



1
00:00:36,470 --> 00:00:25,320

[Music]

2
00:00:36,480 --> 00:00:41,990

do

3
00:01:23,270 --> 00:00:55,680

[Music]

4
00:02:33,589 --> 00:01:28,050

i

5
00:02:35,670 --> 00:02:33,599
expect dragon endeavor to push away from

6
00:02:39,190 --> 00:02:35,680
the space station with the crew 2

7
00:02:41,910 --> 00:02:39,200
astronauts on board just after 1105 am

8
00:02:44,470 --> 00:02:41,920
pacific time making their way back to

9
00:02:46,309 --> 00:02:44,480
planet earth my name is kate tyson i'm a

10
00:02:48,550 --> 00:02:46,319
senior certification engineer here at

11
00:02:50,550 --> 00:02:48,560
spacex i'm very excited to bring you

12
00:02:52,710 --> 00:02:50,560
live coverage of crew dragon completing

13
00:02:54,949 --> 00:02:52,720

its second long duration mission with

14

00:02:57,270 --> 00:02:54,959

people on board as part of our crew 2

15

00:03:00,070 --> 00:02:57,280

mission for nasa joining me today with

16

00:03:03,030 --> 00:03:00,080

nasa communications gary jordan hey kate

17

00:03:04,949 --> 00:03:03,040

it's great to be here for the third crew

18

00:03:07,509 --> 00:03:04,959

crew return in nasa's commercial crew

19

00:03:08,949 --> 00:03:07,519

program the second as part of a crew

20

00:03:10,790 --> 00:03:08,959

rotation mission

21

00:03:12,630 --> 00:03:10,800

at this moment nasa astronauts shane

22

00:03:15,030 --> 00:03:12,640

kimbrough and megan macarthur jaxa

23

00:03:16,790 --> 00:03:15,040

astronaut aki hoshide and issa astronaut

24

00:03:19,270 --> 00:03:16,800

toma pesquet are making their final

25

00:03:20,949 --> 00:03:19,280

preparations to load into dragon and

26

00:03:23,509 --> 00:03:20,959

prepare to come home

27

00:03:25,509 --> 00:03:23,519

once dragon departs the station crew 2's

28

00:03:27,750 --> 00:03:25,519

flight home is expected to last a little

29

00:03:29,190 --> 00:03:27,760

more than eight hours including a fly

30

00:03:31,910 --> 00:03:29,200

around of the international space

31

00:03:33,670 --> 00:03:31,920

station four departure burns that move

32

00:03:35,670 --> 00:03:33,680

the dragon away from the station a

33

00:03:37,110 --> 00:03:35,680

phasing burn to lower its orbit and line

34

00:03:40,390 --> 00:03:37,120

the spacecraft up with the landing

35

00:03:43,030 --> 00:03:40,400

location and one final deorbit burn

36

00:03:45,270 --> 00:03:43,040

dragon is targeted to splash down off

37

00:03:48,309 --> 00:03:45,280

the coast of pensacola florida and the

38

00:03:51,589 --> 00:03:48,319

gulf of mexico tomorrow at or rather

39

00:03:54,550 --> 00:03:51,599

today later tonight at 7 33 p.m pacific

40

00:03:55,990 --> 00:03:54,560

standard 10 33 pm eastern standard

41

00:03:58,070 --> 00:03:56,000

followed by the crew getting picked up

42

00:04:00,550 --> 00:03:58,080

at sea by one of spacex's recovery

43

00:04:02,710 --> 00:04:00,560

vessels in this case the go navigator

44

00:04:06,229 --> 00:04:02,720

this mission began six months ago on

45

00:04:09,350 --> 00:04:06,239

april 23 2021 from historic launch pad

46

00:04:11,509 --> 00:04:09,360

39a at kennedy space center in florida

47

00:04:14,390 --> 00:04:11,519

after a successful liftoff in separation

48

00:04:16,870 --> 00:04:14,400

from falcon 9 crew 2 enjoyed a roughly

49

00:04:18,949 --> 00:04:16,880

24-hour flight on board dragon on their

50

00:04:20,789 --> 00:04:18,959

way to the international space station

51
00:04:22,790 --> 00:04:20,799
since arriving the four astronauts

52
00:04:24,870 --> 00:04:22,800
supported hundreds of experiments and

53
00:04:28,790 --> 00:04:24,880
took part in day-to-day operations

54
00:04:31,110 --> 00:04:28,800
during expedition 65 and 66. kimbra

55
00:04:33,590 --> 00:04:31,120
pasquet and hoshide completed several

56
00:04:36,550 --> 00:04:33,600
spacewalks in support of solar array

57
00:04:38,390 --> 00:04:36,560
panel upgrades deploying two new arrays

58
00:04:42,070 --> 00:04:38,400
and preparing a support bracket for

59
00:04:43,830 --> 00:04:42,080
additional arrays after 199 days in

60
00:04:45,430 --> 00:04:43,840
space they are entering the final phase

61
00:04:46,950 --> 00:04:45,440
of their mission and then just a few

62
00:04:49,510 --> 00:04:46,960
hours from now they've been preparing

63
00:04:50,550 --> 00:04:49,520

for over two weeks for this return uh

64

00:04:52,070 --> 00:04:50,560

flight

65

00:04:54,390 --> 00:04:52,080

today onboard the space station is the

66

00:04:57,030 --> 00:04:54,400

expedition 66 crew now led by rose

67

00:04:58,950 --> 00:04:57,040

cosmos cosmonaut anton shkaplerov also

68

00:05:01,670 --> 00:04:58,960

on board is nasa astronaut mark vande

69

00:05:03,110 --> 00:05:01,680

high and roscosmos cosmonaut piotr

70

00:05:05,590 --> 00:05:03,120

dubrov

71

00:05:07,270 --> 00:05:05,600

the weather right now at pensacola is

72

00:05:09,670 --> 00:05:07,280

looking fantastic that is the prime

73

00:05:12,390 --> 00:05:09,680

landing site for today we just did a go

74

00:05:14,230 --> 00:05:12,400

no-go poll about 15-20 minutes ago and

75

00:05:15,350 --> 00:05:14,240

the teams pulled go so we are ready to

76

00:05:17,590 --> 00:05:15,360

unbox yeah it's definitely something

77

00:05:19,189 --> 00:05:17,600

we've been uh keeping our eye on now the

78

00:05:21,430 --> 00:05:19,199

ground teams have been performing a

79

00:05:22,230 --> 00:05:21,440

number of checkouts uh in addition to

80

00:05:23,270 --> 00:05:22,240

the weather keeping an eye on the

81

00:05:25,189 --> 00:05:23,280

weather the ground teams have been

82

00:05:27,189 --> 00:05:25,199

forming a number of checkouts and

83

00:05:29,270 --> 00:05:27,199

preparation checks on the vehicle uh

84

00:05:31,749 --> 00:05:29,280

such as heat shield inspections uh

85

00:05:33,909 --> 00:05:31,759

checking out the suits uh seat actuator

86

00:05:36,310 --> 00:05:33,919

checkouts of course prop checkouts uh

87

00:05:38,230 --> 00:05:36,320

and of course cargo load crew dragon is

88

00:05:40,070 --> 00:05:38,240

the only vehicle capable of bringing

89

00:05:41,909 --> 00:05:40,080

back significant amounts of cargo from

90

00:05:43,749 --> 00:05:41,919

the space station so getting all that

91

00:05:45,830 --> 00:05:43,759

locked and loaded in place now let's go

92

00:05:47,749 --> 00:05:45,840

over to shaniqua vereen at the johnson

93

00:05:49,749 --> 00:05:47,759

space center to talk a bit about how the

94

00:05:52,469 --> 00:05:49,759

station crew have been preparing to send

95

00:05:54,230 --> 00:05:52,479

crew to home and what we can expect from

96

00:05:57,749 --> 00:05:54,240

here until dragon depart station

97

00:06:01,270 --> 00:05:59,830

thanks caden gary and welcome inside the

98

00:06:03,590 --> 00:06:01,280

international space station flight

99

00:06:05,909 --> 00:06:03,600

control room i'm nasa shaniqua marine

100

00:06:08,469 --> 00:06:05,919

and we are currently awaiting crew 2 to

101
00:06:10,550 --> 00:06:08,479
ingress i did see two of them float into

102
00:06:12,070 --> 00:06:10,560
the capsule but we're still waiting on

103
00:06:14,230 --> 00:06:12,080
the other two

104
00:06:17,189 --> 00:06:14,240
this will they will board dragon and be

105
00:06:19,350 --> 00:06:17,199
on their return flight home crew ingress

106
00:06:22,870 --> 00:06:19,360
just started around 10 50 a.m central

107
00:06:23,990 --> 00:06:22,880
time 16 50 gmt or just about a minute

108
00:06:25,430 --> 00:06:24,000
ago

109
00:06:27,590 --> 00:06:25,440
we're going to take a look at the major

110
00:06:29,189 --> 00:06:27,600
upcoming milestones not only for today's

111
00:06:32,629 --> 00:06:29,199
departure but

112
00:06:35,189 --> 00:06:32,639
for the splash down later tonight

113
00:06:37,350 --> 00:06:35,199

so as we said uh crew ingress is

114

00:06:38,870 --> 00:06:37,360

currently underway

115

00:06:40,870 --> 00:06:38,880

we're waiting for the rest of the crew

116

00:06:45,270 --> 00:06:40,880

to board dragon for their return flight

117

00:06:46,870 --> 00:06:45,280

home 11 15 am central time 17 15 gmt

118

00:06:49,029 --> 00:06:46,880

hatch closure

119

00:06:51,350 --> 00:06:49,039

in about 30 minutes from now we'll be

120

00:06:53,830 --> 00:06:51,360

closing dragon's hatch tomo and aki

121

00:06:55,510 --> 00:06:53,840

suited up prior to ingressing the dragon

122

00:06:57,589 --> 00:06:55,520

once inside the vehicle after hatch

123

00:06:59,909 --> 00:06:57,599

operation shane and megan will don their

124

00:07:01,670 --> 00:06:59,919

spacex spacesuits which will be worn

125

00:07:02,870 --> 00:07:01,680

during all of the dynamic phases of

126

00:07:04,469 --> 00:07:02,880

flight

127

00:07:06,629 --> 00:07:04,479

all the same leak checks on the

128

00:07:08,469 --> 00:07:06,639

spacecraft would occur before the crew

129

00:07:10,710 --> 00:07:08,479

would make their way into their seats to

130

00:07:14,230 --> 00:07:10,720

strap in for undocking concurrent with

131

00:07:16,230 --> 00:07:14,240

dragon hatch apes had apes hatch closure

132

00:07:18,469 --> 00:07:16,240

once dragon's hatches closed mark

133

00:07:20,469 --> 00:07:18,479

vandehei will fix a docking target to

134

00:07:23,189 --> 00:07:20,479

the outside of the apes hatch and then

135

00:07:25,350 --> 00:07:23,199

close it creating a space between dragon

136

00:07:27,670 --> 00:07:25,360

and the station known as the vestibule

137

00:07:29,830 --> 00:07:27,680

he'll then pre make his way out of the

138

00:07:33,029 --> 00:07:29,840

pressurized mating adapter and close the

139

00:07:35,589 --> 00:07:33,039

zenith hatch on node 2. around 11 40 am

140

00:07:36,710 --> 00:07:35,599

central time 1740 gmt

141

00:07:39,510 --> 00:07:36,720

will have

142

00:07:41,749 --> 00:07:39,520

the vegetable depressurization once

143

00:07:43,909 --> 00:07:41,759

hatches are closed a ground command will

144

00:07:45,909 --> 00:07:43,919

be sent to open valves on dragon to

145

00:07:48,150 --> 00:07:45,919

begin depressurizing the vestibule

146

00:07:50,309 --> 00:07:48,160

essentially bending the air inside and

147

00:07:52,950 --> 00:07:50,319

bringing it down close to vacuum they'll

148

00:07:54,629 --> 00:07:52,960

pause at approximately 5 psi for a few

149

00:07:57,430 --> 00:07:54,639

minutes to allow temperatures inside the

150

00:07:58,790 --> 00:07:57,440

vestibule to stabilize before finishing

151
00:08:00,710 --> 00:07:58,800
the depress

152
00:08:03,430 --> 00:08:00,720
around 12 50 p.m

153
00:08:05,430 --> 00:08:03,440
central time 1850 gmt go no go for

154
00:08:07,670 --> 00:08:05,440
undocking teams here in mission control

155
00:08:10,710 --> 00:08:07,680
houston and hawthorne do a final joint

156
00:08:13,350 --> 00:08:10,720
go no go poll for undocking

157
00:08:17,589 --> 00:08:13,360
we're looking for undock around 105 pm

158
00:08:21,029 --> 00:08:19,670
an undocking command will then be sent

159
00:08:22,869 --> 00:08:21,039
followed by a few minutes for the

160
00:08:25,430 --> 00:08:22,879
umbilicals that connects power and data

161
00:08:27,589 --> 00:08:25,440
between the two spacecrafts to detach

162
00:08:29,830 --> 00:08:27,599
for 12 hooks a holding dragon in place

163
00:08:31,510 --> 00:08:29,840

to retract and then two quick firings of

164

00:08:33,190 --> 00:08:31,520

dragon's thrusters will initiate

165

00:08:34,790 --> 00:08:33,200

separation and undocking will be

166

00:08:37,190 --> 00:08:34,800

complete

167

00:08:39,190 --> 00:08:37,200

after undocking and before embarking on

168

00:08:41,430 --> 00:08:39,200

the journey home we are looking for the

169

00:08:43,430 --> 00:08:41,440

crew to do what's conduct what's called

170

00:08:45,430 --> 00:08:43,440

a fly-around maneuver

171

00:08:47,590 --> 00:08:45,440

crew dragon will make a full loop around

172

00:08:48,790 --> 00:08:47,600

the station for about an hour and a half

173

00:08:51,030 --> 00:08:48,800

for the crew to photograph the

174

00:08:52,949 --> 00:08:51,040

laboratory's exterior this is a general

175

00:08:55,190 --> 00:08:52,959

survey around the station to see areas

176
00:08:58,710 --> 00:08:55,200
that can't be regularly seen by external

177
00:09:00,949 --> 00:08:58,720
cameras and the robotic arm

178
00:09:03,190 --> 00:09:00,959
nasa astronaut mark vande will be

179
00:09:05,269 --> 00:09:03,200
watching the undocking and the departure

180
00:09:07,829 --> 00:09:05,279
from the cupola but the prime departure

181
00:09:09,269 --> 00:09:07,839
monitoring falls on shane kimbrough and

182
00:09:10,870 --> 00:09:09,279
megan macarthur

183
00:09:13,829 --> 00:09:10,880
mission controls in houston and in

184
00:09:15,590 --> 00:09:13,839
hawthorne will be will back them up

185
00:09:17,829 --> 00:09:15,600
and as you've heard already several

186
00:09:19,910 --> 00:09:17,839
times this morning their dragon fight is

187
00:09:22,150 --> 00:09:19,920
intended to be autonomous but the crew

188
00:09:24,070 --> 00:09:22,160

on board has the ability to take control

189

00:09:25,509 --> 00:09:24,080

and maneuver dragon during departure if

190

00:09:27,110 --> 00:09:25,519

necessary

191

00:09:29,670 --> 00:09:27,120

on the station side we're still looking

192

00:09:31,590 --> 00:09:29,680

good solar rays are locked in place we

193

00:09:33,430 --> 00:09:31,600

have good communication links

194

00:09:35,190 --> 00:09:33,440

and the attitude will remain on u.s

195

00:09:37,590 --> 00:09:35,200

thrusters control until the time of

196

00:09:40,310 --> 00:09:37,600

undocking we will switch to use control

197

00:09:41,990 --> 00:09:40,320

moment gyros only or tracking no issues

198

00:09:44,310 --> 00:09:42,000

for an on-time departure

199

00:09:47,030 --> 00:09:44,320

as we enter final ingress i'll throw it

200

00:09:55,269 --> 00:09:47,040

back to gary and kate and hawthorne

201
00:10:01,110 --> 00:09:57,269
megan i'm showing stale data on display

202
00:10:01,120 --> 00:10:04,830
copy still data

203
00:10:07,750 --> 00:10:06,069
[Music]

204
00:10:09,269 --> 00:10:07,760
all right thank you shaniqua and we are

205
00:10:11,590 --> 00:10:09,279
hearing some of the communications

206
00:10:13,110 --> 00:10:11,600
checks and getting fantastic views on

207
00:10:15,030 --> 00:10:13,120
board the international space station

208
00:10:17,269 --> 00:10:15,040
right now we are looking at is a camera

209
00:10:18,870 --> 00:10:17,279
that's positioned inside the node 2

210
00:10:20,790 --> 00:10:18,880
that's the forward module the harmony

211
00:10:22,949 --> 00:10:20,800
module and it's pointed straight up

212
00:10:25,030 --> 00:10:22,959
towards the space-facing side of the

213
00:10:26,870 --> 00:10:25,040

international space station up to pma3

214

00:10:29,269 --> 00:10:26,880

pressurized mating adapter 3 now getting

215

00:10:31,509 --> 00:10:29,279

views inside the dragon pilot and

216

00:10:34,069 --> 00:10:31,519

commander that's uh shane kimbrough and

217

00:10:37,190 --> 00:10:34,079

megan mcarthur from this view uh shane

218

00:10:38,790 --> 00:10:37,200

kimbrough on the left megan mcarthur on

219

00:10:41,030 --> 00:10:38,800

the right already in their suits in

220

00:10:42,470 --> 00:10:41,040

position uh they are suited up the

221

00:10:43,670 --> 00:10:42,480

mission specialists will be suited up

222

00:10:45,670 --> 00:10:43,680

here shortly

223

00:10:47,590 --> 00:10:45,680

as they are all getting prepped we're

224

00:10:49,750 --> 00:10:47,600

getting views of mark vande inside the

225

00:10:52,310 --> 00:10:49,760

pressurized mating adapter as well and

226

00:10:54,710 --> 00:10:52,320

again we did a go no go for weather so

227

00:10:56,790 --> 00:10:54,720

we're looking very good at this time

228

00:10:59,110 --> 00:10:56,800

uh the dragon ingress operations you can

229

00:11:01,110 --> 00:10:59,120

see now are underway we're about 20

230

00:11:02,870 --> 00:11:01,120

minutes to hatch closure and then from

231

00:11:04,949 --> 00:11:02,880

there it'll be about two hours until

232

00:11:07,910 --> 00:11:04,959

dragon departs the international space

233

00:11:09,910 --> 00:11:07,920

station now scheduled for 1105

234

00:11:11,350 --> 00:11:09,920

am pacific time

235

00:11:13,110 --> 00:11:11,360

once inside they'll have a number of

236

00:11:15,030 --> 00:11:13,120

tasks inside the capsule including

237

00:11:17,750 --> 00:11:15,040

getting internal cameras configured and

238

00:11:20,550 --> 00:11:17,760

uncovered activating the dragon cabin

239

00:11:22,310 --> 00:11:20,560

fan and associated air filters doing any

240

00:11:24,630 --> 00:11:22,320

quick cleaning of their touch screen

241

00:11:26,470 --> 00:11:24,640

displays and if neces if necessary and

242

00:11:28,310 --> 00:11:26,480

then of course donning their suits you

243

00:11:30,389 --> 00:11:28,320

can see two of them in the suits there's

244

00:11:32,310 --> 00:11:30,399

two more the admission specialist to get

245

00:11:34,550 --> 00:11:32,320

donned they'll be wearing that through

246

00:11:36,230 --> 00:11:34,560

the dynamic phases of the trip home that

247

00:11:38,230 --> 00:11:36,240

includes undocking and departure and

248

00:11:39,829 --> 00:11:38,240

then of course deorbit burn through

249

00:11:42,550 --> 00:11:39,839

splashdown

250

00:11:44,230 --> 00:11:42,560

there is also a chance for them to go

251
00:11:45,990 --> 00:11:44,240
through their final checks on dragon's

252
00:11:46,870 --> 00:11:46,000
control systems before they close the

253
00:11:49,110 --> 00:11:46,880
hatch

254
00:11:50,710 --> 00:11:49,120
and depart from station that includes a

255
00:11:52,550 --> 00:11:50,720
lot of really small details like

256
00:11:54,629 --> 00:11:52,560
checking the lights in the cabin and on

257
00:11:56,629 --> 00:11:54,639
their control panels configuring their

258
00:11:58,389 --> 00:11:56,639
seats and their foot rests removing any

259
00:11:59,509 --> 00:11:58,399
temporary covers on items like the

260
00:12:02,310 --> 00:11:59,519
windows

261
00:12:04,389 --> 00:12:02,320
prior to departure and of course giving

262
00:12:06,389 --> 00:12:04,399
the dragon hatch a thorough inspection

263
00:12:08,790 --> 00:12:06,399

making sure that there's no food or

264

00:12:10,150 --> 00:12:08,800

foreign object debris there on the hatch

265

00:12:12,949 --> 00:12:10,160

seals we of course want to make sure

266

00:12:14,470 --> 00:12:12,959

that the hatch seal is completely sealed

267

00:12:16,710 --> 00:12:14,480

and so going through all of these checks

268

00:12:18,949 --> 00:12:16,720

in preparation for departure are super

269

00:12:20,629 --> 00:12:18,959

critical um something that we mentioned

270

00:12:22,550 --> 00:12:20,639

before just like even cleaning off the

271

00:12:23,990 --> 00:12:22,560

touch screens they have been utilizing

272

00:12:25,350 --> 00:12:24,000

the touch screens

273

00:12:27,590 --> 00:12:25,360

even when they haven't been wearing

274

00:12:29,990 --> 00:12:27,600

their gloves so we might need to wipe

275

00:12:32,150 --> 00:12:30,000

those off but yeah so we're progressing

276

00:12:34,870 --> 00:12:32,160

through those checks now and everybody's

277

00:12:37,030 --> 00:12:34,880

looking on time that's right and even on

278

00:12:38,629 --> 00:12:37,040

the station side mark vandehei is the

279

00:12:40,710 --> 00:12:38,639

nasa crew member that will remain on

280

00:12:42,949 --> 00:12:40,720

board when we have the crew 2 astronauts

281

00:12:44,870 --> 00:12:42,959

uh returning home he'll be one of three

282

00:12:47,430 --> 00:12:44,880

crew members that remain on board mark

283

00:13:03,509 --> 00:12:47,440

vanderhoff and then the uh

284

00:13:05,910 --> 00:13:04,710

all right as they're making their way

285

00:13:08,790 --> 00:13:05,920

through those contracts we may hear

286

00:13:08,800 --> 00:13:14,949

with you make it onto

287

00:13:14,959 --> 00:13:20,550

i got you loud and clear

288

00:13:24,230 --> 00:13:22,389

fantastic so that's pilot uh megan

289

00:13:26,710 --> 00:13:24,240

mcarthur when we get the views from the

290

00:13:28,310 --> 00:13:26,720

dragon capsule you'll see her uh that

291

00:13:30,550 --> 00:13:28,320

camera being behind the pilot and

292

00:13:32,150 --> 00:13:30,560

commander she'll be on the right side uh

293

00:13:33,910 --> 00:13:32,160

and she's just doing a series of comm

294

00:13:35,350 --> 00:13:33,920

checks of course the mission specialists

295

00:13:37,910 --> 00:13:35,360

are still out of their suits they have

296

00:13:39,910 --> 00:13:37,920

to ingress their suits or dawn rather

297

00:13:42,389 --> 00:13:39,920

don their suits to get ready for

298

00:13:51,910 --> 00:13:42,399

undocking just about two hours from now

299

00:13:56,389 --> 00:13:54,150

so uh yeah they'll be um

300

00:13:58,150 --> 00:13:56,399

they'll be uh donning their suits and uh

301

00:14:00,230 --> 00:13:58,160

we'll have some uh

302

00:14:03,110 --> 00:14:00,240

a lot of time while the

303

00:14:05,670 --> 00:14:03,120

vestibule in between the dragon and the

304

00:14:07,350 --> 00:14:05,680

uh space station is pressurizing uh

305

00:14:09,110 --> 00:14:07,360

right now they are equalized in pressure

306

00:14:11,110 --> 00:14:09,120

and the hatches are open we're just

307

00:14:13,910 --> 00:14:11,120

minutes away about

308

00:14:15,509 --> 00:14:13,920

15 minutes away from closing that dragon

309

00:14:18,230 --> 00:14:15,519

hatch from there we'll wrap up our

310

00:14:20,230 --> 00:14:18,240

coverage and uh and take a short break

311

00:14:21,750 --> 00:14:20,240

uh while we wait for the vestibule to

312

00:14:23,269 --> 00:14:21,760

pressurize in between the station and

313

00:14:26,230 --> 00:14:23,279

the dragon will come back up to do

314

00:14:28,629 --> 00:14:26,240

undocking but i was mentioning the crew

315

00:14:29,829 --> 00:14:28,639

handover uh there is a three crew

316

00:14:31,350 --> 00:14:29,839

members that are going to remain on

317

00:14:33,350 --> 00:14:31,360

board mark vanderheist the nasa

318

00:14:35,430 --> 00:14:33,360

astronaut we have station commander

319

00:14:37,829 --> 00:14:35,440

anton shkaplerov and piotr dubrov both

320

00:14:40,629 --> 00:14:37,839

from roscosmos that will remain on board

321

00:14:43,269 --> 00:14:40,639

this is coming from the delay of the

322

00:14:45,189 --> 00:14:43,279

crew 3 launch which is scheduled just a

323

00:14:47,110 --> 00:14:45,199

couple of days from now no earlier than

324

00:14:49,430 --> 00:14:47,120

november 10th so right now we're in

325

00:14:51,750 --> 00:14:49,440

indirect handover and this is uh it's

326

00:14:53,670 --> 00:14:51,760

completely fine um it just all you're

327

00:14:56,069 --> 00:14:53,680

missing out on is the opportunity for

328

00:14:58,389 --> 00:14:56,079

the crew to just show uh the the new

329

00:14:59,829 --> 00:14:58,399

crew the arriving crew crew 3 around the

330

00:15:01,509 --> 00:14:59,839

international space station gets

331

00:15:03,509 --> 00:15:01,519

familiarization on where things are

332

00:15:05,350 --> 00:15:03,519

including the emergency equipment but we

333

00:15:06,949 --> 00:15:05,360

have mark vanda high on board who is

334

00:15:07,829 --> 00:15:06,959

able to do that yeah and of course

335

00:15:10,310 --> 00:15:07,839

weather

336

00:15:11,829 --> 00:15:10,320

especially around florida super tricky

337

00:15:13,990 --> 00:15:11,839

so unfortunately while it would be

338

00:15:16,470 --> 00:15:14,000

preferable to do a direct handover

339

00:15:18,629 --> 00:15:16,480

really gotta do um do what's best for

340

00:15:21,269 --> 00:15:18,639

both crews and in this case uh that

341

00:15:24,470 --> 00:15:21,279

involves returning the crew to uh crew

342

00:15:26,710 --> 00:15:24,480

back home uh prior to crew 3 lifting off

343

00:15:27,590 --> 00:15:26,720

so like we mentioned before weather has

344

00:15:28,949 --> 00:15:27,600

been

345

00:15:31,590 --> 00:15:28,959

in

346

00:15:34,150 --> 00:15:31,600

constant consideration over the last

347

00:15:35,910 --> 00:15:34,160

couple of days with constantly changing

348

00:15:37,829 --> 00:15:35,920

variables around the coast of florida

349

00:15:39,990 --> 00:15:37,839

both on the gulf coast as well as the

350

00:15:42,310 --> 00:15:40,000

atlantic watching things like wind

351

00:15:44,150 --> 00:15:42,320

speeds as well as wave height

352

00:15:45,430 --> 00:15:44,160

so we're really excited that as of right

353

00:15:47,269 --> 00:15:45,440

now we are

354

00:15:49,990 --> 00:15:47,279

going to be bringing everybody home from

355

00:15:51,509 --> 00:15:50,000

crew 2 today so super exciting that's

356

00:15:53,829 --> 00:15:51,519

right and it's going to be an exciting

357

00:15:55,269 --> 00:15:53,839

journey we have of course the undocking

358

00:15:57,749 --> 00:15:55,279

and it's about eight and a half hours

359

00:15:59,990 --> 00:15:57,759

until they come home about an hour and a

360

00:16:02,069 --> 00:16:00,000

half of that is dedicated to something

361

00:16:04,629 --> 00:16:02,079

called a fly around uh this is a new

362

00:16:06,629 --> 00:16:04,639

capability for endeavor uh that was

363

00:16:08,550 --> 00:16:06,639

actually uh we talked about during the

364

00:16:10,870 --> 00:16:08,560

launch but really what's going to happen

365

00:16:13,269 --> 00:16:10,880

is endeavour is going to undock from the

366

00:16:15,509 --> 00:16:13,279

space facing side of the harmony module

367

00:16:19,110 --> 00:16:15,519

and it'll back out to waypoint 1 which

368

00:16:20,949 --> 00:16:19,120

is about 200 220 meters away it'll hold

369

00:16:22,629 --> 00:16:20,959

there for about a minute just make sure

370

00:16:24,150 --> 00:16:22,639

everything is lined up

371

00:16:26,110 --> 00:16:24,160

on the big loop drive and kevin

372

00:16:30,790 --> 00:16:26,120

considered for the partner is complete

373

00:16:30,800 --> 00:16:33,749

spacex copies

374

00:16:38,069 --> 00:16:35,350

cabin configuration for departure is

375

00:16:41,910 --> 00:16:39,829

fantastic cabin configuration for

376

00:16:43,509 --> 00:16:41,920

departure is complete they are just

377

00:16:45,749 --> 00:16:43,519

flying through their procedures this is

378

00:16:49,430 --> 00:16:45,759

fantastic once they actually do undock

379

00:16:51,430 --> 00:16:49,440

about two hours from now 1105 am pacific

380

00:16:53,590 --> 00:16:51,440

uh they will back up here's a fantastic

381

00:16:57,430 --> 00:16:53,600

graphic back up to about uh the keep out

382

00:16:59,910 --> 00:16:57,440

sphere which is about 180 to 220 it's

383

00:17:01,269 --> 00:16:59,920

going to keep within that uh 40 or so

384

00:17:03,269 --> 00:17:01,279

meter range

385

00:17:05,110 --> 00:17:03,279

and it'll essentially fly around the

386

00:17:07,110 --> 00:17:05,120

international space station going to the

387

00:17:09,270 --> 00:17:07,120

uh from the zenith or the top facing to

388

00:17:12,150 --> 00:17:09,280

the after the back and then just make

389

00:17:14,390 --> 00:17:12,160

one uh complete loop from 12 o'clock to

390

00:17:16,390 --> 00:17:14,400

12 o'clock around the international

391

00:17:18,230 --> 00:17:16,400

space station the whole time the

392

00:17:19,909 --> 00:17:18,240

dragon's nose cone will be open and they

393

00:17:21,510 --> 00:17:19,919

have a window at the very front although

394

00:17:23,350 --> 00:17:21,520

the crew will be taking pictures right

395

00:17:24,710 --> 00:17:23,360

out the window uh they'll make a full

396

00:17:27,110 --> 00:17:24,720

loop that'll take about an hour and a

397

00:17:28,950 --> 00:17:27,120

half before they do two departure burns

398

00:17:30,870 --> 00:17:28,960

that will send them outside the keep out

399

00:17:32,870 --> 00:17:30,880

sphere and the approach ellipsoid and

400

00:17:34,230 --> 00:17:32,880

begin the journey home it'll only be a

401
00:17:36,710 --> 00:17:34,240
couple of hours there and we'll can

402
00:17:38,390 --> 00:17:36,720
provide continuous coverage as they do

403
00:17:40,870 --> 00:17:38,400
those departure burns there's also a

404
00:17:43,350 --> 00:17:40,880
departure phase burn uh that allows them

405
00:17:45,110 --> 00:17:43,360
to shift the phasing from essentially

406
00:17:47,350 --> 00:17:45,120
coalipsic with the international space

407
00:17:48,950 --> 00:17:47,360
station are pretty much right underneath

408
00:17:51,190 --> 00:17:48,960
to the phasing that allows them to line

409
00:17:53,270 --> 00:17:51,200
up with the primary landing zone and

410
00:17:55,510 --> 00:17:53,280
that is of course pensacola florida for

411
00:17:58,310 --> 00:17:55,520
today the deorbit burn is going to be a

412
00:18:00,470 --> 00:17:58,320
hefty one a 16 and a half minute burn

413
00:18:02,710 --> 00:18:00,480

they'll fire those once they do that

414

00:18:03,480 --> 00:18:02,720

they are committed to land in pensacola

415

00:18:05,430 --> 00:18:03,490

florida

416

00:18:07,990 --> 00:18:05,440

[Applause]

417

00:18:09,270 --> 00:18:08,000

yeah so a super exciting day like gary

418

00:18:11,270 --> 00:18:09,280

said we're going to be bringing live

419

00:18:12,630 --> 00:18:11,280

coverage throughout all of it so it's

420

00:18:14,630 --> 00:18:12,640

going to be a long one

421

00:18:15,590 --> 00:18:14,640

but we're excited to bring the crew home

422

00:18:17,270 --> 00:18:15,600

today

423

00:18:19,350 --> 00:18:17,280

like we mentioned before they have been

424

00:18:22,070 --> 00:18:19,360

doing lots of checkouts uh for their

425

00:18:23,830 --> 00:18:22,080

departure including suit checkouts and

426

00:18:27,029 --> 00:18:23,840

checking out the actuators of there we

427

00:18:28,870 --> 00:18:27,039

have a live view inside crew dragon

428

00:18:30,549 --> 00:18:28,880

we can see them you can see i love this

429

00:18:32,630 --> 00:18:30,559

view because you can actually see what

430

00:18:34,549 --> 00:18:32,640

they're seeing on their display screens

431

00:18:35,590 --> 00:18:34,559

uh obviously a map of the world they're

432

00:18:39,909 --> 00:18:35,600

showing

433

00:18:43,510 --> 00:18:39,919

a positional uh position location uh and

434

00:18:46,150 --> 00:18:43,520

uh we can on the either side is also

435

00:18:48,549 --> 00:18:46,160

an indicator showing where uh the crew

436

00:18:51,029 --> 00:18:48,559

dragon thrusters uh will actually be

437

00:18:53,990 --> 00:18:51,039

firing from firing from once those are

438

00:18:56,630 --> 00:18:54,000

actually uh happening

439

00:18:58,390 --> 00:18:56,640

the maneuvers of dragon itself are

440

00:19:00,070 --> 00:18:58,400

pretty much automatic uh they're going

441

00:19:01,510 --> 00:19:00,080

to be pretty much hands off uh

442

00:19:03,909 --> 00:19:01,520

particularly through the fly around the

443

00:19:06,070 --> 00:19:03,919

fly around they do have the ability to

444

00:19:08,230 --> 00:19:06,080

uh do some manual thruster maneuvers but

445

00:19:10,150 --> 00:19:08,240

the manual piloting capability for the

446

00:19:12,150 --> 00:19:10,160

fly around maneuver uh will not be

447

00:19:13,909 --> 00:19:12,160

possible so it's really it's really up

448

00:19:16,310 --> 00:19:13,919

to the dragon and his computers to make

449

00:19:18,870 --> 00:19:16,320

that full loop uh and again it's it's

450

00:19:18,880 --> 00:19:22,390

[Applause]

451
00:19:28,150 --> 00:19:24,789
an endeavor spacex we can give you a go

452
00:19:30,710 --> 00:19:28,160
for step three decimal one you are go to

453
00:19:32,870 --> 00:19:30,720
complete lyo configuration imv tear down

454
00:19:34,789 --> 00:19:32,880
and hatch closure for procedure two

455
00:19:36,470 --> 00:19:34,799
decimal one zero three

456
00:19:42,470 --> 00:19:36,480
and reminder we are going to be using

457
00:19:52,150 --> 00:19:44,070
cartridge to you and all the all the

458
00:19:57,430 --> 00:19:54,070
all right continuing to configure that

459
00:19:59,430 --> 00:19:57,440
uh dragon uh for its departure

460
00:20:01,190 --> 00:19:59,440
uh for the past six months dragon has

461
00:20:03,110 --> 00:20:01,200
been relying on the eclipse or

462
00:20:05,510 --> 00:20:03,120
environmental control systems of the

463
00:20:07,350 --> 00:20:05,520

international space station hatches uh

464

00:20:09,029 --> 00:20:07,360

have have pretty much been open and they

465

00:20:11,190 --> 00:20:09,039

have access to it and they've been able

466

00:20:13,510 --> 00:20:11,200

to circulate some air uh through the

467

00:20:15,350 --> 00:20:13,520

pressurized mating adapter but now the

468

00:20:17,190 --> 00:20:15,360

dragon is depart departing it has to

469

00:20:19,990 --> 00:20:17,200

rely on its own systems and of course

470

00:20:22,230 --> 00:20:20,000

the lyo canisters the lithium hydroxide

471

00:20:24,230 --> 00:20:22,240

those have the very very important

472

00:20:26,390 --> 00:20:24,240

environmental control capability of

473

00:20:28,390 --> 00:20:26,400

scrubbing carbon dioxide from the cabin

474

00:20:30,149 --> 00:20:28,400

of the dragon yeah one thing i want to

475

00:20:32,230 --> 00:20:30,159

point out while we have this shot you

476

00:20:34,149 --> 00:20:32,240

can see there

477

00:20:36,710 --> 00:20:34,159

in the center where that circle is so

478

00:20:38,710 --> 00:20:36,720

that is the hatch for the nose cone

479

00:20:40,950 --> 00:20:38,720

that's actually the window

480

00:20:43,510 --> 00:20:40,960

that they'll be taking photos from so uh

481

00:20:46,470 --> 00:20:43,520

while that hatch is currently open uh we

482

00:20:48,710 --> 00:20:46,480

can look like we got some waves there

483

00:20:50,710 --> 00:20:48,720

you can actually see the window itself

484

00:20:52,630 --> 00:20:50,720

where um the crew will be taking photos

485

00:20:55,590 --> 00:20:52,640

from during the fly around procedure as

486

00:20:58,310 --> 00:20:55,600

gary mentioned before

487

00:21:00,789 --> 00:20:58,320

there are a couple of uh positions that

488

00:21:02,630 --> 00:21:00,799

they can that the crew themselves can be

489

00:21:04,710 --> 00:21:02,640

in it'll be up to you can see the window

490

00:21:07,590 --> 00:21:04,720

itself is pretty small and they'll have

491

00:21:10,310 --> 00:21:07,600

a handheld dslr camera to be able to

492

00:21:12,230 --> 00:21:10,320

take uh photos and it's completely up to

493

00:21:14,630 --> 00:21:12,240

their comfort level on what position

494

00:21:16,310 --> 00:21:14,640

they decide to be in they're in space so

495

00:21:18,630 --> 00:21:16,320

they don't really need to worry about up

496

00:21:20,310 --> 00:21:18,640

or down uh so you can see them in

497

00:21:22,310 --> 00:21:20,320

essentially the same orientation that

498

00:21:24,549 --> 00:21:22,320

they are in now just essentially putting

499

00:21:26,549 --> 00:21:24,559

their feet towards the the uh where the

500

00:21:28,630 --> 00:21:26,559

cargo is and and heading out that way

501
00:21:31,029 --> 00:21:28,640
they also have the ability if they

502
00:21:34,070 --> 00:21:31,039
desire to flip completely upside down

503
00:21:36,310 --> 00:21:34,080
and hang their feet uh on the uh on the

504
00:21:38,390 --> 00:21:36,320
seats themselves it might provide a

505
00:21:40,470 --> 00:21:38,400
better uh angle who knows this will be

506
00:21:45,669 --> 00:21:40,480
the first fly around for dragon spacex

507
00:21:47,990 --> 00:21:46,130
go ahead

508
00:21:49,510 --> 00:21:48,000
[Applause]

509
00:21:51,990 --> 00:21:49,520
hey shane we're going to go ahead and

510
00:21:52,950 --> 00:21:52,000
have you cycle the power to display

511
00:21:54,950 --> 00:21:52,960
alpha

512
00:21:56,630 --> 00:21:54,960
we are still investigating potential

513
00:22:04,710 --> 00:21:56,640

causes on the ground but we'd like to

514

00:22:09,110 --> 00:22:06,710

okay that's just uh turning the display

515

00:22:12,549 --> 00:22:09,120

off and on on the touchscreen as that is

516

00:22:14,310 --> 00:22:12,559

something bigger than that

517

00:22:16,230 --> 00:22:14,320

we're going to actually power cycle it

518

00:22:33,350 --> 00:22:16,240

using the display power button in the

519

00:22:37,909 --> 00:22:35,110

we're seeing that procedure happen real

520

00:22:39,590 --> 00:22:37,919

time now the simple power cycle is is

521

00:22:41,669 --> 00:22:39,600

what you and i do at home whenever our

522

00:22:44,310 --> 00:22:41,679

laptop is not working we turn it off and

523

00:22:45,750 --> 00:22:44,320

on again um a very simple fix but

524

00:22:53,029 --> 00:22:45,760

they'll they'll analyze to make sure

525

00:23:03,909 --> 00:22:54,600

them back up now cycle know what you see

526

00:23:07,110 --> 00:23:05,190

on the left you're getting a view from

527

00:23:09,190 --> 00:23:07,120

inside mission control hawthorne that's

528

00:23:10,630 --> 00:23:09,200

the core position essentially the same

529

00:23:12,470 --> 00:23:10,640

as the capcom position in mission

530

00:23:14,630 --> 00:23:12,480

control houston the voice from mission

531

00:23:41,110 --> 00:23:14,640

control hawthorne up to the crew inside

532

00:23:44,789 --> 00:23:42,470

behind the display as you can see

533

00:23:46,870 --> 00:23:44,799

tomorrow pesky mission specialist he'll

534

00:23:52,820 --> 00:23:46,880

be flanking uh shane kimbrough and megan

535

00:23:52,830 --> 00:23:57,750

[Applause]

536

00:24:01,590 --> 00:23:59,909

spacex copies still still data on

537

00:24:03,110 --> 00:24:01,600

display alpha we are going to continue

538

00:24:08,870 --> 00:24:03,120

looking at this on the ground and i'll

539

00:24:08,880 --> 00:24:18,870

never copies

540

00:24:21,510 --> 00:24:19,669

what you're hearing is the

541

00:24:23,430 --> 00:24:21,520

communications from the core here in

542

00:24:24,950 --> 00:24:23,440

mission control hawthorne up to the

543

00:24:26,630 --> 00:24:24,960

endeavor crew

544

00:24:28,789 --> 00:24:26,640

just getting dragon configured is going

545

00:24:31,110 --> 00:24:28,799

to be about two hours from now until

546

00:24:33,750 --> 00:24:31,120

they uh physically separate or undock

547

00:24:35,110 --> 00:24:33,760

from the international space station's

548

00:24:36,549 --> 00:24:35,120

node to

549

00:24:39,110 --> 00:24:36,559

harmony port on the zenith or

550

00:24:41,909 --> 00:24:39,120

space-facing side getting some views for

551
00:24:44,549 --> 00:24:41,919
of the earth now they'll be able to

552
00:24:46,390 --> 00:24:44,559
see a lot of that during their journey

553
00:24:48,630 --> 00:24:46,400
again about over the course of eight and

554
00:24:50,149 --> 00:24:48,640
a half hours they'll see a few sunrises

555
00:24:52,149 --> 00:24:50,159
and sunsets so

556
00:24:54,390 --> 00:24:52,159
we'll see what happens during the fly

557
00:24:56,070 --> 00:24:54,400
around maneuver flying around

558
00:24:58,950 --> 00:24:56,080
again we'll take about an hour and a

559
00:25:00,549 --> 00:24:58,960
half we have a lot coming up uh we're

560
00:25:03,590 --> 00:25:00,559
just about five minutes away from the

561
00:25:06,910 --> 00:25:03,600
scheduled hatch closure uh period

562
00:25:09,510 --> 00:25:06,920
endeavor liar turns out 1709.

563
00:25:14,230 --> 00:25:09,520

[Applause]

564

00:25:18,310 --> 00:25:16,230

they're changing out those lithium

565

00:25:20,789 --> 00:25:18,320

hydroxide canisters making sure they

566

00:25:23,830 --> 00:25:20,799

have fresh canisters able to scrub

567

00:25:26,230 --> 00:25:23,840

carbon dioxide for the journey home

568

00:25:27,750 --> 00:25:26,240

so that will start about five minutes

569

00:25:29,990 --> 00:25:27,760

from now when they close the hatches

570

00:25:31,669 --> 00:25:30,000

it'll take some time until they actually

571

00:25:33,510 --> 00:25:31,679

physically uh undock from the

572

00:25:35,430 --> 00:25:33,520

international space station because

573

00:25:37,590 --> 00:25:35,440

there are about three hatches

574

00:25:39,350 --> 00:25:37,600

that separate the international space

575

00:25:41,269 --> 00:25:39,360

station crew from the dragon crew the

576

00:25:42,950 --> 00:25:41,279

first hatch that they'll close uh you

577

00:25:44,630 --> 00:25:42,960

can see we're seeing in the background

578

00:25:46,310 --> 00:25:44,640

when we got that over the shoulder view

579

00:25:48,789 --> 00:25:46,320

from inside dragon but that was the

580

00:25:50,710 --> 00:25:48,799

forward uh hatch of the dragon that is

581

00:25:52,310 --> 00:25:50,720

the dragon hatch on the other side of

582

00:25:55,350 --> 00:25:52,320

that is something called the a pass

583

00:25:57,430 --> 00:25:55,360

hatch uh that's essentially the uh use

584

00:26:00,230 --> 00:25:57,440

that this is about where mark vande high

585

00:26:03,590 --> 00:26:00,240

is right now uh he's pretty much facing

586

00:26:06,070 --> 00:26:03,600

it uh it's uh it's the hatch on the uh

587

00:26:08,669 --> 00:26:06,080

station side in between which is called

588

00:26:11,110 --> 00:26:08,679

the vestibule that's the part that'll be

589

00:26:12,950 --> 00:26:11,120

depressurized down to vacuum before they

590

00:26:18,310 --> 00:26:12,960

actually physically separate

591

00:26:21,590 --> 00:26:20,149

there you go hash closure is just

592

00:26:23,110 --> 00:26:21,600

moments away

593

00:26:24,630 --> 00:26:23,120

spacex copies

594

00:26:31,669 --> 00:26:24,640

closure and work

595

00:26:35,669 --> 00:26:33,350

and again that'll be that'll be the

596

00:26:38,310 --> 00:26:35,679

first hatch dragon hatch that once

597

00:26:40,710 --> 00:26:38,320

that's closed we'll wrap up our coverage

598

00:26:42,710 --> 00:26:40,720

and allow the crew some time to close

599

00:26:44,390 --> 00:26:42,720

the remaining hatches the a pass being

600

00:26:46,549 --> 00:26:44,400

another station hatch that creates the

601
00:26:48,390 --> 00:26:46,559
vestibule that would be depressurized uh

602
00:26:49,990 --> 00:26:48,400
the part that you see mark van gaal in

603
00:26:51,510 --> 00:26:50,000
right now that won't be depressed

604
00:26:53,909 --> 00:26:51,520
depressurized that's the pressurized

605
00:26:56,149 --> 00:26:53,919
mating adapter but on the towards the

606
00:26:58,070 --> 00:26:56,159
screen a little bit is the node two

607
00:27:00,310 --> 00:26:58,080
hatch node two zenith or space facing

608
00:27:02,470 --> 00:27:00,320
hatch that's the third hatch uh that'll

609
00:27:04,230 --> 00:27:02,480
be closed from there mark vanda high

610
00:27:07,029 --> 00:27:04,240
will move over to the cupola and it'll

611
00:27:08,789 --> 00:27:07,039
be his job to monitor uh dragon's

612
00:27:10,549 --> 00:27:08,799
departure as well as a fly-around

613
00:27:13,510 --> 00:27:10,559

maneuver and he'll remain in that

614

00:27:16,470 --> 00:27:13,520

position until uh they exit the approach

615

00:27:18,070 --> 00:27:16,480

ellipsoid uh there's two uh imaginary

616

00:27:19,430 --> 00:27:18,080

circles around the international space

617

00:27:21,430 --> 00:27:19,440

station one of them is the keep out

618

00:27:24,870 --> 00:27:21,440

sphere that's about what they'll hover

619

00:27:27,669 --> 00:27:24,880

for the uh fly around maneuver about 180

620

00:27:29,909 --> 00:27:27,679

to 220 meters or roughly that 40 meter

621

00:27:33,990 --> 00:27:29,919

stretch and just really circle around

622

00:27:40,070 --> 00:27:36,470

is open

623

00:27:46,630 --> 00:27:43,110

spacex copies hatch closed and pprv iso

624

00:27:48,149 --> 00:27:46,640

valve is in the expected position

625

00:27:50,230 --> 00:27:48,159

all right so good news there hearing

626
00:27:52,310 --> 00:27:50,240
that the hatch has been closed uh on

627
00:27:53,510 --> 00:27:52,320
your screen now a live view of dragon

628
00:27:56,950 --> 00:27:53,520
the first time we're seeing it this

629
00:27:59,510 --> 00:27:56,960
morning uh the crew 2 crew there is on

630
00:28:01,029 --> 00:27:59,520
on station they are now inside dragon

631
00:28:03,830 --> 00:28:01,039
crew dragon that you see on your screen

632
00:28:05,029 --> 00:28:03,840
there that is dragon endeavor as you

633
00:28:07,190 --> 00:28:05,039
hear them call out during these

634
00:28:09,590 --> 00:28:07,200
communications back and forth uh from

635
00:28:11,350 --> 00:28:09,600
station to ground so super exciting

636
00:28:13,510 --> 00:28:11,360
milestone uh we've been waiting for the

637
00:28:15,510 --> 00:28:13,520
last few minutes very exciting so now

638
00:28:17,430 --> 00:28:15,520

that dragon's hatch is closed shane

639

00:28:19,269 --> 00:28:17,440

kimbrough and megan mcarthur will finish

640

00:28:20,789 --> 00:28:19,279

configuring the dragon cabin and of

641

00:28:23,510 --> 00:28:20,799

course they already have their suits

642

00:28:25,269 --> 00:28:23,520

donned aki hoshide and tomato skay will

643

00:28:27,269 --> 00:28:25,279

put on their suits and get in their

644

00:28:29,590 --> 00:28:27,279

seats ready for undocking two hours from

645

00:28:31,750 --> 00:28:29,600

now yeah no i love these suits the

646

00:28:33,990 --> 00:28:31,760

suit's primary function is to protect

647

00:28:36,710 --> 00:28:34,000

the crew in the event of a cabin

648

00:28:38,470 --> 00:28:36,720

depressurization if that were to occur

649

00:28:40,710 --> 00:28:38,480

the suit would inflate to provide a

650

00:28:43,269 --> 00:28:40,720

habitable environment long enough for

651
00:28:45,909 --> 00:28:43,279
the crew to return home whatever ms1 and

652
00:28:48,549 --> 00:28:45,919
ms2 are getting their suits on

653
00:28:50,789 --> 00:28:48,559
all right so call up there that uh aki

654
00:28:51,669 --> 00:28:50,799
and somebody copies ms1 and ms2 getting

655
00:28:54,070 --> 00:28:51,679
suited

656
00:28:56,389 --> 00:28:54,080
are both suiting up

657
00:28:58,149 --> 00:28:56,399
uh the flame resistant materials on the

658
00:29:00,149 --> 00:28:58,159
outer layer of the suit all would also

659
00:29:02,470 --> 00:29:00,159
protect the crew in the unlikely event

660
00:29:04,789 --> 00:29:02,480
of a fire so again the first hatch is

661
00:29:06,710 --> 00:29:04,799
closed the uh dragon hatch in a few

662
00:29:08,950 --> 00:29:06,720
minutes the a pass hatch on the station

663
00:29:11,269 --> 00:29:08,960

side will be closed a patch

664

00:29:13,430 --> 00:29:11,279

a pass is an acronym that stands for

665

00:29:15,510 --> 00:29:13,440

androgynous peripheral attachment system

666

00:29:17,029 --> 00:29:15,520

so you can see why we use the acronym

667

00:29:19,029 --> 00:29:17,039

it's an integra and it's an integral

668

00:29:21,190 --> 00:29:19,039

part of the docking system but before

669

00:29:23,029 --> 00:29:21,200

closing it vanda high again you saw him

670

00:29:24,789 --> 00:29:23,039

attaching a docking target that'll be

671

00:29:26,389 --> 00:29:24,799

used to fine-tune the alignment for an

672

00:29:28,710 --> 00:29:26,399

approaching spacecraft not something

673

00:29:30,230 --> 00:29:28,720

required for undock but would obviously

674

00:29:31,830 --> 00:29:30,240

need to be there for the next spacecraft

675

00:29:35,110 --> 00:29:31,840

docking to this port which in this case

676

00:29:37,430 --> 00:29:35,120

will be crs 24 the spacex cargo craft

677

00:29:39,029 --> 00:29:37,440

now once both the dragon and a-pass

678

00:29:40,950 --> 00:29:39,039

hatches have been closed

679

00:29:43,029 --> 00:29:40,960

depressurization of the vestibule will

680

00:29:44,789 --> 00:29:43,039

begin the vegetable as gary mentioned

681

00:29:46,950 --> 00:29:44,799

before is the area

682

00:29:49,110 --> 00:29:46,960

between dragon and the station's docking

683

00:29:51,590 --> 00:29:49,120

port that will be exposed to the vacuum

684

00:29:53,430 --> 00:29:51,600

of space following undocking it's been

685

00:29:55,510 --> 00:29:53,440

filled with air that originally came

686

00:29:58,310 --> 00:29:55,520

from the station's atmosphere and will

687

00:30:00,230 --> 00:29:58,320

be brought down to vacuum for undocking

688

00:30:02,630 --> 00:30:00,240

if this wasn't done breaking the seal

689

00:30:05,190 --> 00:30:02,640

between dragon and the station would

690

00:30:06,549 --> 00:30:05,200

result in a very fairly propulsive burst

691

00:30:09,029 --> 00:30:06,559

of air

692

00:30:11,350 --> 00:30:09,039

so again we have the a pass hatch closed

693

00:30:13,510 --> 00:30:11,360

coming up and then uh while we're off

694

00:30:15,990 --> 00:30:13,520

air the vestibule will depressurize

695

00:30:17,830 --> 00:30:16,000

that's at about 9 40 a.m pacific it'll

696

00:30:20,070 --> 00:30:17,840

take some time once they actually bring

697

00:30:22,470 --> 00:30:20,080

it down to vacuum they pause at about 5

698

00:30:24,870 --> 00:30:22,480

psi to do a leak check that's expected

699

00:30:26,549 --> 00:30:24,880

about 10 40 a.m pacific and then of

700

00:30:29,750 --> 00:30:26,559

course they'll configure the dragon for

701
00:30:31,110 --> 00:30:29,760
both fly around and for undocking

702
00:30:32,950 --> 00:30:31,120
we'll be back

703
00:30:36,230 --> 00:30:32,960
to provide some coverage right before

704
00:30:37,990 --> 00:30:36,240
they do the final go no go for undocking

705
00:30:39,830 --> 00:30:38,000
and then the undocking sequence starts

706
00:30:42,230 --> 00:30:39,840
at about 11 o'clock

707
00:30:44,310 --> 00:30:42,240
a.m pacific it takes about five minutes

708
00:30:46,950 --> 00:30:44,320
once that sequence starts to undo the

709
00:30:49,669 --> 00:30:46,960
hooks and then there's a couple um uh

710
00:30:51,590 --> 00:30:49,679
burns that'll happen

711
00:30:53,909 --> 00:30:51,600
separate for awareness we are going to

712
00:31:00,470 --> 00:30:53,919
clear the inactive onboard alert from

713
00:31:00,480 --> 00:31:04,630

thank you

714

00:31:07,830 --> 00:31:05,990

all right they're continuing to work

715

00:31:10,230 --> 00:31:07,840

that uh display making sure it's ready

716

00:31:13,669 --> 00:31:10,240

to undock uh two hours from now again

717

00:31:28,389 --> 00:31:13,679

that physical separation is uh 1105 a.m

718

00:31:31,750 --> 00:31:29,750

looks like uh

719

00:31:33,430 --> 00:31:31,760

mark vande is taking some photos there

720

00:31:34,870 --> 00:31:33,440

is that window the same window that the

721

00:31:36,230 --> 00:31:34,880

crew will use to take photos of the

722

00:31:39,190 --> 00:31:36,240

international space station during the

723

00:31:41,990 --> 00:31:39,200

fly around sending some final uh final

724

00:31:43,590 --> 00:31:42,000

photos and final goodbyes to to the crew

725

00:31:45,110 --> 00:31:43,600

there

726

00:31:46,870 --> 00:31:45,120

it is a pretty small window that they

727

00:31:48,870 --> 00:31:46,880

have to look out as we saw earlier while

728

00:31:51,590 --> 00:31:48,880

the crew was ingressing

729

00:31:54,549 --> 00:31:51,600

so i'm sure that the waves through the

730

00:31:57,190 --> 00:31:54,559

window are these little mini waves but

731

00:31:59,590 --> 00:31:57,200

like we said before uh pilot megan

732

00:32:01,590 --> 00:31:59,600

macarthur and commander shane kimbra are

733

00:32:04,389 --> 00:32:01,600

both suited up and in their seats

734

00:32:06,549 --> 00:32:04,399

mission specialists aki hoshide and

735

00:32:09,029 --> 00:32:06,559

thomas pesquet are now donning their

736

00:32:11,430 --> 00:32:09,039

suits as well or putting their suits on

737

00:32:13,750 --> 00:32:11,440

and they will be preparing to get in

738

00:32:16,389 --> 00:32:13,760

their seats and buckle up

739

00:32:18,549 --> 00:32:16,399

after that of course prior to departure

740

00:32:20,710 --> 00:32:18,559

there's going to be some uh suit leech

741

00:32:22,230 --> 00:32:20,720

leak checks and that's when

742

00:32:24,389 --> 00:32:22,240

we basically pressurize the suits to

743

00:32:26,230 --> 00:32:24,399

make sure that all of the zippers and

744

00:32:28,710 --> 00:32:26,240

all the fasteners are in place so that

745

00:32:30,789 --> 00:32:28,720

the suit can hold pressure

746

00:32:32,470 --> 00:32:30,799

which is you know like we said before in

747

00:32:34,389 --> 00:32:32,480

the unlikely event of an emergency the

748

00:32:36,230 --> 00:32:34,399

suit would act like a mini environment

749

00:32:37,750 --> 00:32:36,240

to keep the crew safe very important

750

00:32:39,909 --> 00:32:37,760

during the dynamic phases of the flight

751

00:32:42,230 --> 00:32:39,919

and that includes the undocking but

752

00:32:44,230 --> 00:32:42,240

again the dragon hatch is closed so now

753

00:32:46,630 --> 00:32:44,240

that that dragon hatch is closed uh the

754

00:32:48,230 --> 00:32:46,640

crew is preparing to depart uh and we're

755

00:32:49,990 --> 00:32:48,240

gonna take a short break before we get

756

00:32:52,149 --> 00:32:50,000

ready for undocking to allow all of that

757

00:32:54,230 --> 00:32:52,159

um vestibule depressurization all the

758

00:32:56,549 --> 00:32:54,240

hatches to be closed uh and we'll come

759

00:33:00,230 --> 00:32:56,559

back our live coverage will pick back up

760

00:33:01,830 --> 00:33:00,240

at 10 45 a.m pacific about 15 minutes

761

00:33:03,909 --> 00:33:01,840

before the undock command is sent to the

762

00:33:06,710 --> 00:33:03,919

dragon and gets ready to physically

763

00:33:08,870 --> 00:33:06,720

separate from the station once we undock

764

00:33:11,830 --> 00:33:08,880

we will stay live with you the entire

765

00:33:14,230 --> 00:33:11,840

time until dragon splashes down off the

766

00:33:17,269 --> 00:33:14,240

coast of florida later today which is on

767

00:33:20,789 --> 00:33:17,279

target for today monday november 8th

768

00:33:24,789 --> 00:33:20,799

at 7 33 p.m pacific or

769

00:33:26,950 --> 00:33:24,799

3 33 gmt so don't go anywhere we'll see

770

00:33:32,080 --> 00:33:26,960

you soon as crew 2 gets ready to leave