



1
00:00:02,820 --> 00:00:12,240
this is

2
00:00:48,770 --> 00:00:17,870
[Music]

3
00:00:54,889 --> 00:00:52,310
good morning everyone we are awaiting

4
00:00:56,750 --> 00:00:54,899
Dragon Freedom's departure from the

5
00:00:59,270 --> 00:00:56,760
International Space Station on its way

6
00:01:01,369 --> 00:00:59,280
back to planet Earth we expect freedom

7
00:01:03,770 --> 00:01:01,379
to push away from the space station at

8
00:01:06,830 --> 00:01:03,780
805 a.m Pacific Time or 11 05 a.m

9
00:01:09,530 --> 00:01:06,840
eastern time with the crew of ax2 Peggy

10
00:01:12,109 --> 00:01:09,540
Whitson John shoffner Ali alcarney and

11
00:01:13,969 --> 00:01:12,119
Rihanna varnawi who spent the last eight

12
00:01:15,770 --> 00:01:13,979
days living and working on board the

13
00:01:18,230 --> 00:01:15,780

space station in preparation for

14

00:01:19,789 --> 00:01:18,240

departure a short while ago the ax2 crew

15

00:01:22,310 --> 00:01:19,799

suited up in the dragon and station

16

00:01:23,990 --> 00:01:22,320

hatches were sealed my name is Jesse

17

00:01:25,730 --> 00:01:24,000

Anderson I'm a production manager here

18

00:01:27,710 --> 00:01:25,740

at SpaceX headquarters in Hawthorne

19

00:01:30,170 --> 00:01:27,720

California and joining me today is Duke

20

00:01:32,749 --> 00:01:30,180

Brady a multimedia specialist with Axiom

21

00:01:34,429 --> 00:01:32,759

space thanks Jesse it's great to be here

22

00:01:37,670 --> 00:01:34,439

with you and you might say for the ax2

23

00:01:40,249 --> 00:01:37,680

crew it's all downhill from here

24

00:01:42,350 --> 00:01:40,259

and guiding us through the action

25

00:01:44,810 --> 00:01:42,360

s dragon depart station

26
00:01:46,910 --> 00:01:44,820
book Affairs officer Sandra Jones at

27
00:01:51,950 --> 00:01:46,920
NASA's Johnson Space Center in Houston

28
00:01:55,730 --> 00:01:54,350
Hey Jessie Hey Duke thanks so much great

29
00:01:57,590 --> 00:01:55,740
to be here with you both today

30
00:02:00,289 --> 00:01:57,600
everything going well here in Mission

31
00:02:02,389 --> 00:02:00,299
Control Houston the team just recently

32
00:02:05,030 --> 00:02:02,399
wrapped up the hatch closure procedures

33
00:02:08,029 --> 00:02:05,040
and we're looking forward to a smooth on

34
00:02:10,070 --> 00:02:08,039
time undocking later this morning

35
00:02:12,770 --> 00:02:10,080
this is live coverage of the beginning

36
00:02:14,690 --> 00:02:12,780
of the return to Earth for ax2 the

37
00:02:16,970 --> 00:02:14,700
second Axiom space mission to the

38
00:02:18,650 --> 00:02:16,980

International Space Station this webcast

39

00:02:20,570 --> 00:02:18,660

will follow the crew's departure from

40

00:02:22,430 --> 00:02:20,580

the ISS and conclude once they have

41

00:02:24,650 --> 00:02:22,440

exited the approach ellipsoid which is

42

00:02:27,290 --> 00:02:24,660

the imaginary outer boundary of the ISS

43

00:02:28,790 --> 00:02:27,300

then tonight Axiom and SpaceX will pick

44

00:02:30,890 --> 00:02:28,800

back up with live coverage starting

45

00:02:33,530 --> 00:02:30,900

about an hour before Splashdown to share

46

00:02:35,570 --> 00:02:33,540

the conclusion of this mission

47

00:02:37,670 --> 00:02:35,580

for those of you following along ax2

48

00:02:40,070 --> 00:02:37,680

crew consists of Commander Peggy Whitson

49

00:02:42,110 --> 00:02:40,080

pilot John schoffner and Saudi national

50

00:02:44,270 --> 00:02:42,120

astronauts Ali al-karni and rayana

51
00:02:47,270 --> 00:02:44,280
barnawi the four of them lifted off from

52
00:02:49,190 --> 00:02:47,280
Launchpad 39a on Sunday May 21st and

53
00:02:51,290 --> 00:02:49,200
arrived at station about 15 and a half

54
00:02:53,330 --> 00:02:51,300
hours later which marked dragon's

55
00:02:54,890 --> 00:02:53,340
fastest launch to docking time for human

56
00:02:56,869 --> 00:02:54,900
space flight mission

57
00:02:58,670 --> 00:02:56,879
over the last week it has been such a

58
00:03:00,770 --> 00:02:58,680
joy and privilege to see our colleagues

59
00:03:02,750 --> 00:03:00,780
our our friends really fulfilling their

60
00:03:05,030 --> 00:03:02,760
dreams and making such an impact from

61
00:03:06,530 --> 00:03:05,040
space they absolutely crushed their

62
00:03:08,390 --> 00:03:06,540
goals during this Mission from

63
00:03:10,309 --> 00:03:08,400

groundbreaking scientific research to

64

00:03:12,290 --> 00:03:10,319

some truly engaging and heartwarming

65

00:03:14,030 --> 00:03:12,300

Outreach events they have made the most

66

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

of their time in orbit and that's for

67

00:03:16,910 --> 00:03:14,760

sure

68

00:03:19,009 --> 00:03:16,920

speaking for the Axiom space teams we

69

00:03:20,750 --> 00:03:19,019

could not be more proud of this crew and

70

00:03:22,309 --> 00:03:20,760

everything they've accomplished there's

71

00:03:24,050 --> 00:03:22,319

certainly a lot of hugs and handshakes

72

00:03:26,149 --> 00:03:24,060

waiting for them when they get home and

73

00:03:28,250 --> 00:03:26,159

some well-deserved rest eventually but

74

00:03:30,170 --> 00:03:28,260

before that begins we get to share their

75

00:03:32,270 --> 00:03:30,180

Journey back to Earth with all of you

76

00:03:34,490 --> 00:03:32,280

right now

77

00:03:37,190 --> 00:03:34,500

or return we look at a number of weather

78

00:03:39,589 --> 00:03:37,200

items some of the obvious ones are no

79

00:03:41,570 --> 00:03:39,599

rain or no chance of lightning in the

80

00:03:43,490 --> 00:03:41,580

recovery zone both for the safety of the

81

00:03:45,710 --> 00:03:43,500

crew inside the capsule and the recovery

82

00:03:47,690 --> 00:03:45,720

teams on the water we also are looking

83

00:03:49,910 --> 00:03:47,700

for wind speeds less than 10 miles per

84

00:03:51,710 --> 00:03:49,920

hour in relatively calm seas so that we

85

00:03:53,690 --> 00:03:51,720

can safely perform recovery operations

86

00:03:55,910 --> 00:03:53,700

which includes Landing a helicopter on

87

00:03:58,490 --> 00:03:55,920

the recovery ship to fly our crew back

88

00:04:00,289 --> 00:03:58,500

to shore once Dragon apart station the

89

00:04:02,869 --> 00:04:00,299

cruise flight home is expected to last

90

00:04:04,789 --> 00:04:02,879

approximately 12 hours Dragon will also

91

00:04:06,530 --> 00:04:04,799

execute a phasing burn to lower its

92

00:04:08,330 --> 00:04:06,540

orbit and line the spacecraft up with

93

00:04:10,250 --> 00:04:08,340

its landing locations these four

94

00:04:12,589 --> 00:04:10,260

departure Burns will gradually increase

95

00:04:13,970 --> 00:04:12,599

the distance between the spacecraft and

96

00:04:16,129 --> 00:04:13,980

the space station

97

00:04:17,629 --> 00:04:16,139

Dragon will also execute a phasing burn

98

00:04:19,069 --> 00:04:17,639

to lower its orbit and line the

99

00:04:21,890 --> 00:04:19,079

spacecraft up with its Landing location

100

00:04:24,409 --> 00:04:21,900

then the action starts to pick up pick

101
00:04:27,350 --> 00:04:24,419
up pace with trunk separation closure of

102
00:04:28,909 --> 00:04:27,360
the nose cone a de-orbit burn re-entry

103
00:04:32,030 --> 00:04:28,919
deployment of the drogue and Main

104
00:04:33,830 --> 00:04:32,040
parachutes and finally splash down off

105
00:04:36,469 --> 00:04:33,840
the coast of Florida at which point our

106
00:04:38,210 --> 00:04:36,479
teams will recover the ax2 crew dragon

107
00:04:40,370 --> 00:04:38,220
is targeted to splash down off the coast

108
00:04:42,830 --> 00:04:40,380
of Florida this evening at 809 PM

109
00:04:44,689 --> 00:04:42,840
Pacific Time or 1109 PM eastern time

110
00:04:46,909 --> 00:04:44,699
followed by the crew getting picked up

111
00:04:49,070 --> 00:04:46,919
at Sea by one of our SpaceX recovery

112
00:04:50,990 --> 00:04:49,080
vessels for those of you interested in

113
00:04:53,629 --> 00:04:51,000

keeping tabs on the mission be sure to

114

00:04:56,570 --> 00:04:53,639

check out the follow Dragon tracker on

115

00:04:58,249 --> 00:04:56,580

spacex.com and as a reminder just like

116

00:05:00,650 --> 00:04:58,259

its approach to the International Space

117

00:05:02,689 --> 00:05:00,660

Station dragon's departure and deorbit

118

00:05:04,790 --> 00:05:02,699

is is designed to be fully autonomous

119

00:05:07,070 --> 00:05:04,800

requiring no action from the crew on

120

00:05:08,749 --> 00:05:07,080

board let's go now to Sandra Jones at

121

00:05:10,310 --> 00:05:08,759

NASA's Johnson Space Center to hear

122

00:05:12,050 --> 00:05:10,320

about how the crew has been preparing

123

00:05:14,150 --> 00:05:12,060

for their return and what we can expect

124

00:05:18,710 --> 00:05:14,160

from here until Dragon departs from

125

00:05:22,490 --> 00:05:20,570

thanks Duke and welcome to Mission

126
00:05:24,770 --> 00:05:22,500
Control Houston at the Johnson Space

127
00:05:26,689 --> 00:05:24,780
Center in Houston Texas we're currently

128
00:05:28,730 --> 00:05:26,699
inside the International Space Station

129
00:05:30,590 --> 00:05:28,740
flight control room where the team of

130
00:05:32,629 --> 00:05:30,600
flight controller controllers are being

131
00:05:35,270 --> 00:05:32,639
led by NASA flight director Marcos

132
00:05:37,490 --> 00:05:35,280
Flores earlier this morning we brought

133
00:05:39,469 --> 00:05:37,500
you live coverage of hatch closure in

134
00:05:41,749 --> 00:05:39,479
which the Axiom 2 crew suited up

135
00:05:43,490 --> 00:05:41,759
re-entered the SpaceX Freedom vehicle

136
00:05:45,529 --> 00:05:43,500
and closed the hatch between the

137
00:05:47,990 --> 00:05:45,539
International Space Station and freedom

138
00:05:50,090 --> 00:05:48,000

we're now awaiting that undocking and

139

00:05:52,070 --> 00:05:50,100

we'll be looking ahead to the go no go

140

00:05:53,150 --> 00:05:52,080

Poll for undocking here in just a couple

141

00:05:55,490 --> 00:05:53,160

of minutes

142

00:05:57,170 --> 00:05:55,500

while it's been a very busy morning here

143

00:05:59,990 --> 00:05:57,180

in Mission Control Houston in

144

00:06:02,450 --> 00:06:00,000

anticipation of undocking the Axiom 2

145

00:06:05,450 --> 00:06:02,460

crew has also been busy on board station

146

00:06:07,550 --> 00:06:05,460

in anticipation of their return home

147

00:06:09,650 --> 00:06:07,560

over the last several days the

148

00:06:12,050 --> 00:06:09,660

astronauts worked to pack Dragon full of

149

00:06:14,029 --> 00:06:12,060

cargo for their return Journey along

150

00:06:16,550 --> 00:06:14,039

with the crew Dragon will return more

151
00:06:18,890 --> 00:06:16,560
than 300 pounds of cargo back to Earth

152
00:06:21,469 --> 00:06:18,900
that cargo includes scientific

153
00:06:22,809 --> 00:06:21,479
experiments some hardware and basic

154
00:06:39,370 --> 00:06:22,819
items

155
00:06:45,590 --> 00:06:42,770
up inside station prior to making their

156
00:06:47,390 --> 00:06:45,600
way into cool dragons now since getting

157
00:06:49,969 --> 00:06:47,400
the hatches closed Peggy Whitson and

158
00:06:52,189 --> 00:06:49,979
John schoffner also we copy remain

159
00:06:54,290 --> 00:06:52,199
suited up and all four astronauts are in

160
00:06:57,050 --> 00:06:54,300
their seats and are standing by for

161
00:06:59,270 --> 00:06:57,060
undocking again we've got that final go

162
00:07:01,129 --> 00:06:59,280
no go poll coming up just in just a

163
00:07:03,290 --> 00:07:01,139

couple of minutes where the joint SpaceX

164

00:07:06,290 --> 00:07:03,300

and NASA teams will make their final

165

00:07:08,689 --> 00:07:06,300

call for Dragon to depart Space Station

166

00:07:10,610 --> 00:07:08,699

this is one of many checkpoints in the

167

00:07:13,249 --> 00:07:10,620

return that will continue all the way up

168

00:07:15,409 --> 00:07:13,259

until just before the deorbit burn this

169

00:07:17,510 --> 00:07:15,419

gives Mission managers multiple chances

170

00:07:19,730 --> 00:07:17,520

to assess the weather at the Splashdown

171

00:07:22,249 --> 00:07:19,740

zones and just make sure everything is

172

00:07:24,830 --> 00:07:22,259

lining up before dragging to parts so

173

00:07:26,809 --> 00:07:24,840

we'll stand by for that final go no-go

174

00:07:53,230 --> 00:07:26,819

but for now everything continuing to

175

00:07:53,240 --> 00:08:01,070

thank you

176

00:08:05,450 --> 00:08:03,170

and we did hear a confirmation that

177

00:08:07,670 --> 00:08:05,460

Dragon freedom is go to undock from the

178

00:08:10,370 --> 00:08:07,680

International Space Station again we are

179

00:08:13,249 --> 00:08:10,380

targeting 1005 a.m central time this

180

00:08:15,409 --> 00:08:13,259

morning for that undocking

181

00:08:16,909 --> 00:08:15,419

The Joint teams did pull go for that

182

00:08:24,189 --> 00:08:16,919

undock and everything proceeding

183

00:08:35,870 --> 00:08:26,749

currently dragon is in its final

184

00:08:40,430 --> 00:08:38,449

now just like its approach to the

185

00:08:42,589 --> 00:08:40,440

International Space Station for docking

186

00:08:44,449 --> 00:08:42,599

dragon's departure and undocking and

187

00:08:47,110 --> 00:08:44,459

d-orbit is designed to be fully

188

00:08:47,120 --> 00:08:55,130

requiring no action from the crew

189

00:08:58,910 --> 00:08:56,870

once Dragon departs the International

190

00:09:01,610 --> 00:08:58,920

Space Station the flight home is

191

00:09:07,310 --> 00:09:01,620

expected to last a little more than 12

192

00:09:11,930 --> 00:09:09,829

Dragon will use its Draco thrusters to

193

00:09:14,870 --> 00:09:11,940

thrust away from the station in a series

194

00:09:17,090 --> 00:09:14,880

of carefully choreographed maneuvers of

195

00:09:19,130 --> 00:09:17,100

four departure Burns which increase the

196

00:09:20,630 --> 00:09:19,140

distance between the spacecraft and the

197

00:09:23,090 --> 00:09:20,640

space station

198

00:09:25,070 --> 00:09:23,100

Dragon will also execute a phasing burn

199

00:09:29,269 --> 00:09:25,080

to lower its orbit and line the

200

00:09:34,009 --> 00:09:32,030

today's Splashdown zone is off the coast

201
00:09:43,870 --> 00:09:34,019
of Florida we're targeting Panama City

202
00:09:48,590 --> 00:09:46,550
now following the phasing burn to lower

203
00:09:50,710 --> 00:09:48,600
dragon's orbit the action will really

204
00:09:54,110 --> 00:09:50,720
start to pick up with trunk separation

205
00:09:56,509 --> 00:09:54,120
closure of the nose cone deorbit burn

206
00:09:59,329 --> 00:09:56,519
the re-entry burn and then deployment of

207
00:10:01,790 --> 00:09:59,339
the drogue and Main parachutes finally

208
00:10:05,290 --> 00:10:01,800
Splashdown will occur off the coast of

209
00:10:09,949 --> 00:10:08,329
following splash down the Axiom 2 crew

210
00:10:11,810 --> 00:10:09,959
will be recovered from freedom and

211
00:10:14,389 --> 00:10:11,820
placed on board the recovery vessel

212
00:10:54,710 --> 00:10:14,399
before flying on a helicopter back to

213
00:11:00,230 --> 00:10:57,110

so again we did hear that confirmation

214

00:11:02,030 --> 00:11:00,240

that dragon is a go to undock so now we

215

00:11:04,850 --> 00:11:02,040

are waiting for the undocking sequence

216

00:11:06,230 --> 00:11:04,860

to actually begin once that happens it

217

00:11:07,790 --> 00:11:06,240

will take less than five minutes for

218

00:11:11,269 --> 00:11:07,800

Dragon to separate from the

219

00:11:15,350 --> 00:11:12,949

the first step in the automatic

220

00:11:17,509 --> 00:11:15,360

undocking sequence is for the umbilicals

221

00:11:19,430 --> 00:11:17,519

to retract these umbilicals connect

222

00:11:21,710 --> 00:11:19,440

Dragon systems to the space station

223

00:11:23,329 --> 00:11:21,720

transferring power Telemetry and

224

00:11:27,370 --> 00:11:23,339

commands between the two vehicles

225

00:11:32,329 --> 00:11:30,350

once umbilical separation is complete

226

00:11:34,730 --> 00:11:32,339

Dragon will unlatch itself from the

227

00:11:39,170 --> 00:11:34,740

space station by releasing the 12 hard

228

00:11:41,269 --> 00:11:39,180

capture hooks in two separate phases

229

00:11:42,829 --> 00:11:41,279

all of that combined takes less than

230

00:11:45,530 --> 00:11:42,839

five minutes and then Dragon will be

231

00:11:48,050 --> 00:11:45,540

ready to depart from space station and

232

00:11:52,910 --> 00:11:48,060

push itself away further by using its

233

00:11:57,050 --> 00:11:55,250

now dragon's initial departure from

234

00:11:58,970 --> 00:11:57,060

space station is a little different than

235

00:12:01,730 --> 00:11:58,980

other docked Vehicles like the soyuz

236

00:12:03,590 --> 00:12:01,740

that rely on Springs to push them away

237

00:12:06,350 --> 00:12:03,600

from the docking port

238

00:12:08,690 --> 00:12:06,360

Dragon will actually execute two short

239

00:12:10,970 --> 00:12:08,700

Thruster firings to undock using a

240

00:12:16,490 --> 00:12:10,980

combination of the 12 Draco engines

241

00:12:20,930 --> 00:12:18,650

the first two helps to break any

242

00:12:22,970 --> 00:12:20,940

stiction between dragon and the docking

243

00:12:30,730 --> 00:12:22,980

port and the second slowly backs the

244

00:12:35,509 --> 00:12:33,290

so we are expecting the call for the

245

00:12:48,790 --> 00:12:35,519

undocking sequence to begin in just a

246

00:12:48,800 --> 00:14:05,210

thank you

247

00:14:09,530 --> 00:14:07,370

all right and we are just a couple of

248

00:14:11,629 --> 00:14:09,540

minutes away from the undocking command

249

00:14:13,430 --> 00:14:11,639

to be sent again it will be about a five

250

00:14:15,170 --> 00:14:13,440

minute process between the time the

251
00:14:16,970 --> 00:14:15,180
undocking command is sent and the time

252
00:14:35,110 --> 00:14:16,980
Dragon actually undocks from the

253
00:14:40,189 --> 00:14:38,090
once the undocking command is sent the

254
00:14:43,790 --> 00:14:40,199
first thing we'll be looking for a call

255
00:14:45,949 --> 00:14:43,800
out for is that umbilicals will retract

256
00:14:48,230 --> 00:14:45,959
then we'll be looking ahead to the hooks

257
00:14:50,210 --> 00:14:48,240
to open in two sets of sticks and then

258
00:14:53,150 --> 00:14:50,220
two short undocking Burns will occur

259
00:14:54,590 --> 00:14:53,160
marking the official undocking of crew

260
00:15:04,030 --> 00:14:54,600
Dragon freedom from the International

261
00:15:14,389 --> 00:15:06,590
now 10 seconds away from that command

262
00:15:22,069 --> 00:15:17,090
Dragon SpaceX on the big loop undock

263
00:15:26,569 --> 00:15:24,530

and you just heard confirmation of the

264

00:15:28,670 --> 00:15:26,579

initiation of the undocking sequence

265

00:15:40,389 --> 00:15:28,680

that has begun and the umbilicals are

266

00:15:49,790 --> 00:15:42,769

hearing good calls on the movement of

267

00:15:49,800 --> 00:15:57,949

umbilical demate complete and nominal

268

00:16:05,810 --> 00:16:00,230

umbilical demate was successful and as

269

00:16:09,769 --> 00:16:07,970

so the umbilical has been retracted in

270

00:16:12,290 --> 00:16:09,779

the first set of hooks

271

00:16:29,949 --> 00:16:12,300

that first set of six are beginning to

272

00:16:35,389 --> 00:16:32,810

again the umbilical has fully retracted

273

00:16:37,910 --> 00:16:35,399

and the first set of six hooks of 12 are

274

00:16:39,530 --> 00:16:37,920

also retracting each of these sets of

275

00:16:46,030 --> 00:16:39,540

hooks takes a little bit more than two

276
00:17:03,250 --> 00:16:48,650
and on your screen you can see the team

277
00:17:08,030 --> 00:17:05,870
we're currently still in what we call

278
00:17:11,090 --> 00:17:08,040
Integrated operations while we're

279
00:17:12,710 --> 00:17:11,100
working alongside SpaceX and Axiom but

280
00:17:14,210 --> 00:17:12,720
following the undocking and exit from

281
00:17:16,850 --> 00:17:14,220
the approach ellipsoid this morning

282
00:17:19,370 --> 00:17:16,860
we'll turn it over to Axiom and SpaceX

283
00:17:21,710 --> 00:17:19,380
to take it the rest of the way home as

284
00:17:23,809 --> 00:17:21,720
crew Dragon Freedom prepares to splash

285
00:17:26,689 --> 00:17:23,819
down off the coast of Panama City

286
00:17:35,029 --> 00:17:26,699
Florida this evening at 1004 PM Central

287
00:17:49,330 --> 00:17:38,990
copy you can drive home

288
00:17:53,510 --> 00:17:51,529

since we've gone past what we were

289

00:17:54,950 --> 00:17:53,520

expecting we would like them to just try

290

00:17:57,529 --> 00:17:54,960

one more turn

291

00:17:59,630 --> 00:17:57,539

um at their current setting again that

292

00:18:10,970 --> 00:17:59,640

first set of six hooks continuing to

293

00:18:10,980 --> 00:18:21,789

taking selfies

294

00:18:26,330 --> 00:18:24,169

and you did hear the confirmation there

295

00:18:28,010 --> 00:18:26,340

that the first set of hooks have

296

00:18:31,070 --> 00:18:28,020

successfully retracted everything

297

00:18:34,310 --> 00:18:31,080

continuing to go as planned

298

00:18:48,669 --> 00:18:34,320

the second set of hooks are now in the

299

00:18:54,350 --> 00:18:51,049

this second set of hooks will take about

300

00:18:56,810 --> 00:18:54,360

two minutes as well to retract

301

00:19:12,650 --> 00:18:56,820

nightmare could config

302

00:19:53,150 --> 00:19:14,930

and we're about halfway through that

303

00:20:10,970 --> 00:19:55,789

second set of hooks continuing to

304

00:20:21,710 --> 00:20:14,150

Dragon SpaceX on the big loop all hooks

305

00:20:26,570 --> 00:20:23,810

Dragon separation and we do have

306

00:20:29,630 --> 00:20:26,580

confirmation of Freedom crew Dragon

307

00:20:33,710 --> 00:20:29,640

Freedom undocking at 1005 a.m Central

308

00:20:41,090 --> 00:20:35,630

and you're seeing a video of that

309

00:20:45,049 --> 00:20:43,370

so dragon has started to push itself

310

00:20:47,930 --> 00:20:45,059

away from the International Space

311

00:20:50,510 --> 00:20:47,940

Station and with that Peggy Whitson John

312

00:20:52,310 --> 00:20:50,520

shoffner Ali alcarney and Rihanna Barney

313

00:20:54,289 --> 00:20:52,320

have completed their Journey aboard the

314

00:20:57,890 --> 00:20:54,299

International Space Station

315

00:21:11,310 --> 00:20:57,900

again confirmed separation at 10 05 a.m

316

00:21:11,320 --> 00:21:21,909

[Music]

317

00:21:27,409 --> 00:21:24,830

and we are hearing good confirmation of

318

00:21:31,070 --> 00:21:27,419

those undocking Burns who also heard

319

00:21:32,810 --> 00:21:31,080

some enabled and Axiom two it was a

320

00:21:34,010 --> 00:21:32,820

pleasure having you on board we really

321

00:21:35,990 --> 00:21:34,020

appreciate all the hard work

322

00:21:39,770 --> 00:21:36,000

congratulations on an outstanding

323

00:21:45,049 --> 00:21:42,049

great generosity is greatly appreciated

324

00:21:47,029 --> 00:21:45,059

and I wish you come see and come win for

325

00:21:59,570 --> 00:21:47,039

your Splashdown this evening take care

326

00:21:59,580 --> 00:22:05,450

and Houston copies

327

00:22:11,570 --> 00:22:08,990

and some kind words there between Axiom

328

00:22:13,070 --> 00:22:11,580

to Commander Peggy Whitson and Steve

329

00:22:14,990 --> 00:22:13,080

Bowen who's on board the International

330

00:22:19,970 --> 00:22:15,000

Space Station monitoring today's

331

00:22:24,230 --> 00:22:22,190

now lit up against the International

332

00:22:26,450 --> 00:22:24,240

Space Station there you just saw the

333

00:22:40,090 --> 00:22:26,460

flashes from the thrusters as those

334

00:22:44,090 --> 00:22:42,529

these short Burns help increase the

335

00:22:46,430 --> 00:22:44,100

speed at which dragon is flying away

336

00:22:48,409 --> 00:22:46,440

from the space station and start to send

337

00:22:53,110 --> 00:22:48,419

it on a trajectory up and over the

338

00:22:58,850 --> 00:22:55,789

and there you can see those Thruster

339

00:23:00,169 --> 00:22:58,860

firings lighting up the the soyuz

340

00:23:34,990 --> 00:23:00,179

vehicle docked to the International

341

00:23:40,250 --> 00:23:38,090

the next burn that we're tracking is the

342

00:23:42,230 --> 00:23:40,260

departure burn which will help increase

343

00:23:44,330 --> 00:23:42,240

the additional opening rate between the

344

00:23:49,669 --> 00:23:44,340

crew dragon and the space station

345

00:23:58,810 --> 00:23:52,010

and this departure burn one is slated to

346

00:24:03,470 --> 00:24:01,130

following this burn the crew will start

347

00:24:06,409 --> 00:24:03,480

to take off their spacesuits until it's

348

00:24:11,630 --> 00:24:09,590

they do wear their launch and landings

349

00:24:14,450 --> 00:24:11,640

launch and re-entry spacesuits during

350

00:24:16,909 --> 00:24:14,460

the dynamic phases of flight

351
00:24:18,470 --> 00:24:16,919
however during this 12-hour journey to

352
00:24:20,210 --> 00:24:18,480
splash down they'll have the opportunity

353
00:24:23,690 --> 00:24:20,220
to take their spacesuits off and get

354
00:24:27,590 --> 00:24:25,669
and then they'll put their spacesuits

355
00:24:57,430 --> 00:24:27,600
back on ahead of Splashdown later this

356
00:25:05,810 --> 00:25:00,289
now one minute until the departure burn

357
00:25:11,270 --> 00:25:08,149
again this 21 second burn is going to

358
00:25:14,810 --> 00:25:11,280
help continue to propel Freedom away

359
00:25:17,270 --> 00:25:14,820
from the International Space Station

360
00:25:19,909 --> 00:25:17,280
and shortly after the departure burn

361
00:25:22,370 --> 00:25:19,919
occurs Freedom will exit the keep out

362
00:25:25,370 --> 00:25:22,380
sphere the keep out sphere is an

363
00:25:27,169 --> 00:25:25,380

imaginary sphere which is 200 meters in

364

00:25:29,750 --> 00:25:27,179

radius around the International Space

365

00:25:31,789 --> 00:25:29,760

Station and it's one of several safety

366

00:25:33,830 --> 00:25:31,799

zones that set up to govern visiting

367

00:25:36,890 --> 00:25:33,840

spacecraft either arriving or departing

368

00:25:40,850 --> 00:25:38,930

before moving into the keep out sphere

369

00:25:42,350 --> 00:25:40,860

spacecraft have to be configured where

370

00:25:44,930 --> 00:25:42,360

they would not cross the imaginary

371

00:25:47,090 --> 00:25:44,940

boundary for at least four orbits even

372

00:26:01,750 --> 00:25:47,100

if the spacecraft were to lose all of

373

00:26:01,760 --> 00:26:12,110

depart burn one underway

374

00:26:21,350 --> 00:26:13,970

and you are seeing some of those

375

00:26:26,830 --> 00:26:23,870

again this burn is using the Draco

376
00:26:32,870 --> 00:26:30,289
one nominal and all Dragon systems look

377
00:26:36,710 --> 00:26:32,880
healthy good undock at this time you are

378
00:26:38,630 --> 00:26:36,720
go to Dolph suits in 4.012 and finally a

379
00:26:40,850 --> 00:26:38,640
reminder that the big loop will be

380
00:26:45,830 --> 00:26:40,860
deactivated following dragon's exit from

381
00:26:45,840 --> 00:27:01,390
foreign

382
00:27:06,529 --> 00:27:04,010
and with that call out of a successful

383
00:27:08,269 --> 00:27:06,539
departure burn one the crew now has the

384
00:27:10,490 --> 00:27:08,279
go to get out of their spacesuits and

385
00:27:47,470 --> 00:27:10,500
get comfortable for the 12-hour Journey

386
00:28:01,370 --> 00:27:57,409
continuing to get some views

387
00:28:13,750 --> 00:28:01,380
as it backs away from the International

388
00:28:13,760 --> 00:28:22,210

or something

389

00:28:26,409 --> 00:28:25,010

and we just got word that dragon has

390

00:28:30,049 --> 00:28:26,419

exited

391

00:28:32,870 --> 00:28:30,059

again that's imaginary

392

00:28:34,430 --> 00:28:32,880

it's that imaginary sphere 200 meters in

393

00:28:37,370 --> 00:28:34,440

radius around the International Space

394

00:28:39,289 --> 00:28:37,380

Station and on your screen here so you

395

00:28:41,390 --> 00:28:39,299

continue to see Freedom back away you're

396

00:28:43,909 --> 00:28:41,400

actually able to see those windows on

397

00:28:45,830 --> 00:28:43,919

the vehicle and can kind of make out the

398

00:28:48,350 --> 00:28:45,840

crew inside as they continue to get

399

00:29:28,669 --> 00:28:48,360

smaller and smaller making their way

400

00:29:28,679 --> 00:29:32,810

happy birthday

401
00:29:39,710 --> 00:29:37,070
yep like and they see if the ards have

402
00:29:39,720 --> 00:30:11,029
um

403
00:30:15,409 --> 00:30:13,130
the next major Milestone that we are

404
00:30:21,169 --> 00:30:15,419
tracking this morning is when Dragon

405
00:30:26,149 --> 00:30:24,230
this is another imaginary shape it's a

406
00:30:28,549 --> 00:30:26,159
three-dimensional ellipsoid measuring

407
00:30:31,310 --> 00:30:28,559
four kilometers by two kilometers by two

408
00:30:36,889 --> 00:30:31,320
kilometers it's in the same family as

409
00:30:40,250 --> 00:30:38,690
one of the key differences with the

410
00:30:42,409 --> 00:30:40,260
approach ellipsoid is that Vehicles

411
00:30:49,450 --> 00:30:42,419
outside it have to be on what we call a

412
00:30:53,990 --> 00:30:51,590
and we're getting some really great

413
00:30:55,549 --> 00:30:54,000

views of dragon here as it continues to

414

00:30:59,769 --> 00:30:55,559

undock from the International Space

415

00:31:04,850 --> 00:31:02,269

you can see the nose cone is open and

416

00:31:06,470 --> 00:31:04,860

the trunk is attached before splash down

417

00:31:35,149 --> 00:31:06,480

the nose cone will close and that trunk

418

00:31:35,159 --> 00:31:48,289

later

419

00:31:48,299 --> 00:31:58,430

on

420

00:33:06,370 --> 00:32:51,110

foreign

421

00:33:11,090 --> 00:33:09,110

and with everything continuing to go

422

00:33:14,029 --> 00:33:11,100

smoothly here in Mission Control Houston

423

00:33:16,310 --> 00:33:14,039

we are waiting for Dragon to exit that

424

00:33:18,889 --> 00:33:16,320

approach ellipsoid following the on time

425

00:33:21,830 --> 00:33:18,899

undocking this morning at 10 05 a.m

426
00:33:23,930 --> 00:33:21,840
Central Time dragon has completed a

427
00:33:25,610 --> 00:33:23,940
series of burns to back it away from the

428
00:33:28,009 --> 00:33:25,620
International Space Station and again

429
00:33:30,230 --> 00:33:28,019
everything going A-Okay this morning

430
00:33:32,330 --> 00:33:30,240
here in Mission Control Houston so I'm

431
00:33:34,070 --> 00:33:32,340
going to toss it over to Hawthorne to

432
00:33:35,630 --> 00:33:34,080
give us an update and so they can share

433
00:33:38,870 --> 00:33:35,640
a little bit about what it was like to

434
00:33:41,509 --> 00:33:38,880
see undocking from their perspective

435
00:33:43,730 --> 00:33:41,519
awesome thank you Sandra

436
00:33:46,730 --> 00:33:43,740
if you're just now joining us you are

437
00:33:50,269 --> 00:33:46,740
watching the undocking of the Dragon

438
00:33:52,130 --> 00:33:50,279

Freedom vehicle carrying the ax2 crew

439

00:33:55,009 --> 00:33:52,140

members as they make their way back down

440

00:33:56,450 --> 00:33:55,019

home to Earth and just as Dragon uh

441

00:33:58,549 --> 00:33:56,460

fully autonomously flew to the

442

00:34:00,950 --> 00:33:58,559

International Space Station it is fully

443

00:34:02,570 --> 00:34:00,960

autonomously flying them back down to

444

00:34:04,870 --> 00:34:02,580

earth as well so all these Maneuvers

445

00:34:08,030 --> 00:34:04,880

that you're seeing are fully autonomous

446

00:34:10,070 --> 00:34:08,040

and we have completed a few Burns once

447

00:34:13,430 --> 00:34:10,080

the vehicle is out of the keep out

448

00:34:15,470 --> 00:34:13,440

sphere then it can perform its do you

449

00:34:18,530 --> 00:34:15,480

orbit burn and make its way back down to

450

00:34:21,530 --> 00:34:18,540

earth so what you can expect uh as

451
00:34:24,950 --> 00:34:21,540
Dragon returns is the trunk will be

452
00:34:28,490 --> 00:34:24,960
jettisoned once we um jettison the trunk

453
00:34:31,129 --> 00:34:28,500
then the vehicle can reorient reorient

454
00:34:33,589 --> 00:34:31,139
itself for making its way back into the

455
00:34:36,169 --> 00:34:33,599
Earth's atmosphere and then the drogue

456
00:34:38,869 --> 00:34:36,179
and Main parachutes will deploy and the

457
00:34:41,270 --> 00:34:38,879
crew will safely touch down in the ocean

458
00:34:43,790 --> 00:34:41,280
off the coast of Florida now just as a

459
00:34:46,490 --> 00:34:43,800
reminder this is the second flight for

460
00:34:49,609 --> 00:34:46,500
this Dragon specifically Dragon freedom

461
00:34:53,030 --> 00:34:49,619
and it flew first flew on crew 4 in

462
00:34:55,190 --> 00:34:53,040
April in 2022. this is also the 10th

463
00:34:58,250 --> 00:34:55,200

human space flight mission in the last

464

00:35:00,410 --> 00:34:58,260

three years wow exciting stuff well and

465

00:35:02,570 --> 00:35:00,420

for Axiom space these missions serve as

466

00:35:04,730 --> 00:35:02,580

a precursor in developing the teams

467

00:35:06,890 --> 00:35:04,740

systems and relationships necessary to

468

00:35:09,170 --> 00:35:06,900

operate our own Axiom station currently

469

00:35:10,790 --> 00:35:09,180

under construction for Peggy Whitson

470

00:35:12,650 --> 00:35:10,800

John schoffner and Saudi national

471

00:35:14,990 --> 00:35:12,660

astronauts Ali al-karni and Rihanna

472

00:35:16,849 --> 00:35:15,000

barnali this has been an incredibly

473

00:35:18,710 --> 00:35:16,859

successful mission

474

00:35:20,690 --> 00:35:18,720

as the second private mission to the

475

00:35:22,609 --> 00:35:20,700

International Space Station Axiom 2 is

476
00:35:24,710 --> 00:35:22,619
also an important step for Axiom space

477
00:35:27,170 --> 00:35:24,720
and its academic and Industrial Partners

478
00:35:28,370 --> 00:35:27,180
to perform proof of concept studies and

479
00:35:30,349 --> 00:35:28,380
cutting-edge advancements in

480
00:35:32,450 --> 00:35:30,359
microgravity during their time on the

481
00:35:34,910 --> 00:35:32,460
orbiting laboratory the ax2 astronauts

482
00:35:36,770 --> 00:35:34,920
successfully executed over 20 steam

483
00:35:38,630 --> 00:35:36,780
Outreach engagements and 20 different

484
00:35:41,270 --> 00:35:38,640
microgravity experiments as well as

485
00:35:43,310 --> 00:35:41,280
eight media events they utilize utilize

486
00:35:45,050 --> 00:35:43,320
novel Technologies on orbit that could

487
00:35:47,650 --> 00:35:45,060
be used for future human space flight

488
00:35:50,089 --> 00:35:47,660

Pursuits and benefit humankind on Earth

489

00:35:52,849 --> 00:35:50,099

returning with them in the SpaceX Dragon

490

00:35:54,950 --> 00:35:52,859

freedom is more than 300 pounds of cargo

491

00:35:56,870 --> 00:35:54,960

and important data that will impact our

492

00:35:59,329 --> 00:35:56,880

understanding of human physiology on

493

00:36:01,010 --> 00:35:59,339

Earth and on orbit and beyond all that

494

00:36:03,410 --> 00:36:01,020

they also had a few moments to take into

495

00:36:06,890 --> 00:36:03,420

view unlike any found on Earth looking

496

00:36:08,930 --> 00:36:06,900

at the planet from 250 miles above it

497

00:36:11,390 --> 00:36:08,940

so for more details on the incredible

498

00:36:15,170 --> 00:36:11,400

work performed by this crew and on orbit

499

00:36:17,569 --> 00:36:15,180

check out the axiomsface.com ax2

500

00:36:19,430 --> 00:36:17,579

research website

501
00:36:21,650 --> 00:36:19,440
it's going to be pretty incredible to

502
00:36:23,510 --> 00:36:21,660
see all of the work that they perform on

503
00:36:26,030 --> 00:36:23,520
station brought back and those data

504
00:36:27,589 --> 00:36:26,040
analyzed and everything really given uh

505
00:36:29,089 --> 00:36:27,599
sort of its its full breadth of

506
00:36:29,870 --> 00:36:29,099
knowledge once they get back here on

507
00:36:31,849 --> 00:36:29,880
Earth

508
00:36:33,770 --> 00:36:31,859
yeah Duke this has been an incredible

509
00:36:36,290 --> 00:36:33,780
Mission so far and we're going to send

510
00:36:38,270 --> 00:36:36,300
it back over to Houston Texas mission

511
00:36:42,069 --> 00:36:38,280
control with Sandra Jones how's it going

512
00:36:46,310 --> 00:36:44,569
thanks Jesse and Duke everything's still

513
00:36:48,109 --> 00:36:46,320

continuing to go smoothly here in

514

00:36:50,390 --> 00:36:48,119

Mission Control Houston we are standing

515

00:36:52,130 --> 00:36:50,400

by for Dragon freedom to exit that

516

00:36:54,470 --> 00:36:52,140

approach ellipsoid

517

00:36:56,510 --> 00:36:54,480

again this is a four kilometer by two

518

00:36:59,030 --> 00:36:56,520

kilometer by two kilometer Zone around

519

00:37:01,490 --> 00:36:59,040

the International Space Station in which

520

00:37:03,950 --> 00:37:01,500

a vehicle must be on a 24-hour safe

521

00:37:06,650 --> 00:37:03,960

trajectory from interfering with space

522

00:37:20,390 --> 00:37:06,660

station even if it lost all maneuvering

523

00:37:27,550 --> 00:37:23,329

we are just a few minutes away from that

524

00:37:32,450 --> 00:37:30,170

now once that

525

00:37:34,130 --> 00:37:32,460

approach ellipsoid exit does occur the

526

00:37:35,930 --> 00:37:34,140

team here in Mission Control will

527

00:37:38,329 --> 00:37:35,940

continue to monitor every step of the

528

00:37:40,670 --> 00:37:38,339

way but the prime responsibility once

529

00:37:48,589 --> 00:37:40,680

they exit approach ellipsoid will be on

530

00:37:52,790 --> 00:37:50,690

so again just a few minutes away from

531

00:38:38,810 --> 00:37:52,800

approach ellipsoid exit we are targeting

532

00:38:43,609 --> 00:38:41,450

another thing that will happen once the

533

00:38:46,490 --> 00:38:43,619

crew exits the approach ellipsoid is

534

00:38:48,230 --> 00:38:46,500

that integrated Communications Loop

535

00:38:53,450 --> 00:38:48,240

called the big loop will be taken down

536

00:38:58,930 --> 00:38:56,630

Communications and at this time

537

00:39:01,310 --> 00:38:58,940

crew Dragon freedom is

538

00:39:25,930 --> 00:39:01,320

916 meters away from the International

539

00:39:54,370 --> 00:39:29,030

just about a minute until expected exit

540

00:39:59,030 --> 00:39:56,329

thank you

541

00:40:23,450 --> 00:39:59,040

Dragon SpaceX Comcheck on Dragon to

542

00:40:28,190 --> 00:40:26,089

hey Peru we've got you five by five on

543

00:40:31,310 --> 00:40:28,200

dragging to ground over I'm assuming the

544

00:40:33,890 --> 00:40:31,320

cabin mic at this time we've just exited

545

00:40:37,310 --> 00:40:33,900

the approach ellipsoid and dragon is on

546

00:40:38,450 --> 00:40:37,320

a safe free free drift trajectory and

547

00:40:50,210 --> 00:40:38,460

I'm letting you know that we're going to

548

00:40:55,250 --> 00:40:52,730

and we did get that confirmation that

549

00:40:57,589 --> 00:40:55,260

dragon dragon has successfully exited

550

00:41:00,530 --> 00:40:57,599

the approach ellipsoid and is continuing

551
00:41:02,690 --> 00:41:00,540
their Journey back to Earth so with that

552
00:41:04,490 --> 00:41:02,700
from here in Mission Control Houston we

553
00:41:06,890 --> 00:41:04,500
will conclude our coverage of this

554
00:41:09,410 --> 00:41:06,900
Mission and hand it over to the teams at

555
00:41:11,569 --> 00:41:09,420
SpaceX and Axiom to take it from here

556
00:41:13,370 --> 00:41:11,579
thank you so much for joining us for our

557
00:41:15,589 --> 00:41:13,380
coverage today of hatch closure and

558
00:41:19,490 --> 00:41:15,599
undocking until next time this is

559
00:41:24,950 --> 00:41:22,310
awesome thank you Sandra now that Peggy

560
00:41:27,109 --> 00:41:24,960
Whitson John shoffner Ali alcarney and

561
00:41:28,910 --> 00:41:27,119
Rihanna Barney have Departed the

562
00:41:31,550 --> 00:41:28,920
International Space Station it will only

563
00:41:33,410 --> 00:41:31,560

take them roughly 12 hours until they

564

00:41:35,329 --> 00:41:33,420

make their way back down to earth next

565

00:41:37,010 --> 00:41:35,339

up the crew will doff their spacesuits

566

00:41:39,770 --> 00:41:37,020

to get a little bit more comfy for

567

00:41:42,290 --> 00:41:39,780

flight after a brief off-duty period the

568

00:41:44,810 --> 00:41:42,300

crew will then begin final cabin in in

569

00:41:47,210 --> 00:41:44,820

Cabin preparations and approximately six

570

00:41:49,370 --> 00:41:47,220

and a half hours from now they will Dawn

571

00:41:51,349 --> 00:41:49,380

or put back on their spacesuits and

572

00:41:54,290 --> 00:41:51,359

begin final preparations for the orbit

573

00:41:55,790 --> 00:41:54,300

entry and Splashdown our teams here on

574

00:41:57,650 --> 00:41:55,800

the ground will continue to keep an eye

575

00:42:01,069 --> 00:41:57,660

on the weather to ensure a safe return

576
00:42:02,930 --> 00:42:01,079
to Earth for Dragon and the ax2 crew

577
00:42:06,230 --> 00:42:02,940
and should the current projections hold

578
00:42:08,569 --> 00:42:06,240
starting at 1104 PM Eastern and 804 PM

579
00:42:10,310 --> 00:42:08,579
Pacific this evening Axiom and SpaceX

580
00:42:12,530 --> 00:42:10,320
will pick back up with live coverage of

581
00:42:14,450 --> 00:42:12,540
the conclusion of this ax2 Mission

582
00:42:16,310 --> 00:42:14,460
should teams need to adjust the timing

583
00:42:19,010 --> 00:42:16,320
of Splashdown it is our plan to go live

584
00:42:20,630 --> 00:42:19,020
about an hour before Splashdown for the

585
00:42:22,810 --> 00:42:20,640
latest on the timing of this final stage

586
00:42:25,130 --> 00:42:22,820
of the ax2 journey be sure to visit

587
00:42:28,550 --> 00:42:25,140
axiomspace.com and you can track Dragon

588
00:42:31,010 --> 00:42:28,560

Freedom's flight on spacex.com launches

589

00:42:33,170 --> 00:42:31,020

from all of us at Axiom space thank you

590

00:42:35,150 --> 00:42:33,180

to NASA for the incredible efforts made

591

00:42:37,190 --> 00:42:35,160

on this mission for the shared goal of

592

00:42:39,490 --> 00:42:37,200

expanding access to low earth orbit to

593

00:42:41,990 --> 00:42:39,500

include more countries institutions

594

00:42:44,270 --> 00:42:42,000

Industries and individuals than ever

595

00:42:46,310 --> 00:42:44,280

before this is how we are building

596

00:42:48,770 --> 00:42:46,320

history and thank you Jesse for sharing

597

00:42:50,569 --> 00:42:48,780

the desk with me it's been an honor and

598

00:42:52,790 --> 00:42:50,579

thank you for tuning in all of you

599

00:42:54,410 --> 00:42:52,800

spasiba shukran we look forward to

600

00:43:06,309 --> 00:42:54,420

sharing the culmination of this Mission

601

00:43:06,319 --> 00:43:10,390

thank you

602

00:43:10,400 --> 00:43:16,250

[Music]