1
00:00:01,620 --> 00:00:29,080
[Music]

2
00:00:45,370 --> 00:00:31,720
t-minus one minute

3
00:01:12,240 --> 00:00:59,120
[Music]

4
00:01:18,570 --> 00:01:14,590
we are go for launch

5
00:01:18,580 --> 00:01:26,630
ten

6
00:01:31,560 --> 00:01:29,030
[Music]

7
00:01:33,630 --> 00:01:31,570
welcome back to the NASA social for the

8
00:02:07,010 --> 00:01:33,640
crew dragon mission as we prepare to

9
00:02:07,020 --> 00:02:16,570
[Music]

10
00:02:22,160 --> 00:02:18,890
ladies and gentlemen welcome back again

11
00:02:24,650 --> 00:02:22,170
to the NASA social the virtual version I

12
00:02:26,630 --> 00:02:24,660
again in Yves lamothe I am with the

13
00:02:28,910 --> 00:02:26,640

commanding command and control systems

14
00:02:31,190 --> 00:02:28,920
project manager in exploration ground

15
00:02:32,570 --> 00:02:31,200
systems again enjoying our beautiful

16
00:02:39,440 --> 00:02:32,580
background here with the space shuttle

17
00:02:41,750 --> 00:02:39,450
Atlantis at the KSC visitors visitors

18
00:02:44,180 --> 00:02:41,760
complex I am so sorry about that I'm a

19
00:02:46,580 --> 00:02:44,190
little star star truck because we have

20
00:02:48,350 --> 00:02:46,590
starstruck because we have a special

21
00:02:50,420 --> 00:02:48,360
guest with us today but before I do that

22
00:02:52,070 --> 00:02:50,430
let me first introduce my partner in

23
00:02:52,310 --> 00:02:52,080
crime here Josh Josh how're you doing

24
00:02:55,520 --> 00:02:52,320
today

25
00:02:58,400 --> 00:02:55,530
Yves on a scale of 1 to 10 my excitement

26
00:02:59,840 --> 00:02:58,410
level is a 135 oh wow yeah for all the

27
00:03:02,360 --> 00:02:59,850
space books out there they're gonna get

28
00:03:04,370 --> 00:03:02,370
that one yeah so anyway I'm doing great

29
00:03:06,680 --> 00:03:04,380
I'm so glad that you could join us live

30
00:03:08,990 --> 00:03:06,690
for a Q&A session with a very special

31
00:03:11,480 --> 00:03:09,000
guest so be sure to ask those questions

32
00:03:12,490 --> 00:03:11,490
in the the chat windows there whether

33
00:03:14,240 --> 00:03:12,500
you're wherever you're watching online

34
00:03:16,640 --> 00:03:14,250
definitely we'll take those in a few

35
00:03:18,050 --> 00:03:16,650
minutes and that's really I mean that's

36
00:03:19,490 --> 00:03:18,060
today's show is where we're having a

37
00:03:22,280 --> 00:03:19,500
really good kind of conversation here

38
00:03:24,020 --> 00:03:22,290

with well you saw let you introduce our

39
00:03:25,190 --> 00:03:24,030
guest all right so so listen up guys in

40
00:03:26,840 --> 00:03:25,200
before I do that I hope you've been

41
00:03:29,300 --> 00:03:26,850
enjoying all the shows that we've had

42
00:03:30,920 --> 00:03:29,310
for you the means is to educate you guys

43
00:03:33,050 --> 00:03:30,930
and show you guys what goes on kind of

44
00:03:35,690 --> 00:03:33,060
behind the scenes before we get ready

45
00:03:39,020 --> 00:03:35,700
for such a historic moment all right now

46
00:03:41,449 --> 00:03:39,030
with me right the reason that I'm so you

47
00:03:43,190 --> 00:03:41,459
know you know I'm in fan mode a little

48
00:03:45,199 --> 00:03:43,200
tongue-tied a little bit is because we

49
00:03:48,410 --> 00:03:45,209
have our very own NASA deputy

50
00:03:49,940 --> 00:03:48,420
administrator Jim Moore hard with us Jim

51
00:03:52,220 --> 00:03:49,950
how are you doing today I'm doing great

52
00:03:53,930 --> 00:03:52,230
ease Josh I really appreciate you having

53
00:03:55,820 --> 00:03:53,940
me here yeah absolutely thank you so

54
00:03:57,860 --> 00:03:55,830
much for being here now of course we

55
00:03:59,570 --> 00:03:57,870
have a live audience that are watching

56
00:04:01,729 --> 00:03:59,580
I'm sure they'll have plenty of

57
00:04:03,860 --> 00:04:01,739
questions for you but first if you can

58
00:04:05,030 --> 00:04:03,870
just start introducing yourself let us

59
00:04:06,770 --> 00:04:05,040
know who you are what you're all about

60
00:04:08,900 --> 00:04:06,780
and it will get to learn a few things

61
00:04:11,900 --> 00:04:08,910
about NASA from yeah you know the deputy

62
00:04:13,370 --> 00:04:11,910
administrator of NASA is really I'm to

63
00:04:15,740 --> 00:04:13,380

help Jim bridenstine who's the

64
00:04:17,990 --> 00:04:15,750
administrator and we've laid out a

65
00:04:21,259 --> 00:04:18,000
vision for NASA

66
00:04:25,490 --> 00:04:21,269
and it's really I would say it's one

67
00:04:27,380 --> 00:04:25,500
campaign with three domains and the one

68
00:04:29,660 --> 00:04:27,390
that is gonna be addressed tomorrow is

69
00:04:32,540 --> 00:04:29,670
low-earth orbit but we're also looking

70
00:04:35,630 --> 00:04:32,550
at the moon cislunar space as well as

71
00:04:37,880 --> 00:04:35,640
Mars and deep space we're focused on all

72
00:04:40,190 --> 00:04:37,890
three of those different campaigns and

73
00:04:41,780 --> 00:04:40,200
we're working hard in each one of those

74
00:04:43,760 --> 00:04:41,790
areas and hopefully we will get into

75
00:04:45,920 --> 00:04:43,770
some of what we're doing today and I

76
00:04:47,690 --> 00:04:45,930
look forward to the questions absolutely

77
00:04:50,480 --> 00:04:47,700
thank you so much for that great

78
00:04:51,860 --> 00:04:50,490
introduction and before we get going to

79
00:04:52,940 --> 00:04:51,870
the questions to the audience how long

80
00:04:56,180 --> 00:04:52,950
have you been the NASA deputy

81
00:05:01,310 --> 00:04:56,190
administrator now I was confirmed by the

82
00:05:03,560 --> 00:05:01,320
US Senate back in October of 2018 so

83
00:05:05,360 --> 00:05:03,570
it's been about a year and a half and so

84
00:05:07,460 --> 00:05:05,370
that's been probably the most exciting

85
00:05:09,290 --> 00:05:07,470
time of your career thus far correct it

86
00:05:12,159 --> 00:05:09,300
has been the most exciting time of my

87
00:05:14,810 --> 00:05:12,169
career and and the most challenging to

88
00:05:18,590 --> 00:05:14,820

you know NASA does the impossible and

89
00:05:21,290 --> 00:05:18,600
that doesn't also means it's very

90
00:05:24,020 --> 00:05:21,300
difficult but it makes it for a lot of

91
00:05:27,550 --> 00:05:24,030
fun and the intellectual stimulation as

92
00:05:29,990 --> 00:05:27,560
well as the the wonderful people at NASA

93
00:05:31,700 --> 00:05:30,000
really it's been I've been blessed to be

94
00:05:33,409 --> 00:05:31,710
there well you know we're concerned you

95
00:05:34,969 --> 00:05:33,419
know they say that you know you don't do

96
00:05:37,100 --> 00:05:34,979
things because they're easy because then

97
00:05:39,140 --> 00:05:37,110
everybody would do them but I'd like to

98
00:05:41,930 --> 00:05:39,150
tailor that with it takes great leaders

99
00:05:43,750 --> 00:05:41,940
as yourselves right to lead a group of

100
00:05:46,909 --> 00:05:43,760
us to get out there and do these amazing

101
00:05:49,010 --> 00:05:46,919
amazing things like space travel it's

102
00:05:50,330 --> 00:05:49,020
not it's not an easy feat and we

103
00:05:51,650 --> 00:05:50,340
appreciate your leadership and

104
00:05:53,440 --> 00:05:51,660
everything that you're doing for the

105
00:05:55,490 --> 00:05:53,450
agency to get us to where we're going

106
00:05:58,159 --> 00:05:55,500
we're always trying to make it better

107
00:05:59,719 --> 00:05:58,169
and you know we're all human and we we

108
00:06:01,370 --> 00:05:59,729
make mistakes too but we certainly are

109
00:06:04,370 --> 00:06:01,380
doing everything we can

110
00:06:06,860 --> 00:06:04,380
and I'm confident tomorrow's gonna go

111
00:06:08,930 --> 00:06:06,870
well it's amazing we'll talk about you

112
00:06:11,840 --> 00:06:08,940
know just the some of the processes of

113
00:06:14,390 --> 00:06:11,850

what it takes to get humans into space

114
00:06:16,040 --> 00:06:14,400
safely and that's what we're gonna do

115
00:06:18,230 --> 00:06:16,050
that's our number-one priority tomorrow

116
00:06:20,300 --> 00:06:18,240
you got it so now I definitely want to

117
00:06:22,370 --> 00:06:20,310
go ahead and get the questions from the

118
00:06:23,990 --> 00:06:22,380
audience because you're here they want

119
00:06:26,000 --> 00:06:24,000
the most of you as they as they possibly

120
00:06:27,290 --> 00:06:26,010
can so Josh I'm gonna head it over to

121
00:06:28,970 --> 00:06:27,300
you if you would please let us know what

122
00:06:31,520 --> 00:06:28,980
does the community have to ask

123
00:06:32,690 --> 00:06:31,530
yeah absolutely let's start with just a

124
00:06:34,460 --> 00:06:32,700
question I want to make sure we get a

125
00:06:35,720 --> 00:06:34,470
little background on you yeah I'm just

126
00:06:37,280 --> 00:06:35,730
because obviously if you've been with us

127
00:06:39,590 --> 00:06:37,290
read it just a year and a half now yeah

128
00:06:42,320 --> 00:06:39,600
so hopefully a lot more days and years

129
00:06:44,210 --> 00:06:42,330
to come but as you look towards not only

130
00:06:45,860 --> 00:06:44,220
obviously what's your past and then kind

131
00:06:47,570 --> 00:06:45,870
of the future the first question out of

132
00:06:50,570 --> 00:06:47,580
the gate was actually what is your

133
00:06:51,890 --> 00:06:50,580
vision of the lunar economy in the next

134
00:06:56,060 --> 00:06:51,900
10 to 15 years

135
00:07:01,220 --> 00:06:56,070
yeah the now again we talk about lunar

136
00:07:04,580 --> 00:07:01,230
where we are talking about how we make

137
00:07:07,010 --> 00:07:04,590
space travel affordable we know the

138
00:07:09,560 --> 00:07:07,020

financial problems and challenges we've

139
00:07:13,190 --> 00:07:09,570
got in the world in the United States

140
00:07:17,180 --> 00:07:13,200
and we're looking to get to the moon

141
00:07:20,690 --> 00:07:17,190
we're we've just awarded three contracts

142
00:07:24,320 --> 00:07:20,700
to commercial providers that are going

143
00:07:27,950 --> 00:07:24,330
to design and develop landing systems

144
00:07:30,800 --> 00:07:27,960
and we're going to compete on what those

145
00:07:33,440 --> 00:07:30,810
landing systems are but we really want

146
00:07:36,980 --> 00:07:33,450
to be a customer to those commercial

147
00:07:40,280 --> 00:07:36,990
providers so that we're gonna provide

148
00:07:42,470 --> 00:07:40,290
the demand to start off with and they're

149
00:07:44,420 --> 00:07:42,480
going to be the suppliers and we're

150
00:07:46,910 --> 00:07:44,430
gonna be doing things on the moon really

151
00:07:49,400 --> 00:07:46,920
starting with precursor missions but

152
00:07:52,600 --> 00:07:49,410
it's really looking and seeing we know

153
00:07:56,030 --> 00:07:52,610
there's water ice at the South Pole and

154
00:07:59,030 --> 00:07:56,040
it's our intent to at first demonstrate

155
00:08:02,740 --> 00:07:59,040
whether we can convert that water ice to

156
00:08:05,300 --> 00:08:02,750
oxygen and hydrogen for propellant and

157
00:08:08,450 --> 00:08:05,310
I'm not saying we can do that but we're

158
00:08:10,370 --> 00:08:08,460
gonna try and if we can do that with a

159
00:08:13,130 --> 00:08:10,380
gret you know the gravity well of the

160
00:08:14,570 --> 00:08:13,140
moon is one-sixth that of Earth so the

161
00:08:18,020 --> 00:08:14,580
cost of a launch is gonna be a lot

162
00:08:20,270 --> 00:08:18,030
cheaper going from the moon so we can

163
00:08:24,770 --> 00:08:20,280

get those material those those elements

164
00:08:27,350 --> 00:08:24,780
up into space to Gateway it's possible

165
00:08:30,680 --> 00:08:27,360
that we can move forward in slingshot

166
00:08:32,960 --> 00:08:30,690
out to the deep space so really looking

167
00:08:36,560 --> 00:08:32,970
at the moon as a stepping stone for the

168
00:08:39,409 --> 00:08:36,570
future awesome and can you give us some

169
00:08:47,350 --> 00:08:41,120
30,000 foot view of your career you know

170
00:08:50,750 --> 00:08:47,360
grew up in Virginia has got a MBA and

171
00:08:54,139 --> 00:08:50,760
law degree from Georgetown have an

172
00:08:56,269 --> 00:08:54,149
accounting background ended up in the

173
00:08:58,810 --> 00:08:56,279
United States Senate was working on the

174
00:09:02,329 --> 00:08:58,820
Senate Appropriations Committee

175
00:09:04,670 --> 00:09:02,339
reviewing large agencies such as the

176
00:09:06,079 --> 00:09:04,680
Justice Department that parts of the

177
00:09:09,139 --> 00:09:06,089
Defense Department the Commerce

178
00:09:10,730 --> 00:09:09,149
Department the State Department ended up

179
00:09:12,769 --> 00:09:10,740
as the chief of staff for the whole

180
00:09:16,220 --> 00:09:12,779
committee so really responsible for

181
00:09:21,040 --> 00:09:16,230
passing all the legislation for the

182
00:09:23,840 --> 00:09:21,050
federal government and then had some

183
00:09:27,430 --> 00:09:23,850
personal challenges was in a plane crash

184
00:09:30,079 --> 00:09:27,440
actually and got through that and

185
00:09:32,079 --> 00:09:30,089
Senator McConnell asked me to come back

186
00:09:34,370 --> 00:09:32,089
as the deputy sergeant at arms and

187
00:09:37,189 --> 00:09:34,380
that's really kind of like running a

188
00:09:37,759 --> 00:09:37,199

small city and well I didn't think that

189
00:09:40,639 --> 00:09:37,769
would help

190
00:09:43,819 --> 00:09:40,649
as far as NASA goes understanding

191
00:09:46,009 --> 00:09:43,829
general council training all the

192
00:09:49,550 --> 00:09:46,019
different things the administrative part

193
00:09:51,380 --> 00:09:49,560
of running organization has been very

194
00:09:53,449 --> 00:09:51,390
helpful and I thank goodness I had that

195
00:09:56,560 --> 00:09:53,459
experience and thank goodness he gave me

196
00:09:59,240 --> 00:09:56,570
that opportunity but that got me to NASA

197
00:10:01,310 --> 00:09:59,250
so so what's that like on the career

198
00:10:03,199 --> 00:10:01,320
level because obviously I'm I'm fairly

199
00:10:05,420 --> 00:10:03,209
young in my career and it sounds like

200
00:10:07,250 --> 00:10:05,430
those amazing jobs you just listed like

201
00:10:08,870 --> 00:10:07,260
it almost feels like you're like there

202
00:10:10,430 --> 00:10:08,880
can't be anymore look can't be anymore

203
00:10:12,650 --> 00:10:10,440
there can't be anymore and there's like

204
00:10:14,210 --> 00:10:12,660
another amazing opportunity like and now

205
00:10:17,090 --> 00:10:14,220
like you're number two for NASA like

206
00:10:20,449 --> 00:10:17,100
that's amazing you know all our paths we

207
00:10:22,370 --> 00:10:20,459
all have a story and the path that we're

208
00:10:25,610 --> 00:10:22,380
on each of us are on is not a straight

209
00:10:28,040 --> 00:10:25,620
path and it's really understanding that

210
00:10:31,519 --> 00:10:28,050
and when you're zigging and zagging it's

211
00:10:33,740 --> 00:10:31,529
it's trusting that you're gonna that you

212
00:10:36,650 --> 00:10:33,750
are there is a plan it's just not your

213
00:10:37,939 --> 00:10:36,660

plan and you've got a trust in that and

214
00:10:40,430 --> 00:10:37,949
keep moving forward

215
00:10:43,160 --> 00:10:40,440
and I think if anything kept me going it

216
00:10:45,920 --> 00:10:43,170
was just having that faith that this

217
00:10:48,079 --> 00:10:45,930
would work out and I continue with that

218
00:10:49,850 --> 00:10:48,089
today you know I guess I kind of look at

219
00:10:51,710 --> 00:10:49,860
it as you know in life as you journey

220
00:10:52,730 --> 00:10:51,720
through life opportunities presents

221
00:10:55,460 --> 00:10:52,740
itself yeah

222
00:10:57,170 --> 00:10:55,470
and do you capitalize or do you pass on

223
00:10:58,550 --> 00:10:57,180
it it really depends on you know where

224
00:10:59,960 --> 00:10:58,560
you are with your career what you want

225
00:11:03,019 --> 00:10:59,970
to do that your interests are what your

226
00:11:04,610 --> 00:11:03,029
passion is so now a quick question for

227
00:11:08,660 --> 00:11:04,620
you um do you do you wear your cape

228
00:11:12,560 --> 00:11:08,670
inside or outside my friends who tell

229
00:11:15,710 --> 00:11:12,570
you there's an okay you know that you

230
00:11:18,670 --> 00:11:15,720
make a good point and there are times we

231
00:11:21,829 --> 00:11:18,680
all have difficulties in our careers and

232
00:11:25,820 --> 00:11:21,839
it's understanding that this is part of

233
00:11:27,500 --> 00:11:25,830
the plan and it's keeping calm and you

234
00:11:29,630 --> 00:11:27,510
know this is not a crisis and there's a

235
00:11:31,730 --> 00:11:29,640
reason why this is happening and I'm

236
00:11:33,860 --> 00:11:31,740
gonna keep moving forward may not be in

237
00:11:36,320 --> 00:11:33,870
a direct line but I'm gonna keep moving

238
00:11:39,500 --> 00:11:36,330

forward and that served me well through

239
00:11:41,870 --> 00:11:39,510
my life now in in line would that can do

240
00:11:44,829 --> 00:11:41,880
you enjoy what you're doing with NASA I

241
00:11:47,030 --> 00:11:44,839
do I do I mean look it gets down to

242
00:11:49,550 --> 00:11:47,040
people it gets get sound to

243
00:11:52,280 --> 00:11:49,560
relationships enjoying the present

244
00:11:55,340 --> 00:11:52,290
moment enjoying being with you too today

245
00:11:57,860 --> 00:11:55,350
I mean I'm enjoying this and it's you've

246
00:11:59,990 --> 00:11:57,870
got to stand back breathe and enjoy

247
00:12:02,210 --> 00:12:00,000
where you are right now not what you

248
00:12:05,030 --> 00:12:02,220
just did and not what you're going to do

249
00:12:07,519 --> 00:12:05,040
next and that to me is part of the trick

250
00:12:10,190 --> 00:12:07,529
to life amazing

251
00:12:10,670 --> 00:12:10,200
so at hand for NASA so not today but

252
00:12:16,639 --> 00:12:10,680
tomorrow

253
00:12:18,230 --> 00:12:16,649
crews back to space station from America

254
00:12:20,060 --> 00:12:18,240
again super exciting

255
00:12:22,310 --> 00:12:20,070
so as we do that as we prepare for that

256
00:12:24,590 --> 00:12:22,320
moment I heard you earlier today in the

257
00:12:26,960 --> 00:12:24,600
the news of the media briefing mentioned

258
00:12:30,440 --> 00:12:26,970
that we are gonna have as a result of

259
00:12:31,819 --> 00:12:30,450
and I'll kind of I'll poorly set this up

260
00:12:33,740 --> 00:12:31,829
and let you correct me and finish this

261
00:12:35,600 --> 00:12:33,750
out this thought that with the

262
00:12:38,600 --> 00:12:35,610
Commercial Crew program we're gonna be

263
00:12:40,400 --> 00:12:38,610

having 300 percent as much research

264
00:12:41,000 --> 00:12:40,410
happening on space station is did I get

265
00:12:43,130 --> 00:12:41,010
that right

266
00:12:45,860 --> 00:12:43,140
yeah a few that you look right now we

267
00:12:49,069 --> 00:12:45,870
have Chris Cassidy's up there right now

268
00:12:53,660 --> 00:12:49,079
we have one astronaut on the space

269
00:12:55,430 --> 00:12:53,670
station and Bob and Doug are gonna get

270
00:12:59,510 --> 00:12:55,440
there and I know Chris is excited to see

271
00:13:01,819 --> 00:12:59,520
him but the you know Chris is limited in

272
00:13:04,280 --> 00:13:01,829
the amount of work he can do as one

273
00:13:05,850 --> 00:13:04,290
astronaut in fact you know we just had

274
00:13:08,550 --> 00:13:05,860
HTV nine

275
00:13:12,300 --> 00:13:08,560
which is a Japanese cargo mission just

276
00:13:14,220 --> 00:13:12,310
delivered a lot of material up there

277
00:13:17,700 --> 00:13:14,230
including batteries that need to be

278
00:13:20,850 --> 00:13:17,710
installed and and Chris needs needs Doug

279
00:13:25,200 --> 00:13:20,860
and Bob to get those installed but with

280
00:13:28,830 --> 00:13:25,210
that when we you know the intent is that

281
00:13:31,730 --> 00:13:28,840
we certify this end-to-end flight test

282
00:13:34,490 --> 00:13:31,740
and if it's certified then we'll start

283
00:13:37,740 --> 00:13:34,500
launching crew up to the space station

284
00:13:41,880 --> 00:13:37,750
to stay for much longer periods of time

285
00:13:44,640 --> 00:13:41,890
and if we have a full complement of crew

286
00:13:46,830 --> 00:13:44,650
which is what we envision then we're

287
00:13:51,090 --> 00:13:46,840
going to be able to as you've said Josh

288
00:13:52,860 --> 00:13:51,100

increase our research by 300% and when I

289
00:13:56,220 --> 00:13:52,870
say research you think about some of the

290
00:14:00,290 --> 00:13:56,230
things we're doing we're working towards

291
00:14:04,620 --> 00:14:00,300
creating mass producing retinal implants

292
00:14:08,100 --> 00:14:04,630
at the space station we're working on

293
00:14:17,420 --> 00:14:08,110
creating human tissue we're looking at

294
00:14:20,400 --> 00:14:17,430
trying to make fiber optics excuse me

295
00:14:22,740 --> 00:14:20,410
have a purity level much higher than it

296
00:14:25,680 --> 00:14:22,750
is to reduce the amount of relay

297
00:14:27,930 --> 00:14:25,690
stations that are needed it goes on and

298
00:14:30,270 --> 00:14:27,940
on about the different things that that

299
00:14:32,880 --> 00:14:30,280
we're doing there there's and this is

300
00:14:36,420 --> 00:14:32,890
about supply and demand there is an

301
00:14:39,060 --> 00:14:36,430
overwhelming demand for research we

302
00:14:41,340 --> 00:14:39,070
don't have enough of a supply of one

303
00:14:45,240 --> 00:14:41,350
astronauts but what we're really looking

304
00:14:48,360 --> 00:14:45,250
to do is again going to commercialize

305
00:14:51,090 --> 00:14:48,370
low-earth orbit and that includes

306
00:14:53,100 --> 00:14:51,100
creating commercial space stations that

307
00:14:56,310 --> 00:14:53,110
will meet this demand in the future

308
00:14:57,480 --> 00:14:56,320
that's really what our goal is here not

309
00:15:00,150 --> 00:14:57,490
to mention you think of you know

310
00:15:01,560 --> 00:15:00,160
commercialization of low-earth orbit you

311
00:15:03,750 --> 00:15:01,570
know just in a commercial launch

312
00:15:05,820 --> 00:15:03,760
vehicles it wasn't too long ago we had

313
00:15:08,700 --> 00:15:05,830

no market share and commercial launch

314
00:15:11,940 --> 00:15:08,710
vehicles we now have 70% of the market

315
00:15:14,310 --> 00:15:11,950
share in the United States so you know

316
00:15:16,470 --> 00:15:14,320
this is we're gonna keep going with it

317
00:15:18,360 --> 00:15:16,480
though and there's a lot more we can do

318
00:15:22,110 --> 00:15:18,370
in low-earth orbit cool

319
00:15:24,329 --> 00:15:22,120
so I was gonna say so in inline with

320
00:15:27,780 --> 00:15:24,339
that you know we're talking about the

321
00:15:30,600 --> 00:15:27,790
commercial aspect you know at NASA we

322
00:15:33,360 --> 00:15:30,610
are also working on the SLS rocket you

323
00:15:36,630 --> 00:15:33,370
know so to get us back to the Moon and

324
00:15:38,880 --> 00:15:36,640
Mars and beyond and such so how do you

325
00:15:41,340 --> 00:15:38,890
see this

326
00:15:44,100 --> 00:15:41,350
this love story if you will right

327
00:15:46,620 --> 00:15:44,110
between the commercial aspect the NASA

328
00:15:48,870 --> 00:15:46,630
aspect and bringing in two humans into

329
00:15:51,480 --> 00:15:48,880
you know space travel and space tourism

330
00:15:53,670 --> 00:15:51,490
and and how do you see that you know in

331
00:15:54,510 --> 00:15:53,680
enveloping like over the next 5-10 years

332
00:15:58,380 --> 00:15:54,520
yeah

333
00:16:08,519 --> 00:15:58,390
you know you've won it it's their

334
00:16:12,240 --> 00:16:08,529
economics involved but really when you

335
00:16:13,950 --> 00:16:12,250
look at going to the moon and you know

336
00:16:18,300 --> 00:16:13,960
you mentioned it it's the Space Launch

337
00:16:20,160 --> 00:16:18,310
System and the Orion space capsule which

338
00:16:22,949 --> 00:16:20,170

you know really has done that you know

339
00:16:28,230 --> 00:16:22,959
the Orion is here at Kennedy now ready

340
00:16:32,070 --> 00:16:28,240
to go for Artemis one and we're got the

341
00:16:35,940 --> 00:16:32,080
SLS rocket is at Stennis Space Center I

342
00:16:37,470 --> 00:16:35,950
watched it go from masu to get barged

343
00:16:41,970 --> 00:16:37,480
over there it was pretty exciting the

344
00:16:44,760 --> 00:16:41,980
thing is very large I might add but we

345
00:16:46,500 --> 00:16:44,770
are getting prepared to continue with

346
00:16:49,829 --> 00:16:46,510
the green run which is really where we

347
00:16:52,710 --> 00:16:49,839
really test all the systems of the Space

348
00:16:56,130 --> 00:16:52,720
Launch System and and we're gonna light

349
00:16:58,410 --> 00:16:56,140
up those four rs.25 engines yeah and

350
00:17:01,380 --> 00:16:58,420
that is gonna be a sight to see I mean

351
00:17:02,970 --> 00:17:01,390
for those that are old guys like me you

352
00:17:05,610 --> 00:17:02,980
know there's the old clip of John F

353
00:17:08,880 --> 00:17:05,620
Kennedy watching as they lit up the

354
00:17:11,549 --> 00:17:08,890
Apollo engines and you know it's it's

355
00:17:13,500 --> 00:17:11,559
gonna be a showstopper yeah but it's

356
00:17:16,470 --> 00:17:13,510
it's putting all that together along

357
00:17:18,059 --> 00:17:16,480
with gateway along with this the human

358
00:17:23,100 --> 00:17:18,069
landing system that I mentioned already

359
00:17:26,490 --> 00:17:23,110
and so this is a system to get us to the

360
00:17:30,700 --> 00:17:26,500
moon and get us to the moon by 2024 and

361
00:17:33,220 --> 00:17:30,710
then allow us to be there in a sustained

362
00:17:35,889 --> 00:17:33,230
away so we can do the development and

363
00:17:39,549 --> 00:17:35,899

research we talked about like in situ

364
00:17:41,769 --> 00:17:39,559
resource utilization so that's my answer

365
00:17:42,760 --> 00:17:41,779
your question yes yes let me jump on

366
00:17:43,870 --> 00:17:42,770
that because there was a question that

367
00:17:46,240 --> 00:17:43,880
came in actually and it was the the

368
00:17:48,130 --> 00:17:46,250
question kind of is are you you just

369
00:17:51,070 --> 00:17:48,140
mentioned yeah Institue resource

370
00:17:52,870 --> 00:17:51,080
utilization what data do we hope to gain

371
00:17:55,320 --> 00:17:52,880
from the new moon missions the Artemis

372
00:17:59,289 --> 00:17:55,330
program that may help when going to Mars

373
00:18:01,149 --> 00:17:59,299
yeah I mean first off you know it could

374
00:18:02,560 --> 00:18:01,159
be and I'll talk about it

375
00:18:03,820 --> 00:18:02,570
is are you but then we'll talk about

376
00:18:07,269 --> 00:18:03,830
some of the other things that we need to

377
00:18:10,240 --> 00:18:07,279
do but with is are you in situ resource

378
00:18:13,389 --> 00:18:10,250
utilization you know we've got to prove

379
00:18:15,100 --> 00:18:13,399
economically that we can do it and there

380
00:18:16,600 --> 00:18:15,110
certainly are entrepreneurs out there

381
00:18:19,029 --> 00:18:16,610
that are very interested in it

382
00:18:21,659 --> 00:18:19,039
especially when you've got asteroids

383
00:18:25,149 --> 00:18:21,669
that are you know have a nickel core and

384
00:18:27,639 --> 00:18:25,159
and we you know be able we may be able

385
00:18:29,680 --> 00:18:27,649
to mine asteroids too but those

386
00:18:31,450 --> 00:18:29,690
economics have to work and that's part

387
00:18:33,340 --> 00:18:31,460
of this you know part of this

388
00:18:36,310 --> 00:18:33,350

demonstration that we've got to see how

389
00:18:39,519 --> 00:18:36,320
this goes but again if we can do that

390
00:18:41,919 --> 00:18:39,529
and start using some of the assets

391
00:18:43,810 --> 00:18:41,929
within the moon to go further into space

392
00:18:45,430 --> 00:18:43,820
and it may be that we'll be able to do

393
00:18:47,649 --> 00:18:45,440
it at Mars and then go to the next

394
00:18:51,250 --> 00:18:47,659
planet or next or the next moon that we

395
00:18:53,950 --> 00:18:51,260
want to go to so it I think that's the

396
00:18:57,570 --> 00:18:53,960
the hope is that we may be able to Scott

397
00:18:59,830 --> 00:18:57,580
hopscotch eventually across the universe

398
00:19:01,600 --> 00:18:59,840
we obviously can't bring all the

399
00:19:03,399 --> 00:19:01,610
materials with us so we're going to have

400
00:19:06,070 --> 00:19:03,409
to create it and we're gonna have to

401
00:19:07,720 --> 00:19:06,080
afford it so and it really gets down to

402
00:19:10,320 --> 00:19:07,730
that and that's where the

403
00:19:13,360 --> 00:19:10,330
commercialization is so important so

404
00:19:14,919 --> 00:19:13,370
that's so as far as going back to the

405
00:19:18,100 --> 00:19:14,929
other part of the question of the other

406
00:19:20,440 --> 00:19:18,110
things we need to do you think about Bob

407
00:19:22,960 --> 00:19:20,450
and Doug you think about what is the

408
00:19:26,399 --> 00:19:22,970
most complex system on that rocket

409
00:19:28,690 --> 00:19:26,409
tomorrow that's the human system and

410
00:19:30,880 --> 00:19:28,700
that's what we're most concerned about

411
00:19:34,000 --> 00:19:30,890
well it's gonna be the same way on the

412
00:19:37,269 --> 00:19:34,010
moon you've got radiation exposure that

413
00:19:40,810 --> 00:19:37,279

we have got to address before we send

414
00:19:43,720 --> 00:19:40,820
people out to Mars for instance these

415
00:19:44,259 --> 00:19:43,730
things you know these are serious issues

416
00:19:46,449 --> 00:19:44,269
we

417
00:19:48,339 --> 00:19:46,459
you you know for those who follow it

418
00:19:50,289 --> 00:19:48,349
there are plenty of things we've seen as

419
00:19:53,079 --> 00:19:50,299
far as bone loss

420
00:19:55,810 --> 00:19:53,089
you know reverse blood flows there are a

421
00:19:57,699 --> 00:19:55,820
lot of different challenges where we've

422
00:20:00,159 --> 00:19:57,709
got to address each one of those for a

423
00:20:02,589 --> 00:20:00,169
long-term space travel and we're gonna

424
00:20:05,409 --> 00:20:02,599
be doing that on the moon as well as

425
00:20:08,799 --> 00:20:05,419
making sure that we can sustainably live

426
00:20:11,829 --> 00:20:08,809
off Earth and and we're gonna be doing

427
00:20:12,940 --> 00:20:11,839
that also on the moon

428
00:20:15,039 --> 00:20:12,950
probably just one or two more questions

429
00:20:16,899 --> 00:20:15,049
this one kind of switching back towards

430
00:20:18,789 --> 00:20:16,909
the Commercial Crew program tomorrow's

431
00:20:20,560 --> 00:20:18,799
flight being the first with crew on

432
00:20:21,549 --> 00:20:20,570
board the question I'll kind of

433
00:20:23,469 --> 00:20:21,559
summarize a little bit here

434
00:20:25,449 --> 00:20:23,479
basically it was thinking about both an

435
00:20:28,539 --> 00:20:25,459
American and international set of

436
00:20:30,699 --> 00:20:28,549
activities who do we expect to be the

437
00:20:33,219 --> 00:20:30,709
the astronauts aboard crew dragon and

438
00:20:35,409 --> 00:20:33,229

Starliner Starliner being Boeing's space

439
00:20:37,509 --> 00:20:35,419
capsule so ours is just Americans are

440
00:20:42,129 --> 00:20:37,519
the International what's the plan you

441
00:20:44,979 --> 00:20:42,139
know we haven't named you know folks we

442
00:20:47,799 --> 00:20:44,989
haven't gone out too far yet I know that

443
00:20:51,909 --> 00:20:47,809
we're going to have an astronaut from

444
00:20:55,989 --> 00:20:51,919
Japan on one of the first first launches

445
00:20:58,449 --> 00:20:55,999
of I think it's crew Dragon I'm pretty

446
00:21:00,549 --> 00:20:58,459
sure as I recall but we certainly want

447
00:21:04,149 --> 00:21:00,559
to bring our international partners with

448
00:21:07,479 --> 00:21:04,159
us they're critical to our efforts and

449
00:21:10,569 --> 00:21:07,489
we've seen it things like the robotic

450
00:21:12,009 --> 00:21:10,579
arm that Canada built you know and

451
00:21:16,509 --> 00:21:12,019
there's a lot more coming

452
00:21:19,119 --> 00:21:16,519
and whether it's ISA or Japan but you

453
00:21:22,569 --> 00:21:19,129
know we also have many new space

454
00:21:24,729 --> 00:21:22,579
agencies and so we're really want to

455
00:21:27,489 --> 00:21:24,739
bring we want to be inclusive

456
00:21:30,190 --> 00:21:27,499
you know Apollo it was exclusive we

457
00:21:34,359 --> 00:21:30,200
didn't mean to be but but it was and and

458
00:21:37,419 --> 00:21:34,369
it was really white test pilots military

459
00:21:41,769 --> 00:21:37,429
test pilots we want diversity we want

460
00:21:43,810 --> 00:21:41,779
diversity at NASA and it's been proven I

461
00:21:46,989 --> 00:21:43,820
mean we get much better intellect

462
00:21:49,959 --> 00:21:46,999
intellect and and results if we do

463
00:21:53,109 --> 00:21:49,969

diversify so we want our international

464
00:21:55,180 --> 00:21:53,119
partners and we want to continue to have

465
00:21:58,250 --> 00:21:55,190
diversity in NASA too at my net

466
00:21:59,930 --> 00:21:58,260
do I answer the question yeah I think so

467
00:22:02,840 --> 00:21:59,940
again it's just that the nature of with

468
00:22:04,190 --> 00:22:02,850
the crew dragon and Starliner how does

469
00:22:05,299 --> 00:22:04,200
that work with international partners

470
00:22:08,210 --> 00:22:05,309
and I think that I think you nailed that

471
00:22:10,880 --> 00:22:08,220
one okay okay so I kind of want to touch

472
00:22:13,370 --> 00:22:10,890
a little bit on you know what's going on

473
00:22:15,649 --> 00:22:13,380
on in Jim's head right so what tell me

474
00:22:19,580 --> 00:22:15,659
what what is the most exciting part for

475
00:22:24,590 --> 00:22:19,590
you leading up to tomorrow's launch you

476
00:22:28,639 --> 00:22:24,600
know keep in mind you know as all that I

477
00:22:33,560 --> 00:22:28,649
do the the visuals are very exciting to

478
00:22:37,490 --> 00:22:33,570
to have humans strapped in on top of a

479
00:22:40,879 --> 00:22:37,500
rocket is exciting but there are many

480
00:22:46,100 --> 00:22:40,889
processes that go into this many

481
00:22:48,409 --> 00:22:46,110
complicated processes and the really

482
00:22:50,720 --> 00:22:48,419
watching the Flight Readiness review the

483
00:22:53,360 --> 00:22:50,730
launch readiness review all the

484
00:22:56,600 --> 00:22:53,370
different processes that we have that

485
00:22:59,120 --> 00:22:56,610
we've worked closely with SpaceX we

486
00:23:03,289 --> 00:22:59,130
really collaborated with SpaceX to do

487
00:23:05,810 --> 00:23:03,299
this and that's what I enjoy I come from

488
00:23:08,330 --> 00:23:05,820

a background of looking at large

489
00:23:10,509 --> 00:23:08,340
organizations and how do you make a an

490
00:23:13,340 --> 00:23:10,519
organization better than it's ever been

491
00:23:16,190 --> 00:23:13,350
that's what you know that's what I enjoy

492
00:23:17,810 --> 00:23:16,200
doing and that's what I'm trying to do

493
00:23:21,169 --> 00:23:17,820
I'm not saying I've accomplished it but

494
00:23:25,490 --> 00:23:21,179
that's my goal at NASA is to try you

495
00:23:27,919 --> 00:23:25,500
know Leave No Trace and hopefully left

496
00:23:30,590 --> 00:23:27,929
NASA a better place than it was when I

497
00:23:33,019 --> 00:23:30,600
got here now what would you take a trip

498
00:23:36,620 --> 00:23:33,029
up to up the space if you could if I had

499
00:23:39,440 --> 00:23:36,630
the opportunity I certainly would you

500
00:23:41,810 --> 00:23:39,450
know it's it's I don't think you're

501
00:23:46,549 --> 00:23:41,820
gonna get a 63 year old guy there I was

502
00:23:52,519 --> 00:23:46,559
friends with John Glenn actually 63 yeah

503
00:23:54,320 --> 00:23:52,529
he was he was actually my my dad worked

504
00:23:56,210 --> 00:23:54,330
at what they call the Naval Air Systems

505
00:23:59,330 --> 00:23:56,220
come in he was friends with Alan Shepard

506
00:24:01,460 --> 00:23:59,340
Wow one day I was six years old and I

507
00:24:05,480 --> 00:24:01,470
was in my parents Ford station wagon

508
00:24:06,340 --> 00:24:05,490
thing was so old it had a hinged window

509
00:24:08,919 --> 00:24:06,350
on the back of it

510
00:24:10,480 --> 00:24:08,929
and I remember my brother taking me out

511
00:24:11,919 --> 00:24:10,490
of the car and walking up to some house

512
00:24:14,620 --> 00:24:11,929
in Arlington Virginia

513
00:24:16,330 --> 00:24:14,630

and this man opened the door led us in I

514
00:24:18,400 --> 00:24:16,340
pet the cat it gave me a glass of water

515
00:24:22,240 --> 00:24:18,410
got his autograph and that was the first

516
00:24:24,159 --> 00:24:22,250
time I met John Glenn Wow and ended up

517
00:24:25,750 --> 00:24:24,169
in the Senate and I get to meet him

518
00:24:27,190 --> 00:24:25,760
again we're working together I was on

519
00:24:29,110 --> 00:24:27,200
the what they call the military

520
00:24:31,630 --> 00:24:29,120
construction subcommittee he had the

521
00:24:33,370 --> 00:24:31,640
same subcommittee on the Armed Services

522
00:24:36,520 --> 00:24:33,380
Committee he was a chairman I was just a

523
00:24:39,250 --> 00:24:36,530
staff guy but he was the same kind

524
00:24:42,100 --> 00:24:39,260
gentle man and I shared that story with

525
00:24:44,860 --> 00:24:42,110
him and we both had a great laugh but he

526
00:24:49,899 --> 00:24:44,870
was an amazing individual cool Wow

527
00:24:52,419 --> 00:24:49,909
that is simply amazing do we miss busy

528
00:24:54,940 --> 00:24:52,429
guy so he's got to go okay so Jim if you

529
00:24:57,580 --> 00:24:54,950
can just wrap it up for us I'm just just

530
00:24:59,500 --> 00:24:57,590
kind of tell us you know where you're

531
00:25:00,580 --> 00:24:59,510
gonna be you know tomorrow for the

532
00:25:02,919 --> 00:25:00,590
launch what are the things that you're

533
00:25:05,230 --> 00:25:02,929
going to be thinking of and and what do

534
00:25:06,430 --> 00:25:05,240
you hope for or the message that you

535
00:25:08,950 --> 00:25:06,440
want to lay out to all the people that

536
00:25:10,060 --> 00:25:08,960
are watching you right now what message

537
00:25:12,480 --> 00:25:10,070
do you want to give out to the folks

538
00:25:15,090 --> 00:25:12,490

there yeah you know tomorrow I've got

539
00:25:18,090 --> 00:25:15,100
doing a lot of media in the morning

540
00:25:21,580 --> 00:25:18,100
President and Vice President are coming

541
00:25:25,180 --> 00:25:21,590
along with parts of the cabinet parts of

542
00:25:27,520 --> 00:25:25,190
the congressional delegations and

543
00:25:30,789 --> 00:25:27,530
certainly want to make sure that all

544
00:25:34,720 --> 00:25:30,799
that's going well you know I'm not

545
00:25:36,669 --> 00:25:34,730
involved in the inner workings of this

546
00:25:39,820 --> 00:25:36,679
launch it's I'm going to be an observer

547
00:25:44,649 --> 00:25:39,830
and making sure everything's going as

548
00:25:47,610 --> 00:25:44,659
well as I can but it is I'm gonna leave

549
00:25:51,549 --> 00:25:47,620
that to the professionals to do it right

550
00:25:52,720 --> 00:25:51,559
the message you know I know that there

551
00:25:55,990 --> 00:25:52,730
are a lot of people that are suffering

552
00:26:00,909 --> 00:25:56,000
in this country and in this world and

553
00:26:04,200 --> 00:26:00,919
tomorrow we hope to inspire the United

554
00:26:08,289 --> 00:26:04,210
States and inspire the world this is a

555
00:26:11,950 --> 00:26:08,299
generational achievement and we look

556
00:26:15,010 --> 00:26:11,960
forward to having more of them but this

557
00:26:16,370 --> 00:26:15,020
is what we do at NASA and yeah it's been

558
00:26:19,279 --> 00:26:16,380
challenging with kovat

559
00:26:22,310 --> 00:26:19,289
but we're not out and we're coming back

560
00:26:24,890 --> 00:26:22,320
and we're gonna keep going so tomorrow

561
00:26:27,710 --> 00:26:24,900
we're gonna light that candle and it's

562
00:26:29,299 --> 00:26:27,720
go diem - and I hope you'll all be with

563
00:26:32,810 --> 00:26:29,309

us watching awesome

564
00:26:35,270 --> 00:26:32,820
well Jim thank you so much not just for

565
00:26:37,549 --> 00:26:35,280
your presence here but also for your

566
00:26:39,169 --> 00:26:37,559
leadership your passion of what you do

567
00:26:40,760 --> 00:26:39,179
and all the things that you aim to do

568
00:26:42,950 --> 00:26:40,770
for NASA

569
00:26:45,110 --> 00:26:42,960
you know us us as employees you know we

570
00:26:46,940 --> 00:26:45,120
we get to reap the benefits of that it's

571
00:26:48,740 --> 00:26:46,950
having great leaders like yourselves at

572
00:26:50,720 --> 00:26:48,750
the top doing these great things that

573
00:26:52,669 --> 00:26:50,730
that allow us to do what what we can

574
00:26:57,080 --> 00:26:52,679
down here so I'm honored to be with you

575
00:26:59,060 --> 00:26:57,090
guys absolutely it's a win-win with that

576
00:27:01,460 --> 00:26:59,070
folks I definitely hope you did enjoy

577
00:27:03,860 --> 00:27:01,470
this segment here with our NASA deputy

578
00:27:06,500 --> 00:27:03,870
administrator it's not every day we get

579
00:27:08,270 --> 00:27:06,510
to sit down and talk and get to hear

580
00:27:10,310 --> 00:27:08,280
your words you know from you and

581
00:27:13,520 --> 00:27:10,320
hopefully you guys I'm got some of your

582
00:27:15,289 --> 00:27:13,530
questions answered with that we're gonna

583
00:27:16,970 --> 00:27:15,299
close it out and I'd like to invite you

584
00:27:18,200 --> 00:27:16,980
all to come back around four o'clock for

585
00:27:20,330 --> 00:27:18,210
our pop and speakers we're gonna have

586
00:27:23,090 --> 00:27:20,340
Steve Payne and Dana Hutchinson who will

587
00:27:24,590 --> 00:27:23,100
be talking to us Josh thank you for

588
00:27:26,029 --> 00:27:24,600

riding along we've got a three o'clock -

589
00:27:27,740 --> 00:27:26,039
don't miss the three o'clock 3 o'clock

590
00:27:30,500 --> 00:27:27,750
are you I'm sorry by the way yes 3

591
00:27:33,560 --> 00:27:30,510
o'clock as well yeah so many good shows

592
00:27:35,450 --> 00:27:33,570
guys stay tuned come on back keep your

593
00:27:37,789 --> 00:27:35,460
questions coming and thank you for

594
00:27:39,320 --> 00:27:37,799
joining us and letting us educate you a

595
00:27:41,419 --> 00:27:39,330
little bit about what we do here at NASA