

A blue house-shaped graphic with a white outline. Inside the house, there is a white NASA logo (meatball) in the center of the roof. Below the roofline, the words "NASA AT HOME" are written in large, white, sans-serif capital letters.

NASA AT HOME

SPACEPORT SERIES



1
00:00:16,810 --> 00:00:38,310

[Music]

2
00:00:40,790 --> 00:00:39,110

welcome back

3
00:00:42,790 --> 00:00:40,800

i'm joshua santora coming to you from

4
00:00:44,630 --> 00:00:42,800

near the kennedy space center

5
00:00:45,910 --> 00:00:44,640

when i left you last time i thought we

6
00:00:46,790 --> 00:00:45,920

would be in full swing of launch

7
00:00:48,389 --> 00:00:46,800

preparation

8
00:00:49,750 --> 00:00:48,399

but we've had a couple delays and so we

9
00:00:51,350 --> 00:00:49,760

figured we'd take time to hit another

10
00:00:53,910 --> 00:00:51,360

episode in our series

11
00:00:54,869 --> 00:00:53,920

of how the nasa's kennedy space center

12
00:00:57,750 --> 00:00:54,879

is enabling

13
00:00:59,189 --> 00:00:57,760

deep space human exploration today we're

14

00:01:00,709 --> 00:00:59,199

going to head on gateway

15

00:01:02,389 --> 00:01:00,719

and how our commercial collaborations

16

00:01:05,350 --> 00:01:02,399

and partnerships are helping us

17

00:01:06,550 --> 00:01:05,360

explore and even pioneer new worlds

18

00:01:08,710 --> 00:01:06,560

gateway in short

19

00:01:10,550 --> 00:01:08,720

is an outpost that will be orbiting the

20

00:01:12,950 --> 00:01:10,560

moon that will enable us to reach a

21

00:01:14,950 --> 00:01:12,960

variety of locations on the moon surface

22

00:01:17,350 --> 00:01:14,960

as well as travel to mars and other deep

23

00:01:19,350 --> 00:01:17,360

space destinations

24

00:01:20,789 --> 00:01:19,360

it is a multi-center effort and the

25

00:01:23,510 --> 00:01:20,799

kennedy space center has been given the

26

00:01:25,670 --> 00:01:23,520

responsibility of the logistics element

27

00:01:27,350 --> 00:01:25,680

so to learn more about what that is and

28

00:01:27,990 --> 00:01:27,360

what's involved with making logistics

29

00:01:31,510 --> 00:01:28,000

happen

30

00:01:33,350 --> 00:01:31,520

i'm joined now by jeff smith who is the

31

00:01:35,590 --> 00:01:33,360

element architect for deep space

32

00:01:38,149 --> 00:01:35,600

logistics jeff how you doing today

33

00:01:39,990 --> 00:01:38,159

i'm doing great how about you josh

34

00:01:41,590 --> 00:01:40,000

thanks yeah i'm doing really well uh

35

00:01:41,990 --> 00:01:41,600

always excited to talk about gateway

36

00:01:45,190 --> 00:01:42,000

it's

37

00:01:46,789 --> 00:01:45,200

time i talk to somebody about it i feel

38

00:01:48,870 --> 00:01:46,799

like i'm learning so much more

39

00:01:51,590 --> 00:01:48,880

so excited to hear from you tell us more

40

00:01:54,710 --> 00:01:51,600

about your specific role with gateway

41

00:01:57,190 --> 00:01:54,720

the deep space logistics architect

42

00:01:58,789 --> 00:01:57,200

uh looks forward at what are the crew

43

00:02:01,030 --> 00:01:58,799

and the cargo needs going to be

44

00:02:03,030 --> 00:02:01,040

in the next three years the next five

45

00:02:05,030 --> 00:02:03,040

years the next 15 years

46

00:02:06,709 --> 00:02:05,040

it's my job to try to understand all of

47

00:02:08,469 --> 00:02:06,719

that and then boil it down into

48

00:02:10,229 --> 00:02:08,479

something real and implementable that we

49

00:02:11,990 --> 00:02:10,239

can go do

50

00:02:13,750 --> 00:02:12,000

i mentioned a minute ago that this is a

51
00:02:14,710 --> 00:02:13,760
multi-center effort and kennedy has a

52
00:02:16,630 --> 00:02:14,720
piece of that

53
00:02:18,150 --> 00:02:16,640
can you unpack for me a little bit more

54
00:02:19,750 --> 00:02:18,160
what is this logistics element and

55
00:02:22,869 --> 00:02:19,760
kennedy's role in making that happen

56
00:02:24,790 --> 00:02:22,879
yeah the logistics element is one of the

57
00:02:25,990 --> 00:02:24,800
modules of gateway one of the parts of

58
00:02:28,790 --> 00:02:26,000
gateway gateway

59
00:02:30,630 --> 00:02:28,800
uh in its very early phases will have a

60
00:02:33,670 --> 00:02:30,640
power and propulsion element

61
00:02:35,750 --> 00:02:33,680
uh and a halo element a habitation and

62
00:02:36,390 --> 00:02:35,760
logistics outpost element does two small

63
00:02:38,070 --> 00:02:36,400

parts

64

00:02:39,670 --> 00:02:38,080

only the halo element actually could

65

00:02:41,589 --> 00:02:39,680

have people in it uh

66

00:02:43,270 --> 00:02:41,599

orion will dock there the human lander

67

00:02:44,550 --> 00:02:43,280

system will dock there and a logistics

68

00:02:47,190 --> 00:02:44,560

vehicle will dock there

69

00:02:48,070 --> 00:02:47,200

that's where we come in uh so the the

70

00:02:50,790 --> 00:02:48,080

logistics

71

00:02:51,430 --> 00:02:50,800

vehicle this this dragon xl in this case

72

00:02:53,190 --> 00:02:51,440

uh

73

00:02:55,110 --> 00:02:53,200

our first contractor and partner to be

74

00:02:57,509 --> 00:02:55,120

able to uh fly to the gateway

75

00:02:58,390 --> 00:02:57,519

uh that vehicle you know it really

76

00:03:01,030 --> 00:02:58,400

doesn't look

77

00:03:02,630 --> 00:03:01,040

like the dragon 2 capsule that just

78

00:03:03,509 --> 00:03:02,640

brought crew back successfully from the

79

00:03:06,149 --> 00:03:03,519

iss

80

00:03:07,750 --> 00:03:06,159

but under the hood it's all the same

81

00:03:09,589 --> 00:03:07,760

only with a couple of little tweaks

82

00:03:11,430 --> 00:03:09,599

and a much bigger section for putting

83

00:03:13,110 --> 00:03:11,440

cargo in there

84

00:03:14,550 --> 00:03:13,120

jeff just listening to you today i think

85

00:03:17,509 --> 00:03:14,560

i had an aha moment

86

00:03:17,910 --> 00:03:17,519

i've been envisioning this as a one-time

87

00:03:21,430 --> 00:03:17,920

uh

88

00:03:23,110 --> 00:03:21,440

sounds like that's not the case that

89

00:03:26,470 --> 00:03:23,120

this is actually a recurring mission

90

00:03:28,869 --> 00:03:26,480

is that true it is uh uh

91

00:03:31,030 --> 00:03:28,879

a recurring set of missions and we're

92

00:03:32,149 --> 00:03:31,040

nominally expecting maybe one mission

93

00:03:34,789 --> 00:03:32,159

per year uh

94

00:03:35,910 --> 00:03:34,799

over the lifetime of gateway uh the the

95

00:03:38,550 --> 00:03:35,920

vehicle will be

96

00:03:40,390 --> 00:03:38,560

loaded with over 5000 kilograms of cargo

97

00:03:41,430 --> 00:03:40,400

and supplies and experiments and and

98

00:03:43,589 --> 00:03:41,440

other types of things

99

00:03:44,710 --> 00:03:43,599

it will go up autonomously docked to the

100

00:03:46,390 --> 00:03:44,720

gateway uh

101
00:03:47,750 --> 00:03:46,400
then it will stay there for up to one

102
00:03:49,750 --> 00:03:47,760
year while the crew

103
00:03:51,190 --> 00:03:49,760
come and uh do their sorties to the

104
00:03:52,149 --> 00:03:51,200
lunar surface or another work that they

105
00:03:54,630 --> 00:03:52,159
have to do

106
00:03:56,309 --> 00:03:54,640
after the crew have left uh the trash

107
00:03:57,350 --> 00:03:56,319
will be will have been loaded into the

108
00:04:01,030 --> 00:03:57,360
dragon xl

109
00:04:02,630 --> 00:04:01,040
will depart

110
00:04:04,229 --> 00:04:02,640
and then go into a disposal orbit

111
00:04:06,229 --> 00:04:04,239
probably somewhere

112
00:04:07,990 --> 00:04:06,239
you know going around the sun where it

113
00:04:10,229 --> 00:04:08,000

will be safe and and not

114

00:04:12,470 --> 00:04:10,239

interfere with other missions as the

115

00:04:13,030 --> 00:04:12,480

series suggests and as nasa missions are

116

00:04:14,869 --> 00:04:13,040

clear

117

00:04:16,069 --> 00:04:14,879

uh the moon is not the final destination

118

00:04:17,830 --> 00:04:16,079

although it's really important

119

00:04:19,590 --> 00:04:17,840

we're headed to places further mars and

120

00:04:21,590 --> 00:04:19,600

beyond so

121

00:04:23,830 --> 00:04:21,600

how is gateway enabling that sort of

122

00:04:25,830 --> 00:04:23,840

exploration beyond the moon

123

00:04:27,189 --> 00:04:25,840

uh this is going to be the proving

124

00:04:29,189 --> 00:04:27,199

ground you know where we've gone from

125

00:04:31,030 --> 00:04:29,199

iss and low earth orbit where we're only

126

00:04:31,909 --> 00:04:31,040

just a few hours away from help should

127

00:04:34,070 --> 00:04:31,919

we need it

128

00:04:36,550 --> 00:04:34,080

uh we're moving out to gateway here um

129

00:04:38,710 --> 00:04:36,560

you know 240 000 miles from earth

130

00:04:40,390 --> 00:04:38,720

several days journey to get there or to

131

00:04:43,110 --> 00:04:40,400

get home if something uh

132

00:04:44,070 --> 00:04:43,120

something needs to be done uh gateway is

133

00:04:45,990 --> 00:04:44,080

going to really

134

00:04:47,510 --> 00:04:46,000

increase the level of independence that

135

00:04:50,629 --> 00:04:47,520

the crew need to have

136

00:04:52,310 --> 00:04:50,639

in order to do the operations uh in this

137

00:04:54,230 --> 00:04:52,320

remote environment with longer and

138

00:04:56,230 --> 00:04:54,240

longer time delays between

139

00:04:57,990 --> 00:04:56,240

earth and gateway and then eventually

140

00:04:59,510 --> 00:04:58,000

earth and mars communication

141

00:05:01,830 --> 00:04:59,520

gateway is going to be the proving

142

00:05:03,430 --> 00:05:01,840

ground for all of that and then

143

00:05:05,830 --> 00:05:03,440

when we do need to start moving on to

144

00:05:07,909 --> 00:05:05,840

mars gateway is a great staging point it

145

00:05:10,150 --> 00:05:07,919

really doesn't take a lot of energy

146

00:05:11,430 --> 00:05:10,160

for a vehicle that's docked at gateway

147

00:05:13,350 --> 00:05:11,440

to then boost itself

148

00:05:15,270 --> 00:05:13,360

into an orbit that can take it all the

149

00:05:17,270 --> 00:05:15,280

way to mars a mars transit orbit

150

00:05:19,029 --> 00:05:17,280

so gateway is going to stay a part of

151

00:05:21,270 --> 00:05:19,039

our program for a long time

152

00:05:23,110 --> 00:05:21,280

has that staging point that hopping off

153

00:05:24,629 --> 00:05:23,120

point to mars

154

00:05:26,469 --> 00:05:24,639

jeff can't thank you enough i appreciate

155

00:05:28,310 --> 00:05:26,479

you being here uh good luck to you

156

00:05:30,469 --> 00:05:28,320

and the entire team i know there are

157

00:05:33,110 --> 00:05:30,479

some very fun and exciting but very busy

158

00:05:34,790 --> 00:05:33,120

years ahead of you guys

159

00:05:36,390 --> 00:05:34,800

thank you thank you josh great to talk

160

00:05:38,150 --> 00:05:36,400

with you

161

00:05:40,710 --> 00:05:38,160

there's no mystery that we're relying

162

00:05:42,469 --> 00:05:40,720

heavily on spacex and the dragon xl

163

00:05:44,629 --> 00:05:42,479

to make the logistics element for

164

00:05:46,550 --> 00:05:44,639

gateway happen uh but they are far from

165

00:05:48,310 --> 00:05:46,560

the only company that is helping support

166

00:05:50,550 --> 00:05:48,320

our exploration efforts

167

00:05:52,629 --> 00:05:50,560

to unpack more about the the broad look

168

00:05:55,189 --> 00:05:52,639

at commercialization and exploration

169

00:05:56,790 --> 00:05:55,199

i'm joined now by mary faller who is a

170

00:05:57,830 --> 00:05:56,800

senior mission manager with the launch

171

00:05:59,029 --> 00:05:57,840

services program

172

00:06:02,230 --> 00:05:59,039

and they call the kennedy space center

173

00:06:05,990 --> 00:06:02,240

home mary thanks for joining me

174

00:06:07,830 --> 00:06:06,000

absolutely mary looking at the past

175

00:06:09,430 --> 00:06:07,840

of kind of the way nasa's done business

176

00:06:11,029 --> 00:06:09,440

with our big space programs

177

00:06:12,950 --> 00:06:11,039

we have done a lot of dictating to

178

00:06:13,510 --> 00:06:12,960

contractors for things like the space

179

00:06:16,150 --> 00:06:13,520

shuttle

180

00:06:18,309 --> 00:06:16,160

uh we're working we're owning this

181

00:06:20,070 --> 00:06:18,319

process but now we're shifting gears

182

00:06:22,150 --> 00:06:20,080

and this commercialization really means

183

00:06:23,510 --> 00:06:22,160

that we are operating like a partner

184

00:06:24,870 --> 00:06:23,520

um can you tell me more about the

185

00:06:27,270 --> 00:06:24,880

changing landscape and what that means

186

00:06:31,029 --> 00:06:30,070

well so nasa lsp we've actually been

187

00:06:33,990 --> 00:06:31,039

doing this for

188

00:06:35,029 --> 00:06:34,000

over 20 years launch vehicles have been

189

00:06:38,950 --> 00:06:35,039

launching

190

00:06:41,830 --> 00:06:38,960

commercial for decades obviously

191

00:06:42,950 --> 00:06:41,840

so uh you know historically we nasa

192

00:06:45,990 --> 00:06:42,960

bought hardware

193

00:06:49,670 --> 00:06:46,000

uh they owned everything they owned from

194

00:06:52,070 --> 00:06:49,680

the design they owned how to build it

195

00:06:54,710 --> 00:06:52,080

uh but now we're transitioning into

196

00:06:57,350 --> 00:06:54,720

buying just a service so we just say

197

00:06:59,029 --> 00:06:57,360

we need to go up into this orbit get us

198

00:07:00,550 --> 00:06:59,039

there i don't care how you do it just

199

00:07:03,830 --> 00:07:00,560

make sure it's safe

200

00:07:04,790 --> 00:07:03,840

and so we don't own all of the interim

201
00:07:07,510 --> 00:07:04,800
steps

202
00:07:09,749 --> 00:07:07,520
and now we just have targeted insight

203
00:07:10,070 --> 00:07:09,759
into what the contractor is doing so we

204
00:07:12,469 --> 00:07:10,080
can

205
00:07:13,350 --> 00:07:12,479
knowledgeably agree with what they're

206
00:07:15,589 --> 00:07:13,360
doing

207
00:07:17,430 --> 00:07:15,599
and then we have also very targeted

208
00:07:19,350 --> 00:07:17,440
approvals kind of in those very high

209
00:07:22,790 --> 00:07:19,360
risk areas or mission

210
00:07:24,790 --> 00:07:22,800
unique areas and allows for a lean team

211
00:07:26,469 --> 00:07:24,800
and allows for the industry to really

212
00:07:28,790 --> 00:07:26,479
innovate for us

213
00:07:30,870 --> 00:07:28,800

so stepping back and understanding where

214

00:07:31,830 --> 00:07:30,880

we can take a little bit more hands-off

215

00:07:34,070 --> 00:07:31,840

approach

216

00:07:35,909 --> 00:07:34,080

has really allowed the significant cost

217

00:07:37,270 --> 00:07:35,919

savings and more emissions to actually

218

00:07:39,990 --> 00:07:37,280

go forward

219

00:07:42,309 --> 00:07:40,000

rather than just a handful of really

220

00:07:44,469 --> 00:07:42,319

exquisite expensive missions

221

00:07:45,909 --> 00:07:44,479

yeah thanks for kind of talking about

222

00:07:47,350 --> 00:07:45,919

some of those benefits there

223

00:07:49,110 --> 00:07:47,360

appreciate that obviously important to

224

00:07:51,350 --> 00:07:49,120

talk about those but i'm guessing that

225

00:07:52,309 --> 00:07:51,360

it's also brought some new challenges

226

00:07:54,230 --> 00:07:52,319

with it so

227

00:07:55,830 --> 00:07:54,240

where are the growing pains for us and

228

00:07:57,110 --> 00:07:55,840

what are some of the challenges with

229

00:07:58,550 --> 00:07:57,120

this new operating model where

230

00:07:59,909 --> 00:07:58,560

ultimately we're relying more on

231

00:08:02,469 --> 00:07:59,919

commercial companies

232

00:08:03,589 --> 00:08:02,479

so it's really a cultural shift for most

233

00:08:06,070 --> 00:08:03,599

of nasa

234

00:08:08,150 --> 00:08:06,080

um trusting the industry to do the right

235

00:08:10,150 --> 00:08:08,160

thing is always hard because nasa does

236

00:08:12,309 --> 00:08:10,160

it pretty darn good

237

00:08:13,430 --> 00:08:12,319

so allowing the ownership of those items

238

00:08:16,309 --> 00:08:13,440

to reside with

239

00:08:18,950 --> 00:08:16,319

industry and letting go and of the

240

00:08:20,950 --> 00:08:18,960

telling them how to go do everything

241

00:08:23,430 --> 00:08:20,960

versus a more commercial approach of

242

00:08:25,830 --> 00:08:23,440

focusing on what we really need to be

243

00:08:27,909 --> 00:08:25,840

delivered and in the end

244

00:08:29,670 --> 00:08:27,919

not a step-by-step approach of focusing

245

00:08:31,909 --> 00:08:29,680

on

246

00:08:32,790 --> 00:08:31,919

how they need to get there right we just

247

00:08:35,430 --> 00:08:32,800

need what they are

248

00:08:38,230 --> 00:08:35,440

going to provide also commercial

249

00:08:41,670 --> 00:08:38,240

entities they are now responsible for

250

00:08:44,070 --> 00:08:41,680

the mission success it will be

251

00:08:45,030 --> 00:08:44,080

perceived that nasa has a failure if

252

00:08:48,389 --> 00:08:45,040

there's a failure

253

00:08:51,110 --> 00:08:48,399

even if that responsibility uh lies

254

00:08:52,230 --> 00:08:51,120

with the contractor so that's really

255

00:08:55,670 --> 00:08:52,240

needing to manage

256

00:08:58,710 --> 00:08:55,680

expectations of the public and

257

00:09:00,790 --> 00:08:58,720

you know everybody else who thinks that

258

00:09:03,350 --> 00:09:00,800

this belongs to nasa and you need to own

259

00:09:05,670 --> 00:09:03,360

it that's a challenge

260

00:09:07,110 --> 00:09:05,680

last big question for you today is this

261

00:09:08,790 --> 00:09:07,120

something we can expect to become a

262

00:09:09,509 --> 00:09:08,800

staple like is this the model going

263

00:09:11,829 --> 00:09:09,519

forward

264

00:09:12,630 --> 00:09:11,839

where we'll see broad partnerships and

265

00:09:15,269 --> 00:09:12,640

collaborations

266

00:09:17,190 --> 00:09:15,279

for human exploration so really as the

267

00:09:19,509 --> 00:09:17,200

commercial companies they

268

00:09:20,630 --> 00:09:19,519

see the benefit of commercially

269

00:09:23,509 --> 00:09:20,640

exploring space

270

00:09:25,110 --> 00:09:23,519

the industry base the customer base

271

00:09:26,870 --> 00:09:25,120

grows

272

00:09:28,790 --> 00:09:26,880

there's real excitement of pushing

273

00:09:31,509 --> 00:09:28,800

humans beyond

274

00:09:34,630 --> 00:09:31,519

low earth orbit going to the moon going

275

00:09:37,670 --> 00:09:34,640

to the gateway going to mars

276

00:09:39,509 --> 00:09:37,680

so that's going to continue as that

277

00:09:41,350 --> 00:09:39,519

industry grows there's no going back

278

00:09:43,269 --> 00:09:41,360

it's just a much more efficient and

279

00:09:45,269 --> 00:09:43,279

effective way of doing things

280

00:09:46,870 --> 00:09:45,279

mary a big thanks to you for your

281

00:09:48,150 --> 00:09:46,880

insight and expertise and taking time to

282

00:09:50,070 --> 00:09:48,160

talk to us

283

00:09:51,269 --> 00:09:50,080

obviously launch services program has a

284

00:09:52,949 --> 00:09:51,279

huge part to play

285

00:09:54,310 --> 00:09:52,959

in the robotic explorers that will be a

286

00:09:55,509 --> 00:09:54,320

part of our sustained presence on the

287

00:09:57,829 --> 00:09:55,519

moon and beyond

288

00:09:59,509 --> 00:09:57,839

so good luck to you and your entire team

289

00:10:00,870 --> 00:09:59,519

thank you very much i really appreciate

290

00:10:04,310 --> 00:10:00,880

it

291

00:10:05,990 --> 00:10:04,320

here today now we think we're going to

292

00:10:07,030 --> 00:10:06,000

take that break for these amazing

293

00:10:09,190 --> 00:10:07,040

launches coming up

294

00:10:11,110 --> 00:10:09,200

specifically the two that are the most

295

00:10:13,110 --> 00:10:11,120

noteworthy are the crew one launch

296

00:10:15,190 --> 00:10:13,120

from the kennedy space center and the

297

00:10:17,910 --> 00:10:15,200

sentinel 6 michael freilig mission

298

00:10:19,509 --> 00:10:17,920

from california so please check those

299

00:10:19,990 --> 00:10:19,519

out nasa.gov for more information on

300

00:10:21,590 --> 00:10:20,000

those

301

00:10:23,590 --> 00:10:21,600

another big thanks to jeff and mary for