



1
00:00:04,230 --> 00:00:02,070
down so we'll probably be hearing a lot

2
00:00:05,670 --> 00:00:04,240
of chatter between the core and the crew

3
00:00:07,990 --> 00:00:05,680
as well

4
00:00:09,430 --> 00:00:08,000
yeah deorbit burn is always exciting

5
00:00:12,549 --> 00:00:09,440
because that's that's basically the

6
00:00:13,830 --> 00:00:12,559
final commitment to splashdown which for

7
00:00:16,070 --> 00:00:13,840
those of you that have just joined us

8
00:00:17,750 --> 00:00:16,080
recently we are targeting to splash down

9
00:00:19,830 --> 00:00:17,760
in the gulf of mexico

10
00:00:22,950 --> 00:00:19,840
off the coast of florida

11
00:00:25,830 --> 00:00:22,960
in the rough tampa area our recovery

12
00:00:29,189 --> 00:00:25,840
vessel shannon is out there currently

13
00:00:31,750 --> 00:00:29,199

ready and waiting and excited to

14

00:00:33,190 --> 00:00:31,760

retrieve the crew from the water

15

00:00:35,990 --> 00:00:33,200

and we've heard they have great weather

16

00:00:37,990 --> 00:00:36,000

as well that's a huge factor when we

17

00:00:39,750 --> 00:00:38,000

consider bringing a crew home we want to

18

00:00:42,310 --> 00:00:39,760

make sure that the wind speeds are not

19

00:00:44,470 --> 00:00:42,320

too high and the waves aren't either

20

00:00:46,549 --> 00:00:44,480

we want it to be a smooth ride down and

21

00:00:48,150 --> 00:00:46,559

an easy recovery and keeping it safe not

22

00:00:50,549 --> 00:00:48,160

just for the astronauts but also the

23

00:00:53,110 --> 00:00:50,559

teams recovering absolutely um as you'll

24

00:00:54,709 --> 00:00:53,120

see uh coming up here and the next as

25

00:00:56,150 --> 00:00:54,719

leah said about 45 minutes until

26

00:00:57,830 --> 00:00:56,160

splashdown

27

00:01:00,229 --> 00:00:57,840

you'll see once those recovery teams

28

00:01:02,150 --> 00:01:00,239

move into position you'll see how

29

00:01:04,229 --> 00:01:02,160

quickly they work but you'll also see

30

00:01:05,509 --> 00:01:04,239

how important it is for that weather not

31

00:01:07,750 --> 00:01:05,519

only just for the crew inside the

32

00:01:10,630 --> 00:01:07,760

capsule but for the crews involved in

33

00:01:13,270 --> 00:01:10,640

retrieving the capsule from the water

34

00:01:15,429 --> 00:01:13,280

it's a very dynamic process to say the

35

00:01:16,950 --> 00:01:15,439

least i'll save i'll save some uh

36

00:01:20,390 --> 00:01:16,960

suspense and excitement for when it

37

00:01:22,469 --> 00:01:20,400

happens uh but for those that have um

38

00:01:24,630 --> 00:01:22,479

you know not followed along with our

39

00:01:33,590 --> 00:01:24,640

splashdowns previously dragon spacex

40

00:01:37,109 --> 00:01:35,670

great news there we

41

00:01:39,910 --> 00:01:37,119

clearly had

42

00:01:41,749 --> 00:01:39,920

successful claw separation and the claw

43

00:01:43,350 --> 00:01:41,759

again those umbilicals that are that

44

00:01:45,350 --> 00:01:43,360

bring power and telemetry from the trunk

45

00:01:47,670 --> 00:01:45,360

and the solar cells to the dragon

46

00:01:49,910 --> 00:01:47,680

capsule itself so now dragon is on

47

00:01:51,910 --> 00:01:49,920

battery power we also heard the call to

48

00:01:53,590 --> 00:01:51,920

the crew that there was a successful

49

00:01:55,590 --> 00:01:53,600

trunk jettison

50

00:01:58,469 --> 00:01:55,600

or trunk separation i guess i should say

51
00:02:01,510 --> 00:01:59,749
nice to know we are in the clear things

52
00:02:02,789 --> 00:02:01,520
are moving really smoothly tonight yeah

53
00:02:04,550 --> 00:02:02,799
absolutely

54
00:02:05,670 --> 00:02:04,560
that means that telemetry is looking

55
00:02:08,469 --> 00:02:05,680
good

56
00:02:09,830 --> 00:02:08,479
the nitrox system is primed for cabin

57
00:02:12,309 --> 00:02:09,840
and suit cooling

58
00:02:14,630 --> 00:02:12,319
nitrox of course is that nitrogen oxygen

59
00:02:16,150 --> 00:02:14,640
mixture that we pump through the cabin

60
00:02:18,550 --> 00:02:16,160
and the suits it helps keep the

61
00:02:21,030 --> 00:02:18,560
astronauts nice and cool and comfortable

62
00:02:24,550 --> 00:02:21,040
uh while they're the while the exterior

63
00:02:27,270 --> 00:02:24,560

of their vehicle reaches 3 500 degrees

64

00:02:29,830 --> 00:02:27,280

we want to make sure that the inside is

65

00:02:31,910 --> 00:02:29,840

nice and comfy for them

66

00:02:34,070 --> 00:02:31,920

and they do have the option to change

67

00:02:36,710 --> 00:02:34,080

the temperature inside the cabin either

68

00:02:37,990 --> 00:02:36,720

from the crew dragon itself or they can

69

00:02:39,509 --> 00:02:38,000

ask on the ground that the temperature

70

00:02:41,509 --> 00:02:39,519

be changed however now that they're in

71

00:02:43,589 --> 00:02:41,519

their suits they're getting that cooling

72

00:02:45,509 --> 00:02:43,599

air from their suits instead of inside

73

00:02:47,750 --> 00:02:45,519

the cabin yeah

74

00:02:50,150 --> 00:02:47,760

and nitrox for those are not those that

75

00:02:53,110 --> 00:02:50,160

might not be familiar that is the same

76

00:02:55,110 --> 00:02:53,120

stuff that we use in scuba gear so if

77

00:02:57,030 --> 00:02:55,120

you've ever been scuba diving you

78

00:02:59,350 --> 00:02:57,040

yourself have uh

79

00:03:01,990 --> 00:02:59,360

have also utilized nitrox

80

00:03:04,470 --> 00:03:02,000

so up next we have the final steps that

81

00:03:07,270 --> 00:03:04,480

dragon will perform prior to re-entry

82

00:03:09,670 --> 00:03:07,280

the slew or or also known as maneuver

83

00:03:13,110 --> 00:03:09,680

to deorbit burn

84

00:03:15,750 --> 00:03:13,120

attitude and the deorbit burn itself

85

00:03:18,070 --> 00:03:15,760

this is the last time that the forward

86

00:03:20,710 --> 00:03:18,080

dracos which are the four thrusters

87

00:03:22,630 --> 00:03:20,720

located on top of the vehicle it's the

88

00:03:24,949 --> 00:03:22,640

last time that they will ignite

89

00:03:27,430 --> 00:03:24,959

the deorbit burn will place dragon on a

90

00:03:29,750 --> 00:03:27,440

precise trajectory to

91

00:03:31,270 --> 00:03:29,760

return to the splashdown zone off the

92

00:03:32,470 --> 00:03:31,280

coast of florida like i said before

93

00:03:33,830 --> 00:03:32,480

we're targeting

94

00:03:35,990 --> 00:03:33,840

the tampa area

95

00:03:39,670 --> 00:03:36,000

and it will last about eight minutes

96

00:03:45,270 --> 00:03:41,910

so dragon has maneuvered to the orbit

97

00:03:48,710 --> 00:03:47,190

meaning we are just one step closer to

98

00:03:51,509 --> 00:03:48,720

coming home

99

00:03:53,110 --> 00:03:51,519

everything moving smoothly for

100

00:03:55,030 --> 00:03:53,120

the crew and the next

101
00:03:57,030 --> 00:03:55,040
the next milestone is for the orbit burn

102
00:03:59,030 --> 00:03:57,040
itself to start so that should happen in

103
00:04:03,270 --> 00:03:59,040
about two minutes now everything is

104
00:04:07,030 --> 00:04:05,509
and off the coast of tampa of course we

105
00:04:09,190 --> 00:04:07,040
have to have somebody to pick up our

106
00:04:11,750 --> 00:04:09,200
astronauts after their ride

107
00:04:14,390 --> 00:04:11,760
we have one of the spacex recovery boats

108
00:04:16,310 --> 00:04:14,400
with medical personnel with of course

109
00:04:19,030 --> 00:04:16,320
the recovery team also with nasa team

110
00:04:20,789 --> 00:04:19,040
members on board and they'll be awaiting

111
00:04:22,390 --> 00:04:20,799
the capsule there will be a couple of

112
00:04:24,150 --> 00:04:22,400
fast boats that go out as soon as they

113
00:04:26,550 --> 00:04:24,160

see the capsule land they'll make sure

114

00:04:28,550 --> 00:04:26,560

that the vehicle itself is safe that

115

00:04:30,230 --> 00:04:28,560

it's not putting off

116

00:04:33,030 --> 00:04:30,240

any

117

00:04:35,189 --> 00:04:33,040

dangerous gases before it's lifted onto

118

00:04:37,030 --> 00:04:35,199

the recovery ship

119

00:04:38,230 --> 00:04:37,040

and hopefully we'll have a moment to

120

00:04:40,310 --> 00:04:38,240

talk to

121

00:04:41,990 --> 00:04:40,320

one of our nasa public affairs officers

122

00:04:43,510 --> 00:04:42,000

on the ship as well to get a first-hand

123

00:04:45,350 --> 00:04:43,520

account of all the work that's happening

124

00:04:47,590 --> 00:04:45,360

that would be awesome

125

00:04:49,430 --> 00:04:47,600

now we do actually have two recovery

126
00:04:51,510 --> 00:04:49,440
vessels in our fleet

127
00:04:53,670 --> 00:04:51,520
the one that we're utilizing today is

128
00:04:56,390 --> 00:04:53,680
dedicated to gulf coast recovery

129
00:04:58,950 --> 00:04:56,400
operations and the other one we have

130
00:05:01,590 --> 00:04:58,960
logically is dedicated to our atlantic

131
00:05:03,270 --> 00:05:01,600
coast uh recovery operations so because

132
00:05:05,830 --> 00:05:03,280
we're splashing down in the gulf we're

133
00:05:08,310 --> 00:05:05,840
utilizing um our recovery vessel shannon

134
00:05:10,550 --> 00:05:08,320
named after shannon walker amazing uh

135
00:05:13,430 --> 00:05:10,560
and uh who was the

136
00:05:15,909 --> 00:05:13,440
second woman to fly on a crew dragon

137
00:05:17,909 --> 00:05:15,919
mission the first moment to fly on a

138
00:05:19,510 --> 00:05:17,919

crew no i'm sorry i have that backwards

139

00:05:21,909 --> 00:05:19,520

shannon was the second woman to fly on a

140

00:05:24,150 --> 00:05:21,919

crew dragon mission uh megan macarthur

141

00:05:25,670 --> 00:05:24,160

was the first woman to fly on a crew

142

00:05:27,510 --> 00:05:25,680

dragon mission and she was actually the

143

00:05:28,390 --> 00:05:27,520

pilot uh for

144

00:05:30,870 --> 00:05:28,400

crew

145

00:05:31,909 --> 00:05:30,880

one i believe it was i think

146

00:05:33,749 --> 00:05:31,919

no it was crew

147

00:05:34,950 --> 00:05:33,759

yeah shannon yeah it's so difficult to

148

00:05:38,230 --> 00:05:34,960

keep everything straight now yeah

149

00:05:40,629 --> 00:05:38,240

shannon uh was a mission specialist on

150

00:05:43,590 --> 00:05:40,639

the crew one mission and megan was the

151
00:05:46,070 --> 00:05:43,600
pilot for the crew ii mission so we uh

152
00:05:48,870 --> 00:05:46,080
you know appreciate their um

153
00:05:50,790 --> 00:05:48,880
participation in our program and uh you

154
00:05:53,749 --> 00:05:50,800
know we've chosen to honor them as the

155
00:05:57,029 --> 00:05:53,759
first two women to fly on crew dragon by

156
00:05:59,270 --> 00:05:57,039
naming our recovery vessels after them

157
00:06:00,870 --> 00:05:59,280
we are coming up on that deorbit burn

158
00:06:02,390 --> 00:06:00,880
less than a minute now until the burn

159
00:06:04,309 --> 00:06:02,400
starts again that's going to be a less

160
00:06:07,270 --> 00:06:04,319
than eight minute burn it's a longer one

161
00:06:08,950 --> 00:06:07,280
for sure and that is us committing

162
00:06:11,990 --> 00:06:08,960
saying that we are coming home

163
00:06:13,670 --> 00:06:12,000

uh that will help dragon exit the

164

00:06:15,830 --> 00:06:13,680

uh earth's

165

00:06:17,749 --> 00:06:15,840

orbit come into the

166

00:06:20,150 --> 00:06:17,759

atmosphere and looks like those

167

00:06:21,270 --> 00:06:20,160

thrusters are firing on those screens it

168

00:06:23,189 --> 00:06:21,280

looks like we

169

00:06:29,749 --> 00:06:23,199

can see

170

00:06:32,710 --> 00:06:31,749

once again on the left hand side of your

171

00:06:35,189 --> 00:06:32,720

screen

172

00:06:39,670 --> 00:06:35,199

is our commander raja chari and on the

173

00:06:43,909 --> 00:06:41,510

and that's a live view of spacex mission

174

00:06:46,150 --> 00:06:43,919

control just behind leah and myself here

175

00:06:49,990 --> 00:06:46,160

at spacex headquarters in hawthorne

176
00:06:53,670 --> 00:06:51,589
teams there are

177
00:06:55,830 --> 00:06:53,680
monitoring dragon as we said before it

178
00:06:57,189 --> 00:06:55,840
is completely autonomous so it is flying

179
00:06:59,270 --> 00:06:57,199
itself

180
00:07:01,510 --> 00:06:59,280
you know the computer can do the math

181
00:07:04,230 --> 00:07:01,520
and the calculations much faster than a

182
00:07:06,230 --> 00:07:04,240
human can so just from a safety factor

183
00:07:08,710 --> 00:07:06,240
it's much safer

184
00:07:11,350 --> 00:07:08,720
but yeah so the crew are you know safely

185
00:07:14,710 --> 00:07:11,360
buckled into their seats and as this

186
00:07:17,510 --> 00:07:14,720
deorbit burn is underway as leah said

187
00:07:22,390 --> 00:07:17,520
this commits us to splash down off the

188
00:07:25,909 --> 00:07:24,070

and again they're just getting to watch

189

00:07:27,670 --> 00:07:25,919

on those screens

190

00:07:29,110 --> 00:07:27,680

making sure everything is going smoothly

191

00:07:30,550 --> 00:07:29,120

on their journey home so they're staying

192

00:07:31,510 --> 00:07:30,560

informed even though they're not having

193

00:07:37,029 --> 00:07:31,520

to

194

00:07:41,990 --> 00:07:38,870

about six and a half minutes left in the

195

00:07:45,990 --> 00:07:42,000

burn again it's about a seven uh

196

00:07:51,909 --> 00:07:49,029

yeah we heard uh a quick debrief to the

197

00:07:54,710 --> 00:07:51,919

crew just prior to going live with our

198

00:07:57,589 --> 00:07:54,720

webcast and as you mentioned the weather

199

00:07:59,749 --> 00:07:57,599

is a key factor in determining where and

200

00:08:00,710 --> 00:07:59,759

when we will be able to bring the crew

201
00:08:02,869 --> 00:08:00,720
home

202
00:08:05,430 --> 00:08:02,879
in that report we heard that the wind

203
00:08:07,749 --> 00:08:05,440
speeds were only about three knots and

204
00:08:10,150 --> 00:08:07,759
the wave height was only about a half

205
00:08:12,550 --> 00:08:10,160
foot so once we're able to get live

206
00:08:14,629 --> 00:08:12,560
views of the recovery area

207
00:08:18,550 --> 00:08:14,639
it sounds like we're going to have some

208
00:08:21,110 --> 00:08:18,560
lovely views although it is dark so

209
00:08:22,790 --> 00:08:21,120
that we should see relatively calm seas

210
00:08:25,990 --> 00:08:22,800
you know as far as the light can see

211
00:08:28,550 --> 00:08:26,000
anyway and we also have the wb-57 plane

212
00:08:30,950 --> 00:08:28,560
out hoping to get some early images of

213
00:08:32,149 --> 00:08:30,960

crude dragon as it enters the earth's

214

00:08:34,550 --> 00:08:32,159

atmosphere

215

00:08:36,790 --> 00:08:34,560

but again the deorbit burn is underway

216

00:08:38,469 --> 00:08:36,800

dragon is committed to coming home and

217

00:08:40,790 --> 00:08:38,479

just a quick recap within the last 10

218

00:08:42,550 --> 00:08:40,800

minutes we've seen a lot of action

219

00:08:44,470 --> 00:08:42,560

dragon jettisoned its trunk and

220

00:08:45,750 --> 00:08:44,480

initiated the deorbit burn just a few

221

00:08:47,750 --> 00:08:45,760

minutes ago

222

00:08:49,350 --> 00:08:47,760

for these operations nasa and spacex

223

00:08:51,590 --> 00:08:49,360

closely coordinate with the us coast

224

00:08:54,070 --> 00:08:51,600

guard they establish a safety zone to

225

00:08:55,269 --> 00:08:54,080

ensure public safety and the safety of

226

00:08:57,030 --> 00:08:55,279

those involved in the recovery

227

00:08:59,190 --> 00:08:57,040

operations as well as the crew aboard

228

00:09:01,110 --> 00:08:59,200

the returning spacecraft of course

229

00:09:02,949 --> 00:09:01,120

but multiple notices are issued to the

230

00:09:04,870 --> 00:09:02,959

mariners in advance and during recovery

231

00:09:06,630 --> 00:09:04,880

operations and the coast guard patrol

232

00:09:08,710 --> 00:09:06,640

boats are also deployed to discourage

233

00:09:09,509 --> 00:09:08,720

voters from entering the splashdown zone

234

00:09:11,750 --> 00:09:09,519

so

235

00:09:13,990 --> 00:09:11,760

we want to stress the public that need

236

00:09:15,750 --> 00:09:14,000

to respect this safety zone recovering a

237

00:09:17,509 --> 00:09:15,760

spacecraft from the water is a hazardous

238

00:09:19,269 --> 00:09:17,519

operation and any other boats

239

00:09:21,110 --> 00:09:19,279

interfering increases the risk to

240

00:09:22,790 --> 00:09:21,120

astronauts in the capsule the teams

241

00:09:24,949 --> 00:09:22,800

working to recover them from the water

242

00:09:26,870 --> 00:09:24,959

and the safety of those that come too

243

00:09:29,269 --> 00:09:26,880

close so for the safety of the crew and

244

00:09:31,509 --> 00:09:29,279

for your safety we recommend you sit

245

00:09:33,190 --> 00:09:31,519

back and watch as we are bringing you

246

00:09:34,630 --> 00:09:33,200

the best possible views of our

247

00:09:36,470 --> 00:09:34,640

astronauts homecoming it doesn't get

248

00:09:38,790 --> 00:09:36,480

better than inside the capsule i would

249

00:09:40,949 --> 00:09:38,800

have to agree on their way home

250

00:09:44,070 --> 00:09:40,959

like i mentioned earlier this deorbit

251

00:09:47,030 --> 00:09:44,080

burn is the last time for those four

252

00:09:49,430 --> 00:09:47,040

forward draco thrusters to fire uh

253

00:09:52,150 --> 00:09:49,440

forward basically meaning top so they're

254

00:09:53,829 --> 00:09:52,160

the draco thrusters at the top of dragon

255

00:09:56,150 --> 00:09:53,839

dragon endurance has

256

00:09:58,150 --> 00:09:56,160

not yet entered earth's atmosphere this

257

00:10:00,070 --> 00:09:58,160

deorbit burn is what will line the

258

00:10:02,230 --> 00:10:00,080

vehicle up and put it on its final

259

00:10:05,829 --> 00:10:02,240

trajectory to the landing site off the

260

00:10:08,150 --> 00:10:05,839

coast of florida right now raja tom

261

00:10:09,750 --> 00:10:08,160

kayla and matthias are using their

262

00:10:11,829 --> 00:10:09,760

screens to keep tabs on the burn

263

00:10:12,870 --> 00:10:11,839

duration and you can see right there for

264

00:10:15,430 --> 00:10:12,880

yourself

265

00:10:17,430 --> 00:10:15,440

those draco thruster firings and the

266

00:10:20,069 --> 00:10:17,440

trajectory details like entry angle

267

00:10:23,350 --> 00:10:20,079

capsule perigrine and how much distance

268

00:10:25,350 --> 00:10:23,360

remaining until deorbit burn termination

269

00:10:28,389 --> 00:10:25,360

like i said before dragon is flying

270

00:10:30,470 --> 00:10:28,399

itself so all the crew has to do is stay

271

00:10:32,470 --> 00:10:30,480

strapped in their seats and keep tabs on

272

00:10:34,389 --> 00:10:32,480

things

273

00:10:37,430 --> 00:10:34,399

we have about four minutes left in the

274

00:10:39,509 --> 00:10:37,440

burn dragon is committed to coming home

275

00:10:42,710 --> 00:10:39,519

and teams are committed to going to get

276

00:10:44,949 --> 00:10:42,720

them soon so things are going smoothly

277

00:10:47,350 --> 00:10:44,959

again a lot of action not just in the

278

00:10:49,670 --> 00:10:47,360

last 10 minutes but today we've had the

279

00:10:50,870 --> 00:10:49,680

crew wake up from their rest period and

280

00:10:52,710 --> 00:10:50,880

if they went to sleep they might have

281

00:10:53,910 --> 00:10:52,720

been too excited about coming home to go

282

00:10:55,590 --> 00:10:53,920

to sleep

283

00:10:57,590 --> 00:10:55,600

and the crew on the international space

284

00:11:00,230 --> 00:10:57,600

station has their sleep period right now

285

00:11:02,389 --> 00:11:00,240

as well so they have the opportunity to

286

00:11:04,310 --> 00:11:02,399

be asleep but i think they can watch our

287

00:11:05,910 --> 00:11:04,320

broadcast as well so

288

00:11:08,150 --> 00:11:05,920

they they might be staying up a little

289

00:11:11,190 --> 00:11:08,160

late this time

290

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

now with raja tom kayla and matthias

291

00:11:15,750 --> 00:11:13,519

almost ready to deorbit and splash down

292

00:11:18,630 --> 00:11:15,760

back on planet earth they'll be heading

293

00:11:21,190 --> 00:11:18,640

to one of seven targeted sites supported

294

00:11:23,110 --> 00:11:21,200

by spacex and nasa all of these sites

295

00:11:25,190 --> 00:11:23,120

are located off the coast of florida

296

00:11:26,710 --> 00:11:25,200

either in the gulf of mexico or the

297

00:11:28,550 --> 00:11:26,720

atlantic ocean

298

00:11:30,790 --> 00:11:28,560

spreading these supported sites across

299

00:11:32,949 --> 00:11:30,800

multiple locations helps to maximize the

300

00:11:35,030 --> 00:11:32,959

return opportunities for this mission

301
00:11:37,110 --> 00:11:35,040
and future cruise lowering the chance

302
00:11:38,949 --> 00:11:37,120
that we'll have to wave off due to that

303
00:11:41,110 --> 00:11:38,959
pesky bad weather

304
00:11:43,190 --> 00:11:41,120
earlier today nasa and spacex jointly

305
00:11:44,870 --> 00:11:43,200
selected primary and alternate

306
00:11:46,630 --> 00:11:44,880
splashdown locations off the coast of

307
00:11:48,630 --> 00:11:46,640
tampa which we mentioned is our prime

308
00:11:50,790 --> 00:11:48,640
area and panama city which is the

309
00:11:52,470 --> 00:11:50,800
alternate both on the coast of florida

310
00:11:53,990 --> 00:11:52,480
the selection process works with a lot

311
00:11:56,150 --> 00:11:54,000
of different variables including the

312
00:11:57,910 --> 00:11:56,160
space station's orbital trajectory which

313
00:12:00,310 --> 00:11:57,920

landing sites are available and have

314

00:12:01,509 --> 00:12:00,320

that uh good weather we're looking for

315

00:12:04,150 --> 00:12:01,519

as well as how much free flight

316

00:12:05,590 --> 00:12:04,160

capability dragon has for the trip home

317

00:12:06,949 --> 00:12:05,600

and we also have to plan around the

318

00:12:08,470 --> 00:12:06,959

sleep schedule for the returning crew

319

00:12:10,949 --> 00:12:08,480

members of course

320

00:12:13,190 --> 00:12:10,959

now we'll start with calculating daily

321

00:12:15,110 --> 00:12:13,200

return options based off of the space

322

00:12:18,069 --> 00:12:15,120

station's current orbit and dragon's

323

00:12:19,190 --> 00:12:18,079

capabilities to maneuver and line up for

324

00:12:21,430 --> 00:12:19,200

re-entry

325

00:12:24,069 --> 00:12:21,440

the time from undock to landing at the

326

00:12:26,870 --> 00:12:24,079

primary site can vary from less than 6

327

00:12:28,310 --> 00:12:26,880

hours to more than 39

328

00:12:30,790 --> 00:12:28,320

getting home the quickest comes with

329

00:12:33,269 --> 00:12:30,800

some obvious benefits but we always have

330

00:12:34,949 --> 00:12:33,279

to make sure that the crew if

331

00:12:37,509 --> 00:12:34,959

is properly rested for dynamic

332

00:12:40,230 --> 00:12:37,519

operations but obviously that prevents

333

00:12:42,629 --> 00:12:40,240

us from scheduling 20 plus hours days

334

00:12:45,030 --> 00:12:42,639

for them uh trajectory and ballistics

335

00:12:47,590 --> 00:12:45,040

experts provide the daily opportunities

336

00:12:49,990 --> 00:12:47,600

that would line up dragon with the seven

337

00:12:50,870 --> 00:12:50,000

landing zones and split them into what

338

00:12:53,509 --> 00:12:50,880

we call

339

00:12:55,350 --> 00:12:53,519

ascending and descending opportunities

340

00:12:56,870 --> 00:12:55,360

so just a reminder quickly that we are

341

00:12:59,509 --> 00:12:56,880

still in the orbit burn we have about a

342

00:13:01,030 --> 00:12:59,519

minute left out of that 7 minute and 45

343

00:13:03,590 --> 00:13:01,040

second burn so we're coming up on the

344

00:13:05,430 --> 00:13:03,600

tail end of that um but dragon uses its

345

00:13:07,350 --> 00:13:05,440

draco thrusters to

346

00:13:09,350 --> 00:13:07,360

leave the station and execute a series

347

00:13:11,829 --> 00:13:09,360

of altitude lowering maneuvers and to

348

00:13:13,110 --> 00:13:11,839

line up with the selected primary site

349

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

it can also change to different

350

00:13:16,790 --> 00:13:15,040

alternate sites while in free flight so

351
00:13:18,150 --> 00:13:16,800
if we had bad weather move in and we

352
00:13:19,110 --> 00:13:18,160
needed to avoid that it could have

353
00:13:20,710 --> 00:13:19,120
changed

354
00:13:22,150 --> 00:13:20,720
even after leaving the station so the

355
00:13:24,069 --> 00:13:22,160
weather is something we're constantly

356
00:13:25,670 --> 00:13:24,079
looking at we made that final call to

357
00:13:28,150 --> 00:13:25,680
proceed about two and a half hours

358
00:13:30,069 --> 00:13:28,160
before the crew undocks and for the crew

359
00:13:31,829 --> 00:13:30,079
3 return we looked at a number of

360
00:13:33,350 --> 00:13:31,839
weather items some of these are obvious

361
00:13:35,269 --> 00:13:33,360
like no rain or chance of lightning in

362
00:13:37,750 --> 00:13:35,279
the recovery zone as both for the safety

363
00:13:39,910 --> 00:13:37,760

of the crew inside the capsule and the

364

00:13:41,750 --> 00:13:39,920

crew on the recovery teams on the water

365

00:13:43,670 --> 00:13:41,760

so we're also looking for wind speeds

366

00:13:46,310 --> 00:13:43,680

less than 15 feet a second or about 10

367

00:13:48,310 --> 00:13:46,320

miles per hour and relatively calm seas

368

00:13:49,430 --> 00:13:48,320

so we can safely execute the recovery

369

00:13:51,430 --> 00:13:49,440

operations

370

00:13:54,790 --> 00:13:51,440

that includes

371

00:13:56,629 --> 00:13:54,800

dragon spacex the orbit burn complete

372

00:14:00,470 --> 00:13:56,639

performance was nominal nose cone

373

00:14:07,430 --> 00:14:03,030

the is doctoral burn and we see the same

374

00:14:11,590 --> 00:14:09,350

all right good news the orbit burn is

375

00:14:13,829 --> 00:14:11,600

complete that seven minute 45 second

376
00:14:15,269 --> 00:14:13,839
burn they are committed to coming home

377
00:14:17,750 --> 00:14:15,279
and that splashdown again we're looking

378
00:14:19,670 --> 00:14:17,760
for in less than 30 minutes from now

379
00:14:21,110 --> 00:14:19,680
they also mentioned the nose cone will

380
00:14:21,829 --> 00:14:21,120
be closing

381
00:14:24,629 --> 00:14:21,839
the

382
00:14:26,389 --> 00:14:24,639
four forward bulkhead thrusters that

383
00:14:27,910 --> 00:14:26,399
were just used for the orbit burn we

384
00:14:29,590 --> 00:14:27,920
won't use those again

385
00:14:31,509 --> 00:14:29,600
and so the nose cone can close and

386
00:14:33,590 --> 00:14:31,519
protect the hatch underneath that's the

387
00:14:36,230 --> 00:14:33,600
hatch that they used once they arrived

388
00:14:37,509 --> 00:14:36,240

at the space station and to get to

389

00:14:39,269 --> 00:14:37,519

uh

390

00:14:41,189 --> 00:14:39,279

to get on and off the space station but

391

00:14:43,189 --> 00:14:41,199

tonight whenever they exit the vehicle

392

00:14:44,870 --> 00:14:43,199

they will exit out the

393

00:14:46,870 --> 00:14:44,880

side hatch which is the one they used

394

00:14:49,990 --> 00:14:46,880

when they entered the capsule about six

395

00:14:55,509 --> 00:14:51,829

so that's a live view

396

00:15:00,150 --> 00:14:57,750

like lia said those four

397

00:15:03,269 --> 00:15:00,160

draco thrusters located at the forward

398

00:15:06,069 --> 00:15:03,279

end of dragon will no longer be utilized

399

00:15:08,470 --> 00:15:06,079

so we are closing the nose cone

400

00:15:10,069 --> 00:15:08,480

to protect them as well as the forward

401
00:15:12,470 --> 00:15:10,079
hatch so that's the hatch that was

402
00:15:13,829 --> 00:15:12,480
utilized to dock and undock with the

403
00:15:15,030 --> 00:15:13,839
station

404
00:15:16,629 --> 00:15:15,040
that's pretty cool i'm not sure i've

405
00:15:19,269 --> 00:15:16,639
seen that before yeah that looks like a

406
00:15:20,949 --> 00:15:19,279
new view to me as well in the background

407
00:15:22,550 --> 00:15:20,959
dragon is inhibiting those forward

408
00:15:24,710 --> 00:15:22,560
bulkhead draco thrusters that we just

409
00:15:26,710 --> 00:15:24,720
used to complete the deorbit burn and i

410
00:15:29,509 --> 00:15:26,720
make sure it's safe to latch the nose

411
00:15:31,749 --> 00:15:29,519
cone shut for re-entry um

412
00:15:33,990 --> 00:15:31,759
also the vehicle has initiated the

413
00:15:35,749 --> 00:15:34,000

nitrox suit perch that'll help keep raja

414

00:15:37,509 --> 00:15:35,759

tom kayla and matthias cool and

415

00:15:38,949 --> 00:15:37,519

comfortable during re-entry we're

416

00:15:41,110 --> 00:15:38,959

looking for that to come up in about 20

417

00:15:43,430 --> 00:15:41,120

minutes so again the nose cone is

418

00:15:45,189 --> 00:15:43,440

closing protecting the forward hatch and

419

00:15:46,949 --> 00:15:45,199

our four astronauts are using their

420

00:15:48,550 --> 00:15:46,959

screens to monitor the locking of the

421

00:15:49,670 --> 00:15:48,560

nose cone which is done by a set of

422

00:15:51,749 --> 00:15:49,680

hooks

423

00:15:53,910 --> 00:15:51,759

so as you can um

424

00:15:55,829 --> 00:15:53,920

tell we're getting excited we're getting

425

00:15:58,069 --> 00:15:55,839

closer and closer to

426
00:16:02,069 --> 00:15:58,079
bringing this crew home

427
00:16:05,509 --> 00:16:02,079
the nose cone as we just saw was closing

428
00:16:08,069 --> 00:16:05,519
and that is basically the final

429
00:16:10,230 --> 00:16:08,079
very up close view there as you can see

430
00:16:11,990 --> 00:16:10,240
of that nose cone closing

431
00:16:14,550 --> 00:16:12,000
so we're expecting that to complete in

432
00:16:16,310 --> 00:16:14,560
just about another minute from now

433
00:16:18,310 --> 00:16:16,320
as we said before

434
00:16:21,430 --> 00:16:18,320
this is basically the

435
00:16:23,350 --> 00:16:21,440
uh the protection of that

436
00:16:25,990 --> 00:16:23,360
of the forward hatch as well as the

437
00:16:28,470 --> 00:16:26,000
forward draco thrusters

438
00:16:33,350 --> 00:16:28,480

this is

439

00:16:36,069 --> 00:16:33,360

change uh the big physical change that

440

00:16:38,710 --> 00:16:36,079

dragon will undergo prior to re-entry so

441

00:16:40,949 --> 00:16:38,720

we've already jettisoned the trunk and

442

00:16:43,910 --> 00:16:40,959

now with the closure of the nose cone

443

00:16:46,870 --> 00:16:43,920

dragon is in its final

444

00:16:48,550 --> 00:16:46,880

i'll say final exterior physical state

445

00:16:51,030 --> 00:16:48,560

because obviously there's some like

446

00:16:53,350 --> 00:16:51,040

interior physical state differences as

447

00:16:54,710 --> 00:16:53,360

um you know the system gets ready to to

448

00:16:56,550 --> 00:16:54,720

re-enter so

449

00:16:58,790 --> 00:16:56,560

we're almost done with that nose cone

450

00:17:00,550 --> 00:16:58,800

closure we should hear call out for that

451
00:17:03,670 --> 00:17:00,560
uh any moment

452
00:17:04,390 --> 00:17:03,680
from our team located there

453
00:17:06,710 --> 00:17:04,400
in

454
00:17:09,429 --> 00:17:06,720
spacex mission control center

455
00:17:11,909 --> 00:17:09,439
and we also have the vehicle positioned

456
00:17:14,309 --> 00:17:11,919
properly so that the heat shield is what

457
00:17:16,390 --> 00:17:14,319
will face toward the atmosphere whenever

458
00:17:18,150 --> 00:17:16,400
it's coming in that heat shield

459
00:17:19,990 --> 00:17:18,160
will protect the rest of the vehicle and

460
00:17:23,429 --> 00:17:20,000
ablate some of that heat that's coming

461
00:17:25,990 --> 00:17:23,439
in uh how hot did you say it gets again

462
00:17:27,990 --> 00:17:26,000
500 degrees fahrenheit it's pretty warm

463
00:17:30,470 --> 00:17:28,000

very toasty i'm a usually cold person

464

00:17:32,710 --> 00:17:30,480

but i don't think i'd go that hot yeah

465

00:17:34,630 --> 00:17:32,720

as you said uh dragon has initiated the

466

00:17:37,029 --> 00:17:34,640

suit purge and the um the environment

467

00:17:38,950 --> 00:17:37,039

purge of that nitrox so we are actively

468

00:17:40,470 --> 00:17:38,960

cooling the air around the astronauts so

469

00:17:42,470 --> 00:17:40,480

they'll stay really comfortable inside

470

00:17:45,270 --> 00:17:42,480

crew dragon even though uh the exterior

471

00:17:47,350 --> 00:17:45,280

gets up to 3 500 degrees uh i do want to

472

00:17:48,630 --> 00:17:47,360

note that as a result of that

473

00:17:49,909 --> 00:17:48,640

temperature

474

00:17:51,669 --> 00:17:49,919

actually that's not true it's not a

475

00:17:53,830 --> 00:17:51,679

result of that temperature it's a result

476

00:17:55,750 --> 00:17:53,840

of the fact that as dragon is

477

00:17:57,590 --> 00:17:55,760

re-entering the earth's atmosphere at

478

00:17:59,590 --> 00:17:57,600

such a high speed

479

00:18:01,510 --> 00:17:59,600

it actually forms a shock wave at the

480

00:18:03,190 --> 00:18:01,520

base of the heat shield and lots of

481

00:18:05,190 --> 00:18:03,200

science happens and basically there's

482

00:18:07,909 --> 00:18:05,200

ionization of the particles around the

483

00:18:10,390 --> 00:18:07,919

dragon capsule and it'll get so

484

00:18:12,470 --> 00:18:10,400

condensed and hot that it'll form plasma

485

00:18:15,110 --> 00:18:12,480

around the side of it so that's why once

486

00:18:17,029 --> 00:18:15,120

we see dragon after splashdown

487

00:18:19,270 --> 00:18:17,039

it'll look a little toasty

488

00:18:21,029 --> 00:18:19,280

but as a result of that plasma we won't

489

00:18:23,270 --> 00:18:21,039

be able to communicate

490

00:18:25,510 --> 00:18:23,280

with the crew that plasma basically

491

00:18:27,669 --> 00:18:25,520

prevents any radio frequencies to go in

492

00:18:29,350 --> 00:18:27,679

or out we are unable to command dragon

493

00:18:31,270 --> 00:18:29,360

to do anything

494

00:18:33,750 --> 00:18:31,280

but it's actually a really good thing

495

00:18:36,470 --> 00:18:33,760

because the earth's atmosphere is acting

496

00:18:38,549 --> 00:18:36,480

as that initial braking system for the

497

00:18:42,070 --> 00:18:38,559

dragon capsule to slow it down from that

498

00:18:44,870 --> 00:18:42,080

orbital velocity of 17 500 miles per

499

00:18:46,470 --> 00:18:44,880

hour so um we are expecting that

500

00:18:48,950 --> 00:18:46,480

blackout period

501
00:18:51,990 --> 00:18:48,960
last that we heard uh the the teams were

502
00:18:54,070 --> 00:18:52,000
able to calculate that uh to begin at

503
00:18:57,270 --> 00:18:54,080
the 30-minute mark and end at the

504
00:18:59,590 --> 00:18:57,280
37-minute mark so depending on your time

505
00:19:01,750 --> 00:18:59,600
zone you're in a different hour so for

506
00:19:05,990 --> 00:19:01,760
us that will be at

507
00:19:08,710 --> 00:19:06,000
9 30 p.m pacific to 9 37 p.m

508
00:19:10,710 --> 00:19:08,720
pacific so about a seven minute blackout

509
00:19:13,190 --> 00:19:10,720
period totally normal you'll hear it

510
00:19:14,390 --> 00:19:13,200
called out as los which means loss of

511
00:19:16,549 --> 00:19:14,400
signal

512
00:19:18,549 --> 00:19:16,559
and then you know after that period the

513
00:19:19,990 --> 00:19:18,559

teams here in hawthorne will

514

00:19:20,789 --> 00:19:20,000

try to establish communication with the

515

00:19:22,630 --> 00:19:20,799

crew

516

00:19:24,710 --> 00:19:22,640

but realistically hopefully by then

517

00:19:26,789 --> 00:19:24,720

we'll have views from that wb plane that

518

00:19:29,669 --> 00:19:26,799

you mentioned earlier with a thermal

519

00:19:31,909 --> 00:19:29,679

camera uh to you know catch a view of

520

00:19:33,750 --> 00:19:31,919

dragon as it has is doing that reentry

521

00:19:36,549 --> 00:19:33,760

yeah fingers crossed and you mentioned

522

00:19:38,710 --> 00:19:36,559

the uh atmosphere doing the beginning of

523

00:19:39,669 --> 00:19:38,720

the work to slow exactly crew dragon

524

00:19:41,750 --> 00:19:39,679

down

525

00:19:43,590 --> 00:19:41,760

after it re-enters the atmosphere we'll

526

00:19:45,430 --> 00:19:43,600

have a series of parachutes the first

527

00:19:47,350 --> 00:19:45,440

two are drogue shoots these help pull

528

00:19:49,669 --> 00:19:47,360

out the next four which are the main

529

00:19:51,830 --> 00:19:49,679

parachutes and that'll continue slowing

530

00:19:53,669 --> 00:19:51,840

crew dragon down until it splashes down

531

00:19:55,909 --> 00:19:53,679

safely

532

00:19:57,990 --> 00:19:55,919

in the water off the coast of tampa

533

00:19:59,669 --> 00:19:58,000

again the spas boats will first approach

534

00:20:01,430 --> 00:19:59,679

the capsule make sure there aren't any

535

00:20:04,390 --> 00:20:01,440

dangerous fumes

536

00:20:05,430 --> 00:20:04,400

coming off of it and then the

537

00:20:08,230 --> 00:20:05,440

shannon

538

00:20:09,990 --> 00:20:08,240

the newest named uh recovery boat will

539

00:20:12,710 --> 00:20:10,000

make its way toward the capsule itself

540

00:20:13,590 --> 00:20:12,720

they will lift the capsule up into a

541

00:20:15,190 --> 00:20:13,600

nest

542

00:20:17,350 --> 00:20:15,200

is what it's called the best way to

543

00:20:20,870 --> 00:20:17,360

describe it uh on the boat they will

544

00:20:22,070 --> 00:20:20,880

pull it toward the um center of the boat

545

00:20:23,270 --> 00:20:22,080

where there's a platform for the

546

00:20:25,029 --> 00:20:23,280

astronauts to be helped out of the

547

00:20:28,149 --> 00:20:25,039

capsule they'll get out they'll have

548

00:20:30,070 --> 00:20:28,159

some medical checks um just some routine

549

00:20:32,950 --> 00:20:30,080

checks after spending six months in

550

00:20:35,510 --> 00:20:32,960

space uh and then they will be they will

551
00:20:37,590 --> 00:20:35,520
take a helicopter off of the ship all

552
00:20:40,070 --> 00:20:37,600
the way to shore where they will board

553
00:20:42,950 --> 00:20:40,080
another nasa jet back to houston so it's

554
00:20:44,230 --> 00:20:42,960
a very fast return yeah so the point

555
00:20:46,950 --> 00:20:44,240
being is that

556
00:20:49,190 --> 00:20:46,960
when they land in the water that's

557
00:20:50,710 --> 00:20:49,200
you know big picture it's the last leg

558
00:20:53,350 --> 00:20:50,720
home but

559
00:20:55,909 --> 00:20:53,360
more of the macro or smaller picture uh

560
00:20:57,270 --> 00:20:55,919
micro picture the the journey's not done

561
00:20:59,270 --> 00:20:57,280
there's several more steps that they

562
00:21:01,510 --> 00:20:59,280
have to go through before uh they are

563
00:21:04,710 --> 00:21:01,520

reunited with their families and back on

564

00:21:06,789 --> 00:21:04,720

solid ground so yeah we're expecting all

565

00:21:08,630 --> 00:21:06,799

of that not all that not be

566

00:21:11,669 --> 00:21:08,640

we will probably end our webcast before

567

00:21:13,350 --> 00:21:11,679

the helicopter yeah but it shows up

568

00:21:15,909 --> 00:21:13,360

but in any case yeah there's a lot of

569

00:21:17,270 --> 00:21:15,919

dynamic stuff coming up we are expecting

570

00:21:21,029 --> 00:21:17,280

to hear call out

571

00:21:23,430 --> 00:21:21,039

for completion of the nose cone closure

572

00:21:26,149 --> 00:21:23,440

and yeah that is the final major

573

00:21:27,510 --> 00:21:26,159

physical change of dragon prior to that

574

00:21:29,350 --> 00:21:27,520

deorbit

575

00:21:30,710 --> 00:21:29,360

i had

576

00:21:34,470 --> 00:21:30,720

it felt like a once-in-a-lifetime

577

00:21:36,630 --> 00:21:34,480

opportunity to be on board when crew 2

578

00:21:38,070 --> 00:21:36,640

uh came back into the atmosphere and

579

00:21:41,110 --> 00:21:38,080

seeing them come streaking through the

580

00:21:51,990 --> 00:21:41,120

atmosphere was dragon spacex nose cone

581

00:21:56,390 --> 00:21:53,750

all right so there we heard that call

582

00:21:58,630 --> 00:21:56,400

out from spacex core sarah gillis and

583

00:22:01,510 --> 00:21:58,640

forming the crew that nose cone closure

584

00:22:04,710 --> 00:22:01,520

is complete uh so that was all basically

585

00:22:07,430 --> 00:22:04,720

the first half of uh of reentry as we

586

00:22:09,510 --> 00:22:07,440

begin the second half of entry dragon is

587

00:22:12,789 --> 00:22:09,520

now beginning to inject the cooled

588

00:22:15,430 --> 00:22:12,799

nitrox into the air being delivered to

589

00:22:17,669 --> 00:22:15,440

the suits worn by raja tom kayla and

590

00:22:19,590 --> 00:22:17,679

matthias again this is what will allow

591

00:22:22,549 --> 00:22:19,600

the crew to remain comfortable while

592

00:22:24,149 --> 00:22:22,559

external temperatures reach that 3 500

593

00:22:26,470 --> 00:22:24,159

degrees fahrenheit

594

00:22:28,470 --> 00:22:26,480

the heat shield is pointing forward

595

00:22:30,870 --> 00:22:28,480

uh basically leading the capsule to the

596

00:22:33,190 --> 00:22:30,880

landing site which as i mentioned before

597

00:22:35,430 --> 00:22:33,200

we are targeting off the coast of tampa

598

00:22:37,430 --> 00:22:35,440

florida for landing today

599

00:22:39,110 --> 00:22:37,440

now speaking of the heat shield crew

600

00:22:42,470 --> 00:22:39,120

dragon's primary heat shield is

601
00:22:45,909 --> 00:22:42,480
comprised of pica 3.0 which stands for

602
00:22:47,990 --> 00:22:45,919
phenolic impregnated carbon ablator

603
00:22:50,470 --> 00:22:48,000
first gen pica was first developed by

604
00:22:52,870 --> 00:22:50,480
nasa for studying and sampling comets

605
00:22:55,750 --> 00:22:52,880
within our solar system so spacex

606
00:22:57,590 --> 00:22:55,760
partnered with nasa to develop pica x

607
00:22:59,669 --> 00:22:57,600
which was the second gen product used on

608
00:23:01,270 --> 00:22:59,679
all of the dragon 1 commercial resupply

609
00:23:04,630 --> 00:23:01,280
missions that successfully resupplied

610
00:23:06,470 --> 00:23:04,640
the station on 20 missions but pica 3.0

611
00:23:09,110 --> 00:23:06,480
was developed specifically for use on

612
00:23:10,789 --> 00:23:09,120
dragon 2 crew and cargo with enhanced

613
00:23:13,029 --> 00:23:10,799

structural and thermal properties that

614

00:23:14,710 --> 00:23:13,039

optimize the heat shield and drove down

615

00:23:16,230 --> 00:23:14,720

the cost and mass always a good thing

616

00:23:18,630 --> 00:23:16,240

yeah absolutely

617

00:23:21,190 --> 00:23:18,640

the remainder of the crew dragon capsule

618

00:23:23,669 --> 00:23:21,200

is composed primarily of a spacex

619

00:23:25,590 --> 00:23:23,679

proprietary ablative material it's

620

00:23:28,230 --> 00:23:25,600

another class of thermal protection

621

00:23:29,909 --> 00:23:28,240

which is lighter weight versus pica

622

00:23:32,390 --> 00:23:29,919

and protects the underlying composite

623

00:23:34,470 --> 00:23:32,400

structure during re-entry to ensure the

624

00:23:37,190 --> 00:23:34,480

structural capabilities of the capsule

625

00:23:39,750 --> 00:23:37,200

are maintained so while crew dragon will

626

00:23:42,070 --> 00:23:39,760

experience temperatures over 3000

627

00:23:43,830 --> 00:23:42,080

degrees during peak re-entry conditions

628

00:23:46,070 --> 00:23:43,840

the characteristics of the tps are the

629

00:23:47,909 --> 00:23:46,080

thermal protection systems coupled with

630

00:23:50,070 --> 00:23:47,919

the eclipse environmental cooling and

631

00:23:52,390 --> 00:23:50,080

life support system in the pressurized

632

00:23:54,310 --> 00:23:52,400

interior will ensure that raja tom kayla

633

00:23:56,470 --> 00:23:54,320

and matthias stay cool and comfortable

634

00:23:57,669 --> 00:23:56,480

during all phases of re-entry through

635

00:23:59,029 --> 00:23:57,679

splashdown

636

00:24:01,110 --> 00:23:59,039

yeah so

637

00:24:02,710 --> 00:24:01,120

it's important stuff it sounds like a

638

00:24:05,990 --> 00:24:02,720

lot of words but

639

00:24:08,149 --> 00:24:06,000

basically the main job is to take the

640

00:24:09,430 --> 00:24:08,159

heat that is

641

00:24:11,430 --> 00:24:09,440

you know being experienced by the

642

00:24:13,269 --> 00:24:11,440

capsule and dissipate it

643

00:24:15,190 --> 00:24:13,279

it's a protective barrier

644

00:24:17,190 --> 00:24:15,200

now after crew dragon endurance has

645

00:24:19,350 --> 00:24:17,200

re-entered the earth's atmosphere a

646

00:24:21,750 --> 00:24:19,360

series of parachutes will deploy to slow

647

00:24:24,149 --> 00:24:21,760

the crew's descent first will be the two

648

00:24:26,630 --> 00:24:24,159

drogue shoots followed by the four main

649

00:24:29,269 --> 00:24:26,640

shoots to guide crew dragon it to its

650

00:24:31,990 --> 00:24:29,279

first contact with earth since since

651
00:24:34,149 --> 00:24:32,000
launching uh in november of last year

652
00:24:36,149 --> 00:24:34,159
dragon will automatically deploy these

653
00:24:37,990 --> 00:24:36,159
parachutes when different pressure and

654
00:24:39,909 --> 00:24:38,000
positioning sensors on the capsule

655
00:24:42,950 --> 00:24:39,919
detect that they're at the right speed

656
00:24:45,510 --> 00:24:42,960
and altitude the vehicle velocity at the

657
00:24:48,070 --> 00:24:45,520
drug deploys approximately 350 miles per

658
00:24:49,909 --> 00:24:48,080
hour so that's a lot better than that 17

659
00:24:52,110 --> 00:24:49,919
500 for sure before it reenters the

660
00:24:55,510 --> 00:24:52,120
atmosphere so 3

661
00:24:58,470 --> 00:24:55,520
350 is quite a bit slower but the drugs

662
00:25:00,310 --> 00:24:58,480
will deploy at about 18 000 feet so

663
00:25:03,269 --> 00:25:00,320

those strokes help slow the capsule to

664

00:25:06,870 --> 00:25:03,279

119 miles per hour and that's about when

665

00:25:08,390 --> 00:25:06,880

the main parachutes deploy so about 6500

666

00:25:10,789 --> 00:25:08,400

feet and that's going to slow the

667

00:25:13,350 --> 00:25:10,799

capsule down the vehicle velocity at the

668

00:25:15,750 --> 00:25:13,360

water splashdown is about 16 miles per

669

00:25:17,750 --> 00:25:15,760

hour so much uh

670

00:25:20,470 --> 00:25:17,760

much nicer cruise than that orbital

671

00:25:22,789 --> 00:25:20,480

velocity but the highest g g load the

672

00:25:25,029 --> 00:25:22,799

crew will experience during re-entry is

673

00:25:27,350 --> 00:25:25,039

around three to five g's

674

00:25:29,029 --> 00:25:27,360

in my opinion it's too many

675

00:25:31,029 --> 00:25:29,039

it does seem like a lot after uh

676

00:25:33,269 --> 00:25:31,039

spending you know six months in almost

677

00:25:35,909 --> 00:25:33,279

zero yeah but i'm also the person that

678

00:25:37,830 --> 00:25:35,919

is happy to not ride the roller coaster

679

00:25:39,669 --> 00:25:37,840

and hold everybody's belongings and wait

680

00:25:41,590 --> 00:25:39,679

for them at the exit we should go to a

681

00:25:43,830 --> 00:25:41,600

theme park together because

682

00:25:45,269 --> 00:25:43,840

i'm i'm on the roller coaster i'm happy

683

00:25:47,510 --> 00:25:45,279

to do so

684

00:25:50,310 --> 00:25:47,520

so for those of you that um are just

685

00:25:52,310 --> 00:25:50,320

joining us we have um separated excuse

686

00:25:53,909 --> 00:25:52,320

me we have jettisoned the trunk we have

687

00:25:56,390 --> 00:25:53,919

closed the nose cone

688

00:25:58,630 --> 00:25:56,400

we have positioned dragon into the right

689

00:26:00,870 --> 00:25:58,640

position basically having that heat

690

00:26:03,430 --> 00:26:00,880

shield face forward lead the dragon

691

00:26:06,070 --> 00:26:03,440

capsule um uh before re-entry and we

692

00:26:09,190 --> 00:26:06,080

have completed the deorbit burn

693

00:26:10,950 --> 00:26:09,200

so next up is the uh the

694

00:26:12,870 --> 00:26:10,960

actual re-entry itself and the

695

00:26:14,870 --> 00:26:12,880

communications blackout yeah we have

696

00:26:16,470 --> 00:26:14,880

about 15 minutes until the entry

697

00:26:19,269 --> 00:26:16,480

interface period

698

00:26:21,190 --> 00:26:19,279

we again anticipate that loss of signal

699

00:26:22,149 --> 00:26:21,200

this is something that always happens

700

00:26:25,590 --> 00:26:22,159

it's

701
00:26:27,029 --> 00:26:25,600
side effect of that plasma buildup

702
00:26:29,110 --> 00:26:27,039
but we know we will regain that

703
00:26:32,390 --> 00:26:29,120
communications once they have slowed

704
00:26:34,149 --> 00:26:32,400
down and exited that plasma um we will

705
00:26:36,149 --> 00:26:34,159
see the drug shoots deploy shortly after

706
00:26:37,830 --> 00:26:36,159
which will pull out our mains we'll see

707
00:26:40,630 --> 00:26:37,840
splashdown and fingers crossed we'll

708
00:26:42,789 --> 00:26:40,640
have views of this from our wb-57 and

709
00:26:45,990 --> 00:26:42,799
potentially from the recovery boat

710
00:26:50,710 --> 00:26:48,070
once again we are targeting a landing

711
00:26:53,110 --> 00:26:50,720
off the coast of florida in the

712
00:26:55,830 --> 00:26:53,120
gulf of mexico where we have shannon

713
00:27:03,590 --> 00:26:55,840

positioned around the tampa area dragon

714

00:27:03,600 --> 00:27:10,149

return free to copy

715

00:27:17,029 --> 00:27:14,630

raja at this time i have no changes to

716

00:27:18,710 --> 00:27:17,039

timeline for you same anticipated

717

00:27:20,549 --> 00:27:18,720

blackout start and stop times as i

718

00:27:22,710 --> 00:27:20,559

briefed before

719

00:27:24,710 --> 00:27:22,720

we are not tracking any vehicle issues

720

00:27:27,269 --> 00:27:24,720

at this time

721

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

and so far as weather goes

722

00:27:31,990 --> 00:27:29,600

we are still looking great there is a

723

00:27:34,389 --> 00:27:32,000

slight increase in wind speed at seven

724

00:27:36,630 --> 00:27:34,399

knots from what i last reported but

725

00:27:43,350 --> 00:27:36,640

we have calm season we're ready to get

726

00:27:48,549 --> 00:27:44,870

have you known about timeline changes so

727

00:27:50,789 --> 00:27:48,559

it looks like blackout is 4 30 and 437

728

00:27:52,230 --> 00:27:50,799

metal vehicle issues and then a little

729

00:27:54,549 --> 00:27:52,240

change in the wind from three to seven

730

00:27:58,870 --> 00:27:54,559

knots but still competes and

731

00:27:58,880 --> 00:28:13,269

that's a good read back

732

00:28:16,389 --> 00:28:15,510

so there on your screen that was spacex

733

00:28:18,470 --> 00:28:16,399

core

734

00:28:20,389 --> 00:28:18,480

sarah gillis just letting the crew know

735

00:28:23,990 --> 00:28:20,399

that everything is still looking good no

736

00:28:26,630 --> 00:28:24,000

change in the calculated timeline for

737

00:28:27,990 --> 00:28:26,640

that loss of signal or loss as you hear

738

00:28:29,830 --> 00:28:28,000

it called

739

00:28:31,750 --> 00:28:29,840

you can see on your screen there the

740

00:28:33,350 --> 00:28:31,760

crowd here at spacex headquarters is

741

00:28:36,630 --> 00:28:33,360

starting to grow slightly as we get

742

00:28:37,990 --> 00:28:36,640

closer to that splashdown um it is a

743

00:28:40,630 --> 00:28:38,000

little late

744

00:28:43,110 --> 00:28:40,640

the second shift is uh is currently

745

00:28:44,630 --> 00:28:43,120

working right now um but i expect to see

746

00:28:46,710 --> 00:28:44,640

more people there as we get a little

747

00:28:48,630 --> 00:28:46,720

closer to splashdown itself yeah this is

748

00:28:50,870 --> 00:28:48,640

some of the most exciting stuff and

749

00:28:52,870 --> 00:28:50,880

we're coming up on some of the uh most

750

00:28:54,710 --> 00:28:52,880

dynamic parts of the mission so we're

751
00:28:56,549 --> 00:28:54,720
coming up in about 12 minutes until

752
00:28:59,190 --> 00:28:56,559
entry interface which means we're around

753
00:29:01,510 --> 00:28:59,200
14 minutes until that calm blackout

754
00:29:02,950 --> 00:29:01,520
and less than 30 minutes now to splash

755
00:29:05,430 --> 00:29:02,960
down so

756
00:29:08,070 --> 00:29:05,440
again we'll be off the coast of tampa

757
00:29:10,310 --> 00:29:08,080
and this was determined thanks to

758
00:29:13,350 --> 00:29:10,320
careful analysis not even just yesterday

759
00:29:15,110 --> 00:29:13,360
and today but over the past week or so

760
00:29:16,789 --> 00:29:15,120
teams looking at the weather forecasts

761
00:29:18,070 --> 00:29:16,799
and determining the best opportunities

762
00:29:21,029 --> 00:29:18,080
for us to target to bring these

763
00:29:23,029 --> 00:29:21,039

astronauts home after it's been 175 days

764

00:29:27,269 --> 00:29:23,039

for them on the space station

765

00:29:29,669 --> 00:29:27,279

but 177 days for them in space in total

766

00:29:30,630 --> 00:29:29,679

as we said before we have seven

767

00:29:33,110 --> 00:29:30,640

different

768

00:29:34,549 --> 00:29:33,120

possible locations to retrieve the crew

769

00:29:36,710 --> 00:29:34,559

from

770

00:29:38,549 --> 00:29:36,720

we down select based on the weather

771

00:29:40,710 --> 00:29:38,559

conditions and criteria that have to be

772

00:29:43,510 --> 00:29:40,720

met so as leah mentioned before we

773

00:29:46,789 --> 00:29:43,520

select a primary and an alt and an alt

774

00:29:49,430 --> 00:29:46,799

alternative uh site and we are targeting

775

00:29:52,070 --> 00:29:49,440

uh tampa as that that prime spot

776

00:29:55,269 --> 00:29:52,080

but having seven sites allows greater

777

00:29:59,190 --> 00:29:55,279

flexibility to say um okay so for

778

00:30:00,470 --> 00:29:59,200

example if the atlantic coast is you

779

00:30:02,870 --> 00:30:00,480

know if there's a hurricane rolling

780

00:30:04,230 --> 00:30:02,880

through as often does in florida at

781

00:30:05,510 --> 00:30:04,240

certain times of the year you know if

782

00:30:06,549 --> 00:30:05,520

there's a hurricane that just rolled

783

00:30:08,549 --> 00:30:06,559

through

784

00:30:10,950 --> 00:30:08,559

you know that might mess up weather and

785

00:30:13,110 --> 00:30:10,960

see states on the atlantic side but the

786

00:30:16,870 --> 00:30:13,120

gulf side might be super calm

787

00:30:19,029 --> 00:30:16,880

so by having seven different spots

788

00:30:22,070 --> 00:30:19,039

around the panhandle of florida it does

789

00:30:23,990 --> 00:30:22,080

allow us to make assessments and have

790

00:30:25,430 --> 00:30:24,000

better availability for those return

791

00:30:27,590 --> 00:30:25,440

opportunities

792

00:30:29,750 --> 00:30:27,600

and of course these crew members uh have

793

00:30:31,510 --> 00:30:29,760

spent all this time on the space station

794

00:30:34,389 --> 00:30:31,520

uh they didn't just go up and come home

795

00:30:36,470 --> 00:30:34,399

and so they left behind seven other

796

00:30:38,549 --> 00:30:36,480

people on the space station crew 4

797

00:30:41,590 --> 00:30:38,559

arrived about a week ago

798

00:30:43,590 --> 00:30:41,600

and those astronauts took this past week

799

00:30:46,149 --> 00:30:43,600

to have a handover period with our crew

800

00:30:48,149 --> 00:30:46,159

3 astronauts so crew 3 is showing them

801
00:30:50,630 --> 00:30:48,159
all the ropes on the space station

802
00:30:53,350 --> 00:30:50,640
everything they need to know especially

803
00:30:55,269 --> 00:30:53,360
for our newbies that are on crew four uh

804
00:30:57,990 --> 00:30:55,279
but currently on the space station crew

805
00:31:00,310 --> 00:30:58,000
four is chell lindgren bob hines jessica

806
00:31:02,789 --> 00:31:00,320
watkins and samantha christopher reddy

807
00:31:05,669 --> 00:31:02,799
uh senator christopher is an italian

808
00:31:08,389 --> 00:31:05,679
astronaut she is from the uh european

809
00:31:10,950 --> 00:31:08,399
space agency and then we also have the

810
00:31:13,830 --> 00:31:10,960
soyuz crew of russ cosmos cosmonauts

811
00:31:16,149 --> 00:31:13,840
that's sergey korsakov oleg artemyev and

812
00:31:18,310 --> 00:31:16,159
dennis mattv

813
00:31:20,310 --> 00:31:18,320

yeah it was a little bit of a full house

814

00:31:22,950 --> 00:31:20,320

while crew 3 was still up there oh yeah

815

00:31:26,310 --> 00:31:22,960

um i could imagine that even with a week

816

00:31:28,630 --> 00:31:26,320

to do that those handover activities

817

00:31:31,990 --> 00:31:28,640

that it was super busy right there's so

818

00:31:35,029 --> 00:31:32,000

much science um uh experiments that are

819

00:31:36,710 --> 00:31:35,039

being conducted on stations so

820

00:31:38,789 --> 00:31:36,720

having time to

821

00:31:40,789 --> 00:31:38,799

walk through your replacement you know

822

00:31:42,630 --> 00:31:40,799

all your lab notes where what you got to

823

00:31:46,630 --> 00:31:42,640

do next how to do this you know that

824

00:31:48,149 --> 00:31:46,640

kind of thing um and it i it's just

825

00:31:50,789 --> 00:31:48,159

amazing to me that they actually get it

826
00:31:52,630 --> 00:31:50,799
all done within a week um so between i'm

827
00:31:55,029 --> 00:31:52,640
sure there's you know traditions for new

828
00:31:58,230 --> 00:31:55,039
astronauts on station as well so um you

829
00:31:59,990 --> 00:31:58,240
know allowing the the celebration for

830
00:32:02,470 --> 00:32:00,000
for new people to arrive welcome to

831
00:32:05,590 --> 00:32:02,480
space um all those kinds of things as

832
00:32:09,029 --> 00:32:05,600
well as the work part of actually doing

833
00:32:11,430 --> 00:32:09,039
a crew handover um i can understand why

834
00:32:13,029 --> 00:32:11,440
a full week is needed because uh it's it

835
00:32:15,350 --> 00:32:13,039
sounds really busy

836
00:32:17,269 --> 00:32:15,360
yeah absolutely and crew dragon is able

837
00:32:18,789 --> 00:32:17,279
to bring home some of those science

838
00:32:21,269 --> 00:32:18,799

experiments that the teams have worked

839

00:32:22,710 --> 00:32:21,279

on they have polar freezers um and i

840

00:32:23,909 --> 00:32:22,720

mentioned i got to go to the crew 2

841

00:32:25,750 --> 00:32:23,919

splashdown

842

00:32:27,669 --> 00:32:25,760

on our helicopter flight back to land we

843

00:32:29,750 --> 00:32:27,679

had those polar freezers in the

844

00:32:31,350 --> 00:32:29,760

helicopter with us so it's a really

845

00:32:33,830 --> 00:32:31,360

quick return not only just for the

846

00:32:35,350 --> 00:32:33,840

astronauts but also for that science

847

00:32:36,710 --> 00:32:35,360

back to the researchers here on the

848

00:32:38,149 --> 00:32:36,720

ground so they can analyze the work

849

00:32:39,750 --> 00:32:38,159

that's been done

850

00:32:41,669 --> 00:32:39,760

and it was pretty amazing i was like oh

851
00:32:42,950 --> 00:32:41,679
my goodness this was in space a few

852
00:32:44,389 --> 00:32:42,960
hours ago and this is what the

853
00:32:47,750 --> 00:32:44,399
astronauts have been working on all this

854
00:32:49,350 --> 00:32:47,760
time so um i love that we prioritize not

855
00:32:51,590 --> 00:32:49,360
just their safe return but also the safe

856
00:32:53,669 --> 00:32:51,600
return of this research that's been done

857
00:32:55,350 --> 00:32:53,679
for the betterment of us all

858
00:32:57,669 --> 00:32:55,360
at this point in time we're about 10

859
00:32:59,190 --> 00:32:57,679
minutes away from the anticipated loss

860
00:33:01,110 --> 00:32:59,200
of signal

861
00:33:04,630 --> 00:33:01,120
that entry will begin

862
00:33:05,590 --> 00:33:04,640
just a minute later at 9 31 pm pacific

863
00:33:08,470 --> 00:33:05,600

time

864

00:33:10,870 --> 00:33:08,480

we expect to get that signal back at 9

865

00:33:12,070 --> 00:33:10,880

37 p.m pacific so

866

00:33:15,029 --> 00:33:12,080

just a

867

00:33:16,789 --> 00:33:15,039

a brief period of lack of communication

868

00:33:19,430 --> 00:33:16,799

as i said before

869

00:33:22,549 --> 00:33:19,440

that's due to the re-entry of the

870

00:33:23,430 --> 00:33:22,559

capsule through the earth's atmosphere

871

00:33:25,990 --> 00:33:23,440

the

872

00:33:29,190 --> 00:33:26,000

it's actually doing us a favor um

873

00:33:34,710 --> 00:33:29,200

by the heat shield doing its its job of

874

00:33:35,590 --> 00:33:34,720

breaking um not not b or e a k but um

875

00:33:38,789 --> 00:33:35,600

yeah

876
00:33:41,110 --> 00:33:38,799
um uh basically allowing the capsule to

877
00:33:44,070 --> 00:33:41,120
slow down by using the earth's

878
00:33:46,470 --> 00:33:44,080
atmosphere as that initial

879
00:33:49,750 --> 00:33:46,480
breaking process it really helps us

880
00:33:51,990 --> 00:33:49,760
to not have to build bigger heavier

881
00:33:54,549 --> 00:33:52,000
parachutes which in space everything is

882
00:33:56,549 --> 00:33:54,559
about weight it's about mass and so

883
00:33:59,029 --> 00:33:56,559
the atmosphere is doing us a favor

884
00:34:01,029 --> 00:33:59,039
unfortunately it does mean that as you

885
00:34:03,830 --> 00:34:01,039
said very well before the side of the

886
00:34:06,630 --> 00:34:03,840
side effect is that loss of signal

887
00:34:08,389 --> 00:34:06,640
because as the air is

888
00:34:10,710 --> 00:34:08,399

basically densifying

889

00:34:13,270 --> 00:34:10,720

because of the shock wave that's forming

890

00:34:15,030 --> 00:34:13,280

underneath the the heat shield that

891

00:34:17,109 --> 00:34:15,040

plasma builds up on the side the

892

00:34:19,750 --> 00:34:17,119

exterior gets to 3 500 degrees

893

00:34:22,149 --> 00:34:19,760

fahrenheit and unfortunately we're

894

00:34:23,909 --> 00:34:22,159

unable to send any communications in or

895

00:34:26,869 --> 00:34:23,919

out of the capsule

896

00:34:29,190 --> 00:34:26,879

but i believe we should have views of at

897

00:34:30,389 --> 00:34:29,200

least thermal views of the capsule prior

898

00:34:33,270 --> 00:34:30,399

to

899

00:34:35,109 --> 00:34:33,280

that aos or acquisition of signal

900

00:34:37,270 --> 00:34:35,119

that's at least that's how it's kind of

901
00:34:39,669 --> 00:34:37,280
happened in the past uh we get to to see

902
00:34:41,990 --> 00:34:39,679
them and then we'll hear the core uh

903
00:34:43,510 --> 00:34:42,000
call out to the crew to re-establish

904
00:34:45,990 --> 00:34:43,520
that communication

905
00:34:48,149 --> 00:34:46,000
and even though we won't have

906
00:34:50,149 --> 00:34:48,159
signal from dragon it's still doing its

907
00:34:52,230 --> 00:34:50,159
job this is a fully autonomous vehicle

908
00:34:53,510 --> 00:34:52,240
it doesn't require uh commands from the

909
00:34:55,190 --> 00:34:53,520
ground at that time and it doesn't

910
00:34:56,869 --> 00:34:55,200
require any commands from the astronauts

911
00:34:59,030 --> 00:34:56,879
at that time either though they're still

912
00:35:01,030 --> 00:34:59,040
able to monitor uh the performance of

913
00:35:02,470 --> 00:35:01,040

the vehicle so it should only be like

914

00:35:05,270 --> 00:35:02,480

you mentioned about six or seven minutes

915

00:35:07,349 --> 00:35:05,280

that we don't have comms with them um

916

00:35:09,829 --> 00:35:07,359

but it's it's amazing too the vehicles

917

00:35:13,109 --> 00:35:09,839

coming through so fast that if you're

918

00:35:14,550 --> 00:35:13,119

nearby you can hear two sonic booms once

919

00:35:16,790 --> 00:35:14,560

it enters the atmosphere so they're

920

00:35:18,630 --> 00:35:16,800

making their grand re-entry and that

921

00:35:21,430 --> 00:35:18,640

must have been so cool to see

922

00:35:24,230 --> 00:35:21,440

it is genuinely one of the things i will

923

00:35:25,030 --> 00:35:24,240

never forget awesome amazing that's very

924

00:35:27,990 --> 00:35:25,040

cool

925

00:35:30,710 --> 00:35:28,000

uh so we are about seven minutes away

926
00:35:32,790 --> 00:35:30,720
from that anticipated loss of signal

927
00:35:35,190 --> 00:35:32,800
you mentioned before yeah dragon is

928
00:35:37,750 --> 00:35:35,200
flying itself it's completely autonomous

929
00:35:39,829 --> 00:35:37,760
and realistically speaking um

930
00:35:42,630 --> 00:35:39,839
there shouldn't be much that dragon has

931
00:35:44,390 --> 00:35:42,640
to do during that reentry

932
00:35:46,870 --> 00:35:44,400
anyway because it's really that deorbit

933
00:35:49,510 --> 00:35:46,880
burn that puts it on that precise

934
00:35:53,190 --> 00:35:49,520
trajectory to the designated landing

935
00:35:54,790 --> 00:35:53,200
spot so as we saw um

936
00:35:57,670 --> 00:35:54,800
several minutes ago at this point you

937
00:35:58,470 --> 00:35:57,680
know the four forward draco thrusters

938
00:36:00,069 --> 00:35:58,480

were

939

00:36:03,109 --> 00:36:00,079

firing um

940

00:36:05,510 --> 00:36:03,119

at you know very specific it wasn't just

941

00:36:07,430 --> 00:36:05,520

all four of them firing all at once

942

00:36:10,630 --> 00:36:07,440

right all the time there there were some

943

00:36:12,790 --> 00:36:10,640

more impulse uh type burns and

944

00:36:15,030 --> 00:36:12,800

that's really dragon calculating for

945

00:36:16,950 --> 00:36:15,040

itself exactly what it needs to do and

946

00:36:19,030 --> 00:36:16,960

at the completion of that deorbit burn

947

00:36:22,069 --> 00:36:19,040

it was on that that precise trajectory

948

00:36:25,109 --> 00:36:22,079

so um yeah we're excited to to bring the

949

00:36:28,150 --> 00:36:25,119

crew home um we like we said before

950

00:36:31,030 --> 00:36:28,160

they're going from 17 500 miles per hour

951
00:36:32,790 --> 00:36:31,040
that's their rough orbital velocity

952
00:36:35,750 --> 00:36:32,800
the atmosphere will slow them down to

953
00:36:37,829 --> 00:36:35,760
about 350 miles per hour that's when our

954
00:36:39,750 --> 00:36:37,839
drogue parachutes will deploy at that

955
00:36:43,190 --> 00:36:39,760
point they'll be at about 18 thousand

956
00:36:45,109 --> 00:36:43,200
feet above the ocean surface and then

957
00:36:46,710 --> 00:36:45,119
the drogue parachutes will

958
00:36:48,310 --> 00:36:46,720
continue to significantly slow the

959
00:36:51,430 --> 00:36:48,320
vehicle down

960
00:36:53,430 --> 00:36:51,440
at the six thousand feet altitude the

961
00:36:55,430 --> 00:36:53,440
main parachutes will deploy

962
00:36:57,510 --> 00:36:55,440
we've got four of those those are the

963
00:36:59,430 --> 00:36:57,520

super iconic orange and white parachutes

964

00:37:00,950 --> 00:36:59,440

that everybody loves to see

965

00:37:04,069 --> 00:37:00,960

and what's really incredible is that the

966

00:37:05,910 --> 00:37:04,079

drogue parachutes do so much work during

967

00:37:08,790 --> 00:37:05,920

that initial phase between eighteen

968

00:37:10,550 --> 00:37:08,800

thousand feet and six thousand feet um

969

00:37:11,990 --> 00:37:10,560

that we don't

970

00:37:13,829 --> 00:37:12,000

if they didn't if we didn't have the

971

00:37:15,430 --> 00:37:13,839

drug parachutes those main parachutes

972

00:37:18,950 --> 00:37:15,440

would have to be

973

00:37:21,430 --> 00:37:18,960

much much bigger um uh in turn in order

974

00:37:23,589 --> 00:37:21,440

to slow the vehicle down enough to make

975

00:37:26,230 --> 00:37:23,599

a soft landing they're only going about

976
00:37:28,310 --> 00:37:26,240
10 15 miles per hour whenever they make

977
00:37:32,710 --> 00:37:28,320
contact with the ocean surface those

978
00:37:36,790 --> 00:37:35,030
so again we're standing by for uh the

979
00:37:38,900 --> 00:37:36,800
beginning of entry interface that will

980
00:37:40,310 --> 00:37:38,910
kick off the rest of the

981
00:37:42,230 --> 00:37:40,320
[Music]

982
00:37:43,750 --> 00:37:42,240
deorbit procedures until we have

983
00:37:45,510 --> 00:37:43,760
splashdown

984
00:37:48,790 --> 00:37:45,520
last time we saw our crew members they

985
00:37:50,550 --> 00:37:48,800
were in their suits so that is

986
00:37:53,190 --> 00:37:50,560
a just-in-case procedure essentially

987
00:38:00,069 --> 00:37:53,200
that would be just in case the cabinet

988
00:38:05,589 --> 00:38:02,950

raja tablets secure restraints are down

989

00:38:07,910 --> 00:38:05,599

and visors are closed additionally can

990

00:38:19,349 --> 00:38:07,920

you confirm that your satchel is fully

991

00:38:24,069 --> 00:38:21,750

copy that we are less than four minutes

992

00:38:26,710 --> 00:38:24,079

to anticipated los

993

00:38:34,790 --> 00:38:26,720

we will talk to you on the other side at

994

00:38:37,510 --> 00:38:36,310

perfect timing with your comment leah

995

00:38:39,109 --> 00:38:37,520

you were just saying that they're in

996

00:38:42,069 --> 00:38:39,119

their suits and there we heard the call

997

00:38:44,470 --> 00:38:42,079

out that their visors are down so yes um

998

00:38:45,430 --> 00:38:44,480

that basically means that their suit is

999

00:38:47,589 --> 00:38:45,440

then

1000

00:38:48,950 --> 00:38:47,599

closed off to the interior environment

1001

00:38:50,069 --> 00:38:48,960

of dragon

1002

00:38:51,910 --> 00:38:50,079

that is

1003

00:38:55,030 --> 00:38:51,920

uh we require them to do that during the

1004

00:38:57,510 --> 00:38:55,040

more dynamic events uh while um

1005

00:38:58,150 --> 00:38:57,520

in dragon so obviously during liftoff

1006

00:39:02,550 --> 00:38:58,160

and

1007

00:39:05,670 --> 00:39:02,560

course be uh that was a that was a great

1008

00:39:07,670 --> 00:39:05,680

call out by the core uh sarah gillis it

1009

00:39:10,069 --> 00:39:07,680

sounded like they were able to see

1010

00:39:11,910 --> 00:39:10,079

via one of the interior camera views

1011

00:39:14,950 --> 00:39:11,920

that his satchel was not completely

1012

00:39:17,109 --> 00:39:14,960

zippered so i loved that little reminder

1013

00:39:18,470 --> 00:39:17,119

yeah they they made sure that the cabin

1014

00:39:19,990 --> 00:39:18,480

is um

1015

00:39:21,430 --> 00:39:20,000

configured for reentry so that means

1016

00:39:22,950 --> 00:39:21,440

everything is stowed they would have

1017

00:39:24,550 --> 00:39:22,960

done that a little while ago before they

1018

00:39:26,470 --> 00:39:24,560

got in their seats and strapped up and

1019

00:39:28,150 --> 00:39:26,480

connected their umbilicals but don't

1020

00:39:29,670 --> 00:39:28,160

want a lot flying around in the cabin

1021

00:39:31,589 --> 00:39:29,680

while they are re-entering so yeah

1022

00:39:32,870 --> 00:39:31,599

everything is secured that includes the

1023

00:39:34,950 --> 00:39:32,880

tablets that they use to review

1024

00:39:36,550 --> 00:39:34,960

procedures but they can still see the

1025

00:39:38,390 --> 00:39:36,560

status of the vehicle via those three

1026
00:39:40,150 --> 00:39:38,400
screens in the middle so we are getting

1027
00:39:42,790 --> 00:39:40,160
closer she mentioned just a few minutes

1028
00:39:44,870 --> 00:39:42,800
until we have communications blackout

1029
00:39:47,109 --> 00:39:44,880
and we expect to hear from them again in

1030
00:39:48,710 --> 00:39:47,119
about 10 minutes yeah now you said

1031
00:39:51,030 --> 00:39:48,720
before that they're going to experience

1032
00:39:52,630 --> 00:39:51,040
about three to five g's during this

1033
00:39:54,310 --> 00:39:52,640
reentry period

1034
00:39:55,990 --> 00:39:54,320
so if you've been on a roller coaster

1035
00:39:58,390 --> 00:39:56,000
you can imagine it's like that point

1036
00:40:00,150 --> 00:39:58,400
where after you initially go up

1037
00:40:01,910 --> 00:40:00,160
and that drop whenever you come back

1038
00:40:03,270 --> 00:40:01,920

down it's that feeling that they're

1039

00:40:04,630 --> 00:40:03,280

going to have

1040

00:40:07,510 --> 00:40:04,640

for for

1041

00:40:09,349 --> 00:40:07,520

a few minutes i should say

1042

00:40:11,030 --> 00:40:09,359

and when they get back

1043

00:40:13,270 --> 00:40:11,040

of course like we mentioned they're

1044

00:40:17,030 --> 00:40:13,280

going to have those routine medical

1045

00:40:18,470 --> 00:40:17,040

checks so these are these are recovery

1046

00:40:20,309 --> 00:40:18,480

these are medical checks that we do as

1047

00:40:21,270 --> 00:40:20,319

well with astronauts who fly on a soyuz

1048

00:40:22,710 --> 00:40:21,280

vehicle

1049

00:40:24,390 --> 00:40:22,720

of course those are not taking place on

1050

00:40:26,309 --> 00:40:24,400

a ship those are in

1051
00:40:28,390 --> 00:40:26,319
kazakhstan and they will set up a

1052
00:40:30,710 --> 00:40:28,400
medical tent and evaluate the crew

1053
00:40:33,270 --> 00:40:30,720
members and sometimes do

1054
00:40:35,750 --> 00:40:33,280
scientific research when it comes to

1055
00:40:37,190 --> 00:40:35,760
things like balance

1056
00:40:38,390 --> 00:40:37,200
and so they'll do some of the same

1057
00:40:40,069 --> 00:40:38,400
things here they'll make sure the crew

1058
00:40:41,430 --> 00:40:40,079
is feeling good before they take them

1059
00:40:43,510 --> 00:40:41,440
put them on the helicopter and send them

1060
00:40:46,630 --> 00:40:43,520
back to land make sense

1061
00:40:48,309 --> 00:40:46,640
after they splash down and are recovered

1062
00:40:51,109 --> 00:40:48,319
from the water we'll see them lifted

1063
00:40:53,829 --> 00:40:51,119

onto that recovery vessel shannon

1064

00:40:55,910 --> 00:40:53,839

and once the side hatch is open we'll

1065

00:40:57,589 --> 00:40:55,920

actually see the flight surgeon that

1066

00:41:00,150 --> 00:40:57,599

person will be the first person to pop

1067

00:41:02,470 --> 00:41:00,160

their head in and just do a quick verbal

1068

00:41:04,390 --> 00:41:02,480

thumbs up with all four crew members

1069

00:41:07,270 --> 00:41:04,400

as an initial gauge on how they're

1070

00:41:09,190 --> 00:41:07,280

feeling and um you know based on

1071

00:41:10,390 --> 00:41:09,200

previous returns and you know the way

1072

00:41:12,630 --> 00:41:10,400

that this one's shaping up you know

1073

00:41:14,950 --> 00:41:12,640

hoping to see four thumbs up there

1074

00:41:18,230 --> 00:41:14,960

but for the most part between now and

1075

00:41:20,390 --> 00:41:18,240

then uh raja tom kayla and matthias are

1076

00:41:23,430 --> 00:41:20,400

mostly just going to be monitoring

1077

00:41:25,829 --> 00:41:23,440

uh where things are in terms of the

1078

00:41:27,910 --> 00:41:25,839

return process and and where they where

1079

00:41:29,430 --> 00:41:27,920

where we fall in in that

1080

00:41:31,349 --> 00:41:29,440

and i just want to give another safety

1081

00:41:32,710 --> 00:41:31,359

reminder i know that it's nighttime and

1082

00:41:34,630 --> 00:41:32,720

there probably aren't too many people

1083

00:41:36,470 --> 00:41:34,640

voting too far off the coast of florida

1084

00:41:38,230 --> 00:41:36,480

but they are splashing down

1085

00:41:40,630 --> 00:41:38,240

off the coast of tampa that's our prime

1086

00:41:42,710 --> 00:41:40,640

site today based on the weather

1087

00:41:45,270 --> 00:41:42,720

and we have our recovery boats out there

1088

00:41:47,349 --> 00:41:45,280

the spacex recovery ships ready to bring

1089

00:41:48,950 --> 00:41:47,359

them home this is something that we have

1090

00:41:51,190 --> 00:41:48,960

coordinated with the us coast guard we

1091

00:41:53,510 --> 00:41:51,200

also have their patrol boats in the area

1092

00:41:55,109 --> 00:41:53,520

so it's all for the safety of not just

1093

00:41:57,589 --> 00:41:55,119

the crew who have spent six months in

1094

00:42:00,309 --> 00:41:57,599

space um but also the recovery teams and

1095

00:42:01,829 --> 00:42:00,319

also any uh civilians or voters that

1096

00:42:03,990 --> 00:42:01,839

might be nearby

1097

00:42:05,589 --> 00:42:04,000

to stay away from the capsule stay away

1098

00:42:06,630 --> 00:42:05,599

from the area and respect the coast

1099

00:42:08,950 --> 00:42:06,640

guard's

1100

00:42:10,470 --> 00:42:08,960

patrol boats that way you can watch here

1101
00:42:13,750 --> 00:42:10,480
and we promise we will give you the best

1102
00:42:15,670 --> 00:42:13,760
views and all the latest information

1103
00:42:16,790 --> 00:42:15,680
yeah i'm looking at range status right

1104
00:42:19,030 --> 00:42:16,800
now

1105
00:42:22,309 --> 00:42:19,040
there's a couple of law enforcement

1106
00:42:24,230 --> 00:42:22,319
vessels out there not too many casual

1107
00:42:26,630 --> 00:42:24,240
so that's good news

1108
00:42:29,430 --> 00:42:26,640
but yeah so right now we are expecting

1109
00:42:30,390 --> 00:42:29,440
that entry interface to begin soon

1110
00:42:32,230 --> 00:42:30,400
we

1111
00:42:33,910 --> 00:42:32,240
are actually it's now at the 30 minute

1112
00:42:35,750 --> 00:42:33,920
mark so we should be hearing the call

1113
00:42:38,150 --> 00:42:35,760

out for los

1114

00:42:39,589 --> 00:42:38,160

loss of signal which is expected to last

1115

00:42:43,109 --> 00:42:39,599

until the

1116

00:42:44,470 --> 00:42:43,119

37 minute mark so we're now at 9 30 pm

1117

00:42:46,550 --> 00:42:44,480

pacific time

1118

00:42:49,430 --> 00:42:46,560

expecting that blackout period to last

1119

00:42:51,670 --> 00:42:49,440

until 9 37 pm pacific time

1120

00:42:53,750 --> 00:42:51,680

you can see the crowd growing outside of

1121

00:42:55,109 --> 00:42:53,760

spacex mission control here in hawthorne

1122

00:42:57,349 --> 00:42:55,119

everyone

1123

00:42:58,790 --> 00:42:57,359

watching as we get

1124

00:43:01,430 --> 00:42:58,800

closer and closer to the main event

1125

00:43:03,030 --> 00:43:01,440

which will be splashdown

1126
00:43:04,710 --> 00:43:03,040
and these teams here are monitoring the

1127
00:43:06,150 --> 00:43:04,720
status of the vehicle as well but again

1128
00:43:08,230 --> 00:43:06,160
they don't have to send commands right

1129
00:43:10,550 --> 00:43:08,240
now the vehicle knows exactly what to do

1130
00:43:12,870 --> 00:43:10,560
it's fully autonomous so

1131
00:43:14,150 --> 00:43:12,880
everyone is simply monitoring this we

1132
00:43:16,950 --> 00:43:14,160
also have teams in mission control

1133
00:43:19,030 --> 00:43:16,960
houston in at johnson space center who

1134
00:43:21,349 --> 00:43:19,040
are monitoring the mission

1135
00:43:33,670 --> 00:43:21,359
as well as they are 24 7 monitoring the

1136
00:43:37,990 --> 00:43:35,510
and there's your look at johnson space

1137
00:43:39,510 --> 00:43:38,000
center's mission control

1138
00:43:41,109 --> 00:43:39,520

all those team members

1139

00:43:42,470 --> 00:43:41,119

monitoring uh

1140

00:43:44,710 --> 00:43:42,480

the systems aboard the international

1141

00:43:46,870 --> 00:43:44,720

space station not not crew dragon itself

1142

00:43:55,829 --> 00:43:46,880

but they are still keeping tabs on the

1143

00:44:00,550 --> 00:43:58,470

and i believe we're already in that loss

1144

00:44:02,550 --> 00:44:00,560

of signal uh

1145

00:44:04,790 --> 00:44:02,560

entry interface has begun so we'll be

1146

00:44:07,109 --> 00:44:04,800

expecting to hear back from the crew

1147

00:44:09,589 --> 00:44:07,119

in a few minutes

1148

00:44:11,430 --> 00:44:09,599

yeah at this point we are entering that

1149

00:44:13,910 --> 00:44:11,440

communications blackout period which

1150

00:44:16,390 --> 00:44:13,920

lasts approximately six minutes due to

1151
00:44:18,470 --> 00:44:16,400
plasma formation around the spacecraft

1152
00:44:20,230 --> 00:44:18,480
during this time no vehicle telemetry is

1153
00:44:22,950 --> 00:44:20,240
received by mission control or the

1154
00:44:25,349 --> 00:44:22,960
recovery team and no external commanding

1155
00:44:28,309 --> 00:44:25,359
of the vehicle or voice communication is

1156
00:44:31,510 --> 00:44:28,319
possible but of course uh dragon is

1157
00:44:33,430 --> 00:44:31,520
designed to fly itself during re-entry

1158
00:44:36,390 --> 00:44:33,440
the vehicle will be slowing down from an

1159
00:44:38,790 --> 00:44:36,400
orbital velocity of approximately 17

1160
00:44:40,790 --> 00:44:38,800
500 miles per hour the top temperature

1161
00:44:41,710 --> 00:44:40,800
the dragon will experience upon re-entry

1162
00:44:44,390 --> 00:44:41,720
is

1163
00:44:45,510 --> 00:44:44,400

3500 degrees fahrenheit

1164

00:44:47,349 --> 00:44:45,520
and yeah as i said before we're

1165

00:44:49,990 --> 00:44:47,359
expecting that blackout to last for

1166

00:44:54,230 --> 00:44:50,000
about six or seven minutes uh concluding

1167

00:44:57,750 --> 00:44:54,240
at uh 9 37 p.m pacific time

1168

00:44:59,750 --> 00:44:57,760
right now our crew 3 crew i almost said

1169

00:45:00,870 --> 00:44:59,760
crew 4. i'm getting confused my brain is

1170

00:45:02,630 --> 00:45:00,880
still getting confused with all the

1171

00:45:06,230 --> 00:45:02,640
crews that we have in space right now so

1172

00:45:08,309 --> 00:45:06,240
the crew 3 crew are in their seats their

1173

00:45:11,589 --> 00:45:08,319
visors are down

1174

00:45:14,150 --> 00:45:11,599
and they are continuing to monitor their

1175

00:45:15,190 --> 00:45:14,160
uh their top their their screens there

1176
00:45:17,589 --> 00:45:15,200
to see

1177
00:45:20,230 --> 00:45:17,599
you know what their trajectory is and

1178
00:45:22,870 --> 00:45:20,240
basically what altitude they're at

1179
00:45:24,630 --> 00:45:22,880
and by doing so they're able to prepare

1180
00:45:26,710 --> 00:45:24,640
for the various events so they know it

1181
00:45:27,990 --> 00:45:26,720
roughly what time the drug parachutes

1182
00:45:29,910 --> 00:45:28,000
will deploy

1183
00:45:31,109 --> 00:45:29,920
that of course is

1184
00:45:33,349 --> 00:45:31,119
you know

1185
00:45:35,430 --> 00:45:33,359
a slight change in feeling in terms of

1186
00:45:37,270 --> 00:45:35,440
what they're experiencing in within

1187
00:45:39,190 --> 00:45:37,280
their seats so being able to basically

1188
00:45:40,470 --> 00:45:39,200

brace for that important to know how

1189

00:45:44,390 --> 00:45:40,480

high they are we are expecting those

1190

00:45:45,829 --> 00:45:44,400

drugs to deploy at about 18 000 feet

1191

00:45:47,750 --> 00:45:45,839

and we're about halfway through the

1192

00:45:50,309 --> 00:45:47,760

entry interface period so about three

1193

00:45:53,030 --> 00:45:50,319

more minutes until we expect to acquire

1194

00:45:55,030 --> 00:45:53,040

signal from crew dragon again um those

1195

00:45:58,950 --> 00:45:55,040

drugs will slow the vehicle down to

1196

00:46:00,390 --> 00:45:58,960

about 119 miles or sorry 350 miles per

1197

00:46:02,390 --> 00:46:00,400

hour

1198

00:46:04,710 --> 00:46:02,400

and hopefully sometime soon as the

1199

00:46:07,829 --> 00:46:04,720

capsule slows we'll start to get views

1200

00:46:10,390 --> 00:46:07,839

from the wb-57 that's in the area

1201
00:46:12,470 --> 00:46:10,400
as well as potentially from the recovery

1202
00:46:14,069 --> 00:46:12,480
ship itself

1203
00:46:15,910 --> 00:46:14,079
but all the team members are standing by

1204
00:46:18,630 --> 00:46:15,920
they arrived on the ship via helicopter

1205
00:46:20,710 --> 00:46:18,640
today uh and then again the crew will be

1206
00:46:22,950 --> 00:46:20,720
formed back to land shortly after

1207
00:46:24,950 --> 00:46:22,960
landing within pretty much an hour uh

1208
00:46:26,470 --> 00:46:24,960
after they splash down they will be back

1209
00:46:29,349 --> 00:46:26,480
on solid ground for the first time in

1210
00:46:31,670 --> 00:46:29,359
six months yeah and you said they go to

1211
00:46:34,150 --> 00:46:31,680
a health facility after they come back

1212
00:46:36,069 --> 00:46:34,160
correct yes and that's actually on board

1213
00:46:38,230 --> 00:46:36,079

the boat itself so they don't have to

1214

00:46:39,829 --> 00:46:38,240

wait for any health care and it could

1215

00:46:42,870 --> 00:46:39,839

just be that maybe they're

1216

00:46:44,950 --> 00:46:42,880

you know feeling the effects of gravity

1217

00:46:46,790 --> 00:46:44,960

for sure so uh they're they're just

1218

00:46:49,030 --> 00:46:46,800

there to do those routine health checks

1219

00:46:51,589 --> 00:46:49,040

and make sure that everyone's feeling as

1220

00:46:54,870 --> 00:46:51,599

best as they can

1221

00:46:57,190 --> 00:46:54,880

once again we are in that expected loss

1222

00:46:59,109 --> 00:46:57,200

of signal period that communications

1223

00:47:00,309 --> 00:46:59,119

blackout period we're expecting this to

1224

00:47:03,109 --> 00:47:00,319

last

1225

00:47:05,030 --> 00:47:03,119

another three minutes or so

1226

00:47:07,430 --> 00:47:05,040

the crew is re-entering the earth's

1227

00:47:08,829 --> 00:47:07,440

atmosphere the heat shield is helping to

1228

00:47:11,829 --> 00:47:08,839

slow them down

1229

00:47:14,550 --> 00:47:11,839

significantly they're going from 17

1230

00:47:15,589 --> 00:47:14,560

500 miles per hour roughly they're about

1231

00:47:18,630 --> 00:47:15,599

to

1232

00:47:21,190 --> 00:47:18,640

350 miles per hour so that heat shield

1233

00:47:23,750 --> 00:47:21,200

is doing lots of work right now

1234

00:47:25,670 --> 00:47:23,760

of course when we saw the capsule

1235

00:47:27,190 --> 00:47:25,680

the dragon endurance docked with the

1236

00:47:28,870 --> 00:47:27,200

space station

1237

00:47:30,549 --> 00:47:28,880

all throughout the last six months it

1238

00:47:31,910 --> 00:47:30,559

was you know this

1239

00:47:33,670 --> 00:47:31,920

brilliant white

1240

00:47:35,990 --> 00:47:33,680

that will not be the case the next time

1241

00:47:38,150 --> 00:47:36,000

that we see dragon endurance

1242

00:47:40,390 --> 00:47:38,160

it will certainly come back with a

1243

00:47:42,390 --> 00:47:40,400

little bit of charring on it from the

1244

00:47:44,390 --> 00:47:42,400

that thermal protection system doing its

1245

00:47:47,589 --> 00:47:44,400

job of protecting the structural

1246

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

integrity of the capsule during re-entry

1247

00:47:51,270 --> 00:47:48,960

to me it looks a little bit like a

1248

00:47:53,750 --> 00:47:51,280

toasted marshmallow absolutely

1249

00:47:56,150 --> 00:47:53,760

but we keep the capsule white while on

1250

00:47:57,910 --> 00:47:56,160

orbit because that helps reflect some of

1251
00:47:59,990 --> 00:47:57,920
that heat that's coming from the sun of

1252
00:48:01,589 --> 00:48:00,000
course there's no atmosphere to to

1253
00:48:05,109 --> 00:48:01,599
dissipate any of that heat and so it's

1254
00:48:06,390 --> 00:48:05,119
in direct sunlight um 45 minutes every

1255
00:48:08,870 --> 00:48:06,400
day or every

1256
00:48:11,430 --> 00:48:08,880
uh rotation of the earth so

1257
00:48:13,030 --> 00:48:11,440
that helps keep the capsule cool

1258
00:48:14,950 --> 00:48:13,040
the same thing on the trunk we we

1259
00:48:16,790 --> 00:48:14,960
jettisoned the trunk earlier today that

1260
00:48:18,710 --> 00:48:16,800
will burn up upon reentry into the

1261
00:48:21,190 --> 00:48:18,720
atmosphere

1262
00:48:23,270 --> 00:48:21,200
only the capsule portion is coming home

1263
00:48:25,030 --> 00:48:23,280

uh so the vehicle is running on battery

1264

00:48:27,109 --> 00:48:25,040

power everything has moved really

1265

00:48:30,069 --> 00:48:27,119

smoothly so far and we're just about a

1266

00:48:32,390 --> 00:48:30,079

minute away until we expect acquisition

1267

00:48:35,270 --> 00:48:32,400

of signal from the crew dragon vehicle

1268

00:48:37,430 --> 00:48:35,280

yeah now once the crew splashes down as

1269

00:48:39,829 --> 00:48:37,440

we said before the recovery vessel will

1270

00:48:40,870 --> 00:48:39,839

move into place and retrieve them from

1271

00:48:42,950 --> 00:48:40,880

the water

1272

00:48:44,710 --> 00:48:42,960

a hydraulic lift will

1273

00:48:47,270 --> 00:48:44,720

basically pick them up and set them into

1274

00:48:48,790 --> 00:48:47,280

the nest or the cradle on the boat and

1275

00:49:04,309 --> 00:48:48,800

then that cradle

1276

00:49:04,319 --> 00:49:09,910

dragon spacex com check

1277

00:49:09,920 --> 00:49:16,069

dragon has yours

1278

00:49:16,079 --> 00:49:27,589

to hear from you

1279

00:49:32,230 --> 00:49:29,589

so as you just heard we had confirmation

1280

00:49:34,470 --> 00:49:32,240

from commander raj achary

1281

00:49:39,190 --> 00:49:34,480

dragon spacex expect automated shoot

1282

00:49:42,630 --> 00:49:41,030

endurance happy is expecting automated

1283

00:49:45,589 --> 00:49:42,640

speed support for decided gps

1284

00:49:47,430 --> 00:49:45,599

requisition

1285

00:49:53,109 --> 00:49:47,440

we see the same expect deployment at

1286

00:49:57,990 --> 00:49:55,430

so there's our first view of dragon

1287

00:50:00,150 --> 00:49:58,000

endurance making its re-entry to planet

1288

00:50:02,069 --> 00:50:00,160

earth

1289

00:50:03,990 --> 00:50:02,079

six months in space

1290

00:50:05,190 --> 00:50:04,000

and this is the first time that these uh

1291

00:50:07,109 --> 00:50:05,200

crew members

1292

00:50:08,069 --> 00:50:07,119

have been in earth's atmosphere in that

1293

00:50:09,990 --> 00:50:08,079

time

1294

00:50:11,750 --> 00:50:10,000

as you just heard we're standing by for

1295

00:50:13,670 --> 00:50:11,760

drug parachute deploy so those two

1296

00:50:15,750 --> 00:50:13,680

drogue shoots the crew members will

1297

00:50:17,990 --> 00:50:15,760

probably feel a little bit of a jolt

1298

00:50:20,069 --> 00:50:18,000

as those deploy but that's why they are

1299

00:50:22,470 --> 00:50:20,079

strapped in their seats safely

1300

00:50:24,309 --> 00:50:22,480

those custom fitted seats

1301
00:50:27,270 --> 00:50:24,319
and after the drugs deploy it'll slow

1302
00:50:29,510 --> 00:50:27,280
the capsule to about 350 miles per hour

1303
00:50:32,950 --> 00:50:29,520
before we see the four main parachutes

1304
00:50:35,510 --> 00:50:32,960
deploy and slow it down to about 15

1305
00:50:37,510 --> 00:50:35,520
at the point it'll splash down in the

1306
00:50:39,750 --> 00:50:37,520
ocean off the coast of tampa

1307
00:50:41,750 --> 00:50:39,760
yeah now right now or it may have

1308
00:50:44,069 --> 00:50:41,760
already happened the seats that the crew

1309
00:50:47,109 --> 00:50:44,079
members are in um actually automatically

1310
00:50:49,510 --> 00:50:47,119
rotate to 26 automatically rotate 26

1311
00:50:52,870 --> 00:50:49,520
degrees in order to keep the crew within

1312
00:50:55,430 --> 00:50:52,880
the acceptable g limits for entry and

1313
00:50:57,190 --> 00:50:55,440

landing as i mentioned before if we

1314

00:50:59,349 --> 00:50:57,200

didn't have these drogue shoots which

1315

00:51:01,270 --> 00:50:59,359

they deploy around 18 000 feet so we're

1316

00:51:02,309 --> 00:51:01,280

expecting to see those pop out any

1317

00:51:04,230 --> 00:51:02,319

moment

1318

00:51:05,430 --> 00:51:04,240

without those drogue shoots we would

1319

00:51:17,270 --> 00:51:05,440

have to make

1320

00:51:21,990 --> 00:51:19,670

so without these drug shoots we'd have

1321

00:51:24,710 --> 00:51:22,000

to make the main parachutes three times

1322

00:51:26,950 --> 00:51:24,720

stronger and heavier

1323

00:51:29,190 --> 00:51:26,960

expecting those strokes to deploy any

1324

00:51:30,630 --> 00:51:29,200

moment

1325

00:51:32,950 --> 00:51:30,640

and of course those strokes deploy

1326

00:51:34,630 --> 00:51:32,960

automatically but if uh if needed the

1327

00:51:38,150 --> 00:51:34,640

crew can deploy them manually they have

1328

00:51:40,150 --> 00:51:38,160

a hardline button in the capsule

1329

00:51:45,109 --> 00:51:40,160

it's beneath their display where they

1330

00:51:48,870 --> 00:51:46,790

of course after the drogue shoots deploy

1331

00:51:51,510 --> 00:51:48,880

we'll see those main parachutes which

1332

00:51:54,150 --> 00:51:51,520

help to further decelerate the vehicle

1333

00:51:59,109 --> 00:51:54,160

and allow it to make a soft landing

1334

00:52:04,309 --> 00:52:02,630

great image of those strokes deploying

1335

00:52:07,829 --> 00:52:04,319

all right looks like we have two healthy

1336

00:52:07,839 --> 00:52:12,870

and there

1337

00:52:18,710 --> 00:52:14,870

copy we see the same descent right

1338

00:52:23,750 --> 00:52:20,549

and if you noticed as those drugs were

1339

00:52:28,630 --> 00:52:26,549

the drugs didn't open up to that full

1340

00:52:30,390 --> 00:52:28,640

size you saw all the way at first it's

1341

00:52:32,069 --> 00:52:30,400

called reefing

1342

00:52:33,990 --> 00:52:32,079

they open up more slowly so that it's

1343

00:52:36,230 --> 00:52:34,000

not as big of a jolt to the capsule and

1344

00:52:37,430 --> 00:52:36,240

to the parachute system

1345

00:52:39,750 --> 00:52:37,440

and again these will help slow the

1346

00:52:45,270 --> 00:52:39,760

capsule to 350 miles per hour which

1347

00:52:55,349 --> 00:52:47,829

there we can see the deployment of those

1348

00:53:01,910 --> 00:52:58,230

the vehicle's velocity is about 119

1349

00:53:03,589 --> 00:53:01,920

miles per hour yeah spacex dragon we see

1350

00:53:05,430 --> 00:53:03,599

four shooters we could distinctly feel

1351
00:53:07,190 --> 00:53:05,440
the two difference it looks like none of

1352
00:53:08,710 --> 00:53:07,200
each other

1353
00:53:10,630 --> 00:53:08,720
yeah that reefing action that you just

1354
00:53:12,950 --> 00:53:10,640
mentioned uh

1355
00:53:17,910 --> 00:53:12,960
playing out right in front of us

1356
00:53:17,920 --> 00:53:21,349
excellent views here

1357
00:53:25,910 --> 00:53:23,990
four main parachutes these are the uh

1358
00:53:29,109 --> 00:53:25,920
last big physical change we'll see for

1359
00:53:30,950 --> 00:53:29,119
dragon as it continues its descent

1360
00:53:33,990 --> 00:53:30,960
it will slow the capsule down to about

1361
00:53:35,510 --> 00:53:34,000
15 miles per hour before splashing down

1362
00:53:37,430 --> 00:53:35,520
and teams are in position they're

1363
00:53:39,270 --> 00:53:37,440

they're moving their way closer to where

1364

00:53:41,910 --> 00:53:39,280

the dragon will splash down again we'll

1365

00:53:43,750 --> 00:53:41,920

have some fast boats that will um

1366

00:53:45,349 --> 00:53:43,760

approach the capsule first ensure it's

1367

00:53:47,990 --> 00:53:45,359

safe for the

1368

00:53:49,910 --> 00:53:48,000

recovery ship to approach

1369

00:53:51,829 --> 00:53:49,920

and within an hour of these crew members

1370

00:53:54,950 --> 00:53:51,839

splashing down on earth we expect to see

1371

00:54:03,109 --> 00:53:54,960

them uh

1372

00:54:08,230 --> 00:54:05,190

now for those that might not be familiar

1373

00:54:10,549 --> 00:54:08,240

uh with dragon itself over the lifespan

1374

00:54:12,630 --> 00:54:10,559

of the dragon program we've had great

1375

00:54:14,549 --> 00:54:12,640

success with um water landing which is

1376

00:54:17,670 --> 00:54:14,559

what we are attempting today

1377

00:54:18,950 --> 00:54:17,680

um we've ha with uh 25 successful

1378

00:54:19,990 --> 00:54:18,960

splashdowns

1379

00:54:23,030 --> 00:54:20,000

um

1380

00:54:28,470 --> 00:54:25,829

copy 600

1381

00:54:30,790 --> 00:54:28,480

and we do that water landing uh because

1382

00:54:32,630 --> 00:54:30,800

it's simpler therefore more reliable

1383

00:54:34,710 --> 00:54:32,640

provides more margin against unlikely

1384

00:54:36,950 --> 00:54:34,720

parachute issues

1385

00:54:39,510 --> 00:54:36,960

now we did have to make how we did have

1386

00:54:41,510 --> 00:54:39,520

to learn how to make dragon waterproof

1387

00:54:45,349 --> 00:54:41,520

but once you do that it's very much a

1388

00:54:48,069 --> 00:54:45,359

rinse review reuse type process

1389

00:54:50,710 --> 00:54:48,079

and splashing down is um not necessarily

1390

00:54:53,990 --> 00:54:50,720

a new technique 400 meters

1391

00:54:55,990 --> 00:54:54,000

copy 400 only 400 meters so getting

1392

00:54:58,230 --> 00:54:56,000

getting closer and closer back to planet

1393

00:54:59,829 --> 00:54:58,240

earth um but splashing down is also how

1394

00:55:03,270 --> 00:54:59,839

the apollo astronauts returned to

1395

00:55:05,030 --> 00:55:03,280

absolutely so this capsule is um

1396

00:55:07,109 --> 00:55:05,040

not just similar to

1397

00:55:09,270 --> 00:55:07,119

to this design works very well i should

1398

00:55:11,349 --> 00:55:09,280

say the capsule design when it comes to

1399

00:55:13,430 --> 00:55:11,359

ablating heat as well as protecting crew

1400

00:55:15,430 --> 00:55:13,440

members

1401
00:55:18,710 --> 00:55:15,440
and a very smooth ride home so far for

1402
00:55:27,829 --> 00:55:18,720
our astronauts 200 meters racing

1403
00:55:34,470 --> 00:55:30,309
the teams are about three nautical miles

1404
00:55:35,910 --> 00:55:34,480
away from the splashtown site so

1405
00:55:37,750 --> 00:55:35,920
it's going to take them a little bit of

1406
00:55:40,069 --> 00:55:37,760
time to get there in terms of the large

1407
00:55:42,390 --> 00:55:40,079
vessel but there is a fast boat as we

1408
00:55:43,750 --> 00:55:42,400
call it um that will be able to get to

1409
00:55:45,990 --> 00:55:43,760
the capsule

1410
00:55:50,710 --> 00:55:46,000
very very quickly as we will see here in

1411
00:55:50,720 --> 00:55:54,470
once again

1412
00:56:00,900 --> 00:55:56,069
all right as you can see there on your

1413
00:56:00,910 --> 00:56:08,390

[Applause]

1414

00:56:12,390 --> 00:56:10,230

crew has splashed down

1415

00:56:15,270 --> 00:56:12,400

in the gulf of mexico off the coast of

1416

00:56:19,910 --> 00:56:16,870

so right now dragon is on behalf of the

1417

00:56:21,510 --> 00:56:19,920

entire spacex team welcome home

1418

00:56:23,030 --> 00:56:21,520

the coleman

1419

00:56:24,870 --> 00:56:23,040

it's been an absolute honor to support

1420

00:56:30,309 --> 00:56:24,880

you on your mission endurance crew and

1421

00:56:33,589 --> 00:56:31,750

thanks sarah we're glad to be back

1422

00:56:35,430 --> 00:56:33,599

thanks for letting us take uh endurance

1423

00:56:37,190 --> 00:56:35,440

on a shakedown cruise looking forward to

1424

00:56:39,990 --> 00:56:37,200

watching many more flights of endurance

1425

00:56:41,670 --> 00:56:40,000

in the future that was a a great ride uh

1426
00:56:43,589 --> 00:56:41,680
and enjoyed working with the national

1427
00:56:49,270 --> 00:56:43,599
spacex team so for getting us to the

1428
00:56:49,280 --> 00:56:55,349
appreciate the words raja

1429
00:57:00,309 --> 00:56:57,990
as you can see on your screen we have

1430
00:57:02,950 --> 00:57:00,319
that visual confirmation and verbal

1431
00:57:05,510 --> 00:57:02,960
confirmation for splashdown of the

1432
00:57:08,230 --> 00:57:05,520
dragon spacecraft dragon endurance has

1433
00:57:11,430 --> 00:57:08,240
returned home and nasa astronauts raja

1434
00:57:14,390 --> 00:57:11,440
tom kayla and matthias are back on earth

1435
00:57:16,309 --> 00:57:14,400
after a 23 and a half hour return

1436
00:57:18,150 --> 00:57:16,319
journey from space

1437
00:57:20,069 --> 00:57:18,160
now as i mentioned before the spacex

1438
00:57:22,150 --> 00:57:20,079

recovery ship and team has been waiting

1439

00:57:24,150 --> 00:57:22,160

for dragon splashdown and they will now

1440

00:57:26,789 --> 00:57:24,160

make their way to the splashdown

1441

00:57:28,950 --> 00:57:26,799

location and that splashdown came at 9

1442

00:57:33,750 --> 00:57:28,960

40. spacex endurance feels like we're in

1443

00:57:33,760 --> 00:57:51,910

copy that and we see the same

1444

00:57:51,920 --> 00:57:59,349

and you have a go for raising risers

1445

00:58:05,430 --> 00:58:01,829

again splashdown coming at 9 43 p.m

1446

00:58:08,230 --> 00:58:05,440

pacific time that's 12 43 a.m on may the

1447

00:58:09,990 --> 00:58:08,240

6th in eastern time where the crew has

1448

00:58:11,910 --> 00:58:10,000

splashed down

1449

00:58:13,829 --> 00:58:11,920

stable one which you just heard the core

1450

00:58:15,670 --> 00:58:13,839

call to the crew means that the vehicle

1451

00:58:17,349 --> 00:58:15,680

is upright they've received the go to

1452

00:58:19,670 --> 00:58:17,359

raise their visors and they're now

1453

00:58:21,990 --> 00:58:19,680

waiting for those boats to approach and

1454

00:58:23,910 --> 00:58:22,000

help pull the capsule

1455

00:58:25,670 --> 00:58:23,920

up to the recovery ship once it arrives

1456

00:58:27,270 --> 00:58:25,680

so the teams have been ready and waiting

1457

00:58:29,190 --> 00:58:27,280

they're about three nautical miles away

1458

00:58:31,750 --> 00:58:29,200

so it takes around 30 minutes to make

1459

00:58:34,230 --> 00:58:31,760

their way to raja tom kayla and matthias

1460

00:58:36,870 --> 00:58:34,240

inside dragon

1461

00:58:39,750 --> 00:58:36,880

now right after splashdown um dragon

1462

00:58:41,750 --> 00:58:39,760

actually cuts its parachute lines um

1463

00:58:43,829 --> 00:58:41,760

that is help that's to make sure that

1464

00:58:45,670 --> 00:58:43,839

the dragon capsule isn't pulled in the

1465

00:58:47,030 --> 00:58:45,680

water if there is a little bit of wind

1466

00:58:48,710 --> 00:58:47,040

um if the parachutes were to pick up

1467

00:58:51,430 --> 00:58:48,720

some of that wind so dragon immediately

1468

00:58:53,270 --> 00:58:51,440

cut those parachute lines the teams will

1469

00:58:55,109 --> 00:58:53,280

attempt to recover them

1470

00:58:56,549 --> 00:58:55,119

from the water

1471

00:58:59,589 --> 00:58:56,559

the other thing

1472

00:59:01,510 --> 00:58:59,599

that dragon does is it intakes a tiny

1473

00:59:03,829 --> 00:59:01,520

bit of that

1474

00:59:06,309 --> 00:59:03,839

ocean water intentionally to help

1475

00:59:08,150 --> 00:59:06,319

stabilize uh the capsules so there's a

1476

00:59:10,470 --> 00:59:08,160

couple of pumps at the bottom that

1477

00:59:11,990 --> 00:59:10,480

basically flow a tiny bit of that ocean

1478

00:59:14,309 --> 00:59:12,000

water into

1479

00:59:16,230 --> 00:59:14,319

designated balloons basically

1480

00:59:18,630 --> 00:59:16,240

to help stabilize the capsule that

1481

00:59:21,349 --> 00:59:18,640

allows for the recovery team

1482

00:59:23,349 --> 00:59:21,359

to make a safer recovery and also allows

1483

00:59:25,109 --> 00:59:23,359

the crew to bob around a little bit less

1484

00:59:27,510 --> 00:59:25,119

while they're in the water waiting but

1485

00:59:28,710 --> 00:59:27,520

we can see there that the seas are

1486

00:59:30,630 --> 00:59:28,720

really fair

1487

00:59:32,870 --> 00:59:30,640

as we heard

1488

00:59:35,109 --> 00:59:32,880

a little while ago the the last reading

1489

00:59:38,549 --> 00:59:35,119

that we had were half foot waves and

1490

00:59:39,990 --> 00:59:38,559

that looks to be relatively true now

1491

00:59:42,150 --> 00:59:40,000

yes i don't know if you could ask for

1492

00:59:44,630 --> 00:59:42,160

better weather uh just to look ahead at

1493

00:59:46,950 --> 00:59:44,640

some of the things that are coming

1494

00:59:50,470 --> 00:59:46,960

dragon spacex com check over the boat

1495

00:59:50,480 --> 00:59:58,630

endurance has been cleared

1496

01:00:02,390 --> 01:00:00,789

looking ahead um after the splashdown

1497

01:00:05,270 --> 01:00:02,400

mission control hawthorne can give the

1498

01:00:06,549 --> 01:00:05,280

go for safe to safe approach uh and then

1499

01:00:08,789 --> 01:00:06,559

the approach boats that we've talked

1500

01:00:10,390 --> 01:00:08,799

about will begin inspections

1501
01:00:12,789 --> 01:00:10,400
they're checking for hyper galls which

1502
01:00:15,270 --> 01:00:12,799
are those um noxious fumes that can come

1503
01:00:17,670 --> 01:00:15,280
off the vehicle after those ordinance

1504
01:00:20,470 --> 01:00:17,680
and hypergol checks are complete

1505
01:00:22,549 --> 01:00:20,480
we will see dragon be rigged up which

1506
01:00:24,789 --> 01:00:22,559
means it'll be ready for pickup once the

1507
01:00:26,390 --> 01:00:24,799
recovery ship arrives arrives so that

1508
01:00:28,230 --> 01:00:26,400
usually happens again about 30 minutes

1509
01:00:30,549 --> 01:00:28,240
after splashdown

1510
01:00:32,309 --> 01:00:30,559
and then they'll begin to lift dragon

1511
01:00:34,230 --> 01:00:32,319
onto the deck that takes just a couple

1512
01:00:36,150 --> 01:00:34,240
of minutes and once they have lifted

1513
01:00:38,230 --> 01:00:36,160

dragon into the nest and pulled it

1514

01:00:40,950 --> 01:00:38,240

toward the

1515

01:00:43,829 --> 01:00:40,960

recovery platform we will see the hatch

1516

01:00:46,069 --> 01:00:43,839

open and our crew 3 astronauts take

1517

01:00:48,390 --> 01:00:46,079

their first breath of

1518

01:00:50,710 --> 01:00:48,400

fresh earth air yeah for the first time

1519

01:00:53,190 --> 01:00:50,720

in six months yeah once that side hatch

1520

01:00:55,109 --> 01:00:53,200

is opened uh that's the first time it's

1521

01:00:58,390 --> 01:00:55,119

been opened since

1522

01:01:00,630 --> 01:00:58,400

liftoff since launch day of course the

1523

01:01:02,549 --> 01:01:00,640

crew uses the forward hatch which is

1524

01:01:04,390 --> 01:01:02,559

located under the nose cone at the very

1525

01:01:06,470 --> 01:01:04,400

top of the capsule

1526

01:01:08,150 --> 01:01:06,480

they use that forward hatch to

1527

01:01:10,150 --> 01:01:08,160

get in and out of the space station but

1528

01:01:12,630 --> 01:01:10,160

it's that side hatch that is utilized

1529

01:01:15,109 --> 01:01:12,640

for ingress and egress or to get in and

1530

01:01:16,870 --> 01:01:15,119

out of the capsule while it's on earth

1531

01:01:18,789 --> 01:01:16,880

so yeah when that side hatch opens it's

1532

01:01:20,950 --> 01:01:18,799

the first time it's been open since they

1533

01:01:23,589 --> 01:01:20,960

launched in november

1534

01:01:25,510 --> 01:01:23,599

dragon spacex we are go for recovery

1535

01:01:27,829 --> 01:01:25,520

personnel to approach you can expect

1536

01:01:31,109 --> 01:01:27,839

personnel alongside in approximately one

1537

01:01:37,030 --> 01:01:33,270

and there's copies

1538

01:01:42,150 --> 01:01:38,630

all right those fast boats have gotten

1539

01:01:44,710 --> 01:01:42,160

to go to move toward the vehicle

1540

01:01:47,349 --> 01:01:44,720

yeah so we're now excitedly awaiting the

1541

01:01:50,069 --> 01:01:47,359

recovery of our dragon spacecraft with

1542

01:01:53,430 --> 01:01:50,079

nasa astronauts raja tom kayla and

1543

01:01:55,670 --> 01:01:53,440

matthias inside dragon has already

1544

01:01:58,549 --> 01:01:55,680

autonomously completed several steps to

1545

01:02:00,950 --> 01:01:58,559

safe itself following splashdown

1546

01:02:03,270 --> 01:02:00,960

as you can see there it is patiently

1547

01:02:04,150 --> 01:02:03,280

waiting in the water for that recovery

1548

01:02:06,230 --> 01:02:04,160

team

1549

01:02:08,950 --> 01:02:06,240

now for those of you just joining us the

1550

01:02:12,069 --> 01:02:08,960

mission has gone really smoothly so far

1551
01:02:14,950 --> 01:02:12,079
um dragons just successfully uh splashed

1552
01:02:16,309 --> 01:02:14,960
down in the gulf of mexico off the coast

1553
01:02:19,029 --> 01:02:16,319
of tampa

1554
01:02:21,670 --> 01:02:19,039
just a little bit ago and as you just

1555
01:02:23,990 --> 01:02:21,680
heard we got the okay from the teams to

1556
01:02:26,870 --> 01:02:24,000
begin the approach yes that splashdown

1557
01:02:29,510 --> 01:02:26,880
coming at 9 43 p.m pacific

1558
01:02:32,069 --> 01:02:29,520
but approximately 23 and a half hours

1559
01:02:34,309 --> 01:02:32,079
ago dragon autonomously undocked from

1560
01:02:36,630 --> 01:02:34,319
the space station and a good look there

1561
01:02:38,549 --> 01:02:36,640
those fast boats dragon spacex request

1562
01:02:42,630 --> 01:02:38,559
permission to come on board via display

1563
01:02:49,109 --> 01:02:45,990

yeah you guys are welcome on board

1564

01:02:50,549 --> 01:02:49,119

copy that and work

1565

01:02:52,630 --> 01:02:50,559

now the crew right now are still in

1566

01:02:54,470 --> 01:02:52,640

their seats this is similar to

1567

01:02:55,990 --> 01:02:54,480

when you arrive on an airplane you have

1568

01:02:57,430 --> 01:02:56,000

landed on the tarmac but you're not at

1569

01:03:00,470 --> 01:02:57,440

the gate yet you don't want to take off

1570

01:03:02,470 --> 01:03:00,480

those seat belts just yet uh so they are

1571

01:03:04,309 --> 01:03:02,480

allowing the teams here in hawthorne to

1572

01:03:06,230 --> 01:03:04,319

take a look inside the vehicle as these

1573

01:03:08,230 --> 01:03:06,240

fast boats approach

1574

01:03:09,910 --> 01:03:08,240

but just a look back at yesterday we saw

1575

01:03:12,069 --> 01:03:09,920

them undock from the space station and

1576

01:03:13,990 --> 01:03:12,079

complete a series of departure burns

1577

01:03:17,109 --> 01:03:14,000

they jettisoned the trucks endurance

1578

01:03:18,470 --> 01:03:17,119

we've got tally recovery lights and uh

1579

01:03:20,470 --> 01:03:18,480

only one complaint is these water

1580

01:03:24,069 --> 01:03:20,480

bottles are super heavy

1581

01:03:28,710 --> 01:03:24,079

[Laughter]

1582

01:03:31,990 --> 01:03:30,549

raj of course making a gravity joke

1583

01:03:34,150 --> 01:03:32,000

there

1584

01:03:35,589 --> 01:03:34,160

yeah for the first time in uh six months

1585

01:03:38,309 --> 01:03:35,599

everything has a little more weight to

1586

01:03:39,750 --> 01:03:38,319

it now that they're back in 1g

1587

01:03:41,430 --> 01:03:39,760

on earth

1588

01:03:42,309 --> 01:03:41,440

but today we saw them jettison that

1589

01:03:44,150 --> 01:03:42,319

trunk

1590

01:03:45,589 --> 01:03:44,160

section and perform the final burn that

1591

01:03:47,589 --> 01:03:45,599

the orbit burn

1592

01:03:49,510 --> 01:03:47,599

very shortly ago to place them on the

1593

01:03:50,870 --> 01:03:49,520

trajectory we had them toward the gulf

1594

01:03:52,309 --> 01:03:50,880

of mexico

1595

01:03:53,510 --> 01:03:52,319

they successfully re-entered the earth's

1596

01:03:55,109 --> 01:03:53,520

atmosphere

1597

01:03:57,270 --> 01:03:55,119

made it through that entry interface

1598

01:03:59,270 --> 01:03:57,280

which we had that loss of calm

1599

01:04:01,589 --> 01:03:59,280

as we expected and then regained shortly

1600

01:04:03,670 --> 01:04:01,599

after and then the deployment of the

1601
01:04:06,069 --> 01:04:03,680
parachute which slowed the spacecraft

1602
01:04:08,150 --> 01:04:06,079
down to a gentle splashdown we had

1603
01:04:09,670 --> 01:04:08,160
amazing views of that tonight and so

1604
01:04:12,230 --> 01:04:09,680
we're now following the final part of

1605
01:04:13,750 --> 01:04:12,240
raja tom kayla and matthias journey as

1606
01:04:15,990 --> 01:04:13,760
dragon is lifted out of the water and

1607
01:04:18,150 --> 01:04:16,000
placed on the recovery boat not there

1608
01:04:20,230 --> 01:04:18,160
quite yet but uh

1609
01:04:23,190 --> 01:04:20,240
sooner than later yeah

1610
01:04:25,670 --> 01:04:23,200
as i said before the upon detection of

1611
01:04:28,150 --> 01:04:25,680
landing dragon automatically releases

1612
01:04:30,549 --> 01:04:28,160
the main parachutes to prevent wind from

1613
01:04:33,109 --> 01:04:30,559

pulling on the spacecraft dragon then

1614

01:04:35,829 --> 01:04:33,119

autonomously safes any pyrotechnics that

1615

01:04:37,670 --> 01:04:35,839

are still present on the vehicle and may

1616

01:04:38,829 --> 01:04:37,680

automatically perform additional minor

1617

01:04:40,870 --> 01:04:38,839

system

1618

01:04:43,670 --> 01:04:40,880

reconfigurations as leah mentioned the

1619

01:04:46,950 --> 01:04:43,680

astronauts remain remain seated in in

1620

01:04:48,950 --> 01:04:46,960

their seats and they keep their suits on

1621

01:04:51,270 --> 01:04:48,960

but the onboard air conditioning keeps

1622

01:04:53,029 --> 01:04:51,280

the temperatures in check inside the

1623

01:04:54,950 --> 01:04:53,039

spacecraft nice and cool

1624

01:04:56,950 --> 01:04:54,960

and the communication systems on board

1625

01:05:00,950 --> 01:04:56,960

remain powered so the crew can continue

1626
01:05:02,549 --> 01:05:00,960
to communicate and make uh funny jokes

1627
01:05:03,990 --> 01:05:02,559
and of course this is a view inside the

1628
01:05:06,309 --> 01:05:04,000
capsule so

1629
01:05:08,630 --> 01:05:06,319
you can see rasha there on the left has

1630
01:05:10,870 --> 01:05:08,640
taken off his gloves still has his suits

1631
01:05:12,549 --> 01:05:10,880
on and has been able to raise his visor

1632
01:05:13,990 --> 01:05:12,559
um this is their first time back on

1633
01:05:16,309 --> 01:05:14,000
earth in six months and they're just

1634
01:05:18,549 --> 01:05:16,319
still monitoring the area around them we

1635
01:05:21,029 --> 01:05:18,559
heard them say that they had sights on

1636
01:05:22,789 --> 01:05:21,039
one of those fast boats spacex has two

1637
01:05:23,990 --> 01:05:22,799
fast boats in the recovery fleet and

1638
01:05:26,069 --> 01:05:24,000

they have moved quickly to the

1639

01:05:27,910 --> 01:05:26,079

splashdown point they are being followed

1640

01:05:30,069 --> 01:05:27,920

tonight by shannon the main recovery

1641

01:05:31,670 --> 01:05:30,079

vessel named after shannon walker nasa

1642

01:05:33,750 --> 01:05:31,680

astronaut

1643

01:05:35,910 --> 01:05:33,760

and that will move uh into the position

1644

01:05:37,910 --> 01:05:35,920

upwind of the spacecraft so here's a

1645

01:05:40,150 --> 01:05:37,920

good picture of those two fast boats

1646

01:05:42,230 --> 01:05:40,160

they both have very specific roles

1647

01:05:43,589 --> 01:05:42,240

the first approach is focused on

1648

01:05:45,589 --> 01:05:43,599

immediate safety inspection of the

1649

01:05:47,190 --> 01:05:45,599

capsule integrity and checking for any

1650

01:05:49,829 --> 01:05:47,200

presence of those hypergolic repellent

1651
01:05:51,829 --> 01:05:49,839
vapors making sure it's safe for shannon

1652
01:05:53,829 --> 01:05:51,839
the recovery boat to approach the dragon

1653
01:05:55,430 --> 01:05:53,839
spacecraft so once the capsule is

1654
01:05:57,349 --> 01:05:55,440
cleared for full approach the team

1655
01:05:59,910 --> 01:05:57,359
begins rigging the capsule for water

1656
01:06:01,670 --> 01:05:59,920
recovery by the recovery ship meanwhile

1657
01:06:03,349 --> 01:06:01,680
the second fast boat which you can see

1658
01:06:05,829 --> 01:06:03,359
in the background is responsible for

1659
01:06:07,589 --> 01:06:05,839
parachute recovery and it also serves as

1660
01:06:09,750 --> 01:06:07,599
a redundant boat to the first we love

1661
01:06:11,109 --> 01:06:09,760
having a backup for everything

1662
01:06:13,510 --> 01:06:11,119
and we'll also see a team member on a

1663
01:06:18,870 --> 01:06:13,520

jet ski helping to gather up the now

1664

01:06:23,190 --> 01:06:21,029

as we said the recovery vessel shannon

1665

01:06:24,549 --> 01:06:23,200

it's making its way it's not as fast as

1666

01:06:25,430 --> 01:06:24,559

the fast boats

1667

01:06:27,510 --> 01:06:25,440

so

1668

01:06:29,990 --> 01:06:27,520

but what the folks are doing there on

1669

01:06:32,470 --> 01:06:30,000

the fast boat whenever they begin when

1670

01:06:35,589 --> 01:06:32,480

whenever they do the initial approach

1671

01:06:38,470 --> 01:06:35,599

they actually perform tests to make sure

1672

01:06:40,069 --> 01:06:38,480

that the hypergolic propellants

1673

01:06:41,750 --> 01:06:40,079

the vapors from those propellants are

1674

01:06:44,950 --> 01:06:41,760

not present

1675

01:06:48,789 --> 01:06:44,960

so the monomethyl hydrazine and the

1676

01:06:51,430 --> 01:06:48,799

nitrogen tetroxide mmh and nto

1677

01:06:53,349 --> 01:06:51,440

are toxic if you breathe them in and so

1678

01:06:56,069 --> 01:06:53,359

the crew the first thing they do when

1679

01:06:57,829 --> 01:06:56,079

they arrive they are wearing

1680

01:06:59,270 --> 01:06:57,839

safety gear so that they are not

1681

01:07:00,870 --> 01:06:59,280

breathing anything

1682

01:07:02,789 --> 01:07:00,880

and they have a device that is

1683

01:07:05,430 --> 01:07:02,799

performing checks to see

1684

01:07:06,390 --> 01:07:05,440

if any of those hyperbolic vapors are

1685

01:07:07,910 --> 01:07:06,400

present

1686

01:07:09,349 --> 01:07:07,920

when they get the all clear then they're

1687

01:07:12,630 --> 01:07:09,359

able to

1688

01:07:14,789 --> 01:07:12,640

further you know the recovery process

1689

01:07:16,789 --> 01:07:14,799

it'll take a little over 10 minutes for

1690

01:07:19,109 --> 01:07:16,799

the recovery crew to complete those

1691

01:07:21,589 --> 01:07:19,119

safety checks once complete the team

1692

01:07:24,630 --> 01:07:21,599

will begin preparing dragon to be lifted

1693

01:07:26,870 --> 01:07:24,640

uh into the recovery vessel as part of

1694

01:07:28,789 --> 01:07:26,880

the preparation for this for this lift

1695

01:07:31,430 --> 01:07:28,799

one member of the recovery team will

1696

01:07:33,270 --> 01:07:31,440

actually climb on top of the capsule so

1697

01:07:35,829 --> 01:07:33,280

that they can attach dragon's hoist

1698

01:07:38,230 --> 01:07:35,839

rings and connect the lifting rings

1699

01:07:39,670 --> 01:07:38,240

that's always really fun to see the i

1700

01:07:41,750 --> 01:07:39,680

promise you the amount of training that

1701

01:07:44,789 --> 01:07:41,760

that individual goes through is quite

1702

01:07:46,390 --> 01:07:44,799

extensive oh wow that's a great view

1703

01:07:47,910 --> 01:07:46,400

not thermal this time

1704

01:07:50,470 --> 01:07:47,920

beautiful colors there

1705

01:07:52,549 --> 01:07:50,480

with the uh the various lights that we

1706

01:07:54,150 --> 01:07:52,559

have going on you have a better view

1707

01:07:56,549 --> 01:07:54,160

the individual that

1708

01:07:58,470 --> 01:07:56,559

is actually on dragon capsule now that's

1709

01:08:00,309 --> 01:07:58,480

the person i was just talking about that

1710

01:08:02,309 --> 01:08:00,319

uh we'll be attaching

1711

01:08:04,470 --> 01:08:02,319

uh dragon's hoist rings and connect the

1712

01:08:06,230 --> 01:08:04,480

lifting lines uh so it'll take us less

1713

01:08:08,069 --> 01:08:06,240

than an hour to raise dragon to the

1714

01:08:10,470 --> 01:08:08,079

recovery boat and remove the crew from

1715

01:08:12,470 --> 01:08:10,480

the spacecraft as leah mentioned before

1716

01:08:15,750 --> 01:08:12,480

there's you know very standard medical

1717

01:08:18,630 --> 01:08:15,760

checkouts uh the crew will return to

1718

01:08:20,390 --> 01:08:18,640

land within four hours by helicopter

1719

01:08:22,070 --> 01:08:20,400

if no additional medical assistance is

1720

01:08:24,709 --> 01:08:22,080

needed the crew will board a waiting

1721

01:08:26,709 --> 01:08:24,719

nasa plane and depart for houston

1722

01:08:28,709 --> 01:08:26,719

now for matthias uh

1723

01:08:31,430 --> 01:08:28,719

the european space agency has a plane

1724

01:08:34,630 --> 01:08:31,440

that will take him to europe

1725

01:08:36,070 --> 01:08:34,640

so he really has a much further journey

1726

01:08:38,070 --> 01:08:36,080

to get home

1727

01:08:39,669 --> 01:08:38,080

those european flights are a little bit

1728

01:08:41,510 --> 01:08:39,679

longer yeah

1729

01:08:43,990 --> 01:08:41,520

once again that's a live view inside

1730

01:08:45,990 --> 01:08:44,000

dragon endurance dragon spacex hypervest

1731

01:08:48,789 --> 01:08:46,000

leaves and unfired ordinance checks were

1732

01:08:50,870 --> 01:08:48,799

nominal rigging is in progress

1733

01:08:53,910 --> 01:08:50,880

approximately seven minutes until

1734

01:08:58,789 --> 01:08:53,920

capsule lift standby for a pmc with the

1735

01:09:11,669 --> 01:09:00,550

and dragon copy

1736

01:09:15,669 --> 01:09:13,030

that person on the outside of the

1737

01:09:17,669 --> 01:09:15,679

capsule was uh rigging the castle

1738

01:09:20,070 --> 01:09:17,679

preparing for it to be lifted on to

1739

01:09:21,910 --> 01:09:20,080

shannon the recovery ship which is

1740

01:09:23,110 --> 01:09:21,920

getting closer and closer to picking up

1741

01:09:25,430 --> 01:09:23,120

the vehicle

1742

01:09:28,630 --> 01:09:25,440

we do have a nasa public affairs officer

1743

01:09:30,870 --> 01:09:28,640

from johnson space center uh in houston

1744

01:09:33,349 --> 01:09:30,880

texas that's on the v on the ship

1745

01:09:35,430 --> 01:09:33,359

tonight as well dragon the next call

1746

01:09:56,470 --> 01:09:35,440

will be on dragon to ground private with

1747

01:10:01,110 --> 01:09:59,110

the core calling to the crew that

1748

01:10:03,270 --> 01:10:01,120

they would have a call a private call so

1749

01:10:04,229 --> 01:10:03,280

we won't hear it here on the loops

1750

01:10:05,990 --> 01:10:04,239

with the

1751

01:10:08,149 --> 01:10:06,000

flight surgeon that's someone that they

1752

01:10:09,830 --> 01:10:08,159

can discuss how they're feeling with

1753

01:10:11,189 --> 01:10:09,840

ahead of those checks that they'll get

1754

01:10:13,510 --> 01:10:11,199

on the boat

1755

01:10:16,229 --> 01:10:13,520

but as i was mentioning we have shaniqua

1756

01:10:18,470 --> 01:10:16,239

vareen of nasa from johnson space center

1757

01:10:27,669 --> 01:10:18,480

and break break standby

1758

01:10:30,470 --> 01:10:28,790

and again they want to make sure they

1759

01:10:32,390 --> 01:10:30,480

privatize those loops it's like going to

1760

01:10:35,669 --> 01:10:32,400

the doctor's office it's not necessarily

1761

01:10:36,950 --> 01:10:35,679

everybody's business

1762

01:10:38,870 --> 01:10:36,960

so um

1763

01:10:40,950 --> 01:10:38,880

we have shaniquavarine of nasa from

1764

01:10:42,310 --> 01:10:40,960

johnson space center on the recovery

1765

01:10:44,070 --> 01:10:42,320

vessel tonight

1766

01:10:46,709 --> 01:10:44,080

like i said i got the opportunity to do

1767

01:10:48,470 --> 01:10:46,719

this and i i wonder if she had the same

1768

01:10:49,990 --> 01:10:48,480

experience as me so

1769

01:10:52,149 --> 01:10:50,000

there might be a bit of a delay she's

1770

01:10:54,310 --> 01:10:52,159

dialing in to speak with us from a

1771

01:10:56,070 --> 01:10:54,320

satellite phone being that they are

1772

01:10:58,950 --> 01:10:56,080

in the middle of the gulf of mexico off

1773

01:11:06,229 --> 01:10:58,960

the coast of tampa so just checking in

1774

01:11:11,189 --> 01:11:08,149

i can hear you leah hi how are you guys

1775

01:11:12,550 --> 01:11:11,199

today we are fantastic and thank you so

1776

01:11:20,310 --> 01:11:12,560

much for

1777

01:11:24,870 --> 01:11:22,870

no problem leah tonight has been nothing

1778

01:11:26,950 --> 01:11:24,880

sort of magical

1779

01:11:29,350 --> 01:11:26,960

just a short while ago the recovery team

1780

01:11:29,990 --> 01:11:29,360

and i watched crew dragon endurance as

1781

01:11:32,790 --> 01:11:30,000

an

1782

01:11:35,430 --> 01:11:32,800

atmosphere we also heard those two sonic

1783

01:11:37,350 --> 01:11:35,440

booms as the crew

1784

01:11:41,110 --> 01:11:37,360

appeared for their splashdown just a

1785

01:11:43,350 --> 01:11:41,120

short minute a few minutes later

1786

01:11:46,950 --> 01:11:43,360

we've had beautiful weather and flat and

1787

01:11:49,189 --> 01:11:46,960

calm seas about 78 degrees here and it's

1788

01:11:51,510 --> 01:11:49,199

been just i mean again magical we had

1789

01:11:54,630 --> 01:11:51,520

dolphins basically jumping and trimming

1790

01:11:56,149 --> 01:11:54,640

alongside the boat before we uh before

1791

01:11:59,270 --> 01:11:56,159

the cruise line right before the crew

1792

01:12:02,229 --> 01:12:01,430

didn't

1793

01:12:08,390 --> 01:12:02,239

and

1794

01:12:09,990 --> 01:12:08,400

the medical team there is basic medical

1795

01:12:13,590 --> 01:12:10,000

i was hoping

1796

01:12:16,310 --> 01:12:13,600

about uh some of the preparations that

1797

01:12:22,790 --> 01:12:16,320

have taken place uh to get the crew to

1798

01:12:28,070 --> 01:12:25,910

yes so uh preparations have been pretty

1799

01:12:30,630 --> 01:12:28,080

much going on all day

1800

01:12:33,270 --> 01:12:30,640

we've had two different teams come out

1801

01:12:35,189 --> 01:12:33,280

at different times

1802

01:12:37,510 --> 01:12:35,199

making sure the vote was prepared as

1803

01:12:39,270 --> 01:12:37,520

well as some medical days for the crew

1804

01:12:42,390 --> 01:12:39,280

as you guys mentioned they'll get

1805

01:12:44,950 --> 01:12:42,400

checked out as soon as they uh egress

1806

01:12:47,510 --> 01:12:44,960

the spacecraft they also deployed

1807

01:12:49,350 --> 01:12:47,520

weather balloons in advance to gauge

1808

01:12:50,390 --> 01:12:49,360

whether or not the wind speeds and such

1809

01:12:53,750 --> 01:12:50,400

were

1810

01:12:55,030 --> 01:12:53,760

ready for uh crew dragon to come through

1811

01:12:57,750 --> 01:12:55,040

so

1812

01:13:01,430 --> 01:12:57,760

there's been a lot of trucks here and uh

1813

01:13:09,750 --> 01:13:01,440

smash down was very nominal um and yeah

1814

01:13:14,229 --> 01:13:11,910

thank you so much for joining us from

1815

01:13:16,310 --> 01:13:14,239

the uh from shannon the recovery chef

1816

01:13:18,550 --> 01:13:16,320

out off the coast of tampa in the gulf

1817

01:13:21,590 --> 01:13:18,560

of mexico with a live view

1818

01:13:23,669 --> 01:13:21,600

in person of crew 3's return to earth

1819

01:13:25,510 --> 01:13:23,679

the first time in six months that these

1820

01:13:28,790 --> 01:13:25,520

astronauts have been back to our home

1821

01:13:33,510 --> 01:13:30,709

it must have been so cool to be able to

1822

01:13:34,950 --> 01:13:33,520

hear the double sonic boom from uh

1823

01:13:37,430 --> 01:13:34,960

re-entry

1824

01:13:40,390 --> 01:13:37,440

and to just see it streaking through the

1825

01:13:42,870 --> 01:13:40,400

sky now being on board

1826

01:13:45,350 --> 01:13:42,880

shannon she was about three nautical

1827

01:13:48,630 --> 01:13:45,360

miles away from the splashdown site

1828

01:13:49,990 --> 01:13:48,640

and it sounds far but it's not

1829

01:13:52,709 --> 01:13:50,000

no and at night time i know it's a

1830

01:13:55,030 --> 01:13:52,719

little more difficult for uh for depth

1831

01:13:57,270 --> 01:13:55,040

perception well that and for the crew on

1832

01:13:58,950 --> 01:13:57,280

the ship itself to be able to see the

1833

01:14:00,709 --> 01:13:58,960

parachutes i wasn't able to see them

1834

01:14:02,870 --> 01:14:00,719

whenever they were coming down so you

1835

01:14:04,470 --> 01:14:02,880

definitely get a special view here on

1836

01:14:06,070 --> 01:14:04,480

the webcast because we have those

1837

01:14:08,470 --> 01:14:06,080

thermal cameras

1838

01:14:12,709 --> 01:14:08,480

that can pick up on the vehicle even

1839

01:14:16,470 --> 01:14:14,709

and again we have had those fast boats

1840

01:14:18,229 --> 01:14:16,480

approach the vehicle

1841

01:14:20,630 --> 01:14:18,239

we're now waiting for shannon the

1842

01:14:28,709 --> 01:14:20,640

recovery ship to make its way closer to

1843

01:14:33,910 --> 01:14:30,870

as we mentioned before the

1844

01:14:34,950 --> 01:14:33,920

um team that is presently at the capsule

1845

01:14:37,270 --> 01:14:34,960

it's the

1846

01:14:39,270 --> 01:14:37,280

basically the fast boat team

1847

01:14:41,669 --> 01:14:39,280

they perform the initial safety checks

1848

01:14:44,950 --> 01:14:41,679

to make sure that the hypergolic uh

1849

01:14:47,030 --> 01:14:44,960

propellant fumes were not present and

1850

01:14:48,229 --> 01:14:47,040

once we got the all clear on there the

1851
01:14:49,110 --> 01:14:48,239
individual

1852
01:14:51,510 --> 01:14:49,120
that

1853
01:14:52,709 --> 01:14:51,520
is specially trained extensively trained

1854
01:14:55,110 --> 01:14:52,719
i should say

1855
01:14:57,910 --> 01:14:55,120
to actually climb on top of the dragon

1856
01:15:00,390 --> 01:14:57,920
capsule and attach all of the harnessing

1857
01:15:02,790 --> 01:15:00,400
and rigging necessary to

1858
01:15:05,510 --> 01:15:02,800
hoist dragon up onto the deck of the

1859
01:15:09,189 --> 01:15:05,520
recovery vessel that's all underway at

1860
01:15:13,270 --> 01:15:09,199
the moment and shannon is making her way

1861
01:15:15,110 --> 01:15:13,280
closer and closer to the splashdown site

1862
01:15:17,270 --> 01:15:15,120
and this is a live view inside the

1863
01:15:20,630 --> 01:15:17,280

capsule as

1864

01:15:24,229 --> 01:15:20,640

our four astronauts are awaiting their

1865

01:15:26,149 --> 01:15:24,239

final pickup for the night

1866

01:15:29,669 --> 01:15:26,159

and again they'll egress or exit that

1867

01:15:31,430 --> 01:15:29,679

side hatch it's uh directly in front if

1868

01:15:33,350 --> 01:15:31,440

you can see from this view down toward

1869

01:15:34,229 --> 01:15:33,360

the bottom of the screen the last time

1870

01:15:36,310 --> 01:15:34,239

they

1871

01:15:39,189 --> 01:15:36,320

used this hatch was six months ago when

1872

01:15:42,470 --> 01:15:39,199

they boarded crew dragon for ascent

1873

01:15:45,030 --> 01:15:42,480

toward the international space station

1874

01:15:47,990 --> 01:15:45,040

it was a smooth ride for dragon tonight

1875

01:15:50,229 --> 01:15:48,000

we saw the capsule

1876
01:15:52,310 --> 01:15:50,239
claw separate meaning the umbilicals

1877
01:15:54,310 --> 01:15:52,320
were detached and dragon was operating

1878
01:15:56,550 --> 01:15:54,320
on battery power and this happened

1879
01:15:57,750 --> 01:15:56,560
before the trunk was jettisoned that

1880
01:16:00,310 --> 01:15:57,760
trunk that

1881
01:16:02,229 --> 01:16:00,320
has the solar cells on board

1882
01:16:04,870 --> 01:16:02,239
that trunk burns up upon re-entry into

1883
01:16:07,590 --> 01:16:04,880
the atmosphere meanwhile the crew dragon

1884
01:16:08,550 --> 01:16:07,600
uses its heat shield to ablate some of

1885
01:16:15,590 --> 01:16:08,560
that

1886
01:16:17,830 --> 01:16:15,600
the earth's atmosphere we saw two

1887
01:16:20,390 --> 01:16:17,840
successful drogue parachutes

1888
01:16:22,950 --> 01:16:20,400

deploy slowing the vehicle to about 350

1889

01:16:25,669 --> 01:16:22,960

miles per hour and then those drogues

1890

01:16:27,990 --> 01:16:25,679

pulling out four full main parachutes

1891

01:16:30,470 --> 01:16:28,000

those as you mentioned iconic orange and

1892

01:16:32,630 --> 01:16:30,480

white parachutes hard to miss

1893

01:16:34,950 --> 01:16:32,640

and those slowed the capsule about 15

1894

01:16:37,669 --> 01:16:34,960

miles per hour until it splashed down

1895

01:16:39,910 --> 01:16:37,679

safely since then again we've had these

1896

01:16:42,310 --> 01:16:39,920

fast boats approaching they have checked

1897

01:16:44,149 --> 01:16:42,320

the capsule for hypergolic fuels to make

1898

01:16:46,709 --> 01:16:44,159

sure it's safe for the recovery vessel

1899

01:16:49,030 --> 01:16:46,719

to approach and they're also collecting

1900

01:16:50,310 --> 01:16:49,040

the parachutes that were cut from the

1901

01:16:52,790 --> 01:16:50,320

vehicle

1902

01:16:57,189 --> 01:16:52,800

after it splashed down to keep it from

1903

01:16:59,110 --> 01:16:57,199

being pulled by any wind or wave forces

1904

01:17:01,110 --> 01:16:59,120

we also saw as you mentioned somebody

1905

01:17:03,030 --> 01:17:01,120

very specially and highly trained

1906

01:17:05,590 --> 01:17:03,040

rigging the capsule or preparing it to

1907

01:17:08,070 --> 01:17:05,600

be picked up by the recovery vessel once

1908

01:17:10,310 --> 01:17:08,080

it arrives

1909

01:17:11,830 --> 01:17:10,320

we also heard that the crew were going

1910

01:17:14,229 --> 01:17:11,840

to do the initial check-in with the

1911

01:17:16,310 --> 01:17:14,239

flight surgeon that is you know just

1912

01:17:19,990 --> 01:17:16,320

part of the standard operating procedure

1913

01:17:21,669 --> 01:17:20,000

for post splashdown just uh verbal call

1914

01:17:22,709 --> 01:17:21,679

privatized with the flight surgeon

1915

01:17:26,310 --> 01:17:22,719

that's what's

1916

01:17:28,070 --> 01:17:26,320

either underway now or wrapping up

1917

01:17:31,110 --> 01:17:28,080

that's why we don't hear anything on the

1918

01:17:34,310 --> 01:17:31,120

nets at the moment after

1919

01:17:36,229 --> 01:17:34,320

the recovery vessel gets close the

1920

01:17:39,430 --> 01:17:36,239

all the attachments and the harnessing

1921

01:17:41,510 --> 01:17:39,440

that um we've put on top of the capsule

1922

01:17:44,229 --> 01:17:41,520

the you know that will all be attached

1923

01:17:45,270 --> 01:17:44,239

to the recovery vessel and the hydraulic

1924

01:17:48,390 --> 01:17:45,280

lift will

1925

01:17:51,270 --> 01:17:48,400

uh lift it out of the water and into the

1926

01:17:53,270 --> 01:17:51,280

cradle or the nest um which we will

1927

01:17:56,070 --> 01:17:53,280

hopefully get a view of soon once we're

1928

01:17:58,550 --> 01:17:56,080

able to bring you uh footage back from

1929

01:18:00,310 --> 01:17:58,560

from shannon dragon spacex for awareness

1930

01:18:03,510 --> 01:18:00,320

for approximately three minutes until

1931

01:18:03,520 --> 01:18:11,590

wow great news there

1932

01:18:15,590 --> 01:18:13,669

yes so these astronauts are even closer

1933

01:18:19,189 --> 01:18:15,600

to their journey home uh they will be

1934

01:18:21,910 --> 01:18:19,199

lifted up upon the recovery ship shannon

1935

01:18:24,830 --> 01:18:21,920

and placed in that nest uh before it's

1936

01:18:27,350 --> 01:18:24,840

pulled to the egress or exit

1937

01:18:29,110 --> 01:18:27,360

platform and again a

1938

01:18:30,790 --> 01:18:29,120

medical personnel will check in with the

1939

01:18:32,070 --> 01:18:30,800

crew that'll be the first friendly face

1940

01:18:34,470 --> 01:18:32,080

they see

1941

01:18:36,070 --> 01:18:34,480

in real life besides their other fellow

1942

01:18:37,270 --> 01:18:36,080

astronauts for the first time in six

1943

01:18:38,470 --> 01:18:37,280

months

1944

01:18:41,750 --> 01:18:38,480

they'll do a quick check to make sure

1945

01:18:44,790 --> 01:18:41,760

everyone's feeling okay and then

1946

01:18:48,550 --> 01:18:44,800

each crew member will be helped out

1947

01:18:50,229 --> 01:18:48,560

so just a moment ago we had a very quick

1948

01:18:52,709 --> 01:18:50,239

glance from

1949

01:18:54,630 --> 01:18:52,719

shannon our recovery vessel that is

1950

01:18:56,229 --> 01:18:54,640

preparing there's that view again so we

1951

01:18:59,430 --> 01:18:56,239

can see dragon endurance in the

1952

01:19:01,350 --> 01:18:59,440

background with the fast boats

1953

01:19:03,189 --> 01:19:01,360

one of my

1954

01:19:06,310 --> 01:19:03,199

not one of probably my very favorite

1955

01:19:08,070 --> 01:19:06,320

moment will be coming up momentarily uh

1956

01:19:10,709 --> 01:19:08,080

the individual that is actually there on

1957

01:19:13,510 --> 01:19:10,719

the side of dragon capsule um

1958

01:19:14,870 --> 01:19:13,520

they will most likely be at the top part

1959

01:19:16,950 --> 01:19:14,880

when this thing happens but we'll

1960

01:19:19,830 --> 01:19:16,960

actually see them jump off and back into

1961

01:19:23,030 --> 01:19:19,840

the water um i personally have a fear of

1962

01:19:25,430 --> 01:19:23,040

dark water so there is not enough money

1963

01:19:28,070 --> 01:19:25,440

or air or

1964

01:19:30,550 --> 01:19:28,080

incentive for me to jump off of anything

1965

01:19:33,030 --> 01:19:30,560

into a dark ocean

1966

01:19:34,390 --> 01:19:33,040

but yeah night swim

1967

01:19:35,830 --> 01:19:34,400

not in my brain

1968

01:19:37,590 --> 01:19:35,840

but that individual that you see there

1969

01:19:40,070 --> 01:19:37,600

they're currently

1970

01:19:42,709 --> 01:19:40,080

um putting all of the required harnesses

1971

01:19:44,390 --> 01:19:42,719

and rigging onto the dragon capsule

1972

01:19:45,830 --> 01:19:44,400

um and then that will of course be

1973

01:19:49,110 --> 01:19:45,840

attached to the lines that we see

1974

01:19:51,189 --> 01:19:49,120

hanging from that hydraulic lift

1975

01:19:53,990 --> 01:19:51,199

again this is the our basically our our

1976

01:19:56,470 --> 01:19:54,000

first good view of dragon endurance from

1977

01:20:00,229 --> 01:19:56,480

shannon itself

1978

01:20:02,149 --> 01:20:00,239

and these few people that you see down

1979

01:20:06,149 --> 01:20:02,159

on the ship these are highly trained as

1980

01:20:08,470 --> 01:20:06,159

well um to execute this maneuver so

1981

01:20:10,229 --> 01:20:08,480

anyone else on the ship that has flown

1982

01:20:13,110 --> 01:20:10,239

in today

1983

01:20:14,790 --> 01:20:13,120

including any medical personnel any nasa

1984

01:20:15,830 --> 01:20:14,800

personnel like we spoke with shaniqua

1985

01:20:18,149 --> 01:20:15,840

they are

1986

01:20:20,229 --> 01:20:18,159

watching from a distance to allow this

1987

01:20:22,310 --> 01:20:20,239

team to do their job in bringing the

1988

01:20:24,070 --> 01:20:22,320

capsule up and setting it down into that

1989

01:20:26,390 --> 01:20:24,080

nest safely

1990

01:20:28,950 --> 01:20:26,400

ellia as you mentioned you were actually

1991

01:20:31,110 --> 01:20:28,960

on the recovery vessel for the crew 2

1992

01:20:33,510 --> 01:20:31,120

splashdown and

1993

01:20:35,669 --> 01:20:33,520

recovery process

1994

01:20:37,030 --> 01:20:35,679

when the astronauts were brought on

1995

01:20:39,030 --> 01:20:37,040

board so

1996

01:20:40,149 --> 01:20:39,040

bigger picture uh back up a moment you

1997

01:20:41,669 --> 01:20:40,159

know the astronauts have been in space

1998

01:20:43,510 --> 01:20:41,679

for six months

1999

01:20:45,510 --> 01:20:43,520

you know their immune system needs to

2000

01:20:47,350 --> 01:20:45,520

catch back up to planet earth and the

2001

01:20:49,590 --> 01:20:47,360

environment here

2002

01:20:51,830 --> 01:20:49,600

did you find while you were on the

2003

01:20:53,669 --> 01:20:51,840

recovery vessel that the astronauts even

2004

01:20:55,830 --> 01:20:53,679

after landing you know they went into

2005

01:20:58,390 --> 01:20:55,840

the medical base that they were still

2006

01:21:00,870 --> 01:20:58,400

you know in a protected environment even

2007

01:21:04,629 --> 01:21:00,880

on the recovery vessel oh 100

2008

01:21:06,229 --> 01:21:04,639

we were not allowed um near them once it

2009

01:21:08,950 --> 01:21:06,239

became time for them to egress actually

2010

01:21:10,870 --> 01:21:08,960

we moved into the galley um and it looks

2011

01:21:11,690 --> 01:21:10,880

like your team member's about to take

2012

01:21:13,510 --> 01:21:11,700

his night swim

2013

01:21:16,870 --> 01:21:13,520

[Laughter]

2014

01:21:18,790 --> 01:21:16,880

but um we we stayed in the galley while

2015

01:21:20,550 --> 01:21:18,800

um

2016

01:21:22,790 --> 01:21:20,560

the astronauts were

2017

01:21:25,110 --> 01:21:22,800

helped out of the vehicle they moved

2018

01:21:28,709 --> 01:21:25,120

straight into those medical personnel

2019

01:21:31,030 --> 01:21:28,719

rooms it's very restricted on who is um

2020

01:21:34,229 --> 01:21:31,040

able to be near them of course everyone

2021

01:21:36,070 --> 01:21:34,239

is masked they've been in this

2022

01:21:39,350 --> 01:21:36,080

somewhat pristine environment for about

2023

01:21:42,070 --> 01:21:39,360

six months not a lot of exposure to um

2024

01:21:44,470 --> 01:21:42,080

to bacteria and so any sort or even

2025

01:21:47,510 --> 01:21:44,480

pollens right exactly so any sort of

2026

01:21:49,030 --> 01:21:47,520

sickness we want to prevent them from um

2027

01:21:50,629 --> 01:21:49,040

from getting when their immune systems

2028

01:21:54,790 --> 01:21:50,639

might be a little bit compromised after

2029

01:22:00,870 --> 01:21:58,229

yeah now in the past we have seen um

2030

01:22:04,550 --> 01:22:00,880

that person who at times just because

2031

01:22:07,030 --> 01:22:04,560

the capsule is so uh brightly lit and

2032

01:22:08,790 --> 01:22:07,040

the wetsuit is super dark it kind of

2033

01:22:11,030 --> 01:22:08,800

reminds me of a

2034

01:22:13,750 --> 01:22:11,040

a spider traversing back and forth

2035

01:22:15,350 --> 01:22:13,760

across the vehicle um and in the past

2036

01:22:17,430 --> 01:22:15,360

we've seen that individual climb up a

2037

01:22:20,229 --> 01:22:17,440

little bit higher on the capsule uh

2038

01:22:21,990 --> 01:22:20,239

prior to jumping off but um i just want

2039

01:22:23,430 --> 01:22:22,000

to give a little perspective here it's

2040

01:22:24,709 --> 01:22:23,440

only because of the bright lights you

2041

01:22:27,189 --> 01:22:24,719

know of course for safety reasons we

2042

01:22:29,990 --> 01:22:27,199

want to have the area well lit during

2043

01:22:32,629 --> 01:22:30,000

these operations so the capsule looks

2044

01:22:35,350 --> 01:22:32,639

like it is still that pristine white

2045

01:22:37,189 --> 01:22:35,360

color i promise you it is not we've

2046

01:22:38,709 --> 01:22:37,199

definitely got a floating toasted

2047

01:22:41,590 --> 01:22:38,719

marshmallow there

2048

01:22:43,910 --> 01:22:41,600

in the gulf of mexico

2049

01:22:45,669 --> 01:22:43,920

and there are multiple lines attached to

2050

01:22:48,629 --> 01:22:45,679

the vehicle so that when it's lifted

2051
01:22:50,629 --> 01:22:48,639
it's not just dangling from one line

2052
01:22:53,270 --> 01:22:50,639
these help keep it stable

2053
01:22:54,550 --> 01:22:53,280
and upright when for it to be placed

2054
01:22:56,149 --> 01:22:54,560
into

2055
01:22:58,390 --> 01:22:56,159
the nest so it looks like we're getting

2056
01:23:07,189 --> 01:22:58,400
even closer to that moment but it's

2057
01:23:12,950 --> 01:23:09,350
and again splashdown occurred at 9 43

2058
01:23:15,030 --> 01:23:12,960
p.m pacific time 12 43 a.m eastern time

2059
01:23:18,229 --> 01:23:15,040
off the coast of tampa florida a smooth

2060
01:23:21,110 --> 01:23:18,239
ride home for our crew dragon um nasa

2061
01:23:36,550 --> 01:23:21,120
astronauts and esa astronaut

2062
01:23:41,030 --> 01:23:39,510
so with that view there we can see the

2063
01:23:48,790 --> 01:23:41,040

um

2064

01:23:53,430 --> 01:23:51,350

and clearly the heat shield did its job

2065

01:24:05,350 --> 01:23:53,440

um seeing that it's only slightly

2066

01:24:08,870 --> 01:24:07,510

yeah so this person's about to make

2067

01:24:12,310 --> 01:24:08,880

their egress

2068

01:24:14,390 --> 01:24:12,320

from the capsule momentarily

2069

01:24:25,910 --> 01:24:14,400

tally ho there we go

2070

01:24:29,110 --> 01:24:27,510

my heart rate went up a little bit just

2071

01:24:30,950 --> 01:24:29,120

envisioning having to do what that

2072

01:24:33,590 --> 01:24:30,960

person just did

2073

01:24:34,950 --> 01:24:33,600

in seawater at night oh man

2074

01:24:37,910 --> 01:24:34,960

and here we go

2075

01:24:50,550 --> 01:24:37,920

crew dragon endurance being lifted

2076

01:24:54,550 --> 01:24:51,990

pretty cool view there of the heat

2077

01:24:56,629 --> 01:24:54,560

shield now that it has been lifted out

2078

01:24:58,550 --> 01:24:56,639

of the water

2079

01:25:01,110 --> 01:24:58,560

you can see the water sloshing around

2080

01:25:03,270 --> 01:25:01,120

there that is um actually where the

2081

01:25:05,590 --> 01:25:03,280

parachutes deploy from

2082

01:25:07,590 --> 01:25:05,600

the main parachutes are located in that

2083

01:25:09,350 --> 01:25:07,600

bay there under the side hatch the

2084

01:25:12,629 --> 01:25:09,360

drogue parachutes are located in the

2085

01:25:14,229 --> 01:25:12,639

bays above the side hatch that's a great

2086

01:25:16,229 --> 01:25:14,239

view as you mentioned of the side hatch

2087

01:25:17,990 --> 01:25:16,239

so when they place dragon in the nest as

2088

01:25:19,030 --> 01:25:18,000

they're preparing to do now

2089

01:25:21,669 --> 01:25:19,040

they will

2090

01:25:23,830 --> 01:25:21,679

pull it closer to an egress platform

2091

01:25:25,669 --> 01:25:23,840

because this is significantly high off

2092

01:25:28,310 --> 01:25:25,679

the ground maybe 10 feet off the ground

2093

01:25:29,590 --> 01:25:28,320

so there's an egress platform that is

2094

01:25:32,070 --> 01:25:29,600

level with

2095

01:25:35,510 --> 01:25:32,080

the side hatch that way it makes it

2096

01:25:44,470 --> 01:25:35,520

easier for us to help the crew members

2097

01:25:48,629 --> 01:25:46,310

the capsule will be centered and

2098

01:25:50,870 --> 01:25:48,639

oriented as you can see and then uh

2099

01:25:52,870 --> 01:25:50,880

dragon will be moved to that hanger

2100

01:26:07,590 --> 01:25:52,880

underneath the helipad on the ship yes

2101
01:26:11,590 --> 01:26:09,910
there we can see dragon endurance

2102
01:26:13,990 --> 01:26:11,600
dragon spacex welcome aboard the

2103
01:26:16,470 --> 01:26:14,000
recovery vessel recovery personnel are

2104
01:26:27,030 --> 01:26:16,480
completing the final checks stand by for

2105
01:26:32,870 --> 01:26:29,510
great view there we can see that dragon

2106
01:26:34,870 --> 01:26:32,880
endeavor is now safely on our recovery

2107
01:26:37,110 --> 01:26:34,880
vessel shannon

2108
01:26:39,910 --> 01:26:37,120
this is a view from the helipad itself

2109
01:26:42,870 --> 01:26:39,920
so the vehicle will be pulled

2110
01:26:44,470 --> 01:26:42,880
under this platform um to where like i

2111
01:26:46,149 --> 01:26:44,480
mentioned it'll be level with that

2112
01:26:48,229 --> 01:26:46,159
egress platform

2113
01:26:50,149 --> 01:26:48,239

or i should say the

2114

01:26:52,550 --> 01:26:50,159

side hatch will be level with the egress

2115

01:26:56,790 --> 01:26:52,560

platform but um

2116

01:26:59,430 --> 01:26:56,800

again our crew is out of the water and

2117

01:27:02,070 --> 01:26:59,440

preparing to get out of the capsule

2118

01:27:06,629 --> 01:27:04,550

now once that hatch is open a spacex

2119

01:27:08,950 --> 01:27:06,639

medical doctor will be the first one in

2120

01:27:10,709 --> 01:27:08,960

to check on the crew

2121

01:27:13,110 --> 01:27:10,719

uh basically just to see if they're

2122

01:27:14,709 --> 01:27:13,120

ready for egress um and make sure

2123

01:27:15,750 --> 01:27:14,719

everybody make sure everybody's feeling

2124

01:27:17,990 --> 01:27:15,760

good

2125

01:27:19,990 --> 01:27:18,000

as i've mentioned before while dragon's

2126
01:27:22,390 --> 01:27:20,000
top hatch is used to connect to the

2127
01:27:24,390 --> 01:27:22,400
space station our astronauts will egress

2128
01:27:25,990 --> 01:27:24,400
from dragon side hatch which we see

2129
01:27:28,229 --> 01:27:26,000
there

2130
01:27:30,070 --> 01:27:28,239
before opening the hatch the

2131
01:27:31,350 --> 01:27:30,080
spacecraft's cabin pressure must be

2132
01:27:33,510 --> 01:27:31,360
equalized

2133
01:27:35,750 --> 01:27:33,520
with the outside environment once the

2134
01:27:37,910 --> 01:27:35,760
hatch is opened that will be the crew's

2135
01:27:39,990 --> 01:27:37,920
first breath of fresh air since boarding

2136
01:27:43,350 --> 01:27:40,000
falcon 9 at the start of their mission

2137
01:27:45,110 --> 01:27:43,360
back in november of last year

2138
01:27:47,590 --> 01:27:45,120

i can only imagine how good that will

2139

01:27:49,430 --> 01:27:47,600

feel and uh you mentioned that the

2140

01:27:51,430 --> 01:27:49,440

pressure will need to be equalized to

2141

01:27:53,910 --> 01:27:51,440

that outside we try to keep the pressure

2142

01:27:55,910 --> 01:27:53,920

on the space station and um on crew

2143

01:27:57,590 --> 01:27:55,920

dragon similar to what you would

2144

01:28:01,830 --> 01:27:57,600

experience at sea level on earth that's

2145

01:28:02,550 --> 01:28:01,840

about 14.7 pounds or psi per square inch

2146

01:28:04,870 --> 01:28:02,560

so

2147

01:28:07,430 --> 01:28:04,880

hopefully it wouldn't take too much

2148

01:28:10,310 --> 01:28:07,440

maneuvering or

2149

01:28:13,510 --> 01:28:10,320

tweaking for the uh

2150

01:28:15,830 --> 01:28:13,520

pressure inside to match that outside

2151
01:28:17,750 --> 01:28:15,840
but it's important to note that raja tom

2152
01:28:19,990 --> 01:28:17,760
kayla and matthias will be getting

2153
01:28:21,830 --> 01:28:20,000
assistance from the recovery teams when

2154
01:28:24,070 --> 01:28:21,840
exiting the capsule this is the same

2155
01:28:25,669 --> 01:28:24,080
process for any returning long-duration

2156
01:28:27,669 --> 01:28:25,679
crew members returning to gravity

2157
01:28:29,430 --> 01:28:27,679
environment can wreak havoc with our

2158
01:28:31,110 --> 01:28:29,440
vestibular system absolutely which is

2159
01:28:32,870 --> 01:28:31,120
responsible for maintaining our balance

2160
01:28:35,110 --> 01:28:32,880
and motion so safety is our number one

2161
01:28:37,990 --> 01:28:35,120
priority with this operation like with

2162
01:28:39,350 --> 01:28:38,000
all operations so you'll see all four

2163
01:28:41,430 --> 01:28:39,360

crew members being helped out of the

2164

01:28:43,750 --> 01:28:41,440

capsule they'll be assisted a few feet

2165

01:28:45,750 --> 01:28:43,760

to the medical quarters aboard the boat

2166

01:28:47,990 --> 01:28:45,760

and if you've watched crews return on a

2167

01:28:49,910 --> 01:28:48,000

soyuz spacecraft this is the same

2168

01:28:51,830 --> 01:28:49,920

process as when astronauts are carried

2169

01:28:53,030 --> 01:28:51,840

from the capsule to chairs that are

2170

01:28:55,270 --> 01:28:53,040

waiting for them and then they're

2171

01:28:57,270 --> 01:28:55,280

carried to a waiting medical tent

2172

01:28:58,950 --> 01:28:57,280

this is also the time period where any

2173

01:29:00,870 --> 01:28:58,960

of the time critical cargo can be

2174

01:29:02,390 --> 01:29:00,880

recovered from the spacecraft and the

2175

01:29:04,950 --> 01:29:02,400

remainder can wait until the ship is

2176
01:29:07,830 --> 01:29:04,960
back in port so like i mentioned those

2177
01:29:09,030 --> 01:29:07,840
samples that are in the polar

2178
01:29:10,629 --> 01:29:09,040
freezers

2179
01:29:12,550 --> 01:29:10,639
those refrigerated samples those are

2180
01:29:13,750 --> 01:29:12,560
taken off at this time as well for

2181
01:29:15,590 --> 01:29:13,760
quicker transport back to the

2182
01:29:18,310 --> 01:29:15,600
researchers on land

2183
01:29:20,149 --> 01:29:18,320
so once the ship and capsule return to

2184
01:29:22,229 --> 01:29:20,159
land the recovery team

2185
01:29:24,470 --> 01:29:22,239
can do additional inspections before

2186
01:29:26,550 --> 01:29:24,480
loading dragon on a flatbed truck at the

2187
01:29:30,390 --> 01:29:26,560
spacex facility in cape canaveral for

2188
01:29:34,790 --> 01:29:33,270

we have a great view of the dragon there

2189

01:29:36,950 --> 01:29:34,800
positioned in the nest we're just

2190

01:29:39,510 --> 01:29:36,960
waiting to see it translated

2191

01:29:43,430 --> 01:29:39,520
or moved back to

2192

01:29:46,070 --> 01:29:43,440
the platform where the crew will egress

2193

01:29:48,790 --> 01:29:46,080
i i want to mention one thing you know

2194

01:29:50,950 --> 01:29:48,800
we have a great view but we

2195

01:29:52,629 --> 01:29:50,960
we can't hear anything that's going on

2196

01:29:54,950 --> 01:29:52,639
with the recovery vessel and something i

2197

01:29:57,189 --> 01:29:54,960
never thought of

2198

01:29:58,629 --> 01:29:57,199
in terms of the recovery vessel are also

2199

01:30:01,350 --> 01:29:58,639
the smells

2200

01:30:03,189 --> 01:30:01,360
so i was actually out at cape canaveral

2201
01:30:05,189 --> 01:30:03,199
for work

2202
01:30:07,350 --> 01:30:05,199
this week and i had the opportunity to

2203
01:30:09,590 --> 01:30:07,360
visit the axiom one capsule that just

2204
01:30:10,550 --> 01:30:09,600
splashed down about a week and a half

2205
01:30:12,390 --> 01:30:10,560
ago

2206
01:30:14,390 --> 01:30:12,400
in our

2207
01:30:17,189 --> 01:30:14,400
in dragon land are our buildings where

2208
01:30:18,870 --> 01:30:17,199
we process our dragon capsules and

2209
01:30:20,229 --> 01:30:18,880
something that really surprised me i

2210
01:30:21,669 --> 01:30:20,239
don't know why i should have thought of

2211
01:30:23,350 --> 01:30:21,679
this but um leah you can probably

2212
01:30:26,070 --> 01:30:23,360
comment on this because you were on the

2213
01:30:27,189 --> 01:30:26,080

recovery vessel um the dragon capsule

2214

01:30:30,070 --> 01:30:27,199

you know it did just re-enter the

2215

01:30:32,629 --> 01:30:30,080

earth's atmosphere it does have a

2216

01:30:33,510 --> 01:30:32,639

an odor to it um there there's i can't

2217

01:30:35,189 --> 01:30:33,520

quite

2218

01:30:38,149 --> 01:30:35,199

i can't i couldn't figure out how to

2219

01:30:40,310 --> 01:30:38,159

describe it um it's not quite chemically

2220

01:30:43,590 --> 01:30:40,320

one of my teammates um actually said

2221

01:30:46,470 --> 01:30:43,600

that it smelled like um uh charred

2222

01:30:48,310 --> 01:30:46,480

bamboo okay and i can't say i ever

2223

01:30:50,550 --> 01:30:48,320

smelled that so i don't i i personally

2224

01:30:52,950 --> 01:30:50,560

can't uh verify but

2225

01:30:53,750 --> 01:30:52,960

yeah uh it's uh

2226

01:30:55,510 --> 01:30:53,760

you know

2227

01:30:56,870 --> 01:30:55,520

and they're they're fresh air there uh

2228

01:30:58,870 --> 01:30:56,880

but in any case yeah it's just kind of

2229

01:31:00,310 --> 01:30:58,880

interesting to think all the various

2230

01:31:01,830 --> 01:31:00,320

things that are going on with this

2231

01:31:03,430 --> 01:31:01,840

recovery vessel

2232

01:31:05,030 --> 01:31:03,440

all the operations that are going on and

2233

01:31:07,189 --> 01:31:05,040

one thing that we'll actually see them

2234

01:31:09,750 --> 01:31:07,199

do prior to

2235

01:31:12,390 --> 01:31:09,760

opening the the hatch is we'll see them

2236

01:31:13,830 --> 01:31:12,400

do another safety check to make sure

2237

01:31:15,189 --> 01:31:13,840

speaking of smells to make sure that

2238

01:31:17,590 --> 01:31:15,199

those

2239

01:31:20,229 --> 01:31:17,600

goals still are not

2240

01:31:22,470 --> 01:31:20,239

you know releasing any any vapors

2241

01:31:25,189 --> 01:31:22,480

to make sure that it is safe to open up

2242

01:31:27,990 --> 01:31:25,199

that side hatch before getting our

2243

01:31:31,189 --> 01:31:28,000

cruise crew members out

2244

01:31:33,590 --> 01:31:31,199

it looks like they are finishing hooking

2245

01:31:35,350 --> 01:31:33,600

uh the next up to those lines that'll

2246

01:31:37,350 --> 01:31:35,360

help them pull it toward the egress

2247

01:31:40,950 --> 01:31:37,360

platform you know i wish i could have

2248

01:31:43,350 --> 01:31:40,960

gotten close enough to uh try and

2249

01:31:44,950 --> 01:31:43,360

determine what that smell might be i was

2250

01:31:48,070 --> 01:31:44,960

i was hoping to when i was thinking

2251

01:31:50,149 --> 01:31:48,080

about it while i was there um but

2252

01:31:52,870 --> 01:31:50,159

um we stayed you know a safe distance

2253

01:31:54,070 --> 01:31:52,880

away from the capsule um and of course

2254

01:31:55,669 --> 01:31:54,080

being in the middle of the gulf of

2255

01:31:57,910 --> 01:31:55,679

mexico there's only a little bit of salt

2256

01:31:59,830 --> 01:31:57,920

water so that was uh that was an

2257

01:32:01,830 --> 01:31:59,840

overpowering smell itself you probably

2258

01:32:03,189 --> 01:32:01,840

smell more fish than anything else maybe

2259

01:32:04,709 --> 01:32:03,199

so

2260

01:32:06,550 --> 01:32:04,719

but um

2261

01:32:08,629 --> 01:32:06,560

but yes we are getting pretty close now

2262

01:32:10,310 --> 01:32:08,639

to seeing our astronauts exit the

2263

01:32:11,830 --> 01:32:10,320

vehicle um

2264

01:32:14,149 --> 01:32:11,840

and taking their first breath of fresh

2265

01:32:16,470 --> 01:32:14,159

air after six months in space but again

2266

01:32:18,149 --> 01:32:16,480

you know it's interesting that your

2267

01:32:20,229 --> 01:32:18,159

colleague mentioned it smelled like oh

2268

01:32:26,390 --> 01:32:20,239

here we go we have movement

2269

01:32:31,270 --> 01:32:28,709

it looked like the capsule was being

2270

01:32:33,669 --> 01:32:31,280

hosed down a little bit just to get the

2271

01:32:35,590 --> 01:32:33,679

um some of that salt water out of those

2272

01:32:37,990 --> 01:32:35,600

bays

2273

01:32:41,110 --> 01:32:38,000

once again that bay at the top there is

2274

01:32:42,950 --> 01:32:41,120

where the drogue parachutes are stored

2275

01:32:45,990 --> 01:32:42,960

and then the bay at the bottom

2276

01:32:48,709 --> 01:32:46,000

underneath the side hatch is where the

2277

01:32:50,470 --> 01:32:48,719

main parachutes were stored

2278

01:32:52,229 --> 01:32:50,480

so you can see that

2279

01:32:53,270 --> 01:32:52,239

it's a pretty compact space you know

2280

01:32:54,950 --> 01:32:53,280

it's a

2281

01:32:56,950 --> 01:32:54,960

the parachutes go through a very

2282

01:32:59,430 --> 01:32:56,960

thorough and well checked packing

2283

01:33:02,709 --> 01:32:59,440

process before they are actually stored

2284

01:33:06,390 --> 01:33:05,030

and the person in the middle helping to

2285

01:33:08,470 --> 01:33:06,400

properly park

2286

01:33:10,709 --> 01:33:08,480

a crew dragon exactly where they wanted

2287

01:33:12,709 --> 01:33:10,719

to be for that hatch to line up

2288

01:33:14,629 --> 01:33:12,719

perfectly with the egress platform just

2289

01:33:17,110 --> 01:33:14,639

like you see on a runway with airplanes

2290

01:33:19,590 --> 01:33:17,120

exactly or a friend when i'm not doing a

2291

01:33:21,030 --> 01:33:19,600

good parking job

2292

01:33:23,030 --> 01:33:21,040

you can see there

2293

01:33:25,910 --> 01:33:23,040

the windows for

2294

01:33:27,590 --> 01:33:25,920

the dragon capsule there on either side

2295

01:33:29,350 --> 01:33:27,600

of the side hatch

2296

01:33:32,390 --> 01:33:29,360

as you might notice the teams are

2297

01:33:34,870 --> 01:33:32,400

wearing their personal protective gear

2298

01:33:36,229 --> 01:33:34,880

to make sure that if there are any

2299

01:33:39,270 --> 01:33:36,239

vapors that they aren't breathing them

2300

01:33:50,470 --> 01:33:39,280

they're performing those checks now to

2301
01:33:54,629 --> 01:33:52,550
so coming up next we'll perform those

2302
01:33:55,510 --> 01:33:54,639
safety checks we will open the side

2303
01:33:57,669 --> 01:33:55,520
hatch

2304
01:33:58,870 --> 01:33:57,679
uh we'll see the crew they'll be

2305
01:34:01,750 --> 01:33:58,880
assisted

2306
01:34:03,830 --> 01:34:01,760
as they egress and make their way to the

2307
01:34:06,390 --> 01:34:03,840
medical bays for their standard

2308
01:34:08,950 --> 01:34:06,400
checkouts their standard post

2309
01:34:11,270 --> 01:34:08,960
mission posts flash down checkouts with

2310
01:34:13,270 --> 01:34:11,280
the spacex flight surgeon

2311
01:34:15,510 --> 01:34:13,280
and then after that they hop on a

2312
01:34:18,950 --> 01:34:15,520
helicopter and they get to head back to

2313
01:34:22,550 --> 01:34:20,629

and this view on the left again that's

2314

01:34:24,229 --> 01:34:22,560

still inside crew dragon

2315

01:34:26,470 --> 01:34:24,239

um

2316

01:34:27,990 --> 01:34:26,480

our astronauts just patiently waiting to

2317

01:34:30,870 --> 01:34:28,000

make sure that everything is safe for

2318

01:34:33,270 --> 01:34:30,880

them to exit letting teams on aboard the

2319

01:35:07,109 --> 01:34:33,280

recovery vessel shannon do their job as

2320

01:35:15,830 --> 01:35:09,830

dragon spacex standby for side hatch

2321

01:35:15,840 --> 01:35:21,350

[Applause]

2322

01:35:26,550 --> 01:35:23,189

all right we can see the crew there

2323

01:35:29,109 --> 01:35:26,560

taking off their ppe we got the

2324

01:35:30,790 --> 01:35:29,119

okay to open the hatch

2325

01:35:32,149 --> 01:35:30,800

that means the area is cleared of those

2326

01:35:33,750 --> 01:35:32,159

hyper goals

2327

01:35:35,750 --> 01:35:33,760

that were

2328

01:35:37,030 --> 01:35:35,760

that the fast boats were aiming to

2329

01:35:39,109 --> 01:35:37,040

detect as well as they got some

2330

01:35:46,310 --> 01:35:39,119

secondary checks once on board this

2331

01:35:49,990 --> 01:35:47,750

and again the first person that you'll

2332

01:35:52,790 --> 01:35:50,000

see peek their head into the capsule

2333

01:35:54,390 --> 01:35:52,800

will be the medical

2334

01:35:56,870 --> 01:35:54,400

officer making sure that everyone's

2335

01:35:58,870 --> 01:35:56,880

feeling well and the crew members will

2336

01:36:00,709 --> 01:35:58,880

be assisted out one by one

2337

01:36:16,950 --> 01:36:00,719

and escorted to those medical bays for

2338

01:36:22,310 --> 01:36:19,270

we had splashdown only 40 minutes ago so

2339

01:36:24,470 --> 01:36:22,320

in that time we have been able to

2340

01:36:27,270 --> 01:36:24,480

lift and prepare the capsule

2341

01:36:31,030 --> 01:36:27,280

for these astronauts to

2342

01:36:35,189 --> 01:36:32,550

right now they're just wiping down the

2343

01:36:38,390 --> 01:36:35,199

areas around the side hatch that might

2344

01:36:40,470 --> 01:36:38,400

still be a little wet from splashdown

2345

01:36:42,629 --> 01:36:40,480

just want to make sure that when the

2346

01:36:44,709 --> 01:36:42,639

side hatch is opened

2347

01:36:47,350 --> 01:36:44,719

and we installed the protective fittings

2348

01:36:49,430 --> 01:36:47,360

that everything is dry just to eliminate

2349

01:36:50,790 --> 01:36:49,440

any possibility that

2350

01:36:53,830 --> 01:36:50,800

you know nobody slips or anything

2351
01:36:57,510 --> 01:36:53,840
whenever they are making their way out

2352
01:37:08,390 --> 01:36:57,520
there we can see the side hatch is open

2353
01:37:12,470 --> 01:37:09,910
and that's their first friendly face

2354
01:37:14,629 --> 01:37:12,480
that they've gotten to see in person

2355
01:37:23,189 --> 01:37:14,639
in six months aside from their crewmates

2356
01:37:27,430 --> 01:37:25,510
the white fixture that we saw

2357
01:37:29,430 --> 01:37:27,440
just moments ago they're now placing

2358
01:37:33,270 --> 01:37:29,440
into the side hatch this is just a

2359
01:37:36,390 --> 01:37:33,280
protective cover to make sure that

2360
01:37:37,189 --> 01:37:36,400
whenever the crew members are egressing

2361
01:37:39,030 --> 01:37:37,199
that

2362
01:37:41,109 --> 01:37:39,040
they don't bump anything

2363
01:37:47,590 --> 01:37:41,119

around the hatch that protects not only

2364

01:37:52,790 --> 01:37:50,149

as most of you know we do reuse our

2365

01:37:55,189 --> 01:37:52,800

dragon capsules so making sure that we

2366

01:38:00,149 --> 01:37:55,199

avoid any damage during the ingress and

2367

01:38:03,830 --> 01:38:01,669

and again it's been less than an hour

2368

01:38:05,430 --> 01:38:03,840

since this crew splashed down about 45

2369

01:38:06,550 --> 01:38:05,440

minutes now

2370

01:38:07,669 --> 01:38:06,560

and

2371

01:38:09,350 --> 01:38:07,679

once they

2372

01:38:11,750 --> 01:38:09,360

are helped out of the vehicle they'll

2373

01:38:14,790 --> 01:38:11,760

move to those medical bays and within

2374

01:38:16,390 --> 01:38:14,800

really about an hour of them being

2375

01:38:17,990 --> 01:38:16,400

helped out of the vehicle they will be

2376

01:38:20,709 --> 01:38:18,000

loaded onto the helicopter and brought

2377

01:38:22,550 --> 01:38:20,719

back to land so again it's a very

2378

01:38:23,750 --> 01:38:22,560

um excellent process

2379

01:38:25,990 --> 01:38:23,760

of

2380

01:38:28,950 --> 01:38:26,000

getting getting back home um especially

2381

01:38:30,709 --> 01:38:28,960

to have just been in space for a couple

2382

01:38:35,669 --> 01:38:30,719

bunch of feedback hours the earpieces

2383

01:38:41,109 --> 01:38:38,870

that is a firm dragon we are imminently

2384

01:38:49,910 --> 01:38:41,119

going to be powering off the bilge pump

2385

01:38:54,390 --> 01:38:51,830

some of the things being passed out of

2386

01:38:57,350 --> 01:38:54,400

the spacecraft now are those tablets

2387

01:38:59,270 --> 01:38:57,360

that you could see earlier

2388

01:39:02,870 --> 01:38:59,280

that they space that the astronauts use

2389

01:39:06,149 --> 01:39:02,880

to monitor the procedures while they are

2390

01:39:14,470 --> 01:39:07,510

and still checking in with the

2391

01:39:17,189 --> 01:39:15,750

we've got a couple of other nasa

2392

01:39:30,070 --> 01:39:17,199

astronauts on board there you can see

2393

01:39:33,430 --> 01:39:31,910

you might notice that the

2394

01:39:36,470 --> 01:39:33,440

touch screen looks a little different

2395

01:39:37,350 --> 01:39:36,480

now than it did whenever the crew

2396

01:39:39,270 --> 01:39:37,360

was

2397

01:39:42,790 --> 01:39:39,280

on orbit

2398

01:39:44,870 --> 01:39:42,800

the seats have actually rotated since um

2399

01:39:46,149 --> 01:39:44,880

you know they were on orbit this is to

2400

01:39:49,510 --> 01:39:46,159

allow for

2401
01:39:50,550 --> 01:39:49,520
their bodies to be in a better ergonomic

2402
01:39:52,470 --> 01:39:50,560
position

2403
01:39:56,229 --> 01:39:52,480
in preparation for

2404
01:39:58,950 --> 01:39:56,239
the dynamic parts of reentry

2405
01:40:01,750 --> 01:39:58,960
so those seats have actuated

2406
01:40:03,430 --> 01:40:01,760
downward this allows it

2407
01:40:06,709 --> 01:40:03,440
allows the crew to get in and out a

2408
01:40:12,790 --> 01:40:08,870
and uh we also give the opportunity to

2409
01:40:14,310 --> 01:40:12,800
our photographers to get a couple of uh

2410
01:40:16,470 --> 01:40:14,320
images

2411
01:40:17,990 --> 01:40:16,480
of these crew members fresh back from

2412
01:40:19,990 --> 01:40:18,000
their space flight for three of them it

2413
01:40:23,350 --> 01:40:20,000

was their first space flight

2414

01:40:25,030 --> 01:40:23,360

and then for tom marshburn who um has a

2415

01:40:26,629 --> 01:40:25,040

bit more experience this was his third

2416

01:40:28,310 --> 01:40:26,639

space flight but while on orbit all of

2417

01:40:30,870 --> 01:40:28,320

these astronauts got to complete at

2418

01:40:34,390 --> 01:40:30,880

least one spacewalk um on the

2419

01:40:40,149 --> 01:40:37,109

so up next we should see some foot rests

2420

01:40:41,910 --> 01:40:40,159

come out we detach the foot rests again

2421

01:41:31,669 --> 01:40:41,920

to give a little bit more space for the

2422

01:41:34,709 --> 01:41:33,510

you can see that white protective

2423

01:41:37,030 --> 01:41:34,719

fitting there

2424

01:41:39,270 --> 01:41:37,040

protecting uh the

2425

01:41:40,629 --> 01:41:39,280

components of the side hatch we got a

2426

01:41:47,910 --> 01:41:40,639

good view of that and where that was

2427

01:41:52,149 --> 01:41:49,830

teams just speaking with the crew

2428

01:41:55,109 --> 01:41:52,159

members as i mentioned we saw the

2429

01:41:57,830 --> 01:41:55,119

tablets being removed we saw some photos

2430

01:42:01,030 --> 01:41:57,840

being taken um we have also oh and there

2431

01:42:03,189 --> 01:42:01,040

goes those there go the foot rests

2432

01:42:07,189 --> 01:42:03,199

that are used on orbit it will make it

2433

01:42:10,790 --> 01:42:09,189

be helped out of the vehicle they they

2434

01:42:13,510 --> 01:42:10,800

can actually remove the foot rest as

2435

01:42:15,189 --> 01:42:13,520

well once they are in space gives them a

2436

01:42:24,550 --> 01:42:15,199

little more room to float around and

2437

01:42:30,390 --> 01:42:26,070

those of you that have joined us

2438

01:42:32,950 --> 01:42:30,400

recently the crew 3 crew has splashed

2439

01:42:35,910 --> 01:42:32,960

down off the coast of tampa florida our

2440

01:42:36,709 --> 01:42:35,920

recovery vessel shannon has picked them

2441

01:42:39,510 --> 01:42:36,719

up

2442

01:42:40,950 --> 01:42:39,520

out of the water and we can see

2443

01:42:44,229 --> 01:42:40,960

there

2444

01:42:45,109 --> 01:42:44,239

the teams are preparing to assist the

2445

01:42:48,390 --> 01:42:45,119

crew

2446

01:42:50,390 --> 01:42:48,400

as they exit or egress the

2447

01:42:52,470 --> 01:42:50,400

capsule

2448

01:42:55,430 --> 01:42:52,480

that splashdown coming right on time at

2449

01:42:59,030 --> 01:42:55,440

9 43 p.m pacific

2450

01:43:00,950 --> 01:42:59,040

12 43 a.m eastern time

2451

01:43:12,870 --> 01:43:00,960

off the coast of tampa florida in the

2452

01:43:19,030 --> 01:43:16,149

the journey home is uh

2453

01:43:21,189 --> 01:43:19,040

not quite over for these astronauts

2454

01:43:25,350 --> 01:43:21,199

even though they are back on earth they

2455

01:43:27,590 --> 01:43:25,360

will be helped out of the

2456

01:43:29,510 --> 01:43:27,600

crew dragon vehicle they will have some

2457

01:43:32,390 --> 01:43:29,520

routine medical checks done before they

2458

01:43:34,709 --> 01:43:32,400

are loaded onto a helicopter dragon

2459

01:43:40,870 --> 01:43:34,719

spacex can you confirm that the audio is

2460

01:43:45,830 --> 01:43:42,950

spacex endurance yes that's much better

2461

01:43:45,840 --> 01:43:52,149

sure thanks sorry for the delay

2462

01:43:57,350 --> 01:43:53,750

sounds like that was the voice of

2463

01:43:59,590 --> 01:43:57,360

mission specialist kayla barron

2464

01:44:01,990 --> 01:43:59,600

we can see that the

2465

01:44:04,070 --> 01:44:02,000

slide has been put in place this helps

2466

01:44:20,629 --> 01:44:04,080

the astronauts

2467

01:44:26,590 --> 01:44:23,590

once again the crew 3 crew has splashed

2468

01:44:30,109 --> 01:44:26,600

down after spending a total of

2469

01:44:33,270 --> 01:44:30,119

177 days in space

2470

01:44:35,910 --> 01:44:33,280

175 of those days on the international

2471

01:44:40,149 --> 01:44:38,149

they saw quad a lot during their stay on

2472

01:44:42,070 --> 01:44:40,159

the space station including the arrival

2473

01:44:44,950 --> 01:44:42,080

of eight visiting vehicles

2474

01:44:47,430 --> 01:44:44,960

that includes the axiom one crew just a

2475

01:44:48,790 --> 01:44:47,440

couple of weeks ago as well as the crew

2476

01:45:01,510 --> 01:44:48,800

4 crew

2477

01:45:06,229 --> 01:45:03,910

and the crew today consisting of

2478

01:45:07,109 --> 01:45:06,239

european space agency astronaut matthias

2479

01:45:09,030 --> 01:45:07,119

marr

2480

01:45:11,830 --> 01:45:09,040

and

2481

01:45:14,390 --> 01:45:11,840

nasa astronauts raja chary tom marshburn

2482

01:45:16,790 --> 01:45:14,400

and kayla baron

2483

01:45:18,709 --> 01:45:16,800

chary and baron were part of the same

2484

01:45:20,950 --> 01:45:18,719

astronaut class astronaut selection

2485

01:45:22,310 --> 01:45:20,960

class so um they've done everything from

2486

01:45:25,590 --> 01:45:22,320

training together all the way through

2487

01:45:28,229 --> 01:45:25,600

their first space flight together

2488

01:45:29,830 --> 01:45:28,239

that's really cool they were the turtles

2489

01:45:32,310 --> 01:45:29,840

they were the turtles and we saw a

2490

01:45:47,430 --> 01:45:32,320

turtle as their zero gravity indicator

2491

01:45:51,910 --> 01:45:49,510

there are a couple more turtles on board

2492

01:46:01,030 --> 01:45:51,920

now with bob hines and jessica watkins

2493

01:46:22,229 --> 01:46:03,350

and it looks like rasha is being helped

2494

01:46:27,590 --> 01:46:24,550

i could imagine that after spending six

2495

01:46:33,030 --> 01:46:27,600

months in space all of this must feel

2496

01:46:39,590 --> 01:46:35,189

we heard him make a joke earlier about

2497

01:46:45,109 --> 01:46:42,790

we can see the commander raja chari has

2498

01:46:48,870 --> 01:46:45,119

now egressed the capsule and is making

2499

01:46:50,390 --> 01:46:48,880

his way onto the roll away

2500

01:46:55,270 --> 01:46:50,400

looked like we had some thumbs up there

2501

01:47:01,510 --> 01:46:57,510

yes rasha looks to be in good spirits

2502

01:47:01,520 --> 01:47:10,070

on his first space flight

2503

01:47:14,229 --> 01:47:11,750

and of course this is just a precaution

2504

01:47:16,310 --> 01:47:14,239

after spending six months in space

2505

01:47:19,430 --> 01:47:16,320

and being on a ship as well whenever you

2506

01:47:21,510 --> 01:47:19,440

return it helps to have a seat and

2507

01:47:23,270 --> 01:47:21,520

maybe be helped to those medical bays

2508

01:47:25,910 --> 01:47:23,280

that's very similar like i mentioned to

2509

01:47:28,709 --> 01:47:25,920

a soyuz landing where crew members are

2510

01:47:31,910 --> 01:47:28,719

carried to the seats and then carried to

2511

01:47:33,430 --> 01:47:31,920

the medical tent so this just uh

2512

01:47:34,950 --> 01:47:33,440

makes it a little easier for our crew

2513

01:47:37,669 --> 01:47:34,960

members who are just experiencing

2514

01:47:39,109 --> 01:47:37,679

gravity for the first time in six months

2515

01:47:41,030 --> 01:47:39,119

of course they do work out about two

2516

01:47:44,550 --> 01:47:41,040

hours a day on the space station to help

2517

01:47:46,790 --> 01:47:44,560

maintain muscle mass and bone density

2518

01:47:48,470 --> 01:47:46,800

but when they are regaining this

2519

01:47:50,470 --> 01:47:48,480

equilibrium

2520

01:47:52,310 --> 01:47:50,480

every little bit helps absolutely

2521

01:47:53,109 --> 01:47:52,320

um you know they went through

2522

01:48:10,470 --> 01:47:53,119

a

2523

01:48:15,030 --> 01:48:10,480

to

2524

01:48:19,510 --> 01:48:16,629

i believe that's uh

2525

01:48:25,830 --> 01:48:19,520

tom marshburn nasa astronaut being

2526
01:48:30,229 --> 01:48:27,750
that means our two mission specialists

2527
01:48:32,629 --> 01:48:30,239
matthias maher and

2528
01:48:35,669 --> 01:48:32,639
kayla baron are still inside and there's

2529
01:48:35,679 --> 01:48:58,470
also looks to be in great spirits

2530
01:49:02,149 --> 01:49:00,550
you might hear some background noise

2531
01:49:03,910 --> 01:49:02,159
here uh

2532
01:49:06,149 --> 01:49:03,920
behind leah and i

2533
01:49:09,750 --> 01:49:06,159
you know we we're at spacex headquarters

2534
01:49:12,310 --> 01:49:09,760
in hawthorne california um second shift

2535
01:49:14,550 --> 01:49:12,320
uh production is well underway the work

2536
01:49:16,470 --> 01:49:14,560
never stops yeah despite splashdown

2537
01:49:18,950 --> 01:49:16,480
we're still a live uh operations

2538
01:49:21,669 --> 01:49:18,960

environment so we might hear some some

2539

01:49:28,390 --> 01:49:21,679

production noise in the background

2540

01:49:32,709 --> 01:49:30,149

and we're coming up on about an hour

2541

01:49:35,109 --> 01:49:32,719

since splashdown uh that happened at 9

2542

01:49:39,109 --> 01:49:35,119

43 p.m pacific time we have two crew

2543

01:49:42,870 --> 01:49:39,119

members now out of crew dragon endurance

2544

01:49:45,189 --> 01:49:42,880

breathing their first breaths of

2545

01:49:46,470 --> 01:49:45,199

air on earth for the first time in six

2546

01:49:51,270 --> 01:49:46,480

months

2547

01:49:55,589 --> 01:49:53,270

and being assisted to

2548

01:49:58,550 --> 01:49:55,599

the medical bays for those routine

2549

01:50:01,910 --> 01:50:00,229

they also were able to speak with a

2550

01:50:03,830 --> 01:50:01,920

flight surgeon

2551
01:50:06,629 --> 01:50:03,840
upon splashdown to make sure that they

2552
01:50:08,790 --> 01:50:06,639
were feeling okay

2553
01:50:10,629 --> 01:50:08,800
and then after their checks they will be

2554
01:50:12,149 --> 01:50:10,639
transported to the helicopter on the

2555
01:50:14,149 --> 01:50:12,159
helipad

2556
01:50:15,510 --> 01:50:14,159
that's waiting to take them to shore

2557
01:50:17,830 --> 01:50:15,520
where they will

2558
01:50:19,830 --> 01:50:17,840
part ways we'll have

2559
01:50:21,669 --> 01:50:19,840
our nasa astronauts kayla baron rasha

2560
01:50:23,510 --> 01:50:21,679
chari and tom marshburn coming back to

2561
01:50:26,070 --> 01:50:23,520
houston

2562
01:50:27,030 --> 01:50:26,080
meanwhile matthias mara will board an

2563
01:50:29,189 --> 01:50:27,040

issa

2564

01:50:35,750 --> 01:50:29,199

european space agency plane to take him

2565

01:50:39,350 --> 01:50:37,589

we mentioned before that when the side

2566

01:50:42,470 --> 01:50:39,360

hatch was opened it's the first time

2567

01:50:45,510 --> 01:50:42,480

that that hatch was opened since the

2568

01:50:47,669 --> 01:50:45,520

launch of crew 3 back in november of

2569

01:50:48,470 --> 01:50:47,679

2021

2570

01:50:49,350 --> 01:50:48,480

so

2571

01:50:51,589 --> 01:50:49,360

it's

2572

01:50:53,669 --> 01:50:51,599

you know we utilize the forward hatch to

2573

01:50:56,070 --> 01:50:53,679

dock and undock with the international

2574

01:50:58,709 --> 01:50:56,080

space station but that side hatch

2575

01:51:00,870 --> 01:50:58,719

you know upon opening is really the the

2576

01:51:03,830 --> 01:51:00,880

first breath of fresh air for the

2577

01:51:06,390 --> 01:51:03,840

astronauts since launch although it is

2578

01:51:07,830 --> 01:51:06,400

it is florida and as i mentioned i just

2579

01:51:09,350 --> 01:51:07,840

returned from cape canaveral myself a

2580

01:51:11,189 --> 01:51:09,360

couple days ago and it always astounds

2581

01:51:12,310 --> 01:51:11,199

me that almost no matter what time of

2582

01:51:14,070 --> 01:51:12,320

year

2583

01:51:17,030 --> 01:51:14,080

there's always humidity in the florida

2584

01:51:19,589 --> 01:51:17,040

air so i can imagine that even when they

2585

01:51:21,830 --> 01:51:19,599

do open the hatch it's like yes fresh

2586

01:51:24,470 --> 01:51:21,840

air but it's also humidity whereas the

2587

01:51:26,790 --> 01:51:24,480

interior of dragon capsule

2588

01:51:29,270 --> 01:51:26,800

you know is air-conditioned

2589

01:51:32,229 --> 01:51:29,280

so i can imagine when it's nice to have

2590

01:51:34,550 --> 01:51:32,239

new air it might not necessarily

2591

01:51:36,229 --> 01:51:34,560

have a fresh feel to it because of that

2592

01:51:39,109 --> 01:51:36,239

that humidity

2593

01:51:40,950 --> 01:51:39,119

i'm sure for uh our nasa astronauts who

2594

01:51:49,270 --> 01:51:40,960

live in houston it probably feels a lot

2595

01:51:52,950 --> 01:51:50,950

and again everything has moved pretty

2596

01:51:55,430 --> 01:51:52,960

smoothly tonight uh with the return of

2597

01:51:56,229 --> 01:51:55,440

crew dragon we even had views from prior

2598

01:52:00,070 --> 01:51:56,239

to

2599

01:52:01,109 --> 01:52:00,080

drug parachute deployment from the wb-57

2600

01:52:02,790 --> 01:52:01,119

thermal

2601
01:52:04,149 --> 01:52:02,800
camera that

2602
01:52:06,229 --> 01:52:04,159
allowed us to see not only drug

2603
01:52:08,470 --> 01:52:06,239
deployment but also deployment of four

2604
01:52:09,990 --> 01:52:08,480
main parachutes successfully which

2605
01:52:12,310 --> 01:52:10,000
allowed the

2606
01:52:14,629 --> 01:52:12,320
capsule to splash down gently at around

2607
01:52:23,350 --> 01:52:14,639
15 miles per hour off the coast of tampa

2608
01:52:26,870 --> 01:52:26,070
so right now team members are working

2609
01:52:29,589 --> 01:52:26,880
with

2610
01:52:30,870 --> 01:52:29,599
mission specialist kayla barron to

2611
01:52:31,830 --> 01:52:30,880
assist her

2612
01:52:56,149 --> 01:52:31,840
out of

2613
01:53:02,070 --> 01:52:59,030

that is mission specialist kayla barron

2614

01:53:22,709 --> 01:53:02,080

receiving some help as she

2615

01:53:28,870 --> 01:53:25,510

all right looks like kayla baron has

2616

01:53:30,950 --> 01:53:28,880

made her way down dragon's

2617

01:53:34,070 --> 01:53:30,960

accessibility slide

2618

01:53:35,830 --> 01:53:34,080

and is going to be making her way to the

2619

01:53:46,229 --> 01:53:35,840

medical tents

2620

01:53:51,589 --> 01:53:49,030

we have one more crew member inside

2621

01:53:53,750 --> 01:53:51,599

crew dragon that's european space agency

2622

01:54:20,070 --> 01:53:53,760

astronaut matthias

2623

01:54:26,310 --> 01:54:22,229

and that'll be our last crew member to

2624

01:54:28,149 --> 01:54:26,320

exit crew dragon endurance all four

2625

01:54:30,229 --> 01:54:28,159

will now be

2626
01:54:32,390 --> 01:54:30,239
receiving uh those routine medical

2627
01:54:35,669 --> 01:54:32,400
checks inside the bays on recovery

2628
01:54:37,910 --> 01:54:35,679
vessel shannon before being escorted to

2629
01:54:40,390 --> 01:54:37,920
the helicopter that will take them back

2630
01:54:41,750 --> 01:54:40,400
to land their

2631
01:54:43,669 --> 01:54:41,760
first

2632
01:54:51,669 --> 01:54:43,679
steps on dry land

2633
01:54:55,350 --> 01:54:54,550
once the recovery vessel

2634
01:54:58,149 --> 01:54:55,360
and

2635
01:55:00,709 --> 01:54:58,159
the dragon castle get back to

2636
01:55:03,109 --> 01:55:00,719
the port the recovery team will perform

2637
01:55:05,350 --> 01:55:03,119
additional inspections

2638
01:55:07,589 --> 01:55:05,360

on on the capsule before

2639

01:55:09,750 --> 01:55:07,599

loading dragon onto a flatbed truck at

2640

01:55:12,310 --> 01:55:09,760

the spacex facility in cape canaveral

2641

01:55:14,550 --> 01:55:12,320

for post-processing

2642

01:55:16,950 --> 01:55:14,560

we definitely saw a big thumbs up from

2643

01:55:19,270 --> 01:55:16,960

matthias mar

2644

01:55:22,070 --> 01:55:19,280

on coming back from his first space

2645

01:55:26,070 --> 01:55:23,830

and uh now that

2646

01:55:27,669 --> 01:55:26,080

russia tom kayla and matthias are safely

2647

01:55:29,830 --> 01:55:27,679

back home on earth and getting checked

2648

01:55:32,070 --> 01:55:29,840

out by the nasa medical team we're going

2649

01:55:34,310 --> 01:55:32,080

to wrap up our live coverage of their

2650

01:55:36,870 --> 01:55:34,320

historic return i do want to mention

2651

01:55:38,470 --> 01:55:36,880

that the media telecon is

2652

01:55:41,350 --> 01:55:38,480

now being moved up to start at

2653

01:55:43,270 --> 01:55:41,360

approximately 2 a.m eastern time so make

2654

01:55:46,229 --> 01:55:43,280

sure to tune into that

2655

01:55:48,550 --> 01:55:46,239

this all kicked off on november 10 2021

2656

01:55:50,870 --> 01:55:48,560

from historic launch pad 39a at the

2657

01:55:52,790 --> 01:55:50,880

kennedy space center in florida after

2658

01:55:55,750 --> 01:55:52,800

successful liftoff and separation from

2659

01:55:58,149 --> 01:55:55,760

falcon 9 raja tom kayla and matthias

2660

01:56:00,149 --> 01:55:58,159

made a 24-hour flight onboard dragon to

2661

01:56:01,830 --> 01:56:00,159

the international space station since

2662

01:56:03,830 --> 01:56:01,840

arriving at the space station they spent

2663

01:56:07,109 --> 01:56:03,840

more than they spent nearly six months

2664

01:56:10,229 --> 01:56:07,119

as members of expedition 66 67 that

2665

01:56:11,990 --> 01:56:10,239

would be 175 days to be exact executing

2666

01:56:13,910 --> 01:56:12,000

science experiments spacewalks and

2667

01:56:17,030 --> 01:56:13,920

repairs while aboard the orbiting

2668

01:56:20,870 --> 01:56:17,040

laboratory of course their journey home

2669

01:56:23,830 --> 01:56:20,880

began last night may 4th star wars day

2670

01:56:27,669 --> 01:56:23,840

when they closed the hatch to dragon and

2671

01:56:29,830 --> 01:56:27,679

undocked later at 10 20 p.m pacific time

2672

01:56:31,669 --> 01:56:29,840

after four successful departure burns

2673

01:56:35,189 --> 01:56:31,679

and a phasing burn to line up their

2674

01:56:37,189 --> 01:56:35,199

orbit raja tom kayla and matthias rested

2675

01:56:39,750 --> 01:56:37,199

for a few hours before waking up to

2676
01:56:41,510 --> 01:56:39,760
prepare for re-entry this morning as you

2677
01:56:43,750 --> 01:56:41,520
saw earlier we've jettisoned dragon's

2678
01:56:46,870 --> 01:56:43,760
trunk and performed our final on-orbit

2679
01:56:48,550 --> 01:56:46,880
maneuver the deorbit burn at about 8 53

2680
01:56:51,350 --> 01:56:48,560
p.m pacific

2681
01:56:53,109 --> 01:56:51,360
to send dragon on the path home the

2682
01:56:54,950 --> 01:56:53,119
spacecraft re-entered the earth's

2683
01:56:56,470 --> 01:56:54,960
atmosphere and slowed its descent with

2684
01:56:58,390 --> 01:56:56,480
two successful deployment with

2685
01:56:59,589 --> 01:56:58,400
successful deployment of its two drogue

2686
01:57:03,910 --> 01:56:59,599
parachutes

2687
01:57:06,310 --> 01:57:03,920
course with the final splashdown

2688
01:57:09,750 --> 01:57:06,320

occurring off the coast of florida

2689

01:57:11,830 --> 01:57:09,760

at 9 43 pm pacific time

2690

01:57:14,070 --> 01:57:11,840

following that successful splashdown we

2691

01:57:16,229 --> 01:57:14,080

saw dragon recovery experts move in and

2692

01:57:18,550 --> 01:57:16,239

prepare dragon endurance for its lift

2693

01:57:20,629 --> 01:57:18,560

onto the recovery vessel and just a

2694

01:57:23,270 --> 01:57:20,639

little less than an hour ago uh

2695

01:57:25,189 --> 01:57:23,280

following splash and and in just

2696

01:57:28,070 --> 01:57:25,199

in less than an hour following

2697

01:57:30,310 --> 01:57:28,080

splashdown we saw raja tom kayla and

2698

01:57:32,149 --> 01:57:30,320

matthias make their way out of dragon

2699

01:57:35,109 --> 01:57:32,159

and into the recovery ship's medical

2700

01:57:36,950 --> 01:57:35,119

facilities safe and sound so next up

2701

01:57:39,669 --> 01:57:36,960

they will catch a helicopter flight back

2702

01:57:41,510 --> 01:57:39,679

to shore they'll transfer to an aircraft

2703

01:57:43,189 --> 01:57:41,520

that will take them home so russia tom

2704

01:57:45,030 --> 01:57:43,199

and kayla will take that nasa plane for

2705

01:57:47,270 --> 01:57:45,040

the short flight back to houston and

2706

01:57:49,430 --> 01:57:47,280

matthias will head back to europe they

2707

01:57:52,390 --> 01:57:49,440

will be reunited with their families to

2708

01:57:54,149 --> 01:57:52,400

bring an end to this mission it has been

2709

01:57:55,990 --> 01:57:54,159

a true honor and a privilege to share

2710

01:57:58,149 --> 01:57:56,000

their journey with you as we continue

2711

01:58:00,629 --> 01:57:58,159

this new era in human space flight but

2712

01:58:01,750 --> 01:58:00,639

of course we always have more coming up

2713

01:58:04,229 --> 01:58:01,760

soon

2714

01:58:06,709 --> 01:58:04,239

uh return this morning marks the end of

2715

01:58:09,030 --> 01:58:06,719

the direct handover we just executed

2716

01:58:11,510 --> 01:58:09,040

after successfully launching the crew 4

2717

01:58:14,149 --> 01:58:11,520

mission to the space station just a

2718

01:58:16,070 --> 01:58:14,159

little over a week ago it's been an

2719

01:58:17,750 --> 01:58:16,080

incredible honor to

2720

01:58:20,390 --> 01:58:17,760

enjoy to share this mission with the

2721

01:58:22,629 --> 01:58:20,400

public all the teams from spacex and

2722

01:58:24,790 --> 01:58:22,639

nasa continue to work hard to keep

2723

01:58:27,270 --> 01:58:24,800

america leading the world in human space

2724

01:58:29,830 --> 01:58:27,280

flight continue to follow spacex and

2725

01:58:32,070 --> 01:58:29,840

nasa online and on social media for

2726
01:58:33,990 --> 01:58:32,080
updates for the very latest on crew and

2727
01:58:35,990 --> 01:58:34,000
cargo flights to and from the

2728
01:58:37,990 --> 01:58:36,000
international space station and we'll

2729
01:58:40,149 --> 01:58:38,000
continue to share the progress of rasha

2730
01:58:42,550 --> 01:58:40,159
tom kayla and matthias as they travel

2731
01:58:44,709 --> 01:58:42,560
back home on social media again that

2732
01:58:48,070 --> 01:58:44,719
post splashdown media telecon coming up

2733
01:58:50,550 --> 01:58:48,080
at about 2 a.m eastern time where

2734
01:58:52,870 --> 01:58:50,560
leadership from nasa esa and spacex will

2735
01:58:55,589 --> 01:58:52,880
share a final update as we conclude the

2736
01:58:57,750 --> 01:58:55,599
successful mission so one more thank you

2737
01:58:59,750 --> 01:58:57,760
for tuning in and cheering on raja tom

2738
01:59:01,830 --> 01:58:59,760

kayla and matthias as they head home and

2739

01:59:04,070 --> 01:59:01,840

of course we'll see you again very soon

2740

01:59:05,669 --> 01:59:04,080

when we once again launch astronauts to

2741

01:59:08,709 --> 01:59:05,679

the international space station from

2742

01:59:14,720 --> 01:59:08,719

america on nasa's spacex's mission so