



1  
00:00:05,430 --> 00:00:01,910  
i have the distinct pleasure to

2  
00:00:06,950 --> 00:00:05,440  
introduce the our administrator

3  
00:00:09,669 --> 00:00:06,960  
administrator jim breinstein was

4  
00:00:10,870 --> 00:00:09,679  
nominated by president ronald president

5  
00:00:13,749 --> 00:00:10,880  
donald trump

6  
00:00:16,870 --> 00:00:13,759  
confirmed by the u.s senate and sworn in

7  
00:00:18,470 --> 00:00:16,880  
as nasa's 13th administrator on april 23

8  
00:00:21,429 --> 00:00:18,480  
2018.

9  
00:00:23,269 --> 00:00:21,439  
jim was elected in 2012 to represent

10  
00:00:25,269 --> 00:00:23,279  
oklahoma's first congressional district

11  
00:00:26,790 --> 00:00:25,279  
in the u.s house of representatives

12  
00:00:28,870 --> 00:00:26,800  
where he served on the armed services

13  
00:00:30,630 --> 00:00:28,880

committee and the science space and

14

00:00:32,389 --> 00:00:30,640

technology committee

15

00:00:33,990 --> 00:00:32,399

jim's career in federal service began in

16

00:00:37,030 --> 00:00:34,000

the u.s navy

17

00:00:39,430 --> 00:00:37,040

flying the e-2c hawkeye off the uss

18

00:00:41,030 --> 00:00:39,440

abraham lincoln aircraft carrier

19

00:00:43,670 --> 00:00:41,040

it was there that he flew combat

20

00:00:46,549 --> 00:00:43,680

missions in iraq and afghanistan and

21

00:00:48,310 --> 00:00:46,559

accrued most of his 1900 flight hours

22

00:00:51,270 --> 00:00:48,320

and 333

23

00:00:54,389 --> 00:00:51,280

carrier assisted landings

24

00:00:56,790 --> 00:00:54,399

he later moved to the f-18 hornet and

25

00:00:59,590 --> 00:00:56,800

flew at the naval strike and air warfare

26  
00:01:02,229 --> 00:00:59,600  
center the parent command to top gun and

27  
00:01:05,590 --> 00:01:02,239  
as a reservist he also flew counter drug

28  
00:01:07,350 --> 00:01:05,600  
missions in central and south america

29  
00:01:09,910 --> 00:01:07,360  
after transitioning from active duty to

30  
00:01:11,750 --> 00:01:09,920  
the u.s navy reserve jim returned to

31  
00:01:14,230 --> 00:01:11,760  
tulsa oklahoma to be the executive

32  
00:01:17,109 --> 00:01:14,240  
director of the tulsa air and space

33  
00:01:19,350 --> 00:01:17,119  
museum and planetarium

34  
00:01:21,990 --> 00:01:19,360  
jim completed a triple major

35  
00:01:24,630 --> 00:01:22,000  
at rice university and earned his mba at

36  
00:01:27,749 --> 00:01:24,640  
cornell university he has three children

37  
00:01:29,510 --> 00:01:27,759  
as do i with his wife michelle and so

38  
00:01:31,670 --> 00:01:29,520

please join me in welcoming our nasa

39

00:01:33,990 --> 00:01:31,680

administrator jim breinstein

40

00:01:38,390 --> 00:01:34,000

thank you

41

00:01:40,390 --> 00:01:38,400

[Applause]

42

00:01:42,789 --> 00:01:40,400

dr eugene too thank you for that great

43

00:01:45,270 --> 00:01:42,799

introduction thank you for not just my

44

00:01:46,870 --> 00:01:45,280

introduction but the introduction

45

00:01:49,749 --> 00:01:46,880

uh to the public

46

00:01:51,990 --> 00:01:49,759

of your really phenomenal center

47

00:01:53,590 --> 00:01:52,000

and just to be clear because we have 10

48

00:01:56,149 --> 00:01:53,600

centers across the united states of

49

00:01:59,830 --> 00:01:57,670

this you know this is the first time

50

00:02:02,630 --> 00:01:59,840

we've done this on nasa tv and of course

51  
00:02:04,149 --> 00:02:02,640  
you get the opportunity to present aims

52  
00:02:06,310 --> 00:02:04,159  
on nasa tv

53  
00:02:07,910 --> 00:02:06,320  
for the the viewing public

54  
00:02:09,749 --> 00:02:07,920  
but in the future we'll do this at other

55  
00:02:11,910 --> 00:02:09,759  
centers and we'll have other centers

56  
00:02:13,589 --> 00:02:11,920  
present their capabilities i think it's

57  
00:02:14,869 --> 00:02:13,599  
critically important for all of america

58  
00:02:16,550 --> 00:02:14,879  
to understand

59  
00:02:19,510 --> 00:02:16,560  
ultimately the capabilities that we

60  
00:02:21,589 --> 00:02:19,520  
bring to bear for our country as nasa

61  
00:02:24,070 --> 00:02:21,599  
and of course each one of these centers

62  
00:02:25,750 --> 00:02:24,080  
is important in that capability so thank

63  
00:02:28,790 --> 00:02:25,760

you for your service you're doing a

64

00:02:30,869 --> 00:02:28,800

great job ames is spectacular as all of

65

00:02:32,309 --> 00:02:30,879

our centers are and i know that it's

66

00:02:34,550 --> 00:02:32,319

difficult

67

00:02:37,830 --> 00:02:34,560

to put together a knack at your center

68

00:02:39,509 --> 00:02:37,840

in particular um because uh it it it

69

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

takes a lot of time and a lot of effort

70

00:02:43,910 --> 00:02:41,519

but uh but it's important for our

71

00:02:46,070 --> 00:02:43,920

country to to see what we do and this is

72

00:02:48,309 --> 00:02:46,080

uh this is a great thing uh for for you

73

00:02:51,509 --> 00:02:48,319

you to spend time and effort putting

74

00:02:54,150 --> 00:02:51,519

together so we appreciate you very much

75

00:02:55,750 --> 00:02:54,160

general lyles thank you for being the

76

00:02:57,270 --> 00:02:55,760

chairman of this critically important

77

00:02:59,509 --> 00:02:57,280

committee

78

00:03:01,270 --> 00:02:59,519

as as everybody in this room is aware

79

00:03:02,710 --> 00:03:01,280

and i hope more and more people get to

80

00:03:06,470 --> 00:03:02,720

be aware

81

00:03:08,710 --> 00:03:06,480

nasa has its history in seeking advice

82

00:03:11,910 --> 00:03:08,720

in fact one of the slides that that that

83

00:03:14,550 --> 00:03:11,920

you showed dr2 you showed that we have

84

00:03:16,790 --> 00:03:14,560

our history as naca

85

00:03:19,190 --> 00:03:16,800

the national advisory committee on

86

00:03:20,949 --> 00:03:19,200

aeronautics going all the way back to

87

00:03:22,830 --> 00:03:20,959

the nineteen teens i don't remember what

88

00:03:24,630 --> 00:03:22,840

the specific year was

89

00:03:27,110 --> 00:03:24,640  
1915.

90

00:03:29,030 --> 00:03:27,120  
so that's a that's a long time ago well

91

00:03:31,030 --> 00:03:29,040  
before nasa existed

92

00:03:33,509 --> 00:03:31,040  
but at the same time it was an advisory

93

00:03:36,070 --> 00:03:33,519  
committee on aeronautics and it helped

94

00:03:38,070 --> 00:03:36,080  
our country really establish itself as

95

00:03:40,229 --> 00:03:38,080  
the preeminent

96

00:03:43,190 --> 00:03:40,239  
airfaring country at the time and now we

97

00:03:45,670 --> 00:03:43,200  
are the preeminent space faring nation

98

00:03:46,869 --> 00:03:45,680  
on the planet so what this group does

99

00:03:49,190 --> 00:03:46,879  
the nasa

100

00:03:51,830 --> 00:03:49,200  
advisory committee is it helps me as the

101  
00:03:53,429 --> 00:03:51,840  
nasa administrator and helps our agency

102  
00:03:55,750 --> 00:03:53,439  
ultimately be able to make good

103  
00:03:57,830 --> 00:03:55,760  
decisions that are in the best interest

104  
00:04:01,350 --> 00:03:57,840  
of our country not only in aeronautics

105  
00:04:03,589 --> 00:04:01,360  
but also in space technology discovery

106  
00:04:05,910 --> 00:04:03,599  
exploration and science all of the

107  
00:04:08,949 --> 00:04:05,920  
things that are important for america to

108  
00:04:10,869 --> 00:04:08,959  
to keep its technological edge in the

109  
00:04:12,789 --> 00:04:10,879  
world so general isles thank you for all

110  
00:04:15,110 --> 00:04:12,799  
of your service to this country and of

111  
00:04:16,789 --> 00:04:15,120  
course your service here on the knack

112  
00:04:18,710 --> 00:04:16,799  
as you guys make excellent

113  
00:04:20,069 --> 00:04:18,720

recommendations

114

00:04:22,710 --> 00:04:20,079

that we

115

00:04:24,230 --> 00:04:22,720

generally accept and sometimes don't

116

00:04:26,150 --> 00:04:24,240

but either way we want to get the best

117

00:04:27,990 --> 00:04:26,160

advice we can possibly get and of course

118

00:04:30,230 --> 00:04:28,000

going around the room

119

00:04:32,870 --> 00:04:30,240

it was not lost on me or anybody else

120

00:04:34,629 --> 00:04:32,880

how much expertise there is here in this

121

00:04:35,909 --> 00:04:34,639

room so thank you all for participating

122

00:04:36,950 --> 00:04:35,919

in this

123

00:04:38,629 --> 00:04:36,960

today

124

00:04:40,710 --> 00:04:38,639

so when we think about what we're up

125

00:04:43,749 --> 00:04:40,720

against as an agency and i'll just start

126

00:04:45,749 --> 00:04:43,759

talking about where we are right now

127

00:04:47,350 --> 00:04:45,759

and ultimately some of the space policy

128

00:04:49,270 --> 00:04:47,360

directives that i have as the nasa

129

00:04:51,270 --> 00:04:49,280

administrator coming from the

130

00:04:52,550 --> 00:04:51,280

administration coming from the president

131

00:04:54,950 --> 00:04:52,560

so he has

132

00:04:57,110 --> 00:04:54,960

already signed and issued

133

00:04:58,469 --> 00:04:57,120

three space policy directives the first

134

00:05:01,110 --> 00:04:58,479

one

135

00:05:02,390 --> 00:05:01,120

is our return to the moon space policy

136

00:05:04,629 --> 00:05:02,400

directive one

137

00:05:06,310 --> 00:05:04,639

says that the united states of america

138

00:05:07,830 --> 00:05:06,320

is going to the moon

139

00:05:10,710 --> 00:05:07,840

now people have said well we've heard

140

00:05:13,189 --> 00:05:10,720

this before we go back to

141

00:05:15,430 --> 00:05:13,199

the space exploration initiative of the

142

00:05:19,510 --> 00:05:15,440

1980s or the vision for space

143

00:05:21,590 --> 00:05:19,520

exploration of the 2000s early 2000s

144

00:05:23,350 --> 00:05:21,600

we've had other programs in the past

145

00:05:25,990 --> 00:05:23,360

where the united states said we're going

146

00:05:28,469 --> 00:05:26,000

to the moon and then sometimes i should

147

00:05:31,110 --> 00:05:28,479

say previously other than apollo we've

148

00:05:33,029 --> 00:05:31,120

gotten distracted budgets change and we

149

00:05:34,469 --> 00:05:33,039

ultimately don't accomplish the

150

00:05:36,310 --> 00:05:34,479

objective

151

00:05:39,270 --> 00:05:36,320

well in this particular space policy

152

00:05:41,110 --> 00:05:39,280

directive there are some differences

153

00:05:42,870 --> 00:05:41,120

between what we're doing now and what we

154

00:05:44,070 --> 00:05:42,880

attempted to do back then it starts with

155

00:05:46,550 --> 00:05:44,080

the fact

156

00:05:48,469 --> 00:05:46,560

that it specifically says that this time

157

00:05:49,990 --> 00:05:48,479

when we go to the moon we're going

158

00:05:52,310 --> 00:05:50,000

sustainably

159

00:05:54,950 --> 00:05:52,320

so it is on me to figure out how we get

160

00:05:56,469 --> 00:05:54,960

to the moon sustainably in other words

161

00:05:58,309 --> 00:05:56,479

we're not going to do flags and

162

00:06:00,469 --> 00:05:58,319

footprints again

163

00:06:02,070 --> 00:06:00,479

we all look back fondly on apollo

164

00:06:05,110 --> 00:06:02,080

critically important mission for our

165

00:06:06,230 --> 00:06:05,120

country but when it was over in 1972

166

00:06:08,150 --> 00:06:06,240

and some would argue that it went a

167

00:06:10,390 --> 00:06:08,160

little longer with the apollo soyuz

168

00:06:12,790 --> 00:06:10,400

project but when it was over we didn't

169

00:06:15,270 --> 00:06:12,800

go back to the moon we left flags and

170

00:06:17,270 --> 00:06:15,280

footprints and this time when we go

171

00:06:19,590 --> 00:06:17,280

we're going to go to stay

172

00:06:21,270 --> 00:06:19,600

we're going to go sustainably that's in

173

00:06:23,590 --> 00:06:21,280

the president's space policy directive

174

00:06:25,590 --> 00:06:23,600

one so how do we go sustainably

175

00:06:28,070 --> 00:06:25,600

well we start

176

00:06:30,469 --> 00:06:28,080

by taking advantage of capabilities in

177

00:06:32,070 --> 00:06:30,479

this country that didn't exist even five

178

00:06:33,909 --> 00:06:32,080

or ten years ago

179

00:06:36,469 --> 00:06:33,919

we have commercial companies that can do

180

00:06:37,830 --> 00:06:36,479

things that weren't possible even just a

181

00:06:39,510 --> 00:06:37,840

few years ago

182

00:06:41,830 --> 00:06:39,520

so we want to use those commercial

183

00:06:44,629 --> 00:06:41,840

capabilities that didn't exist to help

184

00:06:47,350 --> 00:06:44,639

develop this sustainable architecture we

185

00:06:49,270 --> 00:06:47,360

also have in the world now

186

00:06:50,309 --> 00:06:49,280

more space agencies than we've ever had

187

00:06:51,749 --> 00:06:50,319

before

188

00:06:53,990 --> 00:06:51,759

all over the world and we want to

189

00:06:56,550 --> 00:06:54,000

partner with our international partners

190

00:06:58,550 --> 00:06:56,560

to have that sustainable architecture

191

00:07:00,150 --> 00:06:58,560

and because of our commercial partners

192

00:07:03,110 --> 00:07:00,160

and our international partners there are

193

00:07:05,110 --> 00:07:03,120

things happening that enable us

194

00:07:07,270 --> 00:07:05,120

to get to space in a way that we haven't

195

00:07:10,070 --> 00:07:07,280

been able to get to space before the

196

00:07:11,749 --> 00:07:10,080

idea that we have reusable rockets

197

00:07:13,589 --> 00:07:11,759

the idea that you can launch or imagine

198

00:07:15,430 --> 00:07:13,599

if you flew across the united states you

199

00:07:18,230 --> 00:07:15,440

flew here to ames

200

00:07:20,390 --> 00:07:18,240

in a 737 and when when the mission was

201  
00:07:22,710 --> 00:07:20,400  
over you threw the airplane away

202  
00:07:24,390 --> 00:07:22,720  
how many of you would have flown here

203  
00:07:26,150 --> 00:07:24,400  
it wouldn't have happened

204  
00:07:27,749 --> 00:07:26,160  
but when you can reuse an airplane we

205  
00:07:30,870 --> 00:07:27,759  
can drive down the cost and we can

206  
00:07:33,430 --> 00:07:30,880  
increase access to aviation and now

207  
00:07:36,230 --> 00:07:33,440  
we're on the brink of driving down costs

208  
00:07:38,150 --> 00:07:36,240  
and increasing access to space

209  
00:07:39,430 --> 00:07:38,160  
which gives us new capabilities that we

210  
00:07:41,110 --> 00:07:39,440  
didn't have before because of

211  
00:07:42,629 --> 00:07:41,120  
reusability

212  
00:07:44,790 --> 00:07:42,639  
we also want to make sure that if we're

213  
00:07:47,749 --> 00:07:44,800

going to go to the moon sustainably

214

00:07:50,230 --> 00:07:47,759

it's not just about reusable rockets

215

00:07:52,390 --> 00:07:50,240

which are impressive in themselves but

216

00:07:54,150 --> 00:07:52,400

we want reusable tugs to go from earth

217

00:07:55,510 --> 00:07:54,160

orbit to lunar orbit

218

00:07:57,990 --> 00:07:55,520

we want

219

00:08:01,189 --> 00:07:58,000

space stations around the moon that can

220

00:08:03,270 --> 00:08:01,199

be there for a very long period of time

221

00:08:05,510 --> 00:08:03,280

and we want landers that go back and

222

00:08:07,510 --> 00:08:05,520

forth from that space station or

223

00:08:09,350 --> 00:08:07,520

eventually space stations

224

00:08:12,469 --> 00:08:09,360

we want those landers to go back and

225

00:08:14,230 --> 00:08:12,479

forth over and over again reusing the

226

00:08:16,710 --> 00:08:14,240

landers themselves

227

00:08:19,270 --> 00:08:16,720

this ultimately is how we create

228

00:08:21,189 --> 00:08:19,280

this architecture for a sustainable

229

00:08:23,589 --> 00:08:21,199

return to the moon

230

00:08:25,990 --> 00:08:23,599

so in this particular case space policy

231

00:08:27,110 --> 00:08:26,000

directive one says that we're going back

232

00:08:29,430 --> 00:08:27,120

to the moon

233

00:08:31,990 --> 00:08:29,440

we're going sustainably we're going to

234

00:08:33,430 --> 00:08:32,000

utilize our commercial partners we're

235

00:08:35,430 --> 00:08:33,440

going to utilize our international

236

00:08:37,269 --> 00:08:35,440

partners and there's another piece here

237

00:08:38,870 --> 00:08:37,279

that's unique never been done before

238

00:08:41,829 --> 00:08:38,880

it's never been our policy as a country

239

00:08:44,630 --> 00:08:41,839

before but the policy is this

240

00:08:46,550 --> 00:08:44,640

we're going to utilize the resources of

241

00:08:48,070 --> 00:08:46,560

the moon

242

00:08:49,110 --> 00:08:48,080

people say well what resources are on

243

00:08:51,509 --> 00:08:49,120

the moon

244

00:08:54,389 --> 00:08:51,519

well from 1969 when we first landed on

245

00:08:56,790 --> 00:08:54,399

the moon all the way up until 2008 we

246

00:08:58,470 --> 00:08:56,800

believed the moon was bone dry

247

00:09:00,710 --> 00:08:58,480

and in 2008

248

00:09:02,470 --> 00:09:00,720

a discovery was made by india

249

00:09:04,949 --> 00:09:02,480

that nasa then

250

00:09:07,110 --> 00:09:04,959

corroborated and in a massive way

251

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

we now know that there are hundreds of

252

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

billions of tons of water ice on the

253

00:09:12,470 --> 00:09:10,640

surface of the moon

254

00:09:14,150 --> 00:09:12,480

especially at the poles

255

00:09:16,550 --> 00:09:14,160

well what does that mean

256

00:09:18,310 --> 00:09:16,560

water ice represents life support

257

00:09:21,110 --> 00:09:18,320

it's water to drink

258

00:09:22,389 --> 00:09:21,120

you know it's air to breathe oxygen

259

00:09:24,389 --> 00:09:22,399

and of course

260

00:09:26,630 --> 00:09:24,399

if you crack water into hydrogen and

261

00:09:28,949 --> 00:09:26,640

oxygen it's also rocket fuel the same

262

00:09:30,470 --> 00:09:28,959

fuel that's going to power the sls

263

00:09:32,310 --> 00:09:30,480

the same fuel that powered the space

264

00:09:34,150 --> 00:09:32,320

shuttles wayne

265

00:09:36,630 --> 00:09:34,160

so this is this is a great opportunity

266

00:09:38,630 --> 00:09:36,640

for us as an agency to say look there

267

00:09:40,630 --> 00:09:38,640

are right now resources on the moon we

268

00:09:42,389 --> 00:09:40,640

want to be able to prove out in-situ

269

00:09:44,230 --> 00:09:42,399

resource utilization

270

00:09:46,310 --> 00:09:44,240

using the resources of the moon to do

271

00:09:48,389 --> 00:09:46,320

more on the moon than we've ever been

272

00:09:49,350 --> 00:09:48,399

able to do before so that's another

273

00:09:51,750 --> 00:09:49,360

change

274

00:09:53,590 --> 00:09:51,760

in our policy as as a country so all of

275

00:09:55,670 --> 00:09:53,600

this is very positive

276

00:09:58,310 --> 00:09:55,680

the other thing that's important when we

277

00:10:00,710 --> 00:09:58,320

think about how do we get more access to

278

00:10:02,870 --> 00:10:00,720

more parts of the moon than ever before

279

00:10:04,949 --> 00:10:02,880

we talk about the gateway the idea that

280

00:10:06,470 --> 00:10:04,959

we're going to have this space station

281

00:10:08,069 --> 00:10:06,480

and i want to be careful because when we

282

00:10:10,790 --> 00:10:08,079

talk about a space station people think

283

00:10:12,550 --> 00:10:10,800

about the international space station

284

00:10:14,470 --> 00:10:12,560

this project that took all of these

285

00:10:16,069 --> 00:10:14,480

years to build and of course it's

286

00:10:17,829 --> 00:10:16,079

massive and

287

00:10:19,590 --> 00:10:17,839

that's really not what we're doing with

288

00:10:21,430 --> 00:10:19,600

the gateway what we're doing

289

00:10:22,630 --> 00:10:21,440

is we're putting a much smaller device

290

00:10:25,030 --> 00:10:22,640

in orbit around the moon that's going to

291

00:10:26,790 --> 00:10:25,040

have access by humans but it's also

292

00:10:28,230 --> 00:10:26,800

going to be maneuverable

293

00:10:30,069 --> 00:10:28,240

it's going to have solar electric

294

00:10:31,990 --> 00:10:30,079

propulsion it can not only stay in that

295

00:10:33,750 --> 00:10:32,000

near rectilinear halo orbit where it can

296

00:10:36,389 --> 00:10:33,760

be for a very long period of time

297

00:10:38,389 --> 00:10:36,399

without burning any station keeping fuel

298

00:10:40,230 --> 00:10:38,399

in other words a sustainable long-term

299

00:10:42,230 --> 00:10:40,240

mission in that orbit

300

00:10:44,389 --> 00:10:42,240

but with that solar electric propulsion

301

00:10:47,190 --> 00:10:44,399

it can also go to the l1 point and the

302

00:10:49,430 --> 00:10:47,200

l2 point and give us more access to more

303

00:10:51,829 --> 00:10:49,440

parts of the moon than ever before like

304

00:10:55,670 --> 00:10:51,839

i said from 1969 all the way up until

305

00:10:57,269 --> 00:10:55,680

2008 we believe the moon to be bone dry

306

00:10:58,949 --> 00:10:57,279

why is that well that's because in the

307

00:11:01,030 --> 00:10:58,959

apollo era we went to just a few

308

00:11:02,790 --> 00:11:01,040

portions of the moon you know in the in

309

00:11:05,509 --> 00:11:02,800

the equatorial regions

310

00:11:07,269 --> 00:11:05,519

six missions all critically important

311

00:11:09,590 --> 00:11:07,279

but they did not give us everything we

312

00:11:11,190 --> 00:11:09,600

needed to know about our nearest

313

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

neighbor the moon

314

00:11:16,069 --> 00:11:13,519

so we want to retire risk we want

315

00:11:18,630 --> 00:11:16,079

reusable architectures we want to use

316

00:11:20,150 --> 00:11:18,640

that in essence space station in orbit

317

00:11:21,509 --> 00:11:20,160

around the moon the gateway we want to

318

00:11:23,430 --> 00:11:21,519

use that to get to more parts of the

319

00:11:24,790 --> 00:11:23,440

moon than ever before and this entire

320

00:11:26,790 --> 00:11:24,800

architecture

321

00:11:29,110 --> 00:11:26,800

needs to be published it needs to be

322

00:11:32,230 --> 00:11:29,120

public the interfaces we want

323

00:11:34,470 --> 00:11:32,240

interoperability whether it's the power

324

00:11:35,750 --> 00:11:34,480

or the docking we want everybody to look

325

00:11:37,670 --> 00:11:35,760

at it whether you're a commercial

326

00:11:39,670 --> 00:11:37,680

partner or an international partner if

327

00:11:41,590 --> 00:11:39,680

you want to build your own landers we

328

00:11:44,150 --> 00:11:41,600

want you to build your own landers and

329

00:11:46,790 --> 00:11:44,160

we want you to be compatible with our

330

00:11:48,470 --> 00:11:46,800

architecture between earth and the moon

331

00:11:50,310 --> 00:11:48,480

and in orbit around the moon we want you

332

00:11:52,150 --> 00:11:50,320

to be compatible we want to be able to

333

00:11:53,670 --> 00:11:52,160

do more than we've ever done before and

334

00:11:56,389 --> 00:11:53,680

so what we're going to do

335

00:11:58,629 --> 00:11:56,399

is build this critical infrastructure on

336

00:12:00,470 --> 00:11:58,639

and around the moon

337

00:12:01,750 --> 00:12:00,480

so space policy directive one is a big

338

00:12:03,829 --> 00:12:01,760

order

339

00:12:06,310 --> 00:12:03,839

and the last piece of it

340

00:12:08,230 --> 00:12:06,320

is we want all of these capabilities

341

00:12:11,190 --> 00:12:08,240

to retire risk

342

00:12:12,870 --> 00:12:11,200

prove in-situ resource utilization

343

00:12:14,230 --> 00:12:12,880

and we want to be able to replicate that

344

00:12:16,470 --> 00:12:14,240

at mars

345

00:12:18,870 --> 00:12:16,480

we talk about the gateway

346

00:12:20,710 --> 00:12:18,880

yes it is true the first gateway is

347

00:12:22,310 --> 00:12:20,720

about the moon

348

00:12:23,750 --> 00:12:22,320

we want more access to more parts of the

349

00:12:25,670 --> 00:12:23,760

moon we don't want to miss

350

00:12:27,190 --> 00:12:25,680

hundreds of billions of tons of water

351  
00:12:29,269 --> 00:12:27,200  
ice again

352  
00:12:30,550 --> 00:12:29,279  
we don't want to miss that again

353  
00:12:32,310 --> 00:12:30,560  
and you know we talk about what other

354  
00:12:33,910 --> 00:12:32,320  
resources might be there we don't know

355  
00:12:35,670 --> 00:12:33,920  
there could be trillions of dollars

356  
00:12:37,509 --> 00:12:35,680  
worth of platinum group metals we know

357  
00:12:39,269 --> 00:12:37,519  
that there are and i'm not saying there

358  
00:12:41,030 --> 00:12:39,279  
are i want to be clear

359  
00:12:43,430 --> 00:12:41,040  
but we know that there are rare earth

360  
00:12:44,790 --> 00:12:43,440  
metals that are extremely valuable

361  
00:12:46,870 --> 00:12:44,800  
well they're not earth metals at all

362  
00:12:48,629 --> 00:12:46,880  
they're asteroid impacts

363  
00:12:50,310 --> 00:12:48,639

many there's and you know this because

364

00:12:52,870 --> 00:12:50,320

down at arizona state university you

365

00:12:54,310 --> 00:12:52,880

have the biggest archive of meteorites

366

00:12:56,069 --> 00:12:54,320

in the world

367

00:12:57,990 --> 00:12:56,079

those rare earth metals are asteroid

368

00:12:59,910 --> 00:12:58,000

impacts and we know that the moon has

369

00:13:01,990 --> 00:12:59,920

had lots of asteroid impacts just like

370

00:13:03,750 --> 00:13:02,000

the earth but the moon doesn't have an

371

00:13:06,069 --> 00:13:03,760

active geology and it doesn't have the

372

00:13:07,750 --> 00:13:06,079

the hydrosphere that we have which means

373

00:13:10,310 --> 00:13:07,760

those deposits could be just sitting

374

00:13:12,710 --> 00:13:10,320

there as they did a billion years ago we

375

00:13:14,629 --> 00:13:12,720

don't know i'm not saying that they are

376

00:13:17,590 --> 00:13:14,639

but to the extent that they exist we

377

00:13:19,670 --> 00:13:17,600

need to be actively working to make sure

378

00:13:20,550 --> 00:13:19,680

that we find them rather than somebody

379

00:13:22,629 --> 00:13:20,560

else

380

00:13:24,870 --> 00:13:22,639

so that's really utilizing the resources

381

00:13:27,190 --> 00:13:24,880

of the moon and then retiring the risk

382

00:13:29,269 --> 00:13:27,200

proving the capabilities understanding

383

00:13:31,269 --> 00:13:29,279

human physiology

384

00:13:33,590 --> 00:13:31,279

we know what happens when astronauts go

385

00:13:35,350 --> 00:13:33,600

into orbit go into a microgravity

386

00:13:36,870 --> 00:13:35,360

environment for a period of six months

387

00:13:38,710 --> 00:13:36,880

to a year we've proven that out on the

388

00:13:40,629 --> 00:13:38,720

international space station which has

389

00:13:42,629 --> 00:13:40,639

been an extremely successful project for

390

00:13:45,509 --> 00:13:42,639

the united states of america and all of

391

00:13:47,430 --> 00:13:45,519

our international partners we've seen it

392

00:13:49,030 --> 00:13:47,440

we know that you know astronauts will

393

00:13:50,389 --> 00:13:49,040

lose one to three percent of their bone

394

00:13:52,470 --> 00:13:50,399

mass per month

395

00:13:53,750 --> 00:13:52,480

we know that their neural vestibular

396

00:13:55,750 --> 00:13:53,760

systems will

397

00:13:57,910 --> 00:13:55,760

when they come back into a gravity will

398

00:14:00,949 --> 00:13:57,920

take come back into a gravity well will

399

00:14:02,870 --> 00:14:00,959

take a bit of time to ultimately

400

00:14:04,870 --> 00:14:02,880

be ready for them to do activities like

401  
00:14:06,310 --> 00:14:04,880  
drive or ride a bike do those kind of

402  
00:14:07,750 --> 00:14:06,320  
activities

403  
00:14:10,710 --> 00:14:07,760  
and and we know that the the

404  
00:14:13,110 --> 00:14:10,720  
cardiovascular system gets deconditioned

405  
00:14:14,310 --> 00:14:13,120  
there's other things we don't know

406  
00:14:16,310 --> 00:14:14,320  
although we're learning more and more

407  
00:14:18,470 --> 00:14:16,320  
every day about what happens in the

408  
00:14:19,670 --> 00:14:18,480  
microgravity environment

409  
00:14:22,470 --> 00:14:19,680  
with

410  
00:14:24,629 --> 00:14:22,480  
physiology but also in in the radiation

411  
00:14:27,030 --> 00:14:24,639  
environment of of space so we're

412  
00:14:29,509 --> 00:14:27,040  
learning these things all the time we've

413  
00:14:31,430 --> 00:14:29,519

we're getting better understanding but

414

00:14:32,949 --> 00:14:31,440

the question is this

415

00:14:34,790 --> 00:14:32,959

do you want

416

00:14:37,030 --> 00:14:34,800

for the first time

417

00:14:40,230 --> 00:14:37,040

when we send somebody on

418

00:14:41,910 --> 00:14:40,240

a seven to nine month journey to mars

419

00:14:43,990 --> 00:14:41,920

do you want them for the first time

420

00:14:45,829 --> 00:14:44,000

proving all of this all of the

421

00:14:48,150 --> 00:14:45,839

physiology

422

00:14:49,750 --> 00:14:48,160

challenge and and proving that we can

423

00:14:52,069 --> 00:14:49,760

mitigate the physiology channel do you

424

00:14:54,150 --> 00:14:52,079

want them proving that out on mars where

425

00:14:55,990 --> 00:14:54,160

your next opportunity to come home is

426  
00:14:57,910 --> 00:14:56,000  
two years away

427  
00:15:00,470 --> 00:14:57,920  
or do we want to retire all of this risk

428  
00:15:02,550 --> 00:15:00,480  
both technology but technologically but

429  
00:15:03,990 --> 00:15:02,560  
also with human physiology do we want to

430  
00:15:06,069 --> 00:15:04,000  
prove it out first

431  
00:15:07,829 --> 00:15:06,079  
on a world that is only a three-day

432  
00:15:09,829 --> 00:15:07,839  
journey home

433  
00:15:11,430 --> 00:15:09,839  
if we have learned anything from apollo

434  
00:15:14,230 --> 00:15:11,440  
13

435  
00:15:15,910 --> 00:15:14,240  
it is that we can have things go bad and

436  
00:15:17,750 --> 00:15:15,920  
still make it home

437  
00:15:19,350 --> 00:15:17,760  
and in other words turn a failed mission

438  
00:15:21,110 --> 00:15:19,360

into a successful mission we can do that

439

00:15:22,870 --> 00:15:21,120

from the moon something like that

440

00:15:24,870 --> 00:15:22,880

happens on the way to mars

441

00:15:26,949 --> 00:15:24,880

it doesn't work out so well

442

00:15:28,949 --> 00:15:26,959

so that's why we have the moon it can

443

00:15:32,069 --> 00:15:28,959

retire risk we can prove capability and

444

00:15:34,470 --> 00:15:32,079

then we can replicate it at mars

445

00:15:36,550 --> 00:15:34,480

so this is space policy directive one

446

00:15:38,790 --> 00:15:36,560

and of course most of that is going to

447

00:15:40,389 --> 00:15:38,800

fall on nasa and our commercial partners

448

00:15:41,829 --> 00:15:40,399

and our international partners

449

00:15:44,230 --> 00:15:41,839

so we're looking for advice on how to

450

00:15:46,150 --> 00:15:44,240

make this happen in an effective way

451  
00:15:49,110 --> 00:15:46,160  
space policy directive 2

452  
00:15:50,470 --> 00:15:49,120  
focuses on the regulatory environment

453  
00:15:52,310 --> 00:15:50,480  
we know

454  
00:15:55,189 --> 00:15:52,320  
that there are more things happening

455  
00:15:56,629 --> 00:15:55,199  
commercially in space than ever before

456  
00:15:58,069 --> 00:15:56,639  
some of the challenges we have as a

457  
00:16:00,629 --> 00:15:58,079  
country

458  
00:16:03,110 --> 00:16:00,639  
is that some capital in fact a good bit

459  
00:16:04,949 --> 00:16:03,120  
of capital is heading overseas and the

460  
00:16:07,430 --> 00:16:04,959  
question is why is it because we don't

461  
00:16:09,030 --> 00:16:07,440  
have the technology or the capability

462  
00:16:10,870 --> 00:16:09,040  
no in fact it's because we have a

463  
00:16:12,389 --> 00:16:10,880

regulatory environment where some people

464

00:16:13,749 --> 00:16:12,399

would suggest

465

00:16:15,350 --> 00:16:13,759

that we don't have the ability to

466

00:16:17,749 --> 00:16:15,360

provide authorization and continuing

467

00:16:19,749 --> 00:16:17,759

supervision which is required under our

468

00:16:21,269 --> 00:16:19,759

international obligations

469

00:16:22,870 --> 00:16:21,279

so if somebody in the state department

470

00:16:24,629 --> 00:16:22,880

says we don't have that ability then

471

00:16:26,310 --> 00:16:24,639

launches don't happen and if launches

472

00:16:28,230 --> 00:16:26,320

don't happen here

473

00:16:29,749 --> 00:16:28,240

those capabilities go to other countries

474

00:16:31,590 --> 00:16:29,759

and we want those capabilities coming

475

00:16:33,590 --> 00:16:31,600

here we want capital flowing to the

476  
00:16:35,350 --> 00:16:33,600  
united states not capital flowing out of

477  
00:16:37,670 --> 00:16:35,360  
the united states so we've got to work

478  
00:16:39,509 --> 00:16:37,680  
on this regulatory environment space

479  
00:16:40,870 --> 00:16:39,519  
policy directive 2

480  
00:16:43,829 --> 00:16:40,880  
focuses us

481  
00:16:45,509 --> 00:16:43,839  
on that regulatory environment when we

482  
00:16:48,550 --> 00:16:45,519  
think of non-traditional space

483  
00:16:50,310 --> 00:16:48,560  
activities commercial habitation

484  
00:16:52,629 --> 00:16:50,320  
the idea that commercial operators are

485  
00:16:54,790 --> 00:16:52,639  
going to put space stations into orbit

486  
00:16:56,389 --> 00:16:54,800  
that nasa can then be one customer of

487  
00:16:57,829 --> 00:16:56,399  
many customers

488  
00:16:59,670 --> 00:16:57,839

that's a good thing for us because it

489

00:17:01,430 --> 00:16:59,680

drives down cost

490

00:17:03,670 --> 00:17:01,440

think about robotic servicing of

491

00:17:05,029 --> 00:17:03,680

satellites doing rendezvous in proximity

492

00:17:08,710 --> 00:17:05,039

operations

493

00:17:10,630 --> 00:17:08,720

again that enables us to take care of

494

00:17:12,549 --> 00:17:10,640

the space environment if you will to

495

00:17:14,309 --> 00:17:12,559

make sure that we're not littering

496

00:17:16,309 --> 00:17:14,319

orbital regimes that could be damaging

497

00:17:18,470 --> 00:17:16,319

to future space missions

498

00:17:21,110 --> 00:17:18,480

think about again how do we utilize the

499

00:17:23,189 --> 00:17:21,120

resources of the moon commercially or

500

00:17:25,029 --> 00:17:23,199

even mine an asteroid

501  
00:17:27,669 --> 00:17:25,039  
these kind of activities right now we

502  
00:17:29,669 --> 00:17:27,679  
don't have in our country an agency

503  
00:17:31,990 --> 00:17:29,679  
responsible for that authorization and

504  
00:17:33,669 --> 00:17:32,000  
continuing supervision space policy

505  
00:17:35,590 --> 00:17:33,679  
directive 2 says that we're going to put

506  
00:17:37,110 --> 00:17:35,600  
that activity at the department of

507  
00:17:38,789 --> 00:17:37,120  
commerce

508  
00:17:39,990 --> 00:17:38,799  
and friends we have to make this a

509  
00:17:41,830 --> 00:17:40,000  
reality

510  
00:17:44,150 --> 00:17:41,840  
because otherwise these capabilities

511  
00:17:46,070 --> 00:17:44,160  
will go abroad go back to space policy

512  
00:17:46,950 --> 00:17:46,080  
directive one we're going back to the

513  
00:17:48,549 --> 00:17:46,960

moon

514

00:17:50,150 --> 00:17:48,559

and we're going with international

515

00:17:51,350 --> 00:17:50,160

partners and we're going with commercial

516

00:17:52,789 --> 00:17:51,360

partners

517

00:17:55,029 --> 00:17:52,799

but how do we get those commercial

518

00:17:56,630 --> 00:17:55,039

partners to be commercial partners

519

00:17:57,909 --> 00:17:56,640

if instead they're taking their money

520

00:17:59,590 --> 00:17:57,919

overseas

521

00:18:01,190 --> 00:17:59,600

we want our commercial partners to stay

522

00:18:03,190 --> 00:18:01,200

here we want to grow more commercial

523

00:18:05,990 --> 00:18:03,200

partners here that's what space policy

524

00:18:09,110 --> 00:18:06,000

directive 2 is all about

525

00:18:10,789 --> 00:18:09,120

then we have space policy directive 3

526

00:18:12,230 --> 00:18:10,799

which is another big challenge going

527

00:18:14,710 --> 00:18:12,240

forward

528

00:18:16,710 --> 00:18:14,720

nasa is one of many agencies that is

529

00:18:19,430 --> 00:18:16,720

part of what's called the interagency

530

00:18:21,990 --> 00:18:19,440

space debris coordination committee

531

00:18:23,270 --> 00:18:22,000

13 space agencies from across the the

532

00:18:25,350 --> 00:18:23,280

globe

533

00:18:27,270 --> 00:18:25,360

nasa being one of them

534

00:18:28,950 --> 00:18:27,280

this coordination committee has said

535

00:18:30,310 --> 00:18:28,960

that every five to nine years we're

536

00:18:32,870 --> 00:18:30,320

going to have a collision in low earth

537

00:18:35,590 --> 00:18:32,880

orbit similar to the iridium cosmos

538

00:18:37,750 --> 00:18:35,600

collision that we saw in 2009

539

00:18:39,590 --> 00:18:37,760

that one collision resulted in thousands

540

00:18:40,950 --> 00:18:39,600

of pieces of orbital debris that is

541

00:18:42,870 --> 00:18:40,960

trackable

542

00:18:44,710 --> 00:18:42,880

that means there's thousands more pieces

543

00:18:45,830 --> 00:18:44,720

that are not trackable when i say

544

00:18:47,909 --> 00:18:45,840

trackable we're talking about 10

545

00:18:50,150 --> 00:18:47,919

centimeters or larger

546

00:18:52,710 --> 00:18:50,160

well with all of this debris that puts

547

00:18:54,470 --> 00:18:52,720

low earth orbit in jeopardy

548

00:18:57,430 --> 00:18:54,480

and of course there's other activities

549

00:18:59,669 --> 00:18:57,440

happening in low earth orbit including

550

00:19:01,990 --> 00:18:59,679

in 2007

551  
00:19:03,270 --> 00:19:02,000  
one of one of the nations of the world

552  
00:19:05,110 --> 00:19:03,280  
and i'm not going to mention who it is

553  
00:19:07,110 --> 00:19:05,120  
here but everybody here knows who it is

554  
00:19:09,270 --> 00:19:07,120  
launched a direct ascent anti-satellite

555  
00:19:10,950 --> 00:19:09,280  
missile and and knocked out a satellite

556  
00:19:12,870 --> 00:19:10,960  
of their own in low earth orbit

557  
00:19:15,190 --> 00:19:12,880  
resulting in a debris field that we are

558  
00:19:17,590 --> 00:19:15,200  
still dealing with today as an agency

559  
00:19:19,669 --> 00:19:17,600  
and as a nation

560  
00:19:21,590 --> 00:19:19,679  
so this is resulting in a cluttered

561  
00:19:24,390 --> 00:19:21,600  
space environment and we've got to make

562  
00:19:25,830 --> 00:19:24,400  
sure that we're protecting space not

563  
00:19:27,350 --> 00:19:25,840

just for our generation but for

564

00:19:29,830 --> 00:19:27,360

generations to come

565

00:19:31,909 --> 00:19:29,840

so space policy directive three says

566

00:19:33,510 --> 00:19:31,919

we're going to take advantage of not

567

00:19:35,590 --> 00:19:33,520

just our current capabilities but we're

568

00:19:37,909 --> 00:19:35,600

going to build capabilities to provide

569

00:19:40,549 --> 00:19:37,919

space situational awareness and space

570

00:19:42,310 --> 00:19:40,559

traffic management so that in the future

571

00:19:43,830 --> 00:19:42,320

we don't have these kind of collisions

572

00:19:45,830 --> 00:19:43,840

and these kind of

573

00:19:48,230 --> 00:19:45,840

challenges that could be detrimental to

574

00:19:50,310 --> 00:19:48,240

to our country and really to the world

575

00:19:52,390 --> 00:19:50,320

for generations to come

576

00:19:54,470 --> 00:19:52,400

so these are a lot of things that

577

00:19:57,270 --> 00:19:54,480

again space policy directive 3 is not

578

00:20:00,070 --> 00:19:57,280

focused specifically on nasa

579

00:20:02,470 --> 00:20:00,080

but we do have a role to play our role

580

00:20:04,390 --> 00:20:02,480

is to develop technologies to develop

581

00:20:06,710 --> 00:20:04,400

capabilities to partner with

582

00:20:09,669 --> 00:20:06,720

institutions many of which doctor two

583

00:20:12,230 --> 00:20:09,679

you talked about academia specifically

584

00:20:14,470 --> 00:20:12,240

how do we ultimately preserve the space

585

00:20:16,070 --> 00:20:14,480

environment for future generations

586

00:20:17,750 --> 00:20:16,080

there's a lot of talent all throughout

587

00:20:18,549 --> 00:20:17,760

the united states we need to tap into

588

00:20:20,149 --> 00:20:18,559

that

589

00:20:22,070 --> 00:20:20,159

a lot of it's at universities a lot of

590

00:20:24,230 --> 00:20:22,080

it is it those partner institutes that

591

00:20:26,710 --> 00:20:24,240

you talk about virtual institutes

592

00:20:29,110 --> 00:20:26,720

and nasa is going to be directing

593

00:20:30,630 --> 00:20:29,120

kind of the process by which we we make

594

00:20:32,390 --> 00:20:30,640

those decisions and ultimately build

595

00:20:34,470 --> 00:20:32,400

those capabilities

596

00:20:36,310 --> 00:20:34,480

in space policy directive 3 that

597

00:20:38,630 --> 00:20:36,320

activity will ultimately

598

00:20:40,789 --> 00:20:38,640

reside within the commerce department

599

00:20:42,310 --> 00:20:40,799

but nasa is going to be involved in in

600

00:20:43,990 --> 00:20:42,320

developing those capabilities just like

601  
00:20:45,909 --> 00:20:44,000  
we do for

602  
00:20:47,590 --> 00:20:45,919  
unmanned aerial systems and integrating

603  
00:20:49,669 --> 00:20:47,600  
them into the national airspace system

604  
00:20:51,510 --> 00:20:49,679  
for the faa we develop those

605  
00:20:53,430 --> 00:20:51,520  
capabilities once they're developed we

606  
00:20:55,430 --> 00:20:53,440  
transfer them over to another agency

607  
00:20:57,830 --> 00:20:55,440  
that is responsible for the regulatory

608  
00:20:59,270 --> 00:20:57,840  
environment nasa is not a regulator we

609  
00:21:01,510 --> 00:20:59,280  
don't want to be a regulator but what we

610  
00:21:03,510 --> 00:21:01,520  
do is we do science and technology and

611  
00:21:05,510 --> 00:21:03,520  
we build capabilities

612  
00:21:07,590 --> 00:21:05,520  
so we have a lot on our plate

613  
00:21:09,110 --> 00:21:07,600

one we're going to the moon two we're

614

00:21:11,029 --> 00:21:09,120

looking at non-traditional space

615

00:21:12,470 --> 00:21:11,039

activities and making sure that at the

616

00:21:14,470 --> 00:21:12,480

end of the day we have an agency that

617

00:21:16,470 --> 00:21:14,480

can provide authorization and continuing

618

00:21:18,390 --> 00:21:16,480

supervision and we're looking at within

619

00:21:20,070 --> 00:21:18,400

the agencies that currently do

620

00:21:22,710 --> 00:21:20,080

regulation for space activities that

621

00:21:24,470 --> 00:21:22,720

were streamlining those regulations and

622

00:21:26,390 --> 00:21:24,480

making sure that ultimately somebody is

623

00:21:28,390 --> 00:21:26,400

responsible for them space policy

624

00:21:30,070 --> 00:21:28,400

directive three is space situational

625

00:21:30,950 --> 00:21:30,080

awareness and space traffic management

626  
00:21:32,789 --> 00:21:30,960  
so

627  
00:21:34,230 --> 00:21:32,799  
a lot of activities

628  
00:21:35,190 --> 00:21:34,240  
and of course we'll be looking to the

629  
00:21:37,430 --> 00:21:35,200  
knack

630  
00:21:39,830 --> 00:21:37,440  
looking to folks in this room to give us

631  
00:21:40,789 --> 00:21:39,840  
the absolute best advice possible

632  
00:21:43,190 --> 00:21:40,799  
so that

633  
00:21:45,350 --> 00:21:43,200  
our country can continue to be not only

634  
00:21:47,350 --> 00:21:45,360  
the preeminent space faring nation

635  
00:21:49,350 --> 00:21:47,360  
but also a preeminent nation in

636  
00:21:51,590 --> 00:21:49,360  
aeronautics which of course a lot of

637  
00:21:53,510 --> 00:21:51,600  
that is done right here at ames and at

638  
00:21:55,669 --> 00:21:53,520

armstrong where i was yesterday and

639

00:21:58,950 --> 00:21:55,679

other agencies or other centers across

640

00:22:00,710 --> 00:21:58,960

the country so with that um

641

00:22:01,669 --> 00:22:00,720

if it's all right general isles i'll let

642

00:22:03,590 --> 00:22:01,679

you uh

643

00:22:05,830 --> 00:22:03,600

take the helm back and i'm here to

644

00:22:07,190 --> 00:22:05,840

answer questions and get feedback jim

645

00:22:08,630 --> 00:22:07,200

thank you very much and thank you for

646

00:22:11,510 --> 00:22:08,640

that very very

647

00:22:13,830 --> 00:22:11,520

compelling uh discussion about nasa and

648

00:22:15,669 --> 00:22:13,840

our nation's space program in the future

649

00:22:18,470 --> 00:22:15,679

uh i'm wondering though uh this is the

650

00:22:20,950 --> 00:22:18,480

first time we broadcast this on nasa tv

651  
00:22:22,950 --> 00:22:20,960  
yeah and all of us are obviously very

652  
00:22:26,310 --> 00:22:22,960  
very excited around this table and

653  
00:22:27,990 --> 00:22:26,320  
probably those who tune into nasa tv are

654  
00:22:29,510 --> 00:22:28,000  
they're all space geeks like we are

655  
00:22:31,990 --> 00:22:29,520  
right so they're very very excited about

656  
00:22:33,750 --> 00:22:32,000  
it how do we get the message out better

657  
00:22:35,669 --> 00:22:33,760  
to the general public in the united

658  
00:22:36,950 --> 00:22:35,679  
states not just of the future but all

659  
00:22:39,510 --> 00:22:36,960  
the great things that are happening

660  
00:22:42,149 --> 00:22:39,520  
today with nasa and exploration and

661  
00:22:43,830 --> 00:22:42,159  
science and and technology it is such a

662  
00:22:45,750 --> 00:22:43,840  
compelling story it's just an exciting

663  
00:22:48,070 --> 00:22:45,760

story yeah but the man on the street

664

00:22:49,909 --> 00:22:48,080

probably is not aware of one iota of the

665

00:22:51,830 --> 00:22:49,919

things that are going on your thoughts

666

00:22:54,549 --> 00:22:51,840

about what we can do differently so

667

00:22:56,870 --> 00:22:54,559

you're you're um you're hitting on a i

668

00:22:58,870 --> 00:22:56,880

think a key point which is important to

669

00:23:00,230 --> 00:22:58,880

me as the nasa administrator

670

00:23:02,470 --> 00:23:00,240

i've had the question before the

671

00:23:04,070 --> 00:23:02,480

question is you know what do you want

672

00:23:05,350 --> 00:23:04,080

your legacy to be as the nasa

673

00:23:06,710 --> 00:23:05,360

administrator i get that when i do these

674

00:23:08,149 --> 00:23:06,720

town halls i visit

675

00:23:09,990 --> 00:23:08,159

this is

676  
00:23:11,990 --> 00:23:10,000  
i've got one more center to you saw all

677  
00:23:14,070 --> 00:23:12,000  
the centers dr two show to multi we've

678  
00:23:16,310 --> 00:23:14,080  
got ten centers across the country this

679  
00:23:17,830 --> 00:23:16,320  
is my ninth one to visit i've got one

680  
00:23:19,590 --> 00:23:17,840  
more to go

681  
00:23:21,590 --> 00:23:19,600  
but i do these town halls with the

682  
00:23:23,590 --> 00:23:21,600  
different programs and projects at each

683  
00:23:24,789 --> 00:23:23,600  
of these centers and i get this question

684  
00:23:26,950 --> 00:23:24,799  
a lot and

685  
00:23:29,430 --> 00:23:26,960  
the the what i would like to do is the

686  
00:23:31,990 --> 00:23:29,440  
nasa administrators get the word out how

687  
00:23:33,990 --> 00:23:32,000  
important space is

688  
00:23:37,190 --> 00:23:34,000

to the lives of every citizen in the

689

00:23:39,590 --> 00:23:37,200

united states so when we think about

690

00:23:41,430 --> 00:23:39,600

how we communicate you mentioned nasa tv

691

00:23:43,750 --> 00:23:41,440

well nasa tv is

692

00:23:45,830 --> 00:23:43,760

that's satellite tv imagine that nasa

693

00:23:48,310 --> 00:23:45,840

being broadcast on satellite tv right

694

00:23:51,350 --> 00:23:48,320

you talk about dish network or directv

695

00:23:53,830 --> 00:23:51,360

you talk about xm radio or internet from

696

00:23:56,149 --> 00:23:53,840

space broadband from space all of the

697

00:23:58,070 --> 00:23:56,159

ways we communicate as a military pilot

698

00:23:59,669 --> 00:23:58,080

we were sending high resolution motion

699

00:24:01,750 --> 00:23:59,679

picture images all over the world so

700

00:24:03,590 --> 00:24:01,760

decision makers could make split-second

701

00:24:05,590 --> 00:24:03,600

critically important decisions

702

00:24:07,669 --> 00:24:05,600

all of that is possible because of a

703

00:24:09,269 --> 00:24:07,679

communication architecture that is

704

00:24:10,870 --> 00:24:09,279

commercialized i want to be really clear

705

00:24:12,149 --> 00:24:10,880

it's commercialized this is not nasa

706

00:24:13,909 --> 00:24:12,159

architecture

707

00:24:15,990 --> 00:24:13,919

but it was all

708

00:24:18,549 --> 00:24:16,000

blazed by a trail

709

00:24:20,470 --> 00:24:18,559

that that nasa blazed i mean this this

710

00:24:23,750 --> 00:24:20,480

capability is available to humanity

711

00:24:24,710 --> 00:24:23,760

because nasa led the way we retired the

712

00:24:28,789 --> 00:24:24,720

risk

713

00:24:30,230 --> 00:24:28,799

it public then others could take

714

00:24:32,870 --> 00:24:30,240

advantage of it and build these

715

00:24:35,269 --> 00:24:32,880

communication architectures that now all

716

00:24:36,789 --> 00:24:35,279

of humanity can benefit from so i think

717

00:24:38,710 --> 00:24:36,799

that's i think that's a wonderful thing

718

00:24:40,549 --> 00:24:38,720

the way we the way we navigate people

719

00:24:42,630 --> 00:24:40,559

are familiar with gps the way we produce

720

00:24:45,430 --> 00:24:42,640

food i was at a swim meet with my

721

00:24:47,510 --> 00:24:45,440

children the other day in oklahoma city

722

00:24:49,029 --> 00:24:47,520

and the grandfather of one of the kids

723

00:24:50,630 --> 00:24:49,039

in the meat

724

00:24:52,470 --> 00:24:50,640

was from nebraska

725

00:24:54,070 --> 00:24:52,480

and he asked me

726

00:24:56,149 --> 00:24:54,080

he asked me so what do you do

727

00:24:57,909 --> 00:24:56,159

and i said well i work for nasa

728

00:25:00,630 --> 00:24:57,919

and he says well what do you do for nasa

729

00:25:02,710 --> 00:25:00,640

and i said well i'm the administrator

730

00:25:04,149 --> 00:25:02,720

and uh and he says well what does the

731

00:25:05,510 --> 00:25:04,159

administrator do

732

00:25:07,510 --> 00:25:05,520

and i

733

00:25:09,350 --> 00:25:07,520

right yeah

734

00:25:10,470 --> 00:25:09,360

and i said well i kind of run it you

735

00:25:12,149 --> 00:25:10,480

know

736

00:25:13,669 --> 00:25:12,159

and he and he says he says to me well

737

00:25:16,630 --> 00:25:13,679

now that i know let me tell you about

738

00:25:19,669 --> 00:25:16,640

what's going on in nebraska we're using

739

00:25:21,750 --> 00:25:19,679

nasa technology to know when to water to

740

00:25:23,830 --> 00:25:21,760

know when to when to plant

741

00:25:26,390 --> 00:25:23,840

when to harvest

742

00:25:29,430 --> 00:25:26,400

how to allocate water effectively to

743

00:25:31,830 --> 00:25:29,440

maximize the growth of our crops

744

00:25:33,909 --> 00:25:31,840

and and he's now created this consortium

745

00:25:36,149 --> 00:25:33,919

of other farmers that are responsible

746

00:25:37,909 --> 00:25:36,159

for taking this out to all the farmers

747

00:25:40,070 --> 00:25:37,919

throughout nebraska

748

00:25:42,630 --> 00:25:40,080

so this is an amazing kind of

749

00:25:44,950 --> 00:25:42,640

development that is enabling the united

750

00:25:47,590 --> 00:25:44,960

states of america and others all over

751  
00:25:49,110 --> 00:25:47,600  
the world to feed more of the world than

752  
00:25:50,390 --> 00:25:49,120  
otherwise would be possible that's a

753  
00:25:51,750 --> 00:25:50,400  
that's a great thing that nasa has done

754  
00:25:54,070 --> 00:25:51,760  
so the way we communicate the way we

755  
00:25:56,950 --> 00:25:54,080  
navigate the way we produce food the way

756  
00:25:59,350 --> 00:25:56,960  
we produce energy the way we understand

757  
00:26:02,070 --> 00:25:59,360  
weather you get up in the morning you

758  
00:26:03,510 --> 00:26:02,080  
turn on you know channel two whatever it

759  
00:26:05,269 --> 00:26:03,520  
is you watch

760  
00:26:06,870 --> 00:26:05,279  
and you see that green blob on the

761  
00:26:08,230 --> 00:26:06,880  
screen and you know when the weather is

762  
00:26:09,510 --> 00:26:08,240  
going to be over your part of the

763  
00:26:10,950 --> 00:26:09,520

country

764

00:26:13,430 --> 00:26:10,960

well eighty percent of the data that

765

00:26:15,510 --> 00:26:13,440

goes into that green blob is data from a

766

00:26:17,990 --> 00:26:15,520

satellite that was built by nasa for

767

00:26:20,149 --> 00:26:18,000

noaa so the way we predict weather and

768

00:26:23,110 --> 00:26:20,159

the way we understand climate

769

00:26:25,669 --> 00:26:23,120

the way we do national security and and

770

00:26:26,630 --> 00:26:25,679

and and disaster relief

771

00:26:28,630 --> 00:26:26,640

um

772

00:26:30,630 --> 00:26:28,640

you know it we we had a conversation

773

00:26:31,990 --> 00:26:30,640

earlier about gps and how important it

774

00:26:33,190 --> 00:26:32,000

is

775

00:26:34,390 --> 00:26:33,200

now

776

00:26:36,390 --> 00:26:34,400

when you think about banking

777

00:26:38,789 --> 00:26:36,400

transactions and and the timing signal

778

00:26:40,950 --> 00:26:38,799

from gps that ultimately goes through

779

00:26:42,870 --> 00:26:40,960

our you know wireless terrestrial

780

00:26:44,789 --> 00:26:42,880

networks that's important for banking

781

00:26:47,190 --> 00:26:44,799

transactions it's important for the

782

00:26:48,870 --> 00:26:47,200

flows of data across terrestrial

783

00:26:50,630 --> 00:26:48,880

wireless networks in general and it's

784

00:26:53,269 --> 00:26:50,640

also important

785

00:26:55,029 --> 00:26:53,279

for the flows of electricity on the grid

786

00:26:56,950 --> 00:26:55,039

so all of these things we talk about how

787

00:26:59,510 --> 00:26:56,960

important space is to our everyday lives

788

00:27:01,669 --> 00:26:59,520

now a lot of these capabilities are

789

00:27:02,789 --> 00:27:01,679

department of defense capabilities

790

00:27:04,630 --> 00:27:02,799

a lot of them are commercial

791

00:27:06,630 --> 00:27:04,640

capabilities a lot of them could be

792

00:27:08,630 --> 00:27:06,640

intelligence community or it could be

793

00:27:11,110 --> 00:27:08,640

you know pick pick your space kind of

794

00:27:13,029 --> 00:27:11,120

capability

795

00:27:14,870 --> 00:27:13,039

commerce noaa

796

00:27:17,029 --> 00:27:14,880

but at the end of the day all of these

797

00:27:19,029 --> 00:27:17,039

capabilities are available to the

798

00:27:21,510 --> 00:27:19,039

american public

799

00:27:24,149 --> 00:27:21,520

because nasa led led the way

800

00:27:26,389 --> 00:27:24,159

you know we retired the risk and we made

801  
00:27:28,149 --> 00:27:26,399  
this available it has elevated the human

802  
00:27:30,470 --> 00:27:28,159  
condition not only for the united states

803  
00:27:31,909 --> 00:27:30,480  
for all of the world

804  
00:27:34,230 --> 00:27:31,919  
and you think about what part of the

805  
00:27:35,590 --> 00:27:34,240  
budget it is we're talking about at this

806  
00:27:36,870 --> 00:27:35,600  
point in american history we're talking

807  
00:27:38,950 --> 00:27:36,880  
about one half

808  
00:27:41,269 --> 00:27:38,960  
of one percent of the federal budget

809  
00:27:43,350 --> 00:27:41,279  
that has lifted and enabled all of this

810  
00:27:45,190 --> 00:27:43,360  
kind of capability and i've only just

811  
00:27:46,230 --> 00:27:45,200  
begun to scratch the surface there's so

812  
00:27:48,070 --> 00:27:46,240  
much more

813  
00:27:49,990 --> 00:27:48,080

but if i can do anything communicating

814

00:27:51,430 --> 00:27:50,000

that out to the world is important

815

00:27:53,750 --> 00:27:51,440

um

816

00:27:57,029 --> 00:27:53,760

how do we do that uh i think i'm the

817

00:27:59,990 --> 00:27:57,039

first nasa administrator to tweet

818

00:28:01,669 --> 00:28:00,000

which is kind of uh you know i i have

819

00:28:03,590 --> 00:28:01,679

gotten some feedback on that that maybe

820

00:28:05,269 --> 00:28:03,600

that's not professional

821

00:28:06,870 --> 00:28:05,279

but it's important why because we're

822

00:28:08,789 --> 00:28:06,880

trying to reach a new generation and

823

00:28:11,190 --> 00:28:08,799

guess what they read they read twitter

824

00:28:12,789 --> 00:28:11,200

and they read facebook and not it's not

825

00:28:13,830 --> 00:28:12,799

just the new generation i can tell you

826  
00:28:17,269 --> 00:28:13,840  
that my

827  
00:28:18,470 --> 00:28:17,279  
parents are involved in that as well so

828  
00:28:20,149 --> 00:28:18,480  
but we want to reach more of the world

829  
00:28:22,789 --> 00:28:20,159  
than ever before social media is a big

830  
00:28:24,470 --> 00:28:22,799  
piece and if i can do anything

831  
00:28:26,149 --> 00:28:24,480  
you know the question about legacy how

832  
00:28:27,830 --> 00:28:26,159  
do we get that message out

833  
00:28:30,789 --> 00:28:27,840  
we can partner with all kinds of

834  
00:28:33,029 --> 00:28:30,799  
different communication capabilities a

835  
00:28:35,510 --> 00:28:33,039  
lot of people don't realize the history

836  
00:28:37,110 --> 00:28:35,520  
here you look at the the nasa logo the

837  
00:28:40,149 --> 00:28:37,120  
meatball

838  
00:28:42,789 --> 00:28:40,159

from

839

00:28:44,149 --> 00:28:42,799

it was made by walt disney

840

00:28:45,750 --> 00:28:44,159

you know that's the kind of partnership

841

00:28:47,590 --> 00:28:45,760

in the relationship it was between

842

00:28:49,029 --> 00:28:47,600

werner von braun and walt disney that

843

00:28:51,990 --> 00:28:49,039

relationship and they wanted to make

844

00:28:53,669 --> 00:28:52,000

sure that we put nasa into every part of

845

00:28:56,149 --> 00:28:53,679

american society

846

00:28:58,310 --> 00:28:56,159

including disney animations and of

847

00:28:59,510 --> 00:28:58,320

course they they created the meatball so

848

00:29:01,110 --> 00:28:59,520

these are the kind of things that we

849

00:29:02,549 --> 00:29:01,120

ought to be doing

850

00:29:04,310 --> 00:29:02,559

now there's

851  
00:29:05,669 --> 00:29:04,320  
and there's a whole host of things that

852  
00:29:07,590 --> 00:29:05,679  
we should be doing

853  
00:29:10,070 --> 00:29:07,600  
that uh that would enable us to get the

854  
00:29:11,909 --> 00:29:10,080  
message out more

855  
00:29:14,149 --> 00:29:11,919  
in some cases we're constrained we're

856  
00:29:17,029 --> 00:29:14,159  
constrained by traditional regulation

857  
00:29:18,630 --> 00:29:17,039  
we're in fact maybe constrained by law

858  
00:29:20,549 --> 00:29:18,640  
one of the things that i'd like to

859  
00:29:22,230 --> 00:29:20,559  
introduce at this point is

860  
00:29:23,990 --> 00:29:22,240  
a new committee that

861  
00:29:25,269 --> 00:29:24,000  
we're standing up with your help and i

862  
00:29:27,350 --> 00:29:25,279  
appreciate you

863  
00:29:28,710 --> 00:29:27,360

is it all right if i kind of start that

864

00:29:29,990 --> 00:29:28,720

process yes sir it was going to be my

865

00:29:32,230 --> 00:29:30,000

next question to ask about that

866

00:29:34,389 --> 00:29:32,240

committee go ahead please absolutely so

867

00:29:36,870 --> 00:29:34,399

one of the things i think about is

868

00:29:38,389 --> 00:29:36,880

you know um you know my children can

869

00:29:40,549 --> 00:29:38,399

tell you

870

00:29:42,389 --> 00:29:40,559

all of the players on the oklahoma city

871

00:29:43,990 --> 00:29:42,399

thunder basketball team or all of the

872

00:29:46,630 --> 00:29:44,000

players on the houston rockets for

873

00:29:49,110 --> 00:29:46,640

example um they they want to wear the

874

00:29:50,789 --> 00:29:49,120

shoes of the players on these teams and

875

00:29:52,789 --> 00:29:50,799

they're they're embedded in the american

876  
00:29:55,510 --> 00:29:52,799  
culture in a way that is that is amazing

877  
00:29:57,110 --> 00:29:55,520  
and that's good i think that's fantastic

878  
00:29:59,510 --> 00:29:57,120  
i'd like to see

879  
00:30:01,669 --> 00:29:59,520  
kids growing up you know instead of

880  
00:30:04,070 --> 00:30:01,679  
maybe wanting to be like a professional

881  
00:30:07,190 --> 00:30:04,080  
sports star i'd like to see him grow up

882  
00:30:09,590 --> 00:30:07,200  
wanting to be a nasa astronaut or a nasa

883  
00:30:11,590 --> 00:30:09,600  
scientist and so how do we make that a

884  
00:30:12,870 --> 00:30:11,600  
reality uh don't get me wrong there are

885  
00:30:15,350 --> 00:30:12,880  
kids that want to do that but it's not

886  
00:30:17,590 --> 00:30:15,360  
nearly as prevalent as the sports stars

887  
00:30:18,710 --> 00:30:17,600  
so we think about you know i'd like to

888  
00:30:20,470 --> 00:30:18,720

see

889

00:30:22,710 --> 00:30:20,480

you know maybe one day

890

00:30:23,830 --> 00:30:22,720

nasa astronauts on the cover of a cereal

891

00:30:26,310 --> 00:30:23,840

box

892

00:30:27,669 --> 00:30:26,320

embedded into the american culture

893

00:30:29,830 --> 00:30:27,679

and there's a lot of different ways that

894

00:30:30,789 --> 00:30:29,840

we can embed nasa into the american

895

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

culture

896

00:30:34,310 --> 00:30:32,480

that maybe have been done historically

897

00:30:36,389 --> 00:30:34,320

but aren't done today and if we can go

898

00:30:37,990 --> 00:30:36,399

back to that i think it'd be good we

899

00:30:39,830 --> 00:30:38,000

need to look at the regulation and the

900

00:30:41,269 --> 00:30:39,840

policy and the the rules that have come

901  
00:30:43,110 --> 00:30:41,279  
about

902  
00:30:44,950 --> 00:30:43,120  
that created an environment that maybe

903  
00:30:46,230 --> 00:30:44,960  
is not as permissive as it has been

904  
00:30:48,310 --> 00:30:46,240  
historically

905  
00:30:50,470 --> 00:30:48,320  
but if we follow through

906  
00:30:52,310 --> 00:30:50,480  
on commercializing low earth orbit which

907  
00:30:54,710 --> 00:30:52,320  
is important so that we can go further

908  
00:30:55,990 --> 00:30:54,720  
we can use nasa resources to go to the

909  
00:30:57,509 --> 00:30:56,000  
moon and go to mars we need to

910  
00:30:59,990 --> 00:30:57,519  
commercialize low earth orbit make sure

911  
00:31:01,430 --> 00:31:00,000  
that there is no gap in human activity

912  
00:31:03,669 --> 00:31:01,440  
and low earth orbit if we're going to do

913  
00:31:04,549 --> 00:31:03,679

that kind of activity we have to figure

914

00:31:06,230 --> 00:31:04,559

out

915

00:31:07,909 --> 00:31:06,240

what are the ways that we can do that

916

00:31:09,509 --> 00:31:07,919

that are unique

917

00:31:10,950 --> 00:31:09,519

that that maybe haven't been tried

918

00:31:12,310 --> 00:31:10,960

before

919

00:31:15,110 --> 00:31:12,320

and to do that

920

00:31:17,669 --> 00:31:15,120

i i have requested and you have obliged

921

00:31:20,950 --> 00:31:17,679

in the creation of a new regulatory and

922

00:31:23,590 --> 00:31:20,960

policy committee of the knack

923

00:31:25,669 --> 00:31:23,600

and i have appointed mike gold who i've

924

00:31:27,830 --> 00:31:25,679

known for a while even in my previous

925

00:31:30,149 --> 00:31:27,840

life as a member of congress who is an

926

00:31:32,230 --> 00:31:30,159

attorney that can help us sort through

927

00:31:34,630 --> 00:31:32,240

what the reality is maybe compared to

928

00:31:37,190 --> 00:31:34,640

some of the the lore if you will

929

00:31:38,870 --> 00:31:37,200

um and ultimately help us uh

930

00:31:41,110 --> 00:31:38,880

figure out what are the best ways to

931

00:31:43,669 --> 00:31:41,120

maximize the exposure

932

00:31:45,430 --> 00:31:43,679

and enable us to commercialize nasa a

933

00:31:47,590 --> 00:31:45,440

lot of nasa's capabilities in low earth

934

00:31:49,669 --> 00:31:47,600

orbit so that we can do things we can

935

00:31:51,509 --> 00:31:49,679

use taxpayer resources to go further and

936

00:31:52,870 --> 00:31:51,519

do more so mike if you'd like to take a

937

00:31:55,590 --> 00:31:52,880

few minutes to talk about kind of what

938

00:31:57,269 --> 00:31:55,600

your your direction is yes

939

00:31:58,710 --> 00:31:57,279

thank you so much

940

00:32:00,789 --> 00:31:58,720

let me just begin by thanking you

941

00:32:02,870 --> 00:32:00,799

administrator bridenstine and the chair

942

00:32:04,950 --> 00:32:02,880

general lyles for this opportunity to

943

00:32:06,710 --> 00:32:04,960

serve on the knack and for your support

944

00:32:07,830 --> 00:32:06,720

in forming this regulatory and policy

945

00:32:10,230 --> 00:32:07,840

committee

946

00:32:12,389 --> 00:32:10,240

nasa is famous for overcoming herculean

947

00:32:14,950 --> 00:32:12,399

technological challenges landing on the

948

00:32:17,750 --> 00:32:14,960

moon putting rovers on mars and imaging

949

00:32:19,509 --> 00:32:17,760

far-flung planets and galaxies however

950

00:32:21,029 --> 00:32:19,519

in this new era of public-private

951  
00:32:23,269 --> 00:32:21,039  
partnerships and commercial space

952  
00:32:25,669 --> 00:32:23,279  
development conquering regulatory and

953  
00:32:27,830 --> 00:32:25,679  
policy hurdles can be just as important

954  
00:32:29,909 --> 00:32:27,840  
to the agency as any engineering

955  
00:32:31,669 --> 00:32:29,919  
challenge that nasa may face

956  
00:32:33,750 --> 00:32:31,679  
therefore the purpose of the regulatory

957  
00:32:36,070 --> 00:32:33,760  
and policy committee will be to target

958  
00:32:38,870 --> 00:32:36,080  
and tackle barriers to achieving nasa's

959  
00:32:40,789 --> 00:32:38,880  
goals by providing expert independent

960  
00:32:43,110 --> 00:32:40,799  
and creative advice to the council and

961  
00:32:44,470 --> 00:32:43,120  
the administrator there are a wide array

962  
00:32:46,549 --> 00:32:44,480  
of issues that the new committee will

963  
00:32:48,470 --> 00:32:46,559

address but i expect the list to evolve

964

00:32:50,230 --> 00:32:48,480

over time but i wanted to take a minute

965

00:32:52,789 --> 00:32:50,240

to describe the initial topics that the

966

00:32:54,230 --> 00:32:52,799

administrator has asked us to explore

967

00:32:56,230 --> 00:32:54,240

the first set of issues relates to the

968

00:32:59,509 --> 00:32:56,240

international space station and private

969

00:33:02,070 --> 00:32:59,519

sector leo operations nasa must be free

970

00:33:04,230 --> 00:33:02,080

to do what it does best to push the

971

00:33:06,710 --> 00:33:04,240

envelope of the final frontier and more

972

00:33:10,230 --> 00:33:06,720

specifically leveraging the sls and

973

00:33:11,110 --> 00:33:10,240

orion execute sbd1 and return to the

974

00:33:13,190 --> 00:33:11,120

moon

975

00:33:15,509 --> 00:33:13,200

to effectively accomplish this goal and

976  
00:33:17,110 --> 00:33:15,519  
to eventually move on to mars the

977  
00:33:19,990 --> 00:33:17,120  
private sector must partner with the

978  
00:33:23,350 --> 00:33:20,000  
agency to commercialize leo

979  
00:33:25,750 --> 00:33:23,360  
establishing a business case in leo that

980  
00:33:28,149 --> 00:33:25,760  
is sufficiently robust to support a

981  
00:33:30,950 --> 00:33:28,159  
free-flying space station will not be

982  
00:33:33,269 --> 00:33:30,960  
simple or easy as bill gerstenmaier has

983  
00:33:35,430 --> 00:33:33,279  
stressed many times before the greatest

984  
00:33:37,430 --> 00:33:35,440  
challenge private sector companies face

985  
00:33:39,750 --> 00:33:37,440  
is finding ways to bolster true

986  
00:33:42,630 --> 00:33:39,760  
commercial demand for human space flight

987  
00:33:44,549 --> 00:33:42,640  
in leo as always the iss remains a

988  
00:33:46,950 --> 00:33:44,559

critical asset and will play a vital

989

00:33:49,190 --> 00:33:46,960

role in serving as laboratory not only

990

00:33:51,190 --> 00:33:49,200

for science but for testing and building

991

00:33:53,909 --> 00:33:51,200

new business cases and commercial

992

00:33:57,509 --> 00:33:53,919

activities in leo however for this to

993

00:34:00,230 --> 00:33:57,519

occur obsolete rules and regulations

994

00:34:02,230 --> 00:34:00,240

must be reviewed and revised for example

995

00:34:05,590 --> 00:34:02,240

the regulatory and policy committee will

996

00:34:07,909 --> 00:34:05,600

assess how to free american astronauts

997

00:34:09,589 --> 00:34:07,919

to fully support commercial activities

998

00:34:11,750 --> 00:34:09,599

on the iss

999

00:34:14,629 --> 00:34:11,760

american companies should not have to

1000

00:34:16,869 --> 00:34:14,639

turn to russian cosmonauts to execute

1001  
00:34:19,109 --> 00:34:16,879  
commercial operations when new

1002  
00:34:21,349 --> 00:34:19,119  
industrial substances are created

1003  
00:34:23,750 --> 00:34:21,359  
commercial experiments conducted or even

1004  
00:34:26,389 --> 00:34:23,760  
advertisements filmed american

1005  
00:34:27,909 --> 00:34:26,399  
astronauts should lead the way

1006  
00:34:30,069 --> 00:34:27,919  
speaking of astronauts the committee

1007  
00:34:32,149 --> 00:34:30,079  
will examine giving the freedom to

1008  
00:34:33,349 --> 00:34:32,159  
pursue endorsements and other media

1009  
00:34:35,270 --> 00:34:33,359  
opportunities

1010  
00:34:38,470 --> 00:34:35,280  
our astronauts are american heroes and

1011  
00:34:41,030 --> 00:34:38,480  
deserve to be treated as such

1012  
00:34:42,550 --> 00:34:41,040  
can i uh can i pause you right there

1013  
00:34:44,310 --> 00:34:42,560

so one of the reasons i think that's

1014

00:34:45,430 --> 00:34:44,320

important i mentioned the cereal box

1015

00:34:46,629 --> 00:34:45,440

earlier

1016

00:34:49,669 --> 00:34:46,639

one of the reasons that's important we

1017

00:34:51,270 --> 00:34:49,679

now have commercial astronauts

1018

00:34:53,109 --> 00:34:51,280

we're now going to because of commercial

1019

00:34:55,190 --> 00:34:53,119

crew which is a capability developed by

1020

00:34:56,710 --> 00:34:55,200

nasa we have astronauts that are going

1021

00:34:59,430 --> 00:34:56,720

to be flying to the international space

1022

00:35:00,710 --> 00:34:59,440

station that are not nasa astronauts

1023

00:35:02,310 --> 00:35:00,720

we're going to we're going to have we've

1024

00:35:04,310 --> 00:35:02,320

got right now we've got a boeing

1025

00:35:07,670 --> 00:35:04,320

astronaut and eventually we're talking

1026

00:35:09,910 --> 00:35:07,680

about having a spacex astronaut and even

1027

00:35:11,589 --> 00:35:09,920

maybe not astronauts at all but but

1028

00:35:13,510 --> 00:35:11,599

folks that are going for other purposes

1029

00:35:15,109 --> 00:35:13,520

they could be going for science or

1030

00:35:17,589 --> 00:35:15,119

developing capabilities or they could be

1031

00:35:19,190 --> 00:35:17,599

going simply for tourism so with all of

1032

00:35:20,630 --> 00:35:19,200

this kind of thing developing the

1033

00:35:23,430 --> 00:35:20,640

question is this

1034

00:35:25,430 --> 00:35:23,440

if those astronauts are not limited in

1035

00:35:27,430 --> 00:35:25,440

kind of the way they are able to promote

1036

00:35:30,150 --> 00:35:27,440

themselves then should nasa astronauts

1037

00:35:32,230 --> 00:35:30,160

be limited in how we promote nasa and

1038

00:35:33,829 --> 00:35:32,240

and i'm not saying that this is an easy

1039

00:35:36,310 --> 00:35:33,839

challenge to address but i will tell you

1040

00:35:38,790 --> 00:35:36,320

from my perspective as a navy pilot we

1041

00:35:41,270 --> 00:35:38,800

have a shortage in naval aviation that

1042

00:35:43,990 --> 00:35:41,280

is drastic and in air force aviation i

1043

00:35:45,589 --> 00:35:44,000

know we've got general levy here as well

1044

00:35:47,190 --> 00:35:45,599

why is that shortage there because you

1045

00:35:49,510 --> 00:35:47,200

can go to the airlines and get paid

1046

00:35:51,190 --> 00:35:49,520

hundreds of thousands of dollars or you

1047

00:35:53,750 --> 00:35:51,200

can get paid much less by staying in the

1048

00:35:55,750 --> 00:35:53,760

military now we have kind of created

1049

00:35:57,829 --> 00:35:55,760

that with this commercial crew which is

1050

00:35:59,430 --> 00:35:57,839

good i want to be clear i want the free

1051

00:36:01,030 --> 00:35:59,440

market to work

1052

00:36:02,870 --> 00:36:01,040

but we also have to think about what is

1053

00:36:04,470 --> 00:36:02,880

the future for nasa astronauts in this

1054

00:36:06,310 --> 00:36:04,480

environment so i wanted to make sure

1055

00:36:07,990 --> 00:36:06,320

that we we addressed that certainly

1056

00:36:09,670 --> 00:36:08,000

right here in silicon valley i'm sure dr

1057

00:36:11,910 --> 00:36:09,680

who can tell you how difficult it is to

1058

00:36:13,430 --> 00:36:11,920

recruit and get people and the expense

1059

00:36:14,870 --> 00:36:13,440

of living out here and speaking of

1060

00:36:16,150 --> 00:36:14,880

branding mr administrator i think we

1061

00:36:17,910 --> 00:36:16,160

might have to charge mountain dew for

1062

00:36:19,349 --> 00:36:17,920

this at some point this is a good good

1063

00:36:21,430 --> 00:36:19,359

opportunity

1064

00:36:23,430 --> 00:36:21,440

so as you say we need to find ways to

1065

00:36:26,310 --> 00:36:23,440

allow astronauts to engage with private

1066

00:36:29,190 --> 00:36:26,320

sector companies and the media to ensure

1067

00:36:31,030 --> 00:36:29,200

that the astronauts nasa and stem return

1068

00:36:31,990 --> 00:36:31,040

to a place of importance and popular

1069

00:36:33,829 --> 00:36:32,000

culture

1070

00:36:36,230 --> 00:36:33,839

the nation should fully leverage our

1071

00:36:38,470 --> 00:36:36,240

astronauts as ambassadors to inspire the

1072

00:36:40,390 --> 00:36:38,480

engineers mathematicians and scientists

1073

00:36:41,829 --> 00:36:40,400

of tomorrow beyond astronaut

1074

00:36:43,510 --> 00:36:41,839

endorsements the committee will tackle

1075

00:36:45,670 --> 00:36:43,520

branding opportunities on hardware

1076  
00:36:47,430 --> 00:36:45,680  
including rockets and other spacecraft

1077  
00:36:49,349 --> 00:36:47,440  
such branding will help enhance the

1078  
00:36:50,950 --> 00:36:49,359  
exposure of space activities in the

1079  
00:36:52,950 --> 00:36:50,960  
popular culture and will begin to

1080  
00:36:54,710 --> 00:36:52,960  
validate a business case that future

1081  
00:36:56,790 --> 00:36:54,720  
private sector operations will need to

1082  
00:36:58,310 --> 00:36:56,800  
leverage so dr lyles this goes right to

1083  
00:37:00,390 --> 00:36:58,320  
the heart of your question how do we

1084  
00:37:02,550 --> 00:37:00,400  
make sure that america is aware of what

1085  
00:37:03,910 --> 00:37:02,560  
we're doing and we we saw from dr two

1086  
00:37:06,230 --> 00:37:03,920  
all the wonderful things that we are

1087  
00:37:07,910 --> 00:37:06,240  
doing just here at this one center we're

1088  
00:37:11,109 --> 00:37:07,920

doing a lot more across the entire

1089

00:37:14,150 --> 00:37:11,119

agency so one of the ways we can do that

1090

00:37:15,589 --> 00:37:14,160

we're talking about potentially

1091

00:37:19,109 --> 00:37:15,599

is it possible

1092

00:37:21,190 --> 00:37:19,119

for nasa to offset some of its costs by

1093

00:37:23,109 --> 00:37:21,200

selling the naming rights to its

1094

00:37:25,030 --> 00:37:23,119

spacecraft or the naming rights to its

1095

00:37:26,870 --> 00:37:25,040

to its rockets which there i'm telling

1096

00:37:29,510 --> 00:37:26,880

you there is interest in that right now

1097

00:37:31,750 --> 00:37:29,520

the question is is it possible

1098

00:37:33,349 --> 00:37:31,760

and and and the answer is i don't know

1099

00:37:35,190 --> 00:37:33,359

but we need somebody to give us advice

1100

00:37:37,190 --> 00:37:35,200

on whether or not it is

1101

00:37:39,270 --> 00:37:37,200

yeah

1102

00:37:41,430 --> 00:37:39,280

going beyond that nasa can and should

1103

00:37:43,270 --> 00:37:41,440

act as a catalyst for private sector leo

1104

00:37:45,430 --> 00:37:43,280

commercialization to this end the

1105

00:37:46,950 --> 00:37:45,440

committee will explore equitable methods

1106

00:37:49,109 --> 00:37:46,960

for nasa in collaboration with

1107

00:37:51,190 --> 00:37:49,119

commercial crew providers to utilize

1108

00:37:53,270 --> 00:37:51,200

excess seats for commercial activities

1109

00:37:55,829 --> 00:37:53,280

and for reimbursed funds from those

1110

00:37:57,750 --> 00:37:55,839

activities to be leveraged by the agency

1111

00:38:00,069 --> 00:37:57,760

potentially to purchase volume and or

1112

00:38:02,630 --> 00:38:00,079

services on private sector habitats to

1113

00:38:03,750 --> 00:38:02,640

the iss or free-flying commercial space

1114

00:38:06,550 --> 00:38:03,760

stations

1115

00:38:08,310 --> 00:38:06,560

america must maintain a presence in leo

1116

00:38:10,550 --> 00:38:08,320

the country is still experiencing the

1117

00:38:11,750 --> 00:38:10,560

pain of human spaceflight transportation

1118

00:38:14,390 --> 00:38:11,760

gap

1119

00:38:16,630 --> 00:38:14,400

we cannot allow history to repeat itself

1120

00:38:19,190 --> 00:38:16,640

by saddling future generations with a

1121

00:38:21,030 --> 00:38:19,200

space platform gap we owe it to

1122

00:38:23,030 --> 00:38:21,040

ourselves and our children to do better

1123

00:38:24,790 --> 00:38:23,040

than that and this committee will do its

1124

00:38:26,390 --> 00:38:24,800

part to identify regulations and

1125

00:38:28,390 --> 00:38:26,400

policies for the administrators

1126  
00:38:30,470 --> 00:38:28,400  
consideration in support of private

1127  
00:38:32,470 --> 00:38:30,480  
sector leo development

1128  
00:38:34,310 --> 00:38:32,480  
looking forward to a future where in leo

1129  
00:38:36,950 --> 00:38:34,320  
is populated with several private sector

1130  
00:38:40,230 --> 00:38:36,960  
space stations we must not lose the

1131  
00:38:42,470 --> 00:38:40,240  
hard-fought victories of the iss and the

1132  
00:38:45,030 --> 00:38:42,480  
singular global collaboration that the

1133  
00:38:46,470 --> 00:38:45,040  
station represents specifically this

1134  
00:38:48,470 --> 00:38:46,480  
committee will provide the administrator

1135  
00:38:51,270 --> 00:38:48,480  
with recommendations on revising the

1136  
00:38:53,109 --> 00:38:51,280  
iss's intergovernmental agreement and

1137  
00:38:55,190 --> 00:38:53,119  
expanding its scope potentially to

1138  
00:38:56,230 --> 00:38:55,200

include private sector habitats and

1139

00:38:57,990 --> 00:38:56,240

stations

1140

00:38:59,829 --> 00:38:58,000

in addition to reviewing the iga the

1141

00:39:01,589 --> 00:38:59,839

committee will explore nasa's role in

1142

00:39:04,950 --> 00:39:01,599

supporting the regulatory streamlining

1143

00:39:07,190 --> 00:39:04,960

articulated in spd2 for example second

1144

00:39:09,349 --> 00:39:07,200

only to gravity the itar has been the

1145

00:39:11,589 --> 00:39:09,359

greatest barrier to the liftoff of many

1146

00:39:13,430 --> 00:39:11,599

commercial space enterprises the

1147

00:39:15,109 --> 00:39:13,440

committee will explore how nasa can

1148

00:39:17,510 --> 00:39:15,119

contribute to ensuring that when a

1149

00:39:19,510 --> 00:39:17,520

product or service is widely available

1150

00:39:21,829 --> 00:39:19,520

in the international marketplace that

1151  
00:39:23,910 --> 00:39:21,839  
commercial development is not held back

1152  
00:39:26,230 --> 00:39:23,920  
when doing so only hurts american

1153  
00:39:27,510 --> 00:39:26,240  
capabilities and interests

1154  
00:39:29,510 --> 00:39:27,520  
the committee has been tasked by the

1155  
00:39:32,310 --> 00:39:29,520  
administrator to provide recommendations

1156  
00:39:34,230 --> 00:39:32,320  
on sbd3 as well we are in an era where

1157  
00:39:36,710 --> 00:39:34,240  
hundreds of satellites can be deployed

1158  
00:39:38,710 --> 00:39:36,720  
in a single launch there has never been

1159  
00:39:40,790 --> 00:39:38,720  
a more important time to tackle space

1160  
00:39:43,190 --> 00:39:40,800  
traffic management and this committee is

1161  
00:39:45,349 --> 00:39:43,200  
eager to review and identify how nasa

1162  
00:39:47,510 --> 00:39:45,359  
can help support the laudable goals and

1163  
00:39:49,349 --> 00:39:47,520

objectives of sbd3

1164

00:39:51,190 --> 00:39:49,359

last but certainly not least the

1165

00:39:53,349 --> 00:39:51,200

committee will examine regulations

1166

00:39:55,910 --> 00:39:53,359

preventing the harmful contamination of

1167

00:39:58,069 --> 00:39:55,920

the moon mars and other celestial bodies

1168

00:40:00,150 --> 00:39:58,079

we need to adopt policies that meet the

1169

00:40:02,470 --> 00:40:00,160

invaluable principles of the outer space

1170

00:40:04,630 --> 00:40:02,480

treaty but do so in a manner that

1171

00:40:06,950 --> 00:40:04,640

ambitious commercial missions to the

1172

00:40:09,430 --> 00:40:06,960

moon or mars are not unnecessarily

1173

00:40:11,190 --> 00:40:09,440

hindered or outright prohibited these

1174

00:40:12,790 --> 00:40:11,200

are all substantial challenges and the

1175

00:40:15,190 --> 00:40:12,800

committee will soon be populated with a

1176  
00:40:16,550 --> 00:40:15,200  
team of regulatory and policy experts

1177  
00:40:18,390 --> 00:40:16,560  
who are working on the front lines of

1178  
00:40:20,630 --> 00:40:18,400  
commercial space to tackle this

1179  
00:40:22,950 --> 00:40:20,640  
ambitious agenda again i'm grateful for

1180  
00:40:24,790 --> 00:40:22,960  
the opportunity to serve on the knack

1181  
00:40:26,630 --> 00:40:24,800  
thank the administrator and to work with

1182  
00:40:28,150 --> 00:40:26,640  
nasa at this critical juncture and look

1183  
00:40:31,190 --> 00:40:28,160  
forward to helping the agency achieve

1184  
00:40:36,710 --> 00:40:31,200  
escape velocity from red tape

1185  
00:40:39,510 --> 00:40:36,720  
you you hit a lot of things in there

1186  
00:40:41,349 --> 00:40:39,520  
that could be perceived as provocative

1187  
00:40:43,190 --> 00:40:41,359  
and i want to be clear we have not made

1188  
00:40:45,430 --> 00:40:43,200

any determinations

1189

00:40:47,990 --> 00:40:45,440

nor have we prejudged the outcome of the

1190

00:40:50,390 --> 00:40:48,000

committee that you're going to chair

1191

00:40:52,950 --> 00:40:50,400

but we talk about commercializing low

1192

00:40:54,630 --> 00:40:52,960

earth orbit in a way where there is no

1193

00:40:55,510 --> 00:40:54,640

gap in low earth orbit we want to make

1194

00:40:57,270 --> 00:40:55,520

sure

1195

00:40:59,109 --> 00:40:57,280

that from the international space

1196

00:41:00,309 --> 00:40:59,119

station to whatever comes next and

1197

00:41:01,910 --> 00:41:00,319

there's going to have to be something

1198

00:41:03,030 --> 00:41:01,920

that comes next because it can't last

1199

00:41:04,470 --> 00:41:03,040

forever

1200

00:41:06,630 --> 00:41:04,480

in that process

1201

00:41:08,069 --> 00:41:06,640

how do we commercialize low earth orbit

1202

00:41:08,870 --> 00:41:08,079

and there's lots of things that can be

1203

00:41:10,150 --> 00:41:08,880

done

1204

00:41:12,230 --> 00:41:10,160

some of the challenges that i've heard

1205

00:41:14,950 --> 00:41:12,240

about as the administrator is that

1206

00:41:16,790 --> 00:41:14,960

our astronauts are prohibited from doing

1207

00:41:18,150 --> 00:41:16,800

certain experiments that are on board

1208

00:41:20,069 --> 00:41:18,160

the iss

1209

00:41:23,349 --> 00:41:20,079

because those experiments might one day

1210

00:41:26,150 --> 00:41:23,359

make a profit for a company that has

1211

00:41:27,910 --> 00:41:26,160

purchased access to the iss now

1212

00:41:30,309 --> 00:41:27,920

um this could be

1213

00:41:32,069 --> 00:41:30,319

uh you know the idea what does nasa do

1214

00:41:34,069 --> 00:41:32,079

nasa works to retire risk and

1215

00:41:36,710 --> 00:41:34,079

commercialize capabilities so that we

1216

00:41:38,309 --> 00:41:36,720

can move on to other things and so did i

1217

00:41:39,910 --> 00:41:38,319

see you did you want to address that

1218

00:41:41,670 --> 00:41:39,920

well you know capitalism works really

1219

00:41:43,190 --> 00:41:41,680

well here on earth there's no reason we

1220

00:41:44,790 --> 00:41:43,200

shouldn't be embracing it

1221

00:41:46,790 --> 00:41:44,800

okay got it

1222

00:41:49,430 --> 00:41:46,800

well the the idea though you mentioned

1223

00:41:51,270 --> 00:41:49,440

some of the some of you know if if if

1224

00:41:52,470 --> 00:41:51,280

our commercial crew partners have seven

1225

00:41:54,150 --> 00:41:52,480

seats

1226

00:41:56,069 --> 00:41:54,160

how do we take advantage of those seven

1227

00:41:58,069 --> 00:41:56,079

seats for them in a way that helps their

1228

00:41:59,829 --> 00:41:58,079

bottom line and at the same time offsets

1229

00:42:01,829 --> 00:41:59,839

our cost

1230

00:42:05,910 --> 00:42:01,839

and and is that feasible is it possible

1231

00:42:07,670 --> 00:42:05,920

legally regulatory um and and so the the

1232

00:42:09,670 --> 00:42:07,680

goal here ultimately

1233

00:42:11,030 --> 00:42:09,680

is to commercialize low-earth orbit to

1234

00:42:12,870 --> 00:42:11,040

make sure there's no gap in low-earth

1235

00:42:14,390 --> 00:42:12,880

orbit and when i say commercialized

1236

00:42:16,230 --> 00:42:14,400

we're talking about industries that

1237

00:42:18,069 --> 00:42:16,240

could be formed around low earth orbit

1238

00:42:19,270 --> 00:42:18,079

in a microgravity environment

1239

00:42:21,190 --> 00:42:19,280

some of the things that we've talked

1240

00:42:23,109 --> 00:42:21,200

about are

1241

00:42:25,990 --> 00:42:23,119

pharmaceuticals for example a

1242

00:42:27,030 --> 00:42:26,000

development of

1243

00:42:28,630 --> 00:42:27,040

no kidding

1244

00:42:30,069 --> 00:42:28,640

you know this came out in the last

1245

00:42:31,349 --> 00:42:30,079

national space council meeting chaired

1246

00:42:32,950 --> 00:42:31,359

by the vice president there was a

1247

00:42:34,309 --> 00:42:32,960

gentleman there from indiana i wonder

1248

00:42:36,550 --> 00:42:34,319

how that happened

1249

00:42:37,430 --> 00:42:36,560

but he but he had a he had a story to

1250

00:42:39,510 --> 00:42:37,440

tell

1251  
00:42:42,870 --> 00:42:39,520  
about the ability to use adult stem

1252  
00:42:44,630 --> 00:42:42,880  
cells to 3d print human organs in a

1253  
00:42:46,069 --> 00:42:44,640  
microgravity environment in a way you

1254  
00:42:48,230 --> 00:42:46,079  
can't do on earth

1255  
00:42:49,589 --> 00:42:48,240  
and if we can prove that capability out

1256  
00:42:52,150 --> 00:42:49,599  
on the international space station and

1257  
00:42:54,390 --> 00:42:52,160  
then use that as part of the market that

1258  
00:42:56,069 --> 00:42:54,400  
can keep that commercial capability

1259  
00:42:57,510 --> 00:42:56,079  
going maybe even outside the

1260  
00:42:59,670 --> 00:42:57,520  
international space station or on the

1261  
00:43:01,190 --> 00:42:59,680  
international space station with offsets

1262  
00:43:02,710 --> 00:43:01,200  
to cost

1263  
00:43:04,230 --> 00:43:02,720

those are all good things for for our

1264

00:43:06,550 --> 00:43:04,240

country so

1265

00:43:08,390 --> 00:43:06,560

i mean i would say mr administrator that

1266

00:43:10,150 --> 00:43:08,400

i believe in this i've worked my entire

1267

00:43:11,750 --> 00:43:10,160

life on these commercial activities it

1268

00:43:13,750 --> 00:43:11,760

will happen the question is will it

1269

00:43:17,829 --> 00:43:13,760

happen in america and this committee

1270

00:43:20,069 --> 00:43:17,839

will be committed to developing policies

1271

00:43:21,829 --> 00:43:20,079

that make it easy that will facilitate

1272

00:43:23,190 --> 00:43:21,839

it happening here because if we don't

1273

00:43:25,270 --> 00:43:23,200

take these actions just like you're

1274

00:43:27,589 --> 00:43:25,280

describing with other policy regulations

1275

00:43:29,750 --> 00:43:27,599

it will go overseas that's great well

1276

00:43:31,589 --> 00:43:29,760

i'm looking forward to seeing

1277

00:43:33,829 --> 00:43:31,599

we're going to start populating that

1278

00:43:35,750 --> 00:43:33,839

committee with experts from across the

1279

00:43:37,670 --> 00:43:35,760

country with a broad

1280

00:43:39,750 --> 00:43:37,680

a very diverse set of views and

1281

00:43:41,829 --> 00:43:39,760

capabilities and backgrounds and

1282

00:43:43,589 --> 00:43:41,839

ultimately seeing where that where that

1283

00:43:45,349 --> 00:43:43,599

goes and and what is what is in the

1284

00:43:46,630 --> 00:43:45,359

realm of possibility because right now

1285

00:43:48,870 --> 00:43:46,640

we don't know but we're going to start

1286

00:43:50,390 --> 00:43:48,880

asking these tough and in some cases

1287

00:43:51,270 --> 00:43:50,400

provocative questions so at the end of

1288

00:43:52,950 --> 00:43:51,280

the day

1289

00:43:55,270 --> 00:43:52,960

we can get from point a to point b in

1290

00:43:57,910 --> 00:43:55,280

the in the fastest way possible so

1291

00:43:58,870 --> 00:43:57,920

i appreciate you jumping in to tackle

1292

00:44:00,150 --> 00:43:58,880

that

1293

00:44:02,069 --> 00:44:00,160

um

1294

00:44:03,589 --> 00:44:02,079

i feel very very positive about the

1295

00:44:04,870 --> 00:44:03,599

ability of

1296

00:44:06,309 --> 00:44:04,880

mike's uh

1297

00:44:07,750 --> 00:44:06,319

committee and the whole council to

1298

00:44:09,750 --> 00:44:07,760

really take on these things very

1299

00:44:11,670 --> 00:44:09,760

seriously no pun intended i think the

1300

00:44:12,550 --> 00:44:11,680

stars are aligned right now you

1301  
00:44:15,910 --> 00:44:12,560  
mentioned

1302  
00:44:17,750 --> 00:44:15,920  
obviously spd1 spd2 spd3 but also the

1303  
00:44:19,430 --> 00:44:17,760  
national space council

1304  
00:44:21,829 --> 00:44:19,440  
and the user advisory group as part of

1305  
00:44:24,230 --> 00:44:21,839  
that council if i look at the tasking

1306  
00:44:26,309 --> 00:44:24,240  
giving from the white house to the space

1307  
00:44:28,150 --> 00:44:26,319  
council and user advisory group they're

1308  
00:44:30,150 --> 00:44:28,160  
right along the same lines of tackling

1309  
00:44:31,750 --> 00:44:30,160  
those barriers those policy those

1310  
00:44:33,030 --> 00:44:31,760  
regulatory issues that are getting in

1311  
00:44:35,030 --> 00:44:33,040  
the way so

1312  
00:44:36,870 --> 00:44:35,040  
the stars are aligned i think we can

1313  
00:44:37,990 --> 00:44:36,880

have nothing but success ahead of us and

1314

00:44:40,150 --> 00:44:38,000

you're the

1315

00:44:41,990 --> 00:44:40,160

you also serve on the user advisory

1316

00:44:44,069 --> 00:44:42,000

group of the national space council yes

1317

00:44:45,670 --> 00:44:44,079

sir so you're you're going to get a very

1318

00:44:47,589 --> 00:44:45,680

unique perspective that you can bring to

1319

00:44:49,670 --> 00:44:47,599

us on i am a floating retirement badly

1320

00:44:51,910 --> 00:44:49,680

but i'm going to get it okay well good

1321

00:44:52,950 --> 00:44:51,920

so so so to that point i want to also

1322

00:44:54,309 --> 00:44:52,960

talk about something else that's

1323

00:44:56,150 --> 00:44:54,319

important for our country right now we

1324

00:44:57,829 --> 00:44:56,160

have had in the history of our country

1325

00:44:59,030 --> 00:44:57,839

we've had national space councils in the

1326

00:45:01,589 --> 00:44:59,040

past

1327

00:45:03,109 --> 00:45:01,599

they have not always been effective uh

1328

00:45:04,470 --> 00:45:03,119

i'm here to tell you that as far as i

1329

00:45:05,990 --> 00:45:04,480

can tell the one we have right now is

1330

00:45:07,270 --> 00:45:06,000

being very effective

1331

00:45:09,190 --> 00:45:07,280

and of course they're appointing great

1332

00:45:12,069 --> 00:45:09,200

people to serve on the user advisory

1333

00:45:13,829 --> 00:45:12,079

group of the national space council

1334

00:45:14,870 --> 00:45:13,839

so i'll just kind of define for maybe

1335

00:45:16,230 --> 00:45:14,880

some people in the room that are not

1336

00:45:19,109 --> 00:45:16,240

aware

1337

00:45:22,470 --> 00:45:20,870

nasa is not the only agency that's

1338

00:45:23,750 --> 00:45:22,480

involved in space and of course the

1339

00:45:25,430 --> 00:45:23,760

department of defense people are

1340

00:45:26,870 --> 00:45:25,440

familiar with the intelligence community

1341

00:45:28,710 --> 00:45:26,880

people are familiar with

1342

00:45:31,829 --> 00:45:28,720

but the department of transportation is

1343

00:45:32,950 --> 00:45:31,839

involved in space as well from the faa

1344

00:45:35,349 --> 00:45:32,960

office of commercial space

1345

00:45:37,990 --> 00:45:35,359

transportation the commerce department

1346

00:45:39,990 --> 00:45:38,000

is involved in space now with noaa and

1347

00:45:42,069 --> 00:45:40,000

other regulatory capabilities that they

1348

00:45:43,589 --> 00:45:42,079

have and of course under space policy

1349

00:45:46,230 --> 00:45:43,599

directives two and three they're going

1350

00:45:47,270 --> 00:45:46,240

to be a lot more involved in space so

1351  
00:45:49,990 --> 00:45:47,280  
all of the

1352  
00:45:52,309 --> 00:45:50,000  
the heads of these agencies the the

1353  
00:45:54,309 --> 00:45:52,319  
secretaries of these agencies

1354  
00:45:56,390 --> 00:45:54,319  
serve on the national space council the

1355  
00:45:58,150 --> 00:45:56,400  
secretary of defense the director of

1356  
00:45:59,750 --> 00:45:58,160  
national intelligence the

1357  
00:46:01,349 --> 00:45:59,760  
secretary of transportation secretary of

1358  
00:46:03,910 --> 00:46:01,359  
commerce of course the nasa

1359  
00:46:05,670 --> 00:46:03,920  
administrator and others and we we

1360  
00:46:07,510 --> 00:46:05,680  
collaborate on ultimately what are the

1361  
00:46:09,109 --> 00:46:07,520  
policies that will enable the american

1362  
00:46:12,150 --> 00:46:09,119  
space enterprise

1363  
00:46:13,829 --> 00:46:12,160

to remain preeminent um and of course

1364

00:46:16,230 --> 00:46:13,839

this in this particular case the the

1365

00:46:17,750 --> 00:46:16,240

council is chaired by the vice president

1366

00:46:21,349 --> 00:46:17,760

of the united states

1367

00:46:23,510 --> 00:46:21,359

who is very actively engaged he has

1368

00:46:24,950 --> 00:46:23,520

you know visited kennedy twice visited

1369

00:46:27,030 --> 00:46:24,960

johnson twice

1370

00:46:29,589 --> 00:46:27,040

visited marshall and jpl

1371

00:46:31,510 --> 00:46:29,599

he's taking a personal interest in this

1372

00:46:33,430 --> 00:46:31,520

i mean everything i just mentioned is is

1373

00:46:35,910 --> 00:46:33,440

specific to nasa but he's done a lot

1374

00:46:37,910 --> 00:46:35,920

more that includes the interagency so

1375

00:46:39,030 --> 00:46:37,920

we're in great shape i'll also say on

1376  
00:46:40,230 --> 00:46:39,040  
that point

1377  
00:46:44,470 --> 00:46:40,240  
that

1378  
00:46:46,550 --> 00:46:44,480  
in congress

1379  
00:46:48,309 --> 00:46:46,560  
the president's budget request increased

1380  
00:46:50,150 --> 00:46:48,319  
nasa by a billion dollars when you have

1381  
00:46:52,550 --> 00:46:50,160  
a 19 point something billion dollar

1382  
00:46:53,270 --> 00:46:52,560  
budget a billion dollars is a lot

1383  
00:46:55,270 --> 00:46:53,280  
and

1384  
00:46:56,870 --> 00:46:55,280  
even before i got here to go advocate

1385  
00:46:59,990 --> 00:46:56,880  
for that new billion dollars congress

1386  
00:47:02,230 --> 00:47:00,000  
had plused up nasa by 1.7 billion

1387  
00:47:04,470 --> 00:47:02,240  
so this is strong bipartisan support

1388  
00:47:06,309 --> 00:47:04,480

support from the administration

1389

00:47:09,270 --> 00:47:06,319

part of what i hope this group can

1390

00:47:12,390 --> 00:47:09,280

achieve is making sure that nasa remains

1391

00:47:13,990 --> 00:47:12,400

apolitical remains bipartisan so that

1392

00:47:15,430 --> 00:47:14,000

this is good for our country and its

1393

00:47:17,910 --> 00:47:15,440

entirety

1394

00:47:19,510 --> 00:47:17,920

and not um not focused on you know

1395

00:47:20,950 --> 00:47:19,520

things that can divide us but things

1396

00:47:23,109 --> 00:47:20,960

that can unite us

1397

00:47:25,190 --> 00:47:23,119

um and and being able to do more than

1398

00:47:27,270 --> 00:47:25,200

we've ever done before so general i'll

1399

00:47:28,950 --> 00:47:27,280

uh let you open it up to others other

1400

00:47:33,349 --> 00:47:28,960

questions and comments from the uh from

1401

00:47:37,670 --> 00:47:35,589

yes amy

1402

00:47:40,069 --> 00:47:37,680

good afternoon mr administrator i would

1403

00:47:43,270 --> 00:47:40,079

love to hear your thoughts about how you

1404

00:47:45,589 --> 00:47:43,280

see the role of the agency in preparing

1405

00:47:47,910 --> 00:47:45,599

the stem workforce of the future not

1406

00:47:52,309 --> 00:47:47,920

just for the agency but really for our

1407

00:47:53,430 --> 00:47:52,319

entire country one a wonderful question

1408

00:47:55,510 --> 00:47:53,440

so

1409

00:47:57,030 --> 00:47:55,520

there was a time in my life before i was

1410

00:47:59,829 --> 00:47:57,040

in the house and before i was the nasa

1411

00:48:01,589 --> 00:47:59,839

administrator i ran a non-profit tulsa

1412

00:48:04,549 --> 00:48:01,599

air and space museum

1413

00:48:08,470 --> 00:48:04,559

and it was a great opportunity for me to

1414

00:48:10,790 --> 00:48:08,480

see firsthand how nasa uniquely can

1415

00:48:12,390 --> 00:48:10,800

impact the lives of children

1416

00:48:14,150 --> 00:48:12,400

so uh

1417

00:48:15,750 --> 00:48:14,160

and and not just impact their lives but

1418

00:48:18,549 --> 00:48:15,760

really kind of change the direction of

1419

00:48:20,470 --> 00:48:18,559

their their course and the reason i was

1420

00:48:22,870 --> 00:48:20,480

so interested in that

1421

00:48:24,710 --> 00:48:22,880

even to lead this non-profit museum

1422

00:48:26,549 --> 00:48:24,720

when i was young

1423

00:48:29,109 --> 00:48:26,559

i think it was the summer after my fifth

1424

00:48:31,829 --> 00:48:29,119

grade and before my sixth grade year

1425

00:48:33,910 --> 00:48:31,839

um i had the opportunity to go and and

1426  
00:48:37,109 --> 00:48:33,920  
and go to a summer camp where i got to

1427  
00:48:39,829 --> 00:48:37,119  
manipulate and play with a wind tunnel

1428  
00:48:42,390 --> 00:48:39,839  
and and it really you know i i learned

1429  
00:48:45,829 --> 00:48:42,400  
about bernoulli's theory and i learned

1430  
00:48:47,910 --> 00:48:45,839  
about the camber of a wing and you know

1431  
00:48:49,670 --> 00:48:47,920  
lift and drag and all the fundamentals

1432  
00:48:51,910 --> 00:48:49,680  
and how to make those things change by

1433  
00:48:53,829 --> 00:48:51,920  
changing the shape of the wing i learned

1434  
00:48:55,190 --> 00:48:53,839  
that the summer between i think it was

1435  
00:48:56,549 --> 00:48:55,200  
the summer between my fifth and sixth

1436  
00:48:58,790 --> 00:48:56,559  
grade year

1437  
00:49:00,309 --> 00:48:58,800  
but you know at that point it was in my

1438  
00:49:03,589 --> 00:49:00,319

mind from that point forward that i

1439

00:49:06,630 --> 00:49:03,599

wanted to be involved in aviation and so

1440

00:49:09,109 --> 00:49:06,640

in fact in those days i had a picture

1441

00:49:11,030 --> 00:49:09,119

hanging on my wall of a nasa

1442

00:49:13,190 --> 00:49:11,040

and in fact it was a multi-agency kind

1443

00:49:16,790 --> 00:49:13,200

of program darpa and others but it was

1444

00:49:18,470 --> 00:49:16,800

an x-29 a forward swept wing aircraft

1445

00:49:20,230 --> 00:49:18,480

and all i knew back then is that this

1446

00:49:21,750 --> 00:49:20,240

thing looked really cool and i had to

1447

00:49:24,150 --> 00:49:21,760

put it on my wall

1448

00:49:26,069 --> 00:49:24,160

and uh and and i did and as i grew older

1449

00:49:27,910 --> 00:49:26,079

i started learning about why would we

1450

00:49:30,069 --> 00:49:27,920

ever want to prove out a forward swept

1451

00:49:31,589 --> 00:49:30,079

wing aircraft and learning about the

1452

00:49:32,430 --> 00:49:31,599

trade-off between

1453

00:49:34,950 --> 00:49:32,440

you know

1454

00:49:37,030 --> 00:49:34,960

maneuverability and stability like you

1455

00:49:39,030 --> 00:49:37,040

you can you can have both but you can't

1456

00:49:41,349 --> 00:49:39,040

have both at the same time

1457

00:49:43,349 --> 00:49:41,359

um and and ultimately the idea that the

1458

00:49:44,549 --> 00:49:43,359

more maneuverable you make an aircraft

1459

00:49:47,109 --> 00:49:44,559

which is what you get with a forward

1460

00:49:48,309 --> 00:49:47,119

swept wing moving at high speeds

1461

00:49:50,390 --> 00:49:48,319

the more you're not going to be able to

1462

00:49:51,990 --> 00:49:50,400

control it as a pilot and in fact it

1463

00:49:54,230 --> 00:49:52,000

wouldn't be controllable

1464

00:49:55,910 --> 00:49:54,240

but because of nasa technology and nasa

1465

00:49:57,430 --> 00:49:55,920

investment we were able to create flight

1466

00:49:58,630 --> 00:49:57,440

control computers that actually could

1467

00:50:00,309 --> 00:49:58,640

control it

1468

00:50:02,470 --> 00:50:00,319

and at the same time

1469

00:50:04,710 --> 00:50:02,480

you know forward swept wings flying at

1470

00:50:06,950 --> 00:50:04,720

that speed it was

1471

00:50:08,390 --> 00:50:06,960

it was an f5 airframe but with that

1472

00:50:09,750 --> 00:50:08,400

forward swept wing it would go

1473

00:50:10,829 --> 00:50:09,760

sufficiently fast to where it would

1474

00:50:13,910 --> 00:50:10,839

actually come

1475

00:50:16,630 --> 00:50:13,920

apart under normal circumstances well at

1476

00:50:18,309 --> 00:50:16,640

the time early 80s maybe late 70s really

1477

00:50:19,990 --> 00:50:18,319

when it first started

1478

00:50:21,430 --> 00:50:20,000

the the development of composite

1479

00:50:23,430 --> 00:50:21,440

materials where you could actually

1480

00:50:25,349 --> 00:50:23,440

strengthen the wing much stronger than

1481

00:50:26,950 --> 00:50:25,359

it would otherwise be and not pay a

1482

00:50:27,750 --> 00:50:26,960

weight penalty

1483

00:50:29,510 --> 00:50:27,760

um

1484

00:50:30,470 --> 00:50:29,520

so the forward swept wing gave us you

1485

00:50:33,990 --> 00:50:30,480

know

1486

00:50:36,390 --> 00:50:34,000

that gave us flight control computer

1487

00:50:37,589 --> 00:50:36,400

capabilities um and and i started

1488

00:50:38,950 --> 00:50:37,599

learning about these things and wanting

1489

00:50:40,549 --> 00:50:38,960

to know more and eventually i came to

1490

00:50:42,150 --> 00:50:40,559

the point in my life when i graduated

1491

00:50:44,390 --> 00:50:42,160

from college

1492

00:50:46,150 --> 00:50:44,400

i was interested in maybe you know i was

1493

00:50:47,670 --> 00:50:46,160

interviewing for you know investment

1494

00:50:49,670 --> 00:50:47,680

banking positions and consulting

1495

00:50:51,750 --> 00:50:49,680

positions and didn't want to do any of

1496

00:50:53,109 --> 00:50:51,760

it i wanted to be in aviation and i

1497

00:50:54,870 --> 00:50:53,119

wanted to be in aviation because of

1498

00:50:56,870 --> 00:50:54,880

these experiences i had growing up

1499

00:50:59,349 --> 00:50:56,880

whether it was the wind tunnel or the

1500

00:51:01,829 --> 00:50:59,359

x-29 or might have something to do with

1501  
00:51:03,190 --> 00:51:01,839  
the movie top gun as well i i i don't

1502  
00:51:04,950 --> 00:51:03,200  
remember

1503  
00:51:06,390 --> 00:51:04,960  
but but at the end of the day

1504  
00:51:08,309 --> 00:51:06,400  
these are the kind of things that

1505  
00:51:09,990 --> 00:51:08,319  
inspire children to do you know

1506  
00:51:11,750 --> 00:51:10,000  
different activities that are that are

1507  
00:51:13,910 --> 00:51:11,760  
good for for the country

1508  
00:51:17,349 --> 00:51:13,920  
and if we as an agency look if we want

1509  
00:51:18,710 --> 00:51:17,359  
to inspire that next generation for stem

1510  
00:51:20,549 --> 00:51:18,720  
which i think is critically important

1511  
00:51:22,710 --> 00:51:20,559  
for the good of our country

1512  
00:51:24,870 --> 00:51:22,720  
nasa has to do stunning things that's

1513  
00:51:27,030 --> 00:51:24,880

why i'm a big believer in the x-plane

1514

00:51:28,950 --> 00:51:27,040

capabilities that we have as a nation

1515

00:51:30,470 --> 00:51:28,960

you know we can do computational fluid

1516

00:51:32,309 --> 00:51:30,480

dynamics

1517

00:51:34,069 --> 00:51:32,319

and see kind of you know what what

1518

00:51:35,510 --> 00:51:34,079

happens on a computer

1519

00:51:36,390 --> 00:51:35,520

but at the end of the day if you can fly

1520

00:51:38,549 --> 00:51:36,400

an airplane

1521

00:51:40,950 --> 00:51:38,559

and kids can see that airplane fly and

1522

00:51:43,430 --> 00:51:40,960

they can put that poster on their wall

1523

00:51:45,349 --> 00:51:43,440

that's how you get folks excited and by

1524

00:51:46,630 --> 00:51:45,359

the way that's all critically important

1525

00:51:48,390 --> 00:51:46,640

as well

1526  
00:51:50,710 --> 00:51:48,400  
it's not just for the stem it's also for

1527  
00:51:53,430 --> 00:51:50,720  
the development of technology so

1528  
00:51:55,270 --> 00:51:53,440  
i'm a big advocate of nasa's stem

1529  
00:51:57,109 --> 00:51:55,280  
mission in fact if you

1530  
00:51:58,790 --> 00:51:57,119  
spend five minutes at the headquarters

1531  
00:52:00,790 --> 00:51:58,800  
asking people

1532  
00:52:03,430 --> 00:52:00,800  
you know why do you work for nasa

1533  
00:52:05,829 --> 00:52:03,440  
they can give you all sorts of of

1534  
00:52:07,510 --> 00:52:05,839  
of things that happened in their past

1535  
00:52:08,790 --> 00:52:07,520  
that made them want to one day work at

1536  
00:52:10,790 --> 00:52:08,800  
this agency

1537  
00:52:12,390 --> 00:52:10,800  
and one of the things depending on the

1538  
00:52:14,950 --> 00:52:12,400

age group that you talk to

1539

00:52:18,470 --> 00:52:14,960

everybody remembers where they were

1540

00:52:21,430 --> 00:52:18,480

when apollo 11 landed on the moon

1541

00:52:23,109 --> 00:52:21,440

and that has been monumental for

1542

00:52:25,109 --> 00:52:23,119

so many people that work in the stem

1543

00:52:26,470 --> 00:52:25,119

fields in this country including people

1544

00:52:28,870 --> 00:52:26,480

that are sitting around this table right

1545

00:52:31,910 --> 00:52:28,880

now so

1546

00:52:34,870 --> 00:52:31,920

so look nasa has a big role to play here

1547

00:52:36,630 --> 00:52:34,880

we need stunning achievements we need to

1548

00:52:38,150 --> 00:52:36,640

do things that are cool and we need to

1549

00:52:39,829 --> 00:52:38,160

make sure that we're communicating that

1550

00:52:41,589 --> 00:52:39,839

to the previous conversation

1551  
00:52:43,670 --> 00:52:41,599  
communicating that to

1552  
00:52:45,430 --> 00:52:43,680  
to the world you know we talked about

1553  
00:52:47,270 --> 00:52:45,440  
the potential you know

1554  
00:52:48,790 --> 00:52:47,280  
is it possible for us to sell the naming

1555  
00:52:50,790 --> 00:52:48,800  
rights on a rocket why would we want to

1556  
00:52:52,549 --> 00:52:50,800  
do that as nasa don't get me wrong we

1557  
00:52:53,910 --> 00:52:52,559  
want to brand nasa

1558  
00:52:55,510 --> 00:52:53,920  
but why would we want to sell the naming

1559  
00:52:56,630 --> 00:52:55,520  
rights well because then those private

1560  
00:52:58,950 --> 00:52:56,640  
companies

1561  
00:53:01,829 --> 00:52:58,960  
can then embed in their marketing

1562  
00:53:03,910 --> 00:53:01,839  
campaigns nasa we can embed nasa into

1563  
00:53:07,349 --> 00:53:03,920

the culture and the fabric of american

1564

00:53:09,190 --> 00:53:07,359

society and inspire generations of folks

1565

00:53:11,589 --> 00:53:09,200

that will you know create those next

1566

00:53:13,349 --> 00:53:11,599

capabilities to keep america preeminent

1567

00:53:15,349 --> 00:53:13,359

not only in space but in science and

1568

00:53:17,990 --> 00:53:15,359

technology and discovery and exploration

1569

00:53:19,910 --> 00:53:18,000

so thank you for that question

1570

00:53:21,030 --> 00:53:19,920

other questions from the council members

1571

00:53:24,309 --> 00:53:21,040

yes

1572

00:53:29,670 --> 00:53:26,710

thank you mr administrator

1573

00:53:32,549 --> 00:53:29,680

there is some really incredible science

1574

00:53:33,829 --> 00:53:32,559

that could be facilitated um and it

1575

00:53:35,910 --> 00:53:33,839

could be implemented as part of the

1576  
00:53:36,710 --> 00:53:35,920  
implementation of space policy directive

1577  
00:53:39,190 --> 00:53:36,720  
one

1578  
00:53:41,670 --> 00:53:39,200  
and in all areas of the nasa science

1579  
00:53:43,670 --> 00:53:41,680  
portfolio and so i was wondering if you

1580  
00:53:45,270 --> 00:53:43,680  
could talk a little bit about how you

1581  
00:53:47,030 --> 00:53:45,280  
might prioritize some of the science

1582  
00:53:47,990 --> 00:53:47,040  
that might happen

1583  
00:53:49,670 --> 00:53:48,000  
another

1584  
00:53:50,790 --> 00:53:49,680  
great question and important for the

1585  
00:53:52,950 --> 00:53:50,800  
agency

1586  
00:53:54,630 --> 00:53:52,960  
um and and i'm glad you asked it because

1587  
00:53:56,470 --> 00:53:54,640  
i want to make sure before my time here

1588  
00:53:58,630 --> 00:53:56,480

ends i'm going to ask thomas to talk

1589

00:54:00,150 --> 00:53:58,640

thomas zurbukin the associate

1590

00:54:01,510 --> 00:54:00,160

administrator of the science mission

1591

00:54:02,549 --> 00:54:01,520

director at nasa i'm going to ask him

1592

00:54:03,750 --> 00:54:02,559

to talk about some things but it's a

1593

00:54:05,190 --> 00:54:03,760

good question

1594

00:54:06,950 --> 00:54:05,200

and i'll tell you how i think about it

1595

00:54:08,870 --> 00:54:06,960

because i talked for a second about why

1596

00:54:10,950 --> 00:54:08,880

we want to make sure nasa remains

1597

00:54:12,390 --> 00:54:10,960

apolitical and nonpartisan because

1598

00:54:14,790 --> 00:54:12,400

ultimately that's that's how we're going

1599

00:54:16,950 --> 00:54:14,800

to be able to do more and find a lot of

1600

00:54:18,470 --> 00:54:16,960

support in the house and in the senate

1601  
00:54:20,950 --> 00:54:18,480  
in order for me to achieve that

1602  
00:54:22,870 --> 00:54:20,960  
objective of remaining apolitical and

1603  
00:54:24,309 --> 00:54:22,880  
you know bipartisan

1604  
00:54:25,750 --> 00:54:24,319  
i'm going to follow the guidance that

1605  
00:54:28,390 --> 00:54:25,760  
comes from the national academy of

1606  
00:54:30,309 --> 00:54:28,400  
sciences through their decadal surveys

1607  
00:54:31,990 --> 00:54:30,319  
so when you think about those decadal

1608  
00:54:33,589 --> 00:54:32,000  
surveys you've got astrophysics and

1609  
00:54:36,390 --> 00:54:33,599  
earth science and

1610  
00:54:37,829 --> 00:54:36,400  
heliophysics and planetary science we're

1611  
00:54:39,510 --> 00:54:37,839  
going to follow the guidance of those

1612  
00:54:42,470 --> 00:54:39,520  
decadal surveys for the purpose of

1613  
00:54:44,630 --> 00:54:42,480

making sure that we are dispassionately

1614

00:54:47,190 --> 00:54:44,640

going the directions that the that the

1615

00:54:49,349 --> 00:54:47,200

science community wants us to go as they

1616

00:54:51,670 --> 00:54:49,359

have reached consensus which is that's

1617

00:54:53,349 --> 00:54:51,680

that's the purpose of doing that

1618

00:54:55,190 --> 00:54:53,359

now as you mentioned

1619

00:54:56,630 --> 00:54:55,200

the moon you mentioned space policy

1620

00:54:58,549 --> 00:54:56,640

directive one that means we're going to

1621

00:55:01,270 --> 00:54:58,559

the moon and how how does that relate to

1622

00:55:03,190 --> 00:55:01,280

science well there is a history at nasa

1623

00:55:04,549 --> 00:55:03,200

where what you do at the moon is not

1624

00:55:06,230 --> 00:55:04,559

science it's part of the human

1625

00:55:07,670 --> 00:55:06,240

exploration mission directorate and

1626  
00:55:10,710 --> 00:55:07,680  
science is everything other than the

1627  
00:55:13,910 --> 00:55:10,720  
moon that goes either beyond the moon or

1628  
00:55:17,030 --> 00:55:13,920  
maybe back to heliophysics et cetera

1629  
00:55:19,829 --> 00:55:17,040  
all of that being being the case

1630  
00:55:22,630 --> 00:55:19,839  
we need to think kind of

1631  
00:55:23,589 --> 00:55:22,640  
transdisciplinary in a transdisciplinary

1632  
00:55:25,589 --> 00:55:23,599  
way

1633  
00:55:28,230 --> 00:55:25,599  
about what science is at the moon

1634  
00:55:29,829 --> 00:55:28,240  
because again 1969 to 2008 we thought

1635  
00:55:30,950 --> 00:55:29,839  
the moon was bone dry what else do we

1636  
00:55:33,349 --> 00:55:30,960  
not know

1637  
00:55:34,470 --> 00:55:33,359  
about the moon and how much can we learn

1638  
00:55:36,710 --> 00:55:34,480

so we're going to be looking at those

1639

00:55:39,910 --> 00:55:36,720

decadal surveys and having them

1640

00:55:41,990 --> 00:55:39,920

inform the direction that we go

1641

00:55:43,510 --> 00:55:42,000

but but ultimately we need to we need to

1642

00:55:45,829 --> 00:55:43,520

be clear

1643

00:55:46,789 --> 00:55:45,839

that there is a lot of science at the

1644

00:55:49,670 --> 00:55:46,799

moon

1645

00:55:52,390 --> 00:55:49,680

that we have yet um to understand

1646

00:55:53,430 --> 00:55:52,400

uh and so i'd like to and

1647

00:55:55,750 --> 00:55:53,440

one of the things that we're going to do

1648

00:55:57,430 --> 00:55:55,760

not today but in the future

1649

00:55:59,750 --> 00:55:57,440

and i wasn't planning to talk about this

1650

00:56:01,510 --> 00:55:59,760

necessarily today but i will

1651  
00:56:03,030 --> 00:56:01,520  
anyway we'll make some more news today

1652  
00:56:04,789 --> 00:56:03,040  
why not

1653  
00:56:06,069 --> 00:56:04,799  
i was we're going to eventually get to a

1654  
00:56:07,430 --> 00:56:06,079  
point where we're going to stand up a

1655  
00:56:09,589 --> 00:56:07,440  
committee

1656  
00:56:12,789 --> 00:56:09,599  
within this group that is focused on

1657  
00:56:15,190 --> 00:56:12,799  
science at the moon specifically

1658  
00:56:17,750 --> 00:56:15,200  
and the reason we want to do that in a

1659  
00:56:18,950 --> 00:56:17,760  
collaboration between human exploration

1660  
00:56:20,630 --> 00:56:18,960  
and science

1661  
00:56:22,309 --> 00:56:20,640  
is because there's a lot of synergies

1662  
00:56:25,190 --> 00:56:22,319  
here that maybe historically haven't

1663  
00:56:27,990 --> 00:56:25,200

been optimized so if we'll talk for a

1664

00:56:30,870 --> 00:56:28,000

second thomas about that

1665

00:56:32,870 --> 00:56:30,880

thank you so much you know just like you

1666

00:56:34,549 --> 00:56:32,880

i believe the moon

1667

00:56:36,630 --> 00:56:34,559

is a body of the solar system that's

1668

00:56:38,789 --> 00:56:36,640

worthy of exploration

1669

00:56:41,109 --> 00:56:38,799

by itself why would it be the only body

1670

00:56:42,789 --> 00:56:41,119

that's not right right and for me that

1671

00:56:45,910 --> 00:56:42,799

that never made sense and

1672

00:56:48,789 --> 00:56:45,920

needless to say there is important

1673

00:56:51,270 --> 00:56:48,799

information in the last decade even

1674

00:56:53,270 --> 00:56:51,280

of the planetary sciences that pointed

1675

00:56:55,829 --> 00:56:53,280

to questions

1676  
00:56:57,670 --> 00:56:55,839  
at the moon that we have no clue about

1677  
00:57:00,630 --> 00:56:57,680  
what the answer is some of them are

1678  
00:57:02,950 --> 00:57:00,640  
related to the entire water cycles the

1679  
00:57:05,270 --> 00:57:02,960  
multiple sources of water and so forth

1680  
00:57:07,510 --> 00:57:05,280  
what's also important is once we unlock

1681  
00:57:09,349 --> 00:57:07,520  
the opportunities

1682  
00:57:12,150 --> 00:57:09,359  
on the surface of the moon or near the

1683  
00:57:13,750 --> 00:57:12,160  
moon and as part of the gateway or other

1684  
00:57:16,789 --> 00:57:13,760  
infrastructure that's there we can

1685  
00:57:17,829 --> 00:57:16,799  
answer questions in other disciplines

1686  
00:57:20,470 --> 00:57:17,839  
that

1687  
00:57:22,549 --> 00:57:20,480  
cannot be answered in any other fashion

1688  
00:57:25,030 --> 00:57:22,559

and i want to remind

1689

00:57:26,870 --> 00:57:25,040

you know the listeners that there is a

1690

00:57:29,510 --> 00:57:26,880

window in the electromagnetic spectrum

1691

00:57:32,870 --> 00:57:29,520

we've never seen we've never listened

1692

00:57:34,230 --> 00:57:32,880

and that is very low frequency radio

1693

00:57:36,390 --> 00:57:34,240

astrophysics

1694

00:57:38,829 --> 00:57:36,400

that the earth is too noisy the sun is

1695

00:57:40,470 --> 00:57:38,839

too noisy so we want to make those

1696

00:57:43,270 --> 00:57:40,480

observations

1697

00:57:46,710 --> 00:57:43,280

on the back side of the moon when it's

1698

00:57:48,150 --> 00:57:46,720

dark see the sun is is and the earth all

1699

00:57:51,190 --> 00:57:48,160

the noise is

1700

00:57:53,670 --> 00:57:51,200

is shut off uh by the moon so that's a

1701  
00:57:55,990 --> 00:57:53,680  
real opportunity there's other questions

1702  
00:57:58,470 --> 00:57:56,000  
like that and the committee that you're

1703  
00:58:00,950 --> 00:57:58,480  
referring to will look at

1704  
00:58:02,549 --> 00:58:00,960  
both signs off the moon but also signs

1705  
00:58:04,549 --> 00:58:02,559  
that can be addressed

1706  
00:58:07,109 --> 00:58:04,559  
using that infrastructure

1707  
00:58:09,829 --> 00:58:07,119  
near the moon and on the surface of the

1708  
00:58:11,750 --> 00:58:09,839  
moon in in a multidisciplinary fashion

1709  
00:58:14,630 --> 00:58:11,760  
in every one of those disciplines we're

1710  
00:58:16,390 --> 00:58:14,640  
aware of questions for which uh

1711  
00:58:18,470 --> 00:58:16,400  
this kind of investigation is very much

1712  
00:58:19,589 --> 00:58:18,480  
worth the investment and yes we want to

1713  
00:58:21,349 --> 00:58:19,599

look at the

1714

00:58:23,589 --> 00:58:21,359

national academies decades to help

1715

00:58:25,990 --> 00:58:23,599

prioritize that but it's something that

1716

00:58:27,990 --> 00:58:26,000

we really want guidance from the product

1717

00:58:30,630 --> 00:58:28,000

community that's great

1718

00:58:32,549 --> 00:58:30,640

that's uh great to hear um

1719

00:58:34,950 --> 00:58:32,559

bill did you want to obviously this is a

1720

00:58:36,390 --> 00:58:34,960

collaboration between heo and science

1721

00:58:37,750 --> 00:58:36,400

did you want to

1722

00:58:39,190 --> 00:58:37,760

add anything to that

1723

00:58:41,030 --> 00:58:39,200

you know i think again you'll get a

1724

00:58:42,950 --> 00:58:41,040

chance to hear when the committee chairs

1725

00:58:43,990 --> 00:58:42,960

get up and talk a little bit we did a

1726

00:58:45,990 --> 00:58:44,000

joint

1727

00:58:47,430 --> 00:58:46,000

human exploration operations committee

1728

00:58:49,990 --> 00:58:47,440

with the science committee meeting

1729

00:58:52,470 --> 00:58:50,000

yesterday and there was a really good

1730

00:58:54,870 --> 00:58:52,480

exchange between those two committees on

1731

00:58:57,109 --> 00:58:54,880

exciting ideas they can use the

1732

00:58:59,349 --> 00:58:57,119

facilities of the gateway they can do

1733

00:59:01,829 --> 00:58:59,359

surface activities the science that that

1734

00:59:03,190 --> 00:59:01,839

can enable and that synergistic action

1735

00:59:04,630 --> 00:59:03,200

back and forth was really really

1736

00:59:05,990 --> 00:59:04,640

positive i think you'll get a chance to

1737

00:59:08,309 --> 00:59:06,000

hear some recommendations and some

1738

00:59:10,069 --> 00:59:08,319

findings later today from both of those

1739

00:59:11,910 --> 00:59:10,079

those committees on what they heard from

1740

00:59:13,750 --> 00:59:11,920

that discussion but i think this is a

1741

00:59:15,190 --> 00:59:13,760

really rich environment for us and

1742

00:59:17,270 --> 00:59:15,200

together teaming together working

1743

00:59:18,710 --> 00:59:17,280

together we can achieve much more than

1744

00:59:20,789 --> 00:59:18,720

than we could individually doing

1745

00:59:22,309 --> 00:59:20,799

exploration or doing science alone but

1746

00:59:24,789 --> 00:59:22,319

by doing exploration and science

1747

00:59:27,750 --> 00:59:24,799

together it's a much much richer way of

1748

00:59:29,510 --> 00:59:27,760

doing uh activities in space that's uh

1749

00:59:31,190 --> 00:59:29,520

that's that's great to hear

1750

00:59:32,950 --> 00:59:31,200

general jim we'll take one more question

1751  
00:59:35,990 --> 00:59:32,960  
from john burgasey and then we'll do a

1752  
00:59:38,150 --> 00:59:36,000  
wrap-up here before we lose the air okay

1753  
00:59:41,510 --> 00:59:38,160  
thank you administrator for your uh

1754  
00:59:43,190 --> 00:59:41,520  
discussion on on on space policy uh and

1755  
00:59:45,190 --> 00:59:43,200  
and that we want to maintain our

1756  
00:59:47,829 --> 00:59:45,200  
leadership in in space

1757  
00:59:51,750 --> 00:59:47,839  
we're also uh leaders in

1758  
00:59:54,230 --> 00:59:51,760  
aeronautics as well uh shown by our 187

1759  
00:59:56,069 --> 00:59:54,240  
billion dollars of exports

1760  
00:59:59,190 --> 00:59:56,079  
of aerospace material

1761  
01:00:01,109 --> 00:59:59,200  
and that's due uh in large part due to

1762  
01:00:03,109 --> 01:00:01,119  
nasa's innovation over the last several

1763  
01:00:05,750 --> 01:00:03,119

years and the continuing innovation

1764

01:00:08,549 --> 01:00:05,760

they're doing in supersonic

1765

01:00:09,510 --> 01:00:08,559

research as well as unmanned air

1766

01:00:15,030 --> 01:00:09,520

traffic

1767

01:00:18,150 --> 01:00:15,040

can you describe a little bit about the

1768

01:00:20,150 --> 01:00:18,160

policy for aeronautics as well yeah no

1769

01:00:22,069 --> 01:00:20,160

that's that's an important point um i'm

1770

01:00:25,270 --> 01:00:22,079

reminded frequently that the first a in

1771

01:00:26,950 --> 01:00:25,280

nasa is for aeronautics specifically uh

1772

01:00:28,950 --> 01:00:26,960

we talked a little bit about some of the

1773

01:00:30,870 --> 01:00:28,960

x-planes especially well the x-29

1774

01:00:32,789 --> 01:00:30,880

historically but right now we're doing

1775

01:00:34,789 --> 01:00:32,799

the low boom flight demonstrator so that

1776

01:00:37,030 --> 01:00:34,799

we can fly across the united states in a

1777

01:00:39,030 --> 01:00:37,040

fraction amount of the time

1778

01:00:40,870 --> 01:00:39,040

and while there will be a sonic boom we

1779

01:00:42,470 --> 01:00:40,880

want to minimize that sonic boom to

1780

01:00:45,270 --> 01:00:42,480

where it's more of a rumble

1781

01:00:47,109 --> 01:00:45,280

um and in fact maybe even imperceptible

1782

01:00:48,710 --> 01:00:47,119

on the earth so we can fly

1783

01:00:50,789 --> 01:00:48,720

across the united states and really

1784

01:00:53,670 --> 01:00:50,799

across the world faster than we've ever

1785

01:00:55,270 --> 01:00:53,680

been able to do before

1786

01:00:57,510 --> 01:00:55,280

but but that's just one experiment

1787

01:00:59,270 --> 01:00:57,520

another experiment that we're doing x-37

1788

01:01:01,349 --> 01:00:59,280

maxwell we're going to actually fly the

1789

01:01:02,950 --> 01:01:01,359

world's first all-electric aircraft

1790

01:01:04,950 --> 01:01:02,960

that's capable of carrying humans and

1791

01:01:07,270 --> 01:01:04,960

cargo which has never been done before

1792

01:01:08,549 --> 01:01:07,280

but in this particular case

1793

01:01:10,710 --> 01:01:08,559

nasa is going to accomplish that the

1794

01:01:12,230 --> 01:01:10,720

idea being the purpose of these x-planes

1795

01:01:13,750 --> 01:01:12,240

is not that we're going to we're going

1796

01:01:15,829 --> 01:01:13,760

to build fleets of these planes but

1797

01:01:18,069 --> 01:01:15,839

we're going to retire risk for the

1798

01:01:19,510 --> 01:01:18,079

technology and then that technology

1799

01:01:21,510 --> 01:01:19,520

again we're going to publish it we're

1800

01:01:23,829 --> 01:01:21,520

going to make it available to the public

1801

01:01:25,430 --> 01:01:23,839

and then companies

1802

01:01:27,589 --> 01:01:25,440

that have an interest in this kind of

1803

01:01:29,270 --> 01:01:27,599

thing after we have retired the risk

1804

01:01:31,589 --> 01:01:29,280

they can take it and they can

1805

01:01:33,670 --> 01:01:31,599

commercialize it and enable us as you

1806

01:01:36,150 --> 01:01:33,680

mentioned which i think is perfect we

1807

01:01:39,109 --> 01:01:36,160

can use this as as a way of maintaining

1808

01:01:40,069 --> 01:01:39,119

america's edge in aviation so we can

1809

01:01:42,150 --> 01:01:40,079

keep

1810

01:01:43,349 --> 01:01:42,160

this as a big part of our export

1811

01:01:45,030 --> 01:01:43,359

capability

1812

01:01:46,309 --> 01:01:45,040

you know people people don't realize a

1813

01:01:48,470 --> 01:01:46,319

lot of times they hear a lot about the

1814

01:01:50,309 --> 01:01:48,480

trade deficit and the balance of

1815

01:01:53,349 --> 01:01:50,319

payments is not equitable but in

1816

01:01:55,589 --> 01:01:53,359

aviation specifically we have a surplus

1817

01:01:57,589 --> 01:01:55,599

in trade it is it is somewhat offsetting

1818

01:01:58,950 --> 01:01:57,599

the trade deficit which is a good thing

1819

01:02:01,510 --> 01:01:58,960

now we're going to have to work really

1820

01:02:03,190 --> 01:02:01,520

hard to maintain that leadership nasa

1821

01:02:04,470 --> 01:02:03,200

does that and the x planes are a big

1822

01:02:05,589 --> 01:02:04,480

piece of it

1823

01:02:07,750 --> 01:02:05,599

but also

1824

01:02:10,309 --> 01:02:07,760

as you're aware you know the the the way

1825

01:02:11,910 --> 01:02:10,319

we're using turbofan engines these days

1826

01:02:14,230 --> 01:02:11,920

uh we're seeing bigger and bigger

1827

01:02:16,950 --> 01:02:14,240

turbofan engines because of reduction

1828

01:02:19,109 --> 01:02:16,960

gear capability between uh the turbine

1829

01:02:20,950 --> 01:02:19,119

and the fan of of an engine which all of

1830

01:02:23,990 --> 01:02:20,960

that technology and capability developed

1831

01:02:26,230 --> 01:02:24,000

by nasa enabling us to export engines as

1832

01:02:27,589 --> 01:02:26,240

well as aircraft so

1833

01:02:28,950 --> 01:02:27,599

what what i have to do as the nasa

1834

01:02:30,309 --> 01:02:28,960

administrator and of course getting

1835

01:02:33,029 --> 01:02:30,319

advice from this

1836

01:02:34,789 --> 01:02:33,039

prestigious group we have to figure out

1837

01:02:37,029 --> 01:02:34,799

at the end of the day

1838

01:02:37,750 --> 01:02:37,039

what capabilities and technologies help

1839

01:02:39,829 --> 01:02:37,760

us

1840

01:02:41,589 --> 01:02:39,839

maintain our edge

1841

01:02:43,670 --> 01:02:41,599

and have the highest probability of

1842

01:02:45,910 --> 01:02:43,680

being commercialized for an export

1843

01:02:48,470 --> 01:02:45,920

capability to help the united states

1844

01:02:49,990 --> 01:02:48,480

maintain its preeminence in aviation

1845

01:02:51,910 --> 01:02:50,000

and of course uh

1846

01:02:53,829 --> 01:02:51,920

nasa has a long history of doing this

1847

01:02:54,950 --> 01:02:53,839

and we want to be able to to continue

1848

01:02:58,150 --> 01:02:54,960

doing this

1849

01:03:00,630 --> 01:02:58,160

uh and and so with the advice of you and

1850

01:03:03,109 --> 01:03:00,640

others on your committee uh we wanna we

1851

01:03:05,029 --> 01:03:03,119

wanna keep keep doing that so

1852

01:03:06,230 --> 01:03:05,039

i know general isles you mentioned that

1853

01:03:08,309 --> 01:03:06,240

we're kind of at the end of the road

1854

01:03:09,990 --> 01:03:08,319

here because of time actually it turns

1855

01:03:12,630 --> 01:03:10,000

out i think we have just a couple of

1856

01:03:14,309 --> 01:03:12,640

questions so like one i was wrong one

1857

01:03:16,390 --> 01:03:14,319

last question and miles i'll leave that

1858

01:03:18,870 --> 01:03:16,400

to you well uh first of all a tip of the

1859

01:03:20,870 --> 01:03:18,880

rabbit ears to you for allowing nasa uh

1860

01:03:22,870 --> 01:03:20,880

the nest advisory council on television

1861

01:03:24,390 --> 01:03:22,880

oh yes yeah it took about as long as it

1862

01:03:26,069 --> 01:03:24,400

took to get to the moon but we're here

1863

01:03:27,750 --> 01:03:26,079

okay so

1864

01:03:30,230 --> 01:03:27,760

if we can send a man to the moon we can

1865

01:03:32,150 --> 01:03:30,240

put the knack on tv

1866

01:03:35,589 --> 01:03:32,160

and uh my next proposal is going to be a

1867

01:03:37,910 --> 01:03:35,599

dedicated fax machine for uh incoming

1868

01:03:40,789 --> 01:03:37,920

comments from people so technology is

1869

01:03:42,230 --> 01:03:40,799

getting pretty crazy here um

1870

01:03:45,750 --> 01:03:42,240

i want to talk about my favorite planet

1871

01:03:47,910 --> 01:03:45,760

earth and the earth science enterprise

1872

01:03:50,230 --> 01:03:47,920

this is an administration from the top

1873

01:03:52,630 --> 01:03:50,240

on down that has expressed

1874

01:03:53,589 --> 01:03:52,640

either skepticism or denial of climate

1875

01:03:55,349 --> 01:03:53,599

science

1876

01:03:56,710 --> 01:03:55,359

yourself included at least on one

1877

01:03:58,230 --> 01:03:56,720

occasion

1878

01:04:01,190 --> 01:03:58,240

to what extent will that affect

1879

01:04:03,670 --> 01:04:01,200

priorities allocation of resources in

1880

01:04:06,069 --> 01:04:03,680

the earth science enterprise at nasa as

1881

01:04:07,829 --> 01:04:06,079

it's a great question miles a couple of

1882

01:04:09,510 --> 01:04:07,839

things that i think are important to

1883

01:04:10,950 --> 01:04:09,520

address number one

1884

01:04:12,789 --> 01:04:10,960

if you look at the president's budget

1885

01:04:14,069 --> 01:04:12,799

request on earth science specific to

1886

01:04:15,510 --> 01:04:14,079

nasa

1887

01:04:17,750 --> 01:04:15,520

it is higher

1888

01:04:20,309 --> 01:04:17,760

than three of the budget requests from

1889

01:04:22,069 --> 01:04:20,319

president obama which i think is a

1890

01:04:23,910 --> 01:04:22,079

a demonstration of the commitment to

1891

01:04:26,390 --> 01:04:23,920

understanding how

1892

01:04:27,829 --> 01:04:26,400

our climate changes and is changing so i

1893

01:04:29,910 --> 01:04:27,839

think that's that's an important point

1894

01:04:32,150 --> 01:04:29,920

it's on par with the fourth

1895

01:04:33,510 --> 01:04:32,160

so we're actually we're healthy there

1896

01:04:35,750 --> 01:04:33,520

of course there can be debates about

1897

01:04:37,270 --> 01:04:35,760

whether or not we need to do more

1898

01:04:39,670 --> 01:04:37,280

but again my goal as the nasa

1899

01:04:41,910 --> 01:04:39,680

administrator is to follow the guidance

1900

01:04:43,670 --> 01:04:41,920

that comes from the decadal surveys in

1901

01:04:46,069 --> 01:04:43,680

this particular case there's a decadal

1902

01:04:47,349 --> 01:04:46,079

survey specific to earth science and

1903

01:04:48,710 --> 01:04:47,359

we're going to follow that guidance and

1904

01:04:50,630 --> 01:04:48,720

i have a history

1905

01:04:52,309 --> 01:04:50,640

you know a lot of time you mentioned the

1906

01:04:55,109 --> 01:04:52,319

narrative on me

1907

01:04:57,270 --> 01:04:55,119

it might not entirely be accurate um

1908

01:04:59,829 --> 01:04:57,280

you can imagine uh in the political

1909

01:05:01,349 --> 01:04:59,839

realm when somebody gets nominated uh

1910

01:05:02,710 --> 01:05:01,359

one side of the aisle thinks that

1911

01:05:04,150 --> 01:05:02,720

they're excellent the other side of the

1912

01:05:05,829 --> 01:05:04,160

aisle thinks that they're terrible and

1913

01:05:07,670 --> 01:05:05,839

they're gonna generate their narratives

1914

01:05:09,670 --> 01:05:07,680

and and sometimes you get caught in the

1915

01:05:12,870 --> 01:05:09,680

crossfire in that but here's the thing

1916

01:05:15,029 --> 01:05:12,880

my history as a member of the armed

1917

01:05:18,069 --> 01:05:15,039

services committee i was very involved

1918

01:05:19,829 --> 01:05:18,079

in an amendment to make sure that

1919

01:05:21,510 --> 01:05:19,839

in fact it was offered by jim langevin

1920

01:05:23,270 --> 01:05:21,520

from rhode island a friend of mine in

1921

01:05:24,710 --> 01:05:23,280

the house of representatives and he said

1922

01:05:26,309 --> 01:05:24,720

he wanted the department of defense to

1923

01:05:28,150 --> 01:05:26,319

do a study on how climate change is

1924

01:05:29,670 --> 01:05:28,160

affecting our national security posture

1925

01:05:31,029 --> 01:05:29,680

and as a navy pilot

1926

01:05:32,950 --> 01:05:31,039

you know i had some experience here and

1927

01:05:34,950 --> 01:05:32,960

as you can imagine democrats were

1928

01:05:36,870 --> 01:05:34,960

against it and republicans were

1929

01:05:38,789 --> 01:05:36,880

or yeah democrats were for the amendment

1930

01:05:41,349 --> 01:05:38,799

republicans were against the amendment

1931

01:05:44,390 --> 01:05:41,359

and i actually stood up on my side of

1932

01:05:46,150 --> 01:05:44,400

the aisle and said no wait a second

1933

01:05:48,549 --> 01:05:46,160

as a navy pilot we're having to defend

1934

01:05:51,109 --> 01:05:48,559

territory we never used to even have to

1935

01:05:52,789 --> 01:05:51,119

defend and our potential adversaries are

1936

01:05:55,109 --> 01:05:52,799

operating in territory they never used

1937

01:05:56,630 --> 01:05:55,119

to be able to operate in and why is that

1938

01:05:58,870 --> 01:05:56,640

well it's because the arctic ice isn't

1939

01:06:01,589 --> 01:05:58,880

there anymore and we can we can pretend

1940

01:06:03,190 --> 01:06:01,599

that it is there but it's not and so

1941

01:06:04,630 --> 01:06:03,200

this does affect our national security

1942

01:06:05,990 --> 01:06:04,640

posture and i made that argument on the

1943

01:06:08,390 --> 01:06:06,000

armed services committee as a member of

1944

01:06:11,510 --> 01:06:08,400

the house long before i ever had the

1945

01:06:13,029 --> 01:06:11,520

opportunity to be nominated for for nasa

1946

01:06:14,390 --> 01:06:13,039

and of course i've been a strong

1947

01:06:16,150 --> 01:06:14,400

advocate of a whole host of earth

1948

01:06:18,069 --> 01:06:16,160

science missions including pace as a

1949

01:06:19,910 --> 01:06:18,079

member of congress and i've i've made

1950

01:06:23,270 --> 01:06:19,920

those arguments as well because we need

1951

01:06:25,430 --> 01:06:23,280

to understand the sources of of carbon

1952

01:06:27,109 --> 01:06:25,440

and the sinks of carbon

1953

01:06:29,190 --> 01:06:27,119

i can tell you this

1954

01:06:31,829 --> 01:06:29,200

and nobody that i know rejects this on

1955

01:06:33,589 --> 01:06:31,839

either side of the aisle carbon dioxide

1956

01:06:34,630 --> 01:06:33,599

is a greenhouse gas

1957

01:06:36,230 --> 01:06:34,640

it is

1958

01:06:37,510 --> 01:06:36,240

there's no i don't know anybody that

1959

01:06:38,870 --> 01:06:37,520

says that it's not

1960

01:06:40,390 --> 01:06:38,880

and we know that we've put more of it

1961

01:06:43,910 --> 01:06:40,400

into the atmosphere than we ever have

1962

01:06:45,430 --> 01:06:43,920

before and so there we are in fact

1963

01:06:47,190 --> 01:06:45,440

responsible for

1964

01:06:49,190 --> 01:06:47,200

the warming of the climate now here's

1965

01:06:52,710 --> 01:06:49,200

what we don't know there's a lot we

1966

01:06:55,190 --> 01:06:52,720

don't know i was just down at jpl

1967

01:06:56,630 --> 01:06:55,200

just two days ago and of course you know

1968

01:06:58,230 --> 01:06:56,640

they've got all their literature and why

1969

01:07:01,029 --> 01:06:58,240

they do all of this earth science kind

1970

01:07:02,390 --> 01:07:01,039

of capability on behalf of nasa

1971

01:07:03,910 --> 01:07:02,400

and of course they they were going

1972

01:07:05,670 --> 01:07:03,920

through all of the things we don't know

1973

01:07:07,190 --> 01:07:05,680

and that's what nasa is for we're for

1974

01:07:08,150 --> 01:07:07,200

trying to understand more when you think

1975

01:07:10,230 --> 01:07:08,160

about

1976

01:07:12,950 --> 01:07:10,240

the lithosphere and the hydrosphere and

1977

01:07:14,470 --> 01:07:12,960

the cryosphere and the biosphere you

1978

01:07:16,150 --> 01:07:14,480

think about biology we're seeing a

1979

01:07:17,910 --> 01:07:16,160

greening of the earth right now because

1980

01:07:20,230 --> 01:07:17,920

there's increased carbon dioxide in the

1981

01:07:22,549 --> 01:07:20,240

atmosphere it's actually happening so

1982

01:07:25,349 --> 01:07:22,559

ultimately the question is how do all of

1983

01:07:26,230 --> 01:07:25,359

these different changes as a result of

1984

01:07:28,549 --> 01:07:26,240

this

1985

01:07:30,549 --> 01:07:28,559

is it destabilizing

1986

01:07:32,549 --> 01:07:30,559

or is it stabilizing

1987

01:07:34,470 --> 01:07:32,559

and in some cases these feedback

1988

01:07:36,150 --> 01:07:34,480

mechanisms are destabilizing and

1989

01:07:39,109 --> 01:07:36,160

sometimes they're they're stabilizing

1990

01:07:40,789 --> 01:07:39,119

but what we know about these subsystems

1991

01:07:43,510 --> 01:07:40,799

of the earth system

1992

01:07:45,430 --> 01:07:43,520

we know because of nasa

1993

01:07:47,190 --> 01:07:45,440

now my goal is to prevent nasa from

1994

01:07:48,870 --> 01:07:47,200

becoming political or partisan that's my

1995

01:07:50,390 --> 01:07:48,880

objective as the nasa administrator in

1996

01:07:51,670 --> 01:07:50,400

order to do that

1997

01:07:53,349 --> 01:07:51,680

we're going to follow the guidance of

1998

01:07:55,670 --> 01:07:53,359

the decadal surveys and we're going to

1999

01:07:57,430 --> 01:07:55,680

do dispassionate science we're going to

2000

01:07:59,109 --> 01:07:57,440

get the data get the information we're

2001

01:08:00,390 --> 01:07:59,119

going to share it i'll tell you what

2002

01:08:03,109 --> 01:08:00,400

we're not going to do though we're not

2003

01:08:06,150 --> 01:08:03,119

going to prescribe what the solution is

2004

01:08:07,109 --> 01:08:06,160

because as soon as nasa delves into that

2005

01:08:08,630 --> 01:08:07,119

then

2006

01:08:10,870 --> 01:08:08,640

people are going to line up on one side

2007

01:08:12,470 --> 01:08:10,880

or the other and we lose our bipartisan

2008

01:08:14,630 --> 01:08:12,480

capability so

2009

01:08:16,390 --> 01:08:14,640

others can say you know what we ought to

2010

01:08:18,630 --> 01:08:16,400

be doing but nasa shouldn't we should be

2011

01:08:20,709 --> 01:08:18,640

do we should do dispassionate science we

2012

01:08:22,950 --> 01:08:20,719

should get the data get the information

2013

01:08:25,110 --> 01:08:22,960

share it with the world in a robust way

2014

01:08:27,590 --> 01:08:25,120

and then have policy makers debate

2015

01:08:29,829 --> 01:08:27,600

that's ultimately what we can and and

2016

01:08:31,430 --> 01:08:29,839

should do so thank you for the question

2017

01:08:32,789 --> 01:08:31,440

it's important it's part of who we are

2018

01:08:34,950 --> 01:08:32,799

as an eight by the way it goes back to

2019

01:08:37,430 --> 01:08:34,960

the creation of nasa at the very

2020

01:08:40,149 --> 01:08:37,440

creation of nasa there was a mission in

2021

01:08:41,349 --> 01:08:40,159

there to understand planet earth which

2022

01:08:44,390 --> 01:08:41,359

is of course

2023

01:08:46,630 --> 01:08:44,400

this tiny blue marble marble in a sea of

2024

01:08:48,709 --> 01:08:46,640

of space so

2025

01:08:50,470 --> 01:08:48,719

thank you for the question and general

2026

01:08:52,070 --> 01:08:50,480

lyles i again

2027

01:08:53,590 --> 01:08:52,080

i want to be really clear about how

2028

01:08:54,789 --> 01:08:53,600

grateful i am for your leadership of

2029

01:08:57,189 --> 01:08:54,799

this committee

2030

01:08:58,149 --> 01:08:57,199

and uh and your your your shepherding of

2031

01:09:00,309 --> 01:08:58,159

this and

2032

01:09:03,669 --> 01:09:00,319

um to the extent that we get

2033

01:09:04,950 --> 01:09:03,679

recommendations um and advice

2034

01:09:07,829 --> 01:09:04,960

know that we're going to take it very

2035

01:09:09,430 --> 01:09:07,839

seriously and and i and and the

2036

01:09:12,309 --> 01:09:09,440

leadership at nasa

2037

01:09:14,470 --> 01:09:12,319

we will we will take it to heart and do

2038

01:09:17,590 --> 01:09:14,480

everything we can to keep america

2039

01:09:19,990 --> 01:09:17,600

preeminent in science based technology

2040

01:09:21,829 --> 01:09:20,000

and of course exploration and discovery

2041

01:09:24,550 --> 01:09:21,839

thank you thank you very much this is a

2042

01:09:26,950 --> 01:09:24,560

very exciting time period for nasa uh in

2043

01:09:28,630 --> 01:09:26,960

all of his responsibilities and we're

2044

01:09:30,550 --> 01:09:28,640

very excited about your leadership and

2045

01:09:31,910 --> 01:09:30,560

very excited about the things we have uh

2046

01:09:33,430 --> 01:09:31,920

that are challenges in some people's

2047

01:09:35,110 --> 01:09:33,440

minds but to me they're great

2048

01:09:36,789 --> 01:09:35,120

opportunities for nasa and for our

2049

01:09:38,229 --> 01:09:36,799

country so awesome thank you very much

2050

01:09:39,910 --> 01:09:38,239

please join me in a round of applause

2051

01:09:41,910 --> 01:09:39,920

for jim breitenstein and nasa

2052

01:09:43,990 --> 01:09:41,920

administrator thank you general