you as you

1154

01:33:04,310 --> 01:33:02,320

said i'm here at the landing site there

1155

01:33:05,750 --> 01:33:04,320

are still some helicopters touching down

1156

01:33:08,629 --> 01:33:05,760

right now

1157

01:33:10,790 --> 01:33:08,639

it was an upright landing and it looks

1158

01:33:13,189 --> 01:33:10,800

like the crew has been waving to the

1159

01:33:16,470 --> 01:33:13,199

personnel outside of the capsule

1160

01:33:17,669 --> 01:33:16,480

um our helicopter the skies are as clear

1161

01:33:20,070 --> 01:33:17,679

as they can get

1162

01:33:21,990 --> 01:33:20,080

we actually got a visual of the castle

1163

01:33:23,350 --> 01:33:22,000

10 minutes before touchdown and we were

1164

01:33:25,189 --> 01:33:23,360

able to follow it

1165

01:33:27,030 --> 01:33:25,199

from that minute mark all the way down

1166

01:33:28,550 --> 01:33:27,040

to the ground we were one of the first

1167

01:33:30,470 --> 01:33:28,560

helicopters out

1168

01:33:32,310 --> 01:33:30,480

and i'm on the ground right now you're

1169

01:33:37,830 --> 01:33:32,320

putting the stand up

1170

01:33:43,270 --> 01:33:40,629

what uh what was the flight like from

1171

01:33:45,910 --> 01:33:43,280

your staging point in jessica's gone to

1172

01:33:48,629 --> 01:33:45,920

the landing side to what point did you

1173

01:33:50,709 --> 01:33:48,639

pick up the soyuz and

1174

01:33:52,149 --> 01:33:50,719

how was the touchdown could you see the

1175

01:33:54,870 --> 01:33:52,159

soft landing engines from your

1176

01:33:58,870 --> 01:33:57,030

yeah rob the skies are clear

1177

01:34:01,270 --> 01:33:58,880

the crew could not have asked for a more

1178

01:34:03,669 --> 01:34:01,280

simple ditch to touch down here and

1179

01:34:05,430 --> 01:34:03,679

breathe this fresh air here back on

1180

01:34:07,830 --> 01:34:05,440

earth for the first time

1181

01:34:10,790 --> 01:34:07,840

in 185 days again

1182

01:34:12,709 --> 01:34:10,800

about 57 degrees here clear skies we got

1183

01:34:14,629 --> 01:34:12,719

a visual of the capsule about 10 minutes

1184

01:34:16,470 --> 01:34:14,639

before it touched down

1185

01:34:18,870 --> 01:34:16,480

we were able to follow the capsule all

1186

01:34:21,270 --> 01:34:18,880

the way down to the ground the capsule

1187

01:34:23,350 --> 01:34:21,280

did have an upright landing

1188

01:34:24,390 --> 01:34:23,360

they have this stand around the castle

1189

01:34:26,310 --> 01:34:24,400

right now

1190

01:34:28,070 --> 01:34:26,320

they've opened it up and they're ready

1191

01:34:30,709 --> 01:34:28,080

to extract the crew

1192

01:34:35,669 --> 01:34:30,719

we expect that commander sergeant sergey

1193

01:34:40,229 --> 01:34:36,870

and uh

1194

01:34:41,990 --> 01:34:40,239

we should be receiving a video from the

1195

01:34:44,149 --> 01:34:42,000

landing site from the spacecraft here

1196

01:34:45,189 --> 01:34:44,159

momentarily and we now have video

1197

01:34:47,270 --> 01:34:45,199

courtney

1198

01:34:50,149 --> 01:34:47,280

as we watch

1199

01:34:53,350 --> 01:34:50,159

the search and recovery forces

1200

01:34:55,270 --> 01:34:53,360

surrounding uh the spacecraft

1201

01:34:57,910 --> 01:34:55,280

give us a play-by-play of what you're

1202

01:35:02,229 --> 01:35:00,310

yeah rob there are two personnel on top

1203

01:35:05,669 --> 01:35:02,239

of this band right now

1204

01:35:07,990 --> 01:35:05,679

they are waiting to open the castle up

1205

01:35:10,310 --> 01:35:08,000

they're actually starting to put up this

1206

01:35:12,390 --> 01:35:10,320

medical tent where the crew will go for

1207

01:35:14,550 --> 01:35:12,400

medical evaluation

1208

01:35:17,109 --> 01:35:14,560

after they are extracted and get an

1209

01:35:19,910 --> 01:35:17,119

opportunity to sit in those chairs for a

1210

01:35:22,070 --> 01:35:19,920

few minutes um so right now we're just

1211

01:35:28,950 --> 01:35:22,080

standing by for them to

1212

01:35:33,830 --> 01:35:31,189

hang in there with us uh courtney uh we

1213

01:35:36,149 --> 01:35:33,840

uh we lost the video fee we only had it

1214

01:35:38,149 --> 01:35:36,159

for a moment uh so

1215

01:35:40,229 --> 01:35:38,159

keep uh providing us with what you're

1216

01:35:42,470 --> 01:35:40,239

seeing as

1217

01:35:44,709 --> 01:35:42,480

recovery developments unfold at the

1218

01:35:46,390 --> 01:35:44,719

spacecraft

1219

01:35:48,550 --> 01:35:46,400

no problem rob they're wiping off the

1220

01:35:50,310 --> 01:35:48,560

top right now

1221

01:35:54,229 --> 01:35:50,320

again we should just be a couple seconds

1222

01:35:59,350 --> 01:35:56,790

and uh once the three crew members uh

1223

01:36:02,070 --> 01:35:59,360

are out of the spacecraft uh i assume

1224

01:36:05,270 --> 01:36:02,080

that they've put chairs up near

1225

01:36:07,590 --> 01:36:05,280

uh the uh spacecraft itself what will be

1226

01:36:10,470 --> 01:36:07,600

the scenario uh and the sequence of

1227

01:36:11,990 --> 01:36:10,480

events after that

1228

01:36:13,990 --> 01:36:12,000

yeah rob they're actually setting those

1229

01:36:15,830 --> 01:36:14,000

chairs up as we speak two of them are

1230

01:36:19,030 --> 01:36:15,840

already on the ground

1231

01:36:21,109 --> 01:36:19,040

set up um just a couple feet away from

1232

01:36:24,390 --> 01:36:21,119

the capsule itself these crew members

1233

01:36:26,390 --> 01:36:24,400

will be carried out by one

1234

01:36:27,830 --> 01:36:26,400

at that point they'll get to sit down

1235

01:36:29,430 --> 01:36:27,840

kind of catch their breath from that

1236

01:36:31,189 --> 01:36:29,440

ride down they'll get to make their

1237

01:36:32,629 --> 01:36:31,199

first call back to earth whether it's to

1238

01:36:34,470 --> 01:36:32,639

family or friends

1239

01:36:35,910 --> 01:36:34,480

get to tell them about their trip home

1240

01:36:36,709 --> 01:36:35,920

back to earth

1241

01:36:38,470 --> 01:36:36,719

and

1242

01:36:40,870 --> 01:36:38,480

they'll sit there for a few minutes get

1243

01:36:43,510 --> 01:36:40,880

a chance to

1244

01:36:45,750 --> 01:36:43,520

recuperate and from there they'll head

1245

01:36:47,270 --> 01:36:45,760

into the medical tents for further

1246

01:36:49,350 --> 01:36:47,280

medical evaluation

1247

01:36:52,870 --> 01:36:49,360

industries will get their first medical

1248

01:36:53,669 --> 01:36:52,880

evaluation as well

1249

01:36:58,629 --> 01:36:53,679

the

1250

01:37:01,669 --> 01:36:58,639

recovery forces

1251

01:37:04,390 --> 01:37:01,679

deploy the helicopters and arrive

1252

01:37:06,790 --> 01:37:04,400

at the timing that they do is always

1253

01:37:08,550 --> 01:37:06,800

very stark to me

1254

01:37:10,950 --> 01:37:08,560

give us your impressions this is the

1255

01:37:13,669 --> 01:37:10,960

first time you have been at a landing

1256

01:37:15,910 --> 01:37:13,679

give us your impressions of uh

1257

01:37:18,629 --> 01:37:15,920

how this all unfolded from your

1258

01:37:23,910 --> 01:37:20,950

yeah something to watch it on tv

1259

01:37:25,510 --> 01:37:23,920

completely another thing to be here in

1260

01:37:27,189 --> 01:37:25,520

person the second we got the visual of

1261

01:37:28,550 --> 01:37:27,199

the capsule coming down

1262

01:37:29,990 --> 01:37:28,560

about 10 minutes

1263

01:37:32,310 --> 01:37:30,000

down i just had goosebumps and those

1264

01:37:34,629 --> 01:37:32,320

goosebumps have not gone away it was so

1265

01:37:36,870 --> 01:37:34,639

incredibly exciting we were one of the

1266

01:37:38,310 --> 01:37:36,880

helicopters on the ground um and then

1267

01:37:40,629 --> 01:37:38,320

some helicopters followed us i was

1268

01:37:43,350 --> 01:37:40,639

actually able to dial in before the last

1269

01:37:45,350 --> 01:37:43,360

helicopter had touched down

1270

01:37:50,229 --> 01:37:45,360

and probably

1271

01:37:55,430 --> 01:37:53,669

keep uh keep providing us with your uh

1272

01:37:57,750 --> 01:37:55,440

with your visuals courtney we do not

1273

01:38:00,790 --> 01:37:57,760

have tv at the moment uh we're expecting

1274

01:38:02,709 --> 01:38:00,800

it shortly but uh keep us surprised as

1275

01:38:04,550 --> 01:38:02,719

to what you're seeing who is getting out

1276

01:38:06,790 --> 01:38:04,560

first and what they're doing with the

1277

01:38:08,870 --> 01:38:06,800

crew

1278

01:38:11,030 --> 01:38:08,880

yeah rob there's about four personnel on

1279

01:38:12,470 --> 01:38:11,040

top of this stand right now that goes

1280

01:38:13,750 --> 01:38:12,480

around the castle

1281

01:38:15,510 --> 01:38:13,760

that stand has a ladder for the

1282

01:38:17,590 --> 01:38:15,520

personnel to get up on and it also has a

1283

01:38:19,590 --> 01:38:17,600

slide in which they slide those crew

1284

01:38:21,350 --> 01:38:19,600

members down one by one

1285

01:38:22,790 --> 01:38:21,360

at that point the medical personnel was

1286

01:38:24,310 --> 01:38:22,800

able to carry them over to those chairs

1287

01:38:25,350 --> 01:38:24,320

we were just talking about

1288

01:38:27,030 --> 01:38:25,360

where they'll get their medical

1289

01:38:28,550 --> 01:38:27,040

evaluation be able to make those first

1290

01:38:30,629 --> 01:38:28,560

calls from earth and be able to

1291

01:38:33,510 --> 01:38:30,639

recuperate a little bit before heading

1292

01:38:34,790 --> 01:38:33,520

over to the medical tent um

1293

01:38:36,470 --> 01:38:34,800

it looks like some pictures are being

1294

01:38:37,430 --> 01:38:36,480

taken right now before they extract the

1295

01:38:39,430 --> 01:38:37,440

crew

1296

01:38:42,310 --> 01:38:39,440

but otherwise it looks like we're just

1297

01:38:45,189 --> 01:38:42,320

moments away from commander sergey

1298

01:38:49,910 --> 01:38:47,189

what is uh the timeline uh and the

1299

01:38:51,590 --> 01:38:49,920

sequence of activities after uh the crew

1300

01:38:55,990 --> 01:38:51,600

makes its way into the medical tent for

1301

01:38:59,910 --> 01:38:58,790

yeah so after um their

1302

01:39:01,910 --> 01:38:59,920

tools

1303

01:39:03,109 --> 01:39:01,920

are completely carried over to the

1304

01:39:04,709 --> 01:39:03,119

medical tent

1305

01:39:07,510 --> 01:39:04,719

which is a short distance away from

1306

01:39:09,189 --> 01:39:07,520

where we are now um those you know will

1307

01:39:10,870 --> 01:39:09,199

conduct a more in-depth medical

1308

01:39:12,629 --> 01:39:10,880

evaluation

1309

01:39:13,830 --> 01:39:12,639

the crew will also undergo a series of

1310

01:39:15,750 --> 01:39:13,840

field tests

1311

01:39:17,590 --> 01:39:15,760

hate rubens in particular will undergo a

1312

01:39:19,830 --> 01:39:17,600

test conducted by our human research

1313

01:39:22,790 --> 01:39:19,840

program called standard measures

1314

01:39:24,310 --> 01:39:22,800

and that's just a set of measures taken

1315

01:39:26,070 --> 01:39:24,320

after landing

1316

01:39:28,149 --> 01:39:26,080

to characterize the effects of living

1317

01:39:29,510 --> 01:39:28,159

and working in the microgravity

1318

01:39:31,669 --> 01:39:29,520

environment

1319

01:39:33,270 --> 01:39:31,679

once those tests are complete the crew

1320

01:39:35,189 --> 01:39:33,280

and personnel will head back to their

1321

01:39:37,350 --> 01:39:35,199

designated helicopters

1322

01:39:39,750 --> 01:39:37,360

from there they'll head to the airport

1323

01:39:41,750 --> 01:39:39,760

in caravanda where rubens will board the

1324

01:39:43,830 --> 01:39:41,760

nasa planes after houston and the

1325

01:39:46,149 --> 01:39:43,840

cosmonauts will board their aircraft to

1326

01:39:49,109 --> 01:39:46,159

return to their training base in star

1327

01:39:52,229 --> 01:39:50,790

courtney hang in there with us we're

1328

01:39:55,430 --> 01:39:52,239

going to be coming back to you here

1329

01:39:57,910 --> 01:39:55,440

momentarily just to recap

1330

01:40:00,310 --> 01:39:57,920

this is courtney beasley at the landing

1331

01:40:02,149 --> 01:40:00,320

site nasa public affairs officer

1332

01:40:03,910 --> 01:40:02,159

she wrote on one of the first

1333

01:40:05,430 --> 01:40:03,920

helicopters from

1334

01:40:06,550 --> 01:40:05,440

jez khazgun

1335

01:40:09,910 --> 01:40:06,560

earlier

1336

01:40:11,350 --> 01:40:09,920

to the landing site where the soyuz ns17

1337

01:40:15,590 --> 01:40:11,360

touched down

1338

01:40:17,990 --> 01:40:15,600

about 15 minutes ago at 11 55 pm central

1339

01:40:20,950 --> 01:40:18,000

time 10 55 a.m

1340

01:40:23,990 --> 01:40:20,960

kazakhstan time at the landing site

1341

01:40:26,950 --> 01:40:24,000

it was a perfectly normal re-entry for

1342

01:40:30,229 --> 01:40:26,960

rubens rzhikov and kud zverchkoff

1343

01:40:31,030 --> 01:40:30,239

all of the entry sequence of events

1344

01:40:32,790 --> 01:40:31,040

were

1345

01:40:34,390 --> 01:40:32,800

by the book

1346

01:40:37,270 --> 01:40:34,400

everything went

1347

01:40:39,430 --> 01:40:37,280

normally the separation of the modules

1348

01:40:41,430 --> 01:40:39,440

the deployment of the parachutes

1349

01:40:43,189 --> 01:40:41,440

and a touchdown occurring

1350

01:40:45,830 --> 01:40:43,199

actually about a minute earlier than had

1351

01:40:47,030 --> 01:40:45,840

been predicted almost a bullseye

1352

01:40:50,709 --> 01:40:47,040

touchdown

1353

01:40:52,149 --> 01:40:50,719

with the soyuz sticking the landing

1354

01:40:54,390 --> 01:40:52,159

landing upright

1355

01:40:56,310 --> 01:40:54,400

which of course helps to facilitate the

1356

01:40:57,990 --> 01:40:56,320

extraction of the crew

1357

01:41:00,390 --> 01:40:58,000

courtney what's uh what's going on there

1358

01:41:04,470 --> 01:41:02,149

yeah rob it looks like those initial

1359

01:41:06,790 --> 01:41:04,480

pictures have been taken and it looks

1360

01:41:09,430 --> 01:41:06,800

like they are

1361

01:41:11,750 --> 01:41:09,440

moving down to extract their first crew

1362

01:41:13,430 --> 01:41:11,760

member

1363

01:41:15,669 --> 01:41:13,440

there's about four personnel again on

1364

01:41:19,350 --> 01:41:15,679

top of the stand

1365

01:41:31,109 --> 01:41:19,360

around the soyuz and here we have it

1366

01:41:36,070 --> 01:41:34,310

and some shaking hands some high fives

1367

01:41:38,629 --> 01:41:36,080

and a lot of smiles on the top of that

1368

01:41:42,310 --> 01:41:38,639

stand right now

1369

01:41:48,310 --> 01:41:44,390

giving the crowd a wave

1370

01:41:48,320 --> 01:41:54,709

and he's going down the slide right now

1371

01:41:59,990 --> 01:41:57,030

again the medical personnel right on the

1372

01:42:08,229 --> 01:42:00,000

slide to carry him over to the chairs

1373

01:42:26,149 --> 01:42:10,310

and they're starting the extraction for

1374

01:42:29,430 --> 01:42:27,750

and rob in the medical chairs they'll be

1375

01:42:38,950 --> 01:42:29,440

seated in the same configuration that

1376

01:42:42,950 --> 01:42:41,109

courtney we're standing by for the

1377

01:42:43,990 --> 01:42:42,960

resumption of video from the landing

1378

01:42:46,390 --> 01:42:44,000

site

1379

01:42:48,070 --> 01:42:46,400

and uh based on your report rijakov is

1380

01:42:50,470 --> 01:42:48,080

out and uh we'll be waiting uh for you

1381

01:42:52,870 --> 01:42:50,480

to report on the next crew member to be

1382

01:42:54,870 --> 01:42:52,880

extracted

1383

01:42:56,950 --> 01:42:54,880

yeah rob we're just um standing by

1384

01:42:58,950 --> 01:42:56,960

waiting it should just be a couple

1385

01:43:01,430 --> 01:42:58,960

moments from now

1386

01:43:02,229 --> 01:43:01,440

again the medical personnel on top ready

1387

01:43:04,229 --> 01:43:02,239

to

1388

01:43:19,669 --> 01:43:04,239

help extract and

1389

01:43:25,270 --> 01:43:21,590

courtney sometimes uh at these uh

1390

01:43:26,470 --> 01:43:25,280

landing sites uh the locals

1391

01:43:28,790 --> 01:43:26,480

who know

1392

01:43:30,950 --> 01:43:28,800

as much about landing operations as

1393

01:43:32,470 --> 01:43:30,960

almost the rest of us

1394

01:43:34,310 --> 01:43:32,480

will show up

1395

01:43:38,790 --> 01:43:34,320

to greet the crew members any sign of

1396

01:43:44,070 --> 01:43:41,430

no rock um don't see any sign of any

1397

01:43:45,830 --> 01:43:44,080

locals that may just be due to the token

1398

01:43:47,990 --> 01:43:45,840

19 restrictions

1399

01:43:50,550 --> 01:43:48,000

um and without video you can't tell but

1400

01:43:53,189 --> 01:43:50,560

most people here do have on masks to

1401

01:43:55,750 --> 01:43:53,199

follow those 2019 guidelines

1402

01:43:57,590 --> 01:43:55,760

and we now have video from the landing

1403

01:43:59,830 --> 01:43:57,600

site we just uh caught a glimpse of

1404

01:44:03,590 --> 01:43:59,840

sergey ryzekov and we're looking

1405

01:44:09,270 --> 01:44:06,470

being extracted and other technical

1406

01:44:10,790 --> 01:44:09,280

personnel clamoring at the very top

1407

01:44:12,950 --> 01:44:10,800

hatch

1408

01:44:15,830 --> 01:44:12,960

that you described a moment ago

1409

01:44:19,910 --> 01:44:15,840

rizhikov is smiling being being attended

1410

01:44:21,990 --> 01:44:19,920

to by the usual uh compliment of russian

1411

01:44:23,270 --> 01:44:22,000

search and recovery personnel blood

1412

01:44:25,750 --> 01:44:23,280

pressure

1413

01:44:27,030 --> 01:44:25,760

94

1414

01:44:29,750 --> 01:44:27,040

heart rate

1415

01:44:31,790 --> 01:44:29,760

rishikov having completed his second

1416

01:44:36,229 --> 01:44:31,800

flight into space

1417

01:44:39,030 --> 01:44:38,070

one seven six

1418

01:44:40,790 --> 01:44:39,040

one

1419

01:44:43,350 --> 01:44:40,800

eleven

1420

01:44:45,669 --> 01:44:43,360

rishikov served as the expedition 64

1421

01:44:47,350 --> 01:44:45,679

commander before handing off command of

1422

01:44:49,510 --> 01:44:47,360

the international space station on

1423

01:44:52,149 --> 01:44:49,520

thursday to shannon walker

1424

01:44:54,550 --> 01:44:52,159

the nasa astronaut who will herself be

1425

01:44:56,950 --> 01:44:54,560

handing over command

1426

01:44:59,750 --> 01:44:56,960

to aki hoshide

1427

01:45:02,950 --> 01:44:59,760

on april 27th after hoshide arrives on

1428

01:45:04,550 --> 01:45:02,960

board on the spacex crew dragon vehicle

1429

01:45:11,430 --> 01:45:04,560

which is scheduled for launch next

1430

01:45:15,669 --> 01:45:13,109

and if you're looking at sergey rijkov

1431

01:45:17,590 --> 01:45:15,679

from the front our nasa personnel are to

1432

01:45:42,390 --> 01:45:17,600

the left of him ready to

1433

01:45:42,400 --> 01:45:46,070

thank you

1434

01:45:50,790 --> 01:45:48,709

you're watching uh look at the top ledge

1435

01:45:52,709 --> 01:45:50,800

live television from the landing site in

1436

01:45:54,390 --> 01:45:52,719

kazakhstan to the southeast of the town

1437

01:45:57,510 --> 01:45:54,400

of jessica's gun

1438

01:45:59,590 --> 01:45:57,520

sergey rizhikov out of the soyuz ms-17

1439

01:46:03,669 --> 01:45:59,600

awaiting the extraction of the other two

1440

01:46:03,679 --> 01:46:06,950

parameters

1441

01:46:11,669 --> 01:46:08,870

please do not on the right carrying a

1442

01:46:13,270 --> 01:46:11,679

bouquet of flowers is uh cosmonaut yuri

1443

01:46:15,189 --> 01:46:13,280

malenchenko

1444

01:46:17,350 --> 01:46:15,199

from the gagarin cosmonaut training

1445

01:46:18,709 --> 01:46:17,360

center presumably that bouquet of

1446

01:46:20,870 --> 01:46:18,719

flowers uh

1447

01:46:23,750 --> 01:46:20,880

to be handed to kate rubins after she's

1448

01:46:25,109 --> 01:46:23,760

out of the soyuz 1

1449

01:46:28,550 --> 01:46:25,119

35

1450

01:46:31,830 --> 01:46:29,750

and rob it looks like one of the

1451

01:46:32,629 --> 01:46:31,840

personnel just went into

1452

01:46:34,790 --> 01:46:32,639

the

1453

01:46:55,189 --> 01:46:34,800

soyuz to

1454

01:46:55,199 --> 01:47:06,830

and here's our second crew member

1455

01:47:13,030 --> 01:47:10,550

okay rob kate rubins is outside of the

1456

01:47:15,910 --> 01:47:13,040

castle right now giving high fives and

1457

01:47:15,920 --> 01:47:19,030

and

1458

01:47:28,470 --> 01:47:21,109

staying at kate

1459

01:47:48,149 --> 01:47:30,870

and even 300 days in space on her two

1460

01:48:03,430 --> 01:47:51,590

let's go and she's being brought over to

1461

01:48:07,830 --> 01:48:05,189

okay rob

1462

01:48:11,270 --> 01:48:07,840

reuben has been seated in her chair

1463

01:48:13,590 --> 01:48:11,280

sit down again all smiles

1464

01:48:16,070 --> 01:48:13,600
from both reuben's and our nasa

1465

01:48:18,229 --> 01:48:16,080
personnel

1466

01:48:19,590 --> 01:48:18,239
and kate rubin is now receiving flowers

1467

01:48:23,270 --> 01:48:19,600
a beautiful bouquet

1468

01:48:27,830 --> 01:48:25,430
yuri malenchenko handing rubens that

1469

01:48:29,830 --> 01:48:27,840
bouquet of flowers uh on

1470

01:48:32,470 --> 01:48:29,840
the left of your screen is uh reuben's

1471

01:48:34,550 --> 01:48:32,480
flight surgeon dr natasha cho

1472

01:48:37,510 --> 01:48:34,560
on the right is uh

1473

01:48:40,390 --> 01:48:37,520
a russian nurse roxanna botsmanova who

1474

01:48:44,790 --> 01:48:40,400
operates every landing operation as one

1475

01:48:49,430 --> 01:48:47,030
and rob we just asked kate how her write

1476

01:48:55,830 --> 01:48:49,440

down was and she said quote it was

1477

01:48:55,840 --> 01:49:07,830

please step back

1478

01:49:12,390 --> 01:49:10,149

so rubens and rita cough now

1479

01:49:33,830 --> 01:49:12,400

out of the soyuz just waiting for his

1480

01:49:58,070 --> 01:49:46,149

uh

1481

01:50:01,750 --> 01:49:59,750

and kate rubin's just realized drew

1482

01:50:23,669 --> 01:50:01,760

morgan was here so that was also a good

1483

01:50:27,830 --> 01:50:25,830

on a placid saturday morning on the step

1484

01:50:29,830 --> 01:50:27,840

of kazakhstan uh

1485

01:50:39,990 --> 01:50:29,840

sergey kudzverchkoff about to be

1486

01:50:40,000 --> 01:50:45,830

pressure no oxygen oxygen 95

1487

01:50:45,840 --> 01:51:00,550

okay

1488

01:51:32,149 --> 01:51:08,149

is

1489

01:51:32,159 --> 01:51:38,470

just

1490

01:51:41,589 --> 01:51:40,310

your the measurements have been taken

1491

01:51:47,109 --> 01:51:41,599

and i will

1492

01:51:50,870 --> 01:51:48,790

rob again these chairs are where the

1493

01:51:52,310 --> 01:51:50,880

crew will sit for a short time

1494

01:51:54,709 --> 01:51:52,320

for their first set of medical

1495

01:51:56,229 --> 01:51:54,719

evaluations and they'll also be able to

1496

01:51:58,790 --> 01:51:56,239

make their first phone call from back

1497

01:52:01,430 --> 01:51:58,800

here on earth this is also a period of

1498

01:52:03,350 --> 01:52:01,440

time for their equilibrium to get

1499

01:52:04,470 --> 01:52:03,360

readjusted to gravity after living and

1500

01:52:13,109 --> 01:52:04,480

working

1501
01:52:17,350 --> 01:52:14,950
and conspiracy is now being carried over

1502
01:52:19,750 --> 01:52:17,360
to his chair

1503
01:52:55,109 --> 01:52:19,760
so all three crew members now extracted

1504
01:52:55,119 --> 01:53:03,669
uh

1505
01:53:03,679 --> 01:53:13,910
up

1506
01:53:49,109 --> 01:53:16,629
flight surgeon is

1507
01:54:01,589 --> 01:53:50,390
man it's fun to be on this side of

1508
01:54:05,350 --> 01:54:03,910
television continues to come in from the

1509
01:54:06,950 --> 01:54:05,360
landing site

1510
01:54:09,669 --> 01:54:06,960
where

1511
01:54:13,350 --> 01:54:09,679
just uh 30 minutes ago

1512
01:54:17,030 --> 01:54:13,360
the soyuz ms-17 crew the expedition 64

1513
01:54:19,270 --> 01:54:17,040

trio of cade rubin's sergey ryzekov and

1514

01:54:21,270 --> 01:54:19,280

sergey kud zverchkov

1515

01:54:24,149 --> 01:54:21,280

landed

1516

01:54:27,030 --> 01:54:24,159

upright in their soyuz vehicle to

1517

01:54:28,790 --> 01:54:27,040

complete their 185-day mission

1518

01:54:31,350 --> 01:54:28,800

you just caught a glimpse a moment ago

1519

01:54:32,950 --> 01:54:31,360

of the nearby inflatable medical tent

1520

01:54:35,189 --> 01:54:32,960

the orange tent

1521

01:54:36,550 --> 01:54:35,199

that they will be carried into a few

1522

01:54:38,950 --> 01:54:36,560

moments from now

1523

01:54:40,870 --> 01:54:38,960

to begin medical tests

1524

01:54:43,270 --> 01:54:40,880

before

1525

01:54:45,990 --> 01:54:43,280

boarding uh individual helicopters for

1526

01:54:53,669 --> 01:54:46,000

about a two hour fifteen minute flight

1527

01:54:57,350 --> 01:54:55,109

courtney i think we have you uh

1528

01:54:59,669 --> 01:54:57,360

re-established now tell us what the

1529

01:55:02,709 --> 01:54:59,679

scene is at is looking like uh at the

1530

01:55:06,709 --> 01:55:04,229

uh well as you know all three crew

1531

01:55:07,990 --> 01:55:06,719

members now in their seats kate rubin's

1532

01:55:10,149 --> 01:55:08,000

having a conversation with the nasa

1533

01:55:12,310 --> 01:55:10,159

personnel on the side again she said

1534

01:55:13,750 --> 01:55:12,320

that her ride home was awesome and she

1535

01:55:15,830 --> 01:55:13,760

just said that it was really to be on

1536

01:55:18,550 --> 01:55:15,840

her side of things so

1537

01:55:20,470 --> 01:55:18,560

i'm excited to do boom i know she had a

1538

01:55:22,470 --> 01:55:20,480

great time living and working aboard the

1539

01:55:24,870 --> 01:55:22,480

international space station

1540

01:55:27,510 --> 01:55:24,880

again they'll spam these tears for their

1541

01:55:29,669 --> 01:55:27,520

first set of medical evaluations before

1542

01:55:31,350 --> 01:55:29,679

being carried over to the tent and kate

1543

01:56:08,149 --> 01:55:31,360

rubins is now on the phone making her

1544

01:56:14,390 --> 01:56:10,470

having completed the first

1545

01:56:17,750 --> 01:56:14,400

mission in his career of 185 days that

1546

01:56:20,229 --> 01:56:17,760

included a spacewalk last november

1547

01:56:22,310 --> 01:56:20,239

with uh sergey ryjikov outside of the

1548

01:56:24,149 --> 01:56:22,320

poisk module

1549

01:56:26,629 --> 01:56:24,159

that served as an airlock for the first

1550

01:56:28,550 --> 01:56:26,639

time for a russian spacewalk that poisk

1551

01:56:30,709 --> 01:56:28,560

module was the

1552

01:56:46,709 --> 01:56:30,719

departure point earlier this evening for

1553

01:56:46,719 --> 01:56:53,109

not everybody's here yet

1554

01:56:57,430 --> 01:56:55,109

and courtney uh even

1555

01:57:08,950 --> 01:56:57,440

in the remote step of kazakhstan there's

1556

01:57:22,629 --> 01:57:11,589

okay one more picture of the club

1557

01:57:27,430 --> 01:57:25,270

we should be seeing the crew hoisted in

1558

01:58:11,189 --> 01:57:27,440

those chairs to be brought into the

1559

01:58:17,430 --> 01:58:13,589

for those just joining us

1560

01:58:18,950 --> 01:58:17,440

the soyuz ms-17 landed at 11 55 p.m

1561

01:58:22,629 --> 01:58:18,960

central time

1562

01:58:23,910 --> 01:58:22,639

12 55 a.m eastern time about 34 minutes

1563

01:58:26,390 --> 01:58:23,920

ago

1564

01:58:27,830 --> 01:58:26,400

russian mi8 helicopters carrying uh

1565

01:58:29,030 --> 01:58:27,840

members of the search and recovery

1566

01:58:31,430 --> 01:58:29,040

forces

1567

01:58:33,510 --> 01:58:31,440

uh quickly landed in sequential fashion

1568

01:58:35,669 --> 01:58:33,520

uh one by one

1569

01:58:37,189 --> 01:58:35,679

on a perfectly clear morning on a

1570

01:58:39,109 --> 01:58:37,199

saturday morning on the step of

1571

01:58:40,950 --> 01:58:39,119

kazakhstan to the southeast of the town

1572

01:58:42,950 --> 01:58:40,960

of jezkasgan

1573

01:58:44,470 --> 01:58:42,960

to begin the extraction of the crew one

1574

01:58:46,709 --> 01:58:44,480

by one

1575

01:58:50,070 --> 01:58:46,719

rizakov was first out followed by kate

1576

01:58:52,070 --> 01:58:50,080

rubins and then sergey kood sverchkov

1577

01:58:54,870 --> 01:58:52,080

and you can see

1578

01:58:56,950 --> 01:58:54,880

the crew members now being raised in the

1579

01:59:14,229 --> 01:58:56,960

chairs to be brought to the nearby

1580

01:59:19,430 --> 01:59:16,950

courtney we see uh rishikov signing uh

1581

01:59:21,910 --> 01:59:19,440

his spacecraft give us a

1582

01:59:23,589 --> 01:59:21,920

quick glimpse as to what's going on yes

1583

01:59:26,310 --> 01:59:23,599

okay

1584

01:59:27,910 --> 01:59:26,320

yeah rob the group just took a big group

1585

01:59:30,709 --> 01:59:27,920

photo with all of the personnel from

1586

01:59:32,629 --> 01:59:30,719

both cosmos and from nasa

1587

01:59:34,709 --> 01:59:32,639

again from here the crew will be carried

1588

01:59:37,750 --> 01:59:34,719

into the medical tent

1589

01:59:38,870 --> 01:59:37,760

for further medical evaluation

1590

01:59:41,430 --> 01:59:38,880

after

1591

01:59:42,790 --> 01:59:41,440

those evaluations are finished the crew

1592

01:59:45,109 --> 01:59:42,800

and personnel will head back to their

1593

01:59:47,350 --> 01:59:45,119

designated helicopters and they'll head

1594

01:59:48,950 --> 01:59:47,360

to the airport in karazanda where rivers

1595

01:59:50,790 --> 01:59:48,960

will board the nasa plane back to

1596

01:59:53,270 --> 01:59:50,800

houston and the two cosmonauts will

1597

01:59:56,709 --> 01:59:53,280

board their aircraft to return to their

1598

01:59:59,109 --> 01:59:56,719

training base in star city russia

1599

02:00:03,030 --> 02:00:00,790

headed into the medical tent for further

1600

02:00:04,870 --> 02:00:03,040

medical evaluation that will wrap up my

1601

02:00:06,870 --> 02:00:04,880

report from the field

1602

02:00:08,709 --> 02:00:06,880

it's been an absolute honor to be here

1603

02:00:10,390 --> 02:00:08,719

at this landing representing nasa public

1604

02:00:12,629 --> 02:00:10,400

affairs and we're all looking forward to

1605

02:00:14,470 --> 02:00:12,639

seeing you back in houston rob back to

1606

02:00:17,910 --> 02:00:14,480

you

1607

02:00:19,669 --> 02:00:17,920

safe trip back to houston we'll look

1608

02:00:21,589 --> 02:00:19,679

forward to seeing you and hearing more

1609

02:00:22,709 --> 02:00:21,599

about your trip

1610

02:00:24,709 --> 02:00:22,719

as

1611

02:00:28,229 --> 02:00:24,719

we lost our television feed just a

1612

02:00:30,790 --> 02:00:28,239

moment ago you saw kate rubin's uh being

1613

02:00:31,910 --> 02:00:30,800

carried toward the inflatable medical

1614

02:00:34,950 --> 02:00:31,920

tent

1615

02:00:37,030 --> 02:00:34,960

following uh sergey ryzikov the soyuz

1616

02:00:38,709 --> 02:00:37,040

commander signing the outside of the

1617

02:00:40,229 --> 02:00:38,719

descent module

1618

02:00:42,950 --> 02:00:40,239

with

1619

02:00:45,030 --> 02:00:42,960

the date of landing

1620

02:01:56,629 --> 02:00:45,040

that has now become a tradition for

1621

02:02:02,070 --> 02:01:59,270

the three soyuz crew members and now

1622

02:02:03,589 --> 02:02:02,080

inside the inflatable medical tent at

1623

02:02:05,750 --> 02:02:03,599

the landing site

1624

02:02:06,790 --> 02:02:05,760

just a few feet away from the descent

1625

02:02:09,589 --> 02:02:06,800

module

1626
02:02:13,189 --> 02:02:09,599
that touched down in perfect fashion

1627
02:02:14,790 --> 02:02:13,199
at 11 55 pm central time 12 55 a.m

1628
02:02:18,229 --> 02:02:14,800
eastern time

1629
02:02:21,030 --> 02:02:18,239
to wrap up the 185 day mission of kate

1630
02:02:25,430 --> 02:02:21,040
rubins sergey ryzikov and sergey kud

1631
02:02:29,510 --> 02:02:27,669
there will be a period as you heard from

1632
02:02:31,589 --> 02:02:29,520
public affairs officer courtney beasley

1633
02:02:33,669 --> 02:02:31,599
a period of medical testing inside the

1634
02:02:35,910 --> 02:02:33,679
medical tent

1635
02:02:37,830 --> 02:02:35,920
after which the crew members will board

1636
02:02:39,910 --> 02:02:37,840
individual helicopters

1637
02:02:42,390 --> 02:02:39,920
for a flight back to the staging city of

1638
02:02:44,149 --> 02:02:42,400

karaganda where they will split up

1639

02:02:46,310 --> 02:02:44,159

rubens boarding a nasa plane for a

1640

02:02:49,109 --> 02:02:46,320

flight back to houston

1641

02:02:51,030 --> 02:02:49,119

and rijakoff and kudz vertkoff boarding

1642

02:02:52,229 --> 02:02:51,040

a gagarin cosmonaut training center

1643

02:02:53,830 --> 02:02:52,239

aircraft

1644

02:02:55,510 --> 02:02:53,840

for a flight

1645

02:05:22,790 --> 02:02:55,520

back to star city russia and their

1646

02:05:26,470 --> 02:05:25,589

this is mission control houston

1647

02:05:33,430 --> 02:05:26,480

the

1648

02:05:36,149 --> 02:05:33,440

has brought kate rubin's

1649

02:05:39,950 --> 02:05:36,159

sergey ryzikov and sergey kud sverchkov

1650

02:05:43,189 --> 02:05:39,960

back to earth after 185 days in space a

1651
02:05:45,270 --> 02:05:43,199
78.4 million mile mission

1652
02:05:46,629 --> 02:05:45,280
everything went perfectly throughout the

1653
02:05:49,990 --> 02:05:46,639
course of the night

1654
02:05:52,550 --> 02:05:50,000
from hatch closure through undocking

1655
02:05:55,430 --> 02:05:52,560
through the deorbit burn and all of the

1656
02:05:57,430 --> 02:05:55,440
entry sequence of events that resulted

1657
02:06:01,189 --> 02:05:57,440
in an upright landing for their descent

1658
02:06:02,550 --> 02:06:01,199
module a bullseye landing about 91 miles

1659
02:06:03,990 --> 02:06:02,560
to the southeast of the town of

1660
02:06:06,229 --> 02:06:04,000
jezkasgan

1661
02:06:08,870 --> 02:06:06,239
the crew is out of the soyuz they're in

1662
02:06:11,189 --> 02:06:08,880
the nearby medical tent getting out of

1663
02:06:12,950 --> 02:06:11,199

their social launch and entry suits

1664

02:06:15,830 --> 02:06:12,960

having an opportunity

1665

02:06:17,910 --> 02:06:15,840

to receive initial medical testing

1666

02:06:19,189 --> 02:06:17,920

before they board respective helicopters

1667

02:06:22,310 --> 02:06:19,199

to fly back

1668

02:06:23,910 --> 02:06:22,320

to the staging city of karaganda

1669

02:06:26,229 --> 02:06:23,920

kazakhstan

1670

02:06:29,030 --> 02:06:26,239

where they will split up with rubens

1671

02:06:31,270 --> 02:06:29,040

returning to houston on a nasa plane and

1672

02:06:33,189 --> 02:06:31,280

rizakov and kudzverchkov

1673

02:06:38,629 --> 02:06:33,199

returning to their training base in star

1674

02:06:43,430 --> 02:06:40,709

this is

1675

02:06:45,430 --> 02:06:43,440

one of a continuing series of events in

1676

02:06:47,830 --> 02:06:45,440

one of the busiest periods

1677

02:06:49,830 --> 02:06:47,840

in international space station if not

1678

02:06:52,550 --> 02:06:49,840

human space flight history

1679

02:06:54,470 --> 02:06:52,560

where 14 astronauts and cosmonauts

1680

02:06:56,149 --> 02:06:54,480

are coming and going from the station on

1681

02:06:58,149 --> 02:06:56,159

four different spacecraft over a

1682

02:06:59,510 --> 02:06:58,159

three-week period

1683

02:07:01,910 --> 02:06:59,520

next up

1684

02:07:03,669 --> 02:07:01,920

is next thursday's launch

1685

02:07:06,709 --> 02:07:03,679

of the crew 2

1686

02:07:08,229 --> 02:07:06,719

astronauts on board a spacex crew dragon

1687

02:07:09,750 --> 02:07:08,239

spacecraft

1688

02:07:11,750 --> 02:07:09,760

led by

1689

02:07:14,310 --> 02:07:11,760

spacecraft commander shane kimbrough on

1690

02:07:16,950 --> 02:07:14,320

the right of your screen megan mcarthur

1691

02:07:19,189 --> 02:07:16,960

the dragon pilot on the left

1692

02:07:21,669 --> 02:07:19,199

and the multinational crew rounding out

1693

02:07:24,790 --> 02:07:21,679

tomah pesquet of the european space

1694

02:07:27,350 --> 02:07:24,800

agency and aki hoshide

1695

02:07:28,550 --> 02:07:27,360

of the japan aerospace exploration

1696

02:07:30,629 --> 02:07:28,560

agency

1697

02:07:32,629 --> 02:07:30,639

they are scheduled to launch from

1698

02:07:35,189 --> 02:07:32,639

launch pad 39a at the kennedy space

1699

02:07:38,470 --> 02:07:35,199

center next thursday april 22nd

1700

02:07:41,750 --> 02:07:38,480

at 6 11 a.m eastern time with nasa tv

1701
02:07:44,149 --> 02:07:41,760
coverage beginning at 2 a.m eastern time

1702
02:07:47,270 --> 02:07:44,159
docking scheduled one week

1703
02:07:49,910 --> 02:07:47,280
from today actually from friday

1704
02:07:52,390 --> 02:07:49,920
in the early morning hours to bring the

1705
02:07:54,629 --> 02:07:52,400
station crew temporarily to an 11-person

1706
02:07:56,790 --> 02:07:54,639
crew so we'll be following all of the

1707
02:07:59,189 --> 02:07:56,800
countdown activities throughout the week

1708
02:08:01,030 --> 02:07:59,199
with a series of briefings

1709
02:08:03,270 --> 02:08:01,040
throughout the week from the kennedy

1710
02:08:05,350 --> 02:08:03,280
space center leading up to their launch

1711
02:08:07,830 --> 02:08:05,360
next thursday morning

1712
02:08:09,669 --> 02:08:07,840
in the meantime you can follow and

1713
02:08:12,149 --> 02:08:09,679

recap all of the events from this

1714

02:08:13,750 --> 02:08:12,159

evening on the nasa television video

1715

02:08:16,069 --> 02:08:13,760

file that's coming up

1716

02:08:18,870 --> 02:08:16,079

saturday morning at 4 30 a.m central

1717

02:08:21,990 --> 02:08:18,880

time 5 30 a.m eastern time that will

1718

02:08:23,030 --> 02:08:22,000

recap all of the activities associated

1719

02:08:25,270 --> 02:08:23,040

with

1720

02:08:27,830 --> 02:08:25,280

the return to crew the return to earth

1721

02:08:30,709 --> 02:08:27,840

of the expedition 64 crew

1722

02:08:33,830 --> 02:08:30,719

of uh kate rubins sergey rizhikov and

1723

02:08:35,189 --> 02:08:33,840

sergey kud zverchkov the crew safely

1724

02:08:36,390 --> 02:08:35,199

back on earth

1725

02:08:38,790 --> 02:08:36,400

soon to be

1726

02:08:40,229 --> 02:08:38,800

back home in houston and in star city

1727

02:08:42,149 --> 02:08:40,239

russia

1728

02:08:43,350 --> 02:08:42,159

so we'd like to thank you for uh joining

1729

02:08:44,310 --> 02:08:43,360

us throughout the course of the night

1730

02:08:46,709 --> 02:08:44,320

tonight

1731

02:08:48,390 --> 02:08:46,719

and to follow all of the exploits of the

1732

02:08:50,310 --> 02:08:48,400

expedition crews onboard the

1733

02:08:53,430 --> 02:08:50,320

international space station on

1734

02:09:08,950 --> 02:08:55,750

for now have a great weekend this is

1735

02:09:08,960 --> 02:09:13,860

bye

1736

02:09:13,870 --> 02:09:21,750

[Music]

1737

02:09:25,040 --> 02:09:23,910

it's one of the best kept secrets of

1738

02:09:29,830 --> 02:09:25,050

space science

1739

02:09:32,069 --> 02:09:29,840

[Music]

1740

02:09:34,880 --> 02:09:32,079

for transporting ambitious and hefty

1741

02:09:38,220 --> 02:09:34,890

scientific experiments to near space

1742

02:09:42,950 --> 02:09:41,350

[Applause]