



1
00:00:02,320 --> 00:00:07,750
ladies and gentlemen general jack daly

2
00:00:07,760 --> 00:00:23,910
[Applause]

3
00:00:27,109 --> 00:00:25,429
well good morning ladies and gentlemen

4
00:00:28,470 --> 00:00:27,119
and welcome to the stephen f woodward

5
00:00:30,150 --> 00:00:28,480
housing center

6
00:00:31,750 --> 00:00:30,160
it's my very great pleasure to welcome

7
00:00:33,750 --> 00:00:31,760
you here today

8
00:00:35,590 --> 00:00:33,760
it is an honor to host the first meeting

9
00:00:38,310 --> 00:00:35,600
of the newly reestablished national

10
00:00:39,990 --> 00:00:38,320
space council by choosing this location

11
00:00:41,830 --> 00:00:40,000
to begin their work the council is

12
00:00:44,790 --> 00:00:41,840
sending a strong message about its

13
00:00:47,029 --> 00:00:44,800

intentions for our future in space

14

00:00:49,350 --> 00:00:47,039

rather than as an executive boardroom or

15

00:00:51,270 --> 00:00:49,360

an agent agency conference room

16

00:00:53,270 --> 00:00:51,280

this first chapter of the new space age

17

00:00:54,869 --> 00:00:53,280

will be written here among the icons of

18

00:00:56,310 --> 00:00:54,879

our nation's highest proudest

19

00:00:57,910 --> 00:00:56,320

achievements

20

00:00:59,990 --> 00:00:57,920

from the helmet and gloves of neil

21

00:01:02,310 --> 00:01:00,000

armstrong war when he planted the flag

22

00:01:04,789 --> 00:01:02,320

on the moon to discovery champion of the

23

00:01:06,870 --> 00:01:04,799

space shuttle fleet the james s mcdonald

24

00:01:09,190 --> 00:01:06,880

space hanger contains artifacts that

25

00:01:12,149 --> 00:01:09,200

capture the scope of america's legacy

26

00:01:13,910 --> 00:01:12,159

and future in outer space like no other

27

00:01:15,830 --> 00:01:13,920

venue

28

00:01:17,670 --> 00:01:15,840

from the beginning the space program has

29

00:01:19,030 --> 00:01:17,680

been a partnership between industry and

30

00:01:20,870 --> 00:01:19,040

government

31

00:01:22,390 --> 00:01:20,880

working together toward important

32

00:01:24,550 --> 00:01:22,400

national goals

33

00:01:26,390 --> 00:01:24,560

from the first mercury capsule to the

34

00:01:28,710 --> 00:01:26,400

international space station

35

00:01:31,030 --> 00:01:28,720

private public partnerships are the

36

00:01:34,149 --> 00:01:31,040

foundation of how america solves complex

37

00:01:35,990 --> 00:01:34,159

problems and accomplishes great things

38

00:01:37,830 --> 00:01:36,000

many of those same organizations are

39

00:01:39,590 --> 00:01:37,840

here today today

40

00:01:41,429 --> 00:01:39,600

helped us build this museum and we're

41

00:01:42,870 --> 00:01:41,439

delighted to have them back

42

00:01:44,870 --> 00:01:42,880

and we're grateful for the part that

43

00:01:47,429 --> 00:01:44,880

they have played in the plot the

44

00:01:49,109 --> 00:01:47,439

country's new course in space

45

00:01:51,109 --> 00:01:49,119

the person leading that charge is no

46

00:01:52,870 --> 00:01:51,119

stranger here during his tenure as

47

00:01:55,429 --> 00:01:52,880

representative of the indiana's sixth

48

00:01:57,429 --> 00:01:55,439

district he led a virtual field trip

49

00:01:58,870 --> 00:01:57,439

from the uberhazy center to classrooms

50

00:02:01,510 --> 00:01:58,880

back home

51
00:02:03,109 --> 00:02:01,520
ensuring that children in muncie had the

52
00:02:05,510 --> 00:02:03,119
same access to the smithsonian

53
00:02:06,709 --> 00:02:05,520
institution as visitors to the nation's

54
00:02:08,949 --> 00:02:06,719
capital

55
00:02:11,029 --> 00:02:08,959
that commitment but to our shared

56
00:02:12,949 --> 00:02:11,039
mission of inspiring future innovators

57
00:02:15,110 --> 00:02:12,959
and explorers will be the key to

58
00:02:16,869 --> 00:02:15,120
national space council's bold vision for

59
00:02:18,710 --> 00:02:16,879
the future

60
00:02:20,390 --> 00:02:18,720
this summer in houston the vice

61
00:02:23,910 --> 00:02:20,400
president welcomed what he called the

62
00:02:27,830 --> 00:02:23,920
newest class of american heroes

63
00:02:29,589 --> 00:02:27,840

the 2017 class of nasa astronauts

64

00:02:31,509 --> 00:02:29,599

he said they will carry our national

65

00:02:32,790 --> 00:02:31,519

nation to even greater heights of

66

00:02:34,229 --> 00:02:32,800

discovery

67

00:02:36,150 --> 00:02:34,239

and inspire our children and

68

00:02:38,309 --> 00:02:36,160

grandchildren every bit as much as their

69

00:02:39,509 --> 00:02:38,319

forebears in the storied american

70

00:02:41,910 --> 00:02:39,519

program

71

00:02:44,790 --> 00:02:41,920

those 12 men and women are of the

72

00:02:47,190 --> 00:02:44,800

generation now the largest on earth

73

00:02:50,390 --> 00:02:47,200

learned long after we took our first

74

00:02:52,550 --> 00:02:50,400

small steps into the next frontier the

75

00:02:54,550 --> 00:02:52,560

work begun here today will map out the

76

00:02:55,990 --> 00:02:54,560

giant leaps they will make on behalf of

77

00:02:57,830 --> 00:02:56,000

their country

78

00:02:59,830 --> 00:02:57,840

captain gene cernan the last man on the

79

00:03:03,270 --> 00:02:59,840

moon described the apollo program as a

80

00:03:06,070 --> 00:03:03,280

decade out of time a 21st century event

81

00:03:08,470 --> 00:03:06,080

born into the middle of the 20th century

82

00:03:10,630 --> 00:03:08,480

50 years later the time is at hand for

83

00:03:11,670 --> 00:03:10,640

the heirs of apollo to take up the

84

00:03:14,149 --> 00:03:11,680

mantle

85

00:03:16,149 --> 00:03:14,159

it will be up to that new generation of

86

00:03:18,390 --> 00:03:16,159

innovators and explorers to lead the

87

00:03:21,270 --> 00:03:18,400

next great adventure

88

00:03:23,190 --> 00:03:21,280

it is up to us to pass them the torch

89

00:03:25,350 --> 00:03:23,200

it is now my great pleasure to welcome

90

00:03:26,949 --> 00:03:25,360

the chair of the national space council

91

00:03:29,810 --> 00:03:26,959

and the vice president of the united

92

00:03:41,250 --> 00:03:29,820

states the honorable mike pence

93

00:03:41,660 --> 00:03:41,260

[Applause]

94

00:03:46,350 --> 00:03:41,670

[Music]

95

00:03:47,400 --> 00:03:46,360

[Applause]

96

00:03:52,149 --> 00:03:47,410

[Music]

97

00:03:56,229 --> 00:03:53,509

thank you all

98

00:04:00,309 --> 00:03:58,149

general daily thank you for that kind

99

00:04:02,470 --> 00:04:00,319

introduction

100

00:04:05,509 --> 00:04:02,480

and thank you for your extraordinary

101
00:04:14,550 --> 00:04:05,519
record of service to the united states

102
00:04:18,229 --> 00:04:16,390
members of the cabinet distinguished

103
00:04:19,909 --> 00:04:18,239
members of congress who join us here

104
00:04:21,270 --> 00:04:19,919
today honored guests

105
00:04:23,590 --> 00:04:21,280
and to our gracious hosts the

106
00:04:25,030 --> 00:04:23,600
smithsonian institution the national air

107
00:04:28,070 --> 00:04:25,040
and space museum

108
00:04:28,950 --> 00:04:28,080
and all the men and women of the stephen

109
00:04:31,590 --> 00:04:28,960
f

110
00:04:33,030 --> 00:04:31,600
udvar-hazy center it is my great honor

111
00:04:34,950 --> 00:04:33,040
to be with you today here at the

112
00:04:37,430 --> 00:04:34,960
inaugural meeting

113
00:04:45,189 --> 00:04:37,440

of the reconstituted national space

114

00:04:49,110 --> 00:04:47,749

and i bring greetings from a man who is

115

00:04:51,670 --> 00:04:49,120

committed

116

00:04:54,230 --> 00:04:51,680

to american leadership on earth and in

117

00:04:55,670 --> 00:04:54,240

the boundless expanse of space the 45th

118

00:04:56,710 --> 00:04:55,680

president of the united states of

119

00:04:58,570 --> 00:04:56,720

america

120

00:05:04,390 --> 00:04:58,580

president donald trump

121

00:05:06,070 --> 00:05:04,400

[Applause]

122

00:05:08,550 --> 00:05:06,080

in his inaugural address the president

123

00:05:10,710 --> 00:05:08,560

rededicated america once again

124

00:05:13,909 --> 00:05:10,720

to lead in the heavens and in his words

125

00:05:15,430 --> 00:05:13,919

to unlock the mysteries of space

126
00:05:16,790 --> 00:05:15,440
and to guide this new era of american

127
00:05:18,790 --> 00:05:16,800
space leadership president trump

128
00:05:20,390 --> 00:05:18,800
relaunched the national space council

129
00:05:22,070 --> 00:05:20,400
and it is

130
00:05:24,150 --> 00:05:22,080
my great honor in fact it's very

131
00:05:26,150 --> 00:05:24,160
humbling for me to have the opportunity

132
00:05:29,189 --> 00:05:26,160
to serve as its chair at the first

133
00:05:30,710 --> 00:05:29,199
meeting in nearly a quarter century

134
00:05:31,990 --> 00:05:30,720
i can't think of a better place for this

135
00:05:33,830 --> 00:05:32,000
first meeting than right here at the

136
00:05:36,070 --> 00:05:33,840
national air and space museum in the

137
00:05:37,590 --> 00:05:36,080
hangars and galleries of this museum

138
00:05:40,390 --> 00:05:37,600

some of the great monuments of human

139

00:05:41,830 --> 00:05:40,400

ingenuity and daring have come to rest

140

00:05:43,350 --> 00:05:41,840

the first airplane to complete a

141

00:05:46,950 --> 00:05:43,360

transcontinental voyage across the

142

00:05:48,790 --> 00:05:46,960

united states which took 49 days in

143

00:05:50,469 --> 00:05:48,800

1911.

144

00:05:52,070 --> 00:05:50,479

behind all of you

145

00:05:53,749 --> 00:05:52,080

the spy plane that led america's

146

00:05:56,150 --> 00:05:53,759

reconnaissance operations during the

147

00:05:58,230 --> 00:05:56,160

cold war faster than three times the

148

00:06:00,629 --> 00:05:58,240

speed of sound into more than 16 miles

149

00:06:01,990 --> 00:06:00,639

above the earth the legendary sr-71

150

00:06:03,830 --> 00:06:02,000

blackbird

151
00:06:06,070 --> 00:06:03,840
and the shuttle behind me

152
00:06:07,029 --> 00:06:06,080
that ferried astronauts to space for

153
00:06:11,029 --> 00:06:07,039
more than

154
00:06:12,070 --> 00:06:11,039
26 years and logged a record of 148

155
00:06:13,830 --> 00:06:12,080
million

156
00:06:23,350 --> 00:06:13,840
miles the space

157
00:06:27,350 --> 00:06:25,909
each vessel here represents a pinnacle

158
00:06:29,510 --> 00:06:27,360
in the history of man's quest for

159
00:06:31,350 --> 00:06:29,520
knowledge and adventure they remind us

160
00:06:32,469 --> 00:06:31,360
of the giants on whose shoulders we all

161
00:06:34,150 --> 00:06:32,479
stand

162
00:06:35,749 --> 00:06:34,160
they inspire the millions of visitors

163
00:06:37,430 --> 00:06:35,759

who pass through this museum every year

164

00:06:39,590 --> 00:06:37,440

to dream bigger work harder and push

165

00:06:41,189 --> 00:06:39,600

farther in our own day

166

00:06:42,629 --> 00:06:41,199

today in the shadow of this history we

167

00:06:43,590 --> 00:06:42,639

pledge to do what america has always

168

00:06:45,110 --> 00:06:43,600

done

169

00:06:47,670 --> 00:06:45,120

we will push the boundaries of human

170

00:06:49,430 --> 00:06:47,680

knowledge we will blaze new trails into

171

00:06:52,469 --> 00:06:49,440

that great frontier

172

00:06:56,390 --> 00:06:52,479

and we will once again astonish the

173

00:07:03,350 --> 00:06:56,400

world as we boldly go to meet our future

174

00:07:06,550 --> 00:07:04,870

now

175

00:07:07,830 --> 00:07:06,560

it's all together fitting that we chose

176

00:07:09,510 --> 00:07:07,840

this week for the first meeting of the

177

00:07:12,629 --> 00:07:09,520

national space council

178

00:07:14,070 --> 00:07:12,639

yesterday marked the 60th anniversary

179

00:07:16,629 --> 00:07:14,080

of sputnik

180

00:07:18,870 --> 00:07:16,639

that 184 pound satellite that changed

181

00:07:21,350 --> 00:07:18,880

the course of history

182

00:07:23,990 --> 00:07:21,360

on that day six decades ago yesterday

183

00:07:26,870 --> 00:07:24,000

the race for space began

184

00:07:28,150 --> 00:07:26,880

and the then soviet union took an early

185

00:07:29,670 --> 00:07:28,160

lead

186

00:07:31,909 --> 00:07:29,680

but the sight of that light blinking

187

00:07:34,150 --> 00:07:31,919

across the that october sky spurred

188

00:07:35,749 --> 00:07:34,160

america to action we refused to accept a

189

00:07:37,270 --> 00:07:35,759

future in space

190

00:07:39,029 --> 00:07:37,280

written by the enemies of freedom and so

191

00:07:40,469 --> 00:07:39,039

the united states of america vowed to

192

00:07:43,189 --> 00:07:40,479

claim our rightful place as the

193

00:07:46,150 --> 00:07:43,199

undisputed leader in the exploration of

194

00:07:50,629 --> 00:07:46,160

the heavens and 12 years later

195

00:07:59,589 --> 00:07:50,639

with one giant leap for mankind america

196

00:08:03,830 --> 00:08:02,230

but more than half a century later

197

00:08:05,589 --> 00:08:03,840

we've seeded ground

198

00:08:07,189 --> 00:08:05,599

and so we gather here today to renew

199

00:08:08,469 --> 00:08:07,199

this same mission

200

00:08:10,390 --> 00:08:08,479

in our time

201
00:08:12,230 --> 00:08:10,400
by reviving the national space council

202
00:08:15,270 --> 00:08:12,240
president donald trump has declared to

203
00:08:23,029 --> 00:08:15,280
all of the world america will lead in

204
00:08:26,710 --> 00:08:24,710
for my part as i said it's an honor to

205
00:08:28,869 --> 00:08:26,720
chair this council i i caught space

206
00:08:30,710 --> 00:08:28,879
fever when i was a kid back in a small

207
00:08:32,149 --> 00:08:30,720
town in southern indiana

208
00:08:33,350 --> 00:08:32,159
some of the most precious memories of my

209
00:08:35,029 --> 00:08:33,360
youth were

210
00:08:36,870 --> 00:08:35,039
my little family gathered around a black

211
00:08:38,630 --> 00:08:36,880
and white television watching images of

212
00:08:39,750 --> 00:08:38,640
american heroes making history in the

213
00:08:41,430 --> 00:08:39,760

stars

214

00:08:43,110 --> 00:08:41,440

as a member of congress

215

00:08:44,949 --> 00:08:43,120

i actually asked to serve on the nasa

216

00:08:46,310 --> 00:08:44,959

subcommittee in my very first year in

217

00:08:48,790 --> 00:08:46,320

the congress i had the privilege along

218

00:08:51,670 --> 00:08:48,800

with my wife and all of our children to

219

00:08:52,949 --> 00:08:51,680

attend several space shuttle launches as

220

00:08:55,030 --> 00:08:52,959

a family

221

00:08:57,829 --> 00:08:55,040

i actually have no doubt that as i told

222

00:08:59,350 --> 00:08:57,839

the general this morning a fellow marine

223

00:09:00,949 --> 00:08:59,360

with my son that

224

00:09:02,630 --> 00:09:00,959

i think my son was inspired to be a

225

00:09:04,070 --> 00:09:02,640

marine corps aviator when he was a

226

00:09:06,389 --> 00:09:04,080

ten-year-old boy sat in those

227

00:09:09,030 --> 00:09:06,399

grandstands and watched with awe

228

00:09:10,150 --> 00:09:09,040

as america's astronauts hurtled into the

229

00:09:12,070 --> 00:09:10,160

heavens

230

00:09:13,750 --> 00:09:12,080

now i said at the time that the sights

231

00:09:16,150 --> 00:09:13,760

and sounds of the launch at cape

232

00:09:17,350 --> 00:09:16,160

canaveral were miraculous it was almost

233

00:09:20,150 --> 00:09:17,360

as though the

234

00:09:21,190 --> 00:09:20,160

as the flames came from beneath the ship

235

00:09:24,389 --> 00:09:21,200

it was

236

00:09:26,070 --> 00:09:24,399

birth to a piece of the sun and sending

237

00:09:28,070 --> 00:09:26,080

it home the power

238

00:09:30,470 --> 00:09:28,080

and the symbolism of unquestioned

239

00:09:31,509 --> 00:09:30,480

american leadership was inspiring to us

240

00:09:33,990 --> 00:09:31,519

all

241

00:09:35,509 --> 00:09:34,000

but in recent years the clarity of our

242

00:09:37,030 --> 00:09:35,519

purpose and the confidence of our

243

00:09:38,710 --> 00:09:37,040

conviction that propelled the united

244

00:09:40,150 --> 00:09:38,720

states to be a vanguard of space

245

00:09:41,750 --> 00:09:40,160

exploration

246

00:09:43,910 --> 00:09:41,760

seems to have waned

247

00:09:45,110 --> 00:09:43,920

america seems to have lost our edge in

248

00:09:47,870 --> 00:09:45,120

space

249

00:09:54,630 --> 00:09:47,880

and those days are over

250

00:09:58,470 --> 00:09:56,389

because the american people never lost

251
00:10:00,310 --> 00:09:58,480
our passion to explore space and uncover

252
00:10:02,310 --> 00:10:00,320
its secrets this summer i visited the

253
00:10:04,230 --> 00:10:02,320
kennedy space center at cape canaveral

254
00:10:05,990 --> 00:10:04,240
the johnson space center in houston

255
00:10:07,990 --> 00:10:06,000
where i met with men and women of nasa

256
00:10:09,750 --> 00:10:08,000
including as the general said the newest

257
00:10:12,230 --> 00:10:09,760
class of astronauts

258
00:10:13,990 --> 00:10:12,240
they still embody as generations did

259
00:10:15,430 --> 00:10:14,000
before they embody the courage and

260
00:10:17,430 --> 00:10:15,440
excellence that's long inspired the

261
00:10:18,790 --> 00:10:17,440
american people but for too long our

262
00:10:20,870 --> 00:10:18,800
government's commitment has failed to

263
00:10:22,230 --> 00:10:20,880

match our people's spirit and meet our

264

00:10:24,150 --> 00:10:22,240

nation's needs

265

00:10:25,430 --> 00:10:24,160

the truth is that america entered this

266

00:10:28,150 --> 00:10:25,440

new millennium

267

00:10:30,069 --> 00:10:28,160

without a coherent policy a coherent

268

00:10:31,269 --> 00:10:30,079

vision for outer space

269

00:10:32,870 --> 00:10:31,279

and in the absence of american

270

00:10:34,550 --> 00:10:32,880

leadership other nations have seized the

271

00:10:36,470 --> 00:10:34,560

opportunity to stake their claim in the

272

00:10:38,710 --> 00:10:36,480

infinite frontier

273

00:10:41,190 --> 00:10:38,720

rather than lead in space too often

274

00:10:44,230 --> 00:10:41,200

we've chosen to drift

275

00:10:45,509 --> 00:10:44,240

and as we learned 60 years ago

276

00:10:47,269 --> 00:10:45,519

when we drift

277

00:10:48,710 --> 00:10:47,279

we fall behind

278

00:10:50,550 --> 00:10:48,720

our struggle to define the direction and

279

00:10:53,430 --> 00:10:50,560

purpose of america's space program dates

280

00:10:55,030 --> 00:10:53,440

back decades to the post-apollo period

281

00:10:56,710 --> 00:10:55,040

we had just won the race to the moon and

282

00:10:58,870 --> 00:10:56,720

suddenly the question became what should

283

00:11:01,269 --> 00:10:58,880

we do where should we go

284

00:11:03,110 --> 00:11:01,279

next in the debate that followed sending

285

00:11:05,350 --> 00:11:03,120

americans to the moon was treated as a

286

00:11:06,550 --> 00:11:05,360

triumph to be remembered but not

287

00:11:07,990 --> 00:11:06,560

repeated

288

00:11:10,150 --> 00:11:08,000

every passing year that the moon

289

00:11:11,990 --> 00:11:10,160

remained squarely in the rearview mirror

290

00:11:13,670 --> 00:11:12,000

further eroded our ability to return to

291

00:11:15,590 --> 00:11:13,680

the lunar domain and made it more likely

292

00:11:17,750 --> 00:11:15,600

that we would forget why we

293

00:11:19,350 --> 00:11:17,760

ever wanted to go in the first place

294

00:11:21,430 --> 00:11:19,360

and now we find ourselves in a position

295

00:11:23,269 --> 00:11:21,440

where the united states has not sent an

296

00:11:25,509 --> 00:11:23,279

american astronaut

297

00:11:28,069 --> 00:11:25,519

beyond low earth orbit

298

00:11:29,910 --> 00:11:28,079

in 45 years

299

00:11:32,630 --> 00:11:29,920

across the board our space program has

300

00:11:34,230 --> 00:11:32,640

suffered from apathy and neglect

301
00:11:37,190 --> 00:11:34,240
when the space shuttle program ended in

302
00:11:38,949 --> 00:11:37,200
2011 we had four years to find an

303
00:11:41,110 --> 00:11:38,959
assured way for our astronauts to get

304
00:11:43,590 --> 00:11:41,120
into space in the meantime

305
00:11:45,030 --> 00:11:43,600
we agreed to pay russia to hitch a ride

306
00:11:46,310 --> 00:11:45,040
on their rockets to the international

307
00:11:48,470 --> 00:11:46,320
space station

308
00:11:50,310 --> 00:11:48,480
but four years turned into five

309
00:11:51,190 --> 00:11:50,320
and five years turned into six and here

310
00:11:54,949 --> 00:11:51,200
we are

311
00:11:56,230 --> 00:11:54,959
in 2017 still relying on the russians to

312
00:11:58,310 --> 00:11:56,240
ferry our astronauts to the

313
00:12:01,030 --> 00:11:58,320

international space station at a cost

314

00:12:01,990 --> 00:12:01,040

per seat that now stands at more than 76

315

00:12:03,350 --> 00:12:02,000

million

316

00:12:04,949 --> 00:12:03,360

dollars

317

00:12:06,470 --> 00:12:04,959

meanwhile rather than competing with

318

00:12:08,310 --> 00:12:06,480

other nations to agree the best space

319

00:12:10,150 --> 00:12:08,320

technology the previous administration

320

00:12:11,509 --> 00:12:10,160

chose capitulation

321

00:12:13,509 --> 00:12:11,519

according to the u.s intelligence

322

00:12:15,110 --> 00:12:13,519

community russia and china are pursuing

323

00:12:17,509 --> 00:12:15,120

a full range of anti-satellite

324

00:12:19,190 --> 00:12:17,519

technology to reduce u.s military

325

00:12:21,509 --> 00:12:19,200

effectiveness and they're increasingly

326

00:12:23,269 --> 00:12:21,519

considering attacks against satellite

327

00:12:24,949 --> 00:12:23,279

systems as part of their future warfare

328

00:12:26,629 --> 00:12:24,959

doctrine

329

00:12:29,269 --> 00:12:26,639

america's abdication of leadership in

330

00:12:30,550 --> 00:12:29,279

space has spurred our nation to action

331

00:12:34,069 --> 00:12:30,560

once more

332

00:12:36,710 --> 00:12:34,079

and just as with sputnik six decades ago

333

00:12:39,430 --> 00:12:36,720

we have resolved with the leadership of

334

00:12:43,030 --> 00:12:39,440

president donald trump to never again

335

00:12:43,580 --> 00:12:43,040

let america fall behind in the race for

336

00:12:48,949 --> 00:12:43,590

space

337

00:12:52,790 --> 00:12:51,269

that's what brings us here today

338

00:12:54,710 --> 00:12:52,800

and under the president's leadership we

339

00:12:56,870 --> 00:12:54,720

will restore our proud legacy

340

00:12:59,990 --> 00:12:56,880

of leadership on this next great

341

00:13:01,750 --> 00:13:00,000

frontier and america will lead again

342

00:13:03,430 --> 00:13:01,760

twice before america's had a national

343

00:13:04,949 --> 00:13:03,440

space council charged with advising the

344

00:13:06,550 --> 00:13:04,959

president on national policy and

345

00:13:08,230 --> 00:13:06,560

strategy for space

346

00:13:10,389 --> 00:13:08,240

the first space council helped marshall

347

00:13:12,629 --> 00:13:10,399

america's energies and skills during the

348

00:13:14,629 --> 00:13:12,639

infancy of our attempts to reach the

349

00:13:16,629 --> 00:13:14,639

stars and it was under the council's

350

00:13:18,230 --> 00:13:16,639

watch that america put a man in outer

351

00:13:20,870 --> 00:13:18,240

space but a man on the moon with less

352

00:13:23,350 --> 00:13:20,880

than a decade between them now president

353

00:13:25,350 --> 00:13:23,360

trump has charged this national space

354

00:13:27,590 --> 00:13:25,360

council with reviewing america's current

355

00:13:29,430 --> 00:13:27,600

policy and our long-range goals in

356

00:13:31,829 --> 00:13:29,440

coordinating all national space

357

00:13:33,190 --> 00:13:31,839

activities from security to commerce to

358

00:13:34,870 --> 00:13:33,200

exploration

359

00:13:37,509 --> 00:13:34,880

today more than ever before our nation's

360

00:13:39,110 --> 00:13:37,519

prosperity security and identity depend

361

00:13:41,110 --> 00:13:39,120

on american leadership in space and the

362

00:13:43,430 --> 00:13:41,120

membership of this council

363

00:13:44,949 --> 00:13:43,440

all members of our cabinet critical

364

00:13:47,350 --> 00:13:44,959

members of our national security

365

00:13:49,430 --> 00:13:47,360

infrastructure reflect the multi-faceted

366

00:13:51,110 --> 00:13:49,440

nature of our work

367

00:13:52,389 --> 00:13:51,120

joining me here today as members of this

368

00:13:54,470 --> 00:13:52,399

council are several members of the

369

00:13:57,189 --> 00:13:54,480

president's cabinet leaders in defense

370

00:13:59,269 --> 00:13:57,199

intelligence commerce transportation

371

00:14:01,430 --> 00:13:59,279

space exploration science

372

00:14:03,030 --> 00:14:01,440

and technology would you please give

373

00:14:04,550 --> 00:14:03,040

them another round of applause for

374

00:14:05,670 --> 00:14:04,560

making

375

00:14:10,270 --> 00:14:05,680

this

376

00:14:15,110 --> 00:14:13,670

[Applause]

377

00:14:17,030 --> 00:14:15,120

but to fully unlock the mysteries of

378

00:14:19,269 --> 00:14:17,040

space president trump recognizes we must

379

00:14:20,949 --> 00:14:19,279

look beyond the halls of government and

380

00:14:22,470 --> 00:14:20,959

for input and guidance at the

381

00:14:23,910 --> 00:14:22,480

president's direction the national space

382

00:14:26,230 --> 00:14:23,920

council will also

383

00:14:28,150 --> 00:14:26,240

in his words draw from the expertise and

384

00:14:30,550 --> 00:14:28,160

insights from scientists innovators and

385

00:14:32,790 --> 00:14:30,560

business leaders like never before we

386

00:14:35,590 --> 00:14:32,800

will tap into the bottomless well of

387

00:14:37,030 --> 00:14:35,600

american innovation once again

388

00:14:38,550 --> 00:14:37,040

american companies are on the cutting

389

00:14:40,389 --> 00:14:38,560

edge of space technology and they're

390

00:14:41,910 --> 00:14:40,399

developing new rockets spaceships and

391

00:14:44,389 --> 00:14:41,920

satellites that will take us further

392

00:14:45,990 --> 00:14:44,399

into space faster than ever before like

393

00:14:47,829 --> 00:14:46,000

the railroads that brought american

394

00:14:49,509 --> 00:14:47,839

explorers entrepreneurs and settlers to

395

00:14:51,110 --> 00:14:49,519

tame the wild west these groundbreaking

396

00:14:53,030 --> 00:14:51,120

new technologies will

397

00:14:54,949 --> 00:14:53,040

open untold opportunities to extend the

398

00:14:56,949 --> 00:14:54,959

range of american action and values into

399

00:14:59,350 --> 00:14:56,959

the new worlds of outer space and by

400

00:15:00,710 --> 00:14:59,360

fostering much stronger partnerships

401
00:15:02,790 --> 00:15:00,720
between the federal government and the

402
00:15:05,110 --> 00:15:02,800
realm of industry and bringing the full

403
00:15:06,710 --> 00:15:05,120
force of our national interest of air

404
00:15:07,829 --> 00:15:06,720
american leadership in space will be

405
00:15:09,430 --> 00:15:07,839
assured

406
00:15:10,870 --> 00:15:09,440
the objectives of the national space

407
00:15:12,870 --> 00:15:10,880
council are clear

408
00:15:15,269 --> 00:15:12,880
the president has charged us with laying

409
00:15:17,269 --> 00:15:15,279
the foundation for america to maintain a

410
00:15:19,269 --> 00:15:17,279
constant commercial human presence in

411
00:15:21,030 --> 00:15:19,279
low earth orbit from there

412
00:15:22,710 --> 00:15:21,040
we will turn our attention back toward

413
00:15:25,910 --> 00:15:22,720

our celestial neighbors

414

00:15:28,310 --> 00:15:25,920

we will return american astronauts to

415

00:15:30,470 --> 00:15:28,320

the moon not only to leave behind

416

00:15:33,670 --> 00:15:30,480

footprints and flags but to build the

417

00:15:44,949 --> 00:15:33,680

foundation we need to send americans to

418

00:15:48,069 --> 00:15:46,470

the moon will be a stepping stone a

419

00:15:49,269 --> 00:15:48,079

training ground a venue to strengthen

420

00:15:51,189 --> 00:15:49,279

our commercial and international

421

00:15:54,069 --> 00:15:51,199

partnerships as we refocus america's

422

00:15:55,269 --> 00:15:54,079

space program toward human space

423

00:15:56,790 --> 00:15:55,279

exploration

424

00:15:58,710 --> 00:15:56,800

and under president trump this council

425

00:16:01,030 --> 00:15:58,720

will spur the development of space

426
00:16:02,790 --> 00:16:01,040
technology to protect america's national

427
00:16:07,030 --> 00:16:02,800
security

428
00:16:08,870 --> 00:16:07,040
i saw firsthand when i visited schriever

429
00:16:10,550 --> 00:16:08,880
air force base and the redstone arsenal

430
00:16:11,910 --> 00:16:10,560
earlier this year

431
00:16:14,069 --> 00:16:11,920
as i said our adversaries are

432
00:16:15,910 --> 00:16:14,079
aggressively developing jamming

433
00:16:17,350 --> 00:16:15,920
hacking and other technologies intended

434
00:16:19,829 --> 00:16:17,360
to military surveillance

435
00:16:21,430 --> 00:16:19,839
navigation communication systems

436
00:16:23,990 --> 00:16:21,440
in the face of these actions america

437
00:16:25,670 --> 00:16:24,000
must be as dominant in space as we are

438
00:16:27,350 --> 00:16:25,680

here on earth

439

00:16:28,870 --> 00:16:27,360

my friends the task that lies before us

440

00:16:31,350 --> 00:16:28,880

will require the highest level of

441

00:16:33,030 --> 00:16:31,360

commitment and dedication

442

00:16:34,470 --> 00:16:33,040

now the work before us

443

00:16:36,310 --> 00:16:34,480

will be difficult

444

00:16:37,990 --> 00:16:36,320

but difficulty always brings out

445

00:16:42,710 --> 00:16:38,000

america's best

446

00:16:44,310 --> 00:16:42,720

by anyone anytime

447

00:16:46,069 --> 00:16:44,320

we won the race to the moon a half a

448

00:16:48,949 --> 00:16:46,079

century ago

449

00:16:50,480 --> 00:16:48,959

and now we will win the 21st century in

450

00:16:55,189 --> 00:16:50,490

space

451
00:16:56,710 --> 00:16:55,199

[Applause]

452
00:16:58,389 --> 00:16:56,720

under president trump's leadership and

453
00:16:59,910 --> 00:16:58,399

with the guidance of this national space

454
00:17:02,870 --> 00:16:59,920

council the united states will usher in

455
00:17:05,189 --> 00:17:02,880

a new era of space leadership for our

456
00:17:06,630 --> 00:17:05,199

nation that will benefit every facet of

457
00:17:08,630 --> 00:17:06,640

our national life will strengthen our

458
00:17:10,789 --> 00:17:08,640

economy as we unlock new opportunities

459
00:17:13,110 --> 00:17:10,799

new technologies and new sources of

460
00:17:15,110 --> 00:17:13,120

prosperity we'll inspire our children to

461
00:17:16,549 --> 00:17:15,120

seek education in science technology

462
00:17:18,390 --> 00:17:16,559

engineering and math

463
00:17:20,309 --> 00:17:18,400

we'll enhance our defense

464

00:17:21,909 --> 00:17:20,319

and advance the security of our citizens

465

00:17:23,990 --> 00:17:21,919

but most of all

466

00:17:26,630 --> 00:17:24,000

as the president believes

467

00:17:28,230 --> 00:17:26,640

we will renew the american spirit itself

468

00:17:30,549 --> 00:17:28,240

and rekindle our belief that america can

469

00:17:32,789 --> 00:17:30,559

accomplish anything

470

00:17:35,590 --> 00:17:32,799

as president trump has said

471

00:17:38,070 --> 00:17:35,600

in his words it is america's destiny

472

00:17:40,470 --> 00:17:38,080

to be the leader amongst nations on our

473

00:17:43,430 --> 00:17:40,480

adventure into the great unknown

474

00:17:44,950 --> 00:17:43,440

and today we begin that latest chapter

475

00:17:47,990 --> 00:17:44,960

of that adventure

476

00:17:50,470 --> 00:17:48,000

but as we embark let us have faith

477

00:17:52,390 --> 00:17:50,480

faith as the old book teaches us that if

478

00:17:53,830 --> 00:17:52,400

we rise to the heavens

479

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

he will be there

480

00:17:57,909 --> 00:17:55,760

and as we make plans and we prepare

481

00:18:00,470 --> 00:17:57,919

recommendations for our president

482

00:18:02,230 --> 00:18:00,480

and our leaders in the congress we will

483

00:18:04,789 --> 00:18:02,240

also do so with the mind that there will

484

00:18:07,430 --> 00:18:04,799

be courageous men and women

485

00:18:09,510 --> 00:18:07,440

who will make those plans a reality

486

00:18:11,190 --> 00:18:09,520

and our faith in them

487

00:18:12,470 --> 00:18:11,200

and our faith that they will not go

488

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

alone

489

00:18:16,470 --> 00:18:15,120

will sustain us as we go as it ever has

490

00:18:17,909 --> 00:18:16,480

before

491

00:18:19,430 --> 00:18:17,919

so with thanks for all the members of

492

00:18:21,510 --> 00:18:19,440

the space council thanks for all the

493

00:18:23,909 --> 00:18:21,520

honored guests from whom we will hear

494

00:18:32,960 --> 00:18:23,919

welcome to the first gathering of the

495

00:18:32,970 --> 00:19:38,710

[Applause]

496

00:19:44,630 --> 00:19:41,750

ladies and gentlemen please welcome

497

00:19:47,029 --> 00:19:44,640

marilyn hewson president and ceo

498

00:19:50,230 --> 00:19:47,039

lockheed martin

499

00:19:53,990 --> 00:19:50,240

dennis muellenberg president and ceo the

500

00:19:58,390 --> 00:19:57,110

david thompson president and ceo orbital

501
00:20:05,029 --> 00:19:58,400
atk

502
00:20:06,789 --> 00:20:05,039
[Applause]

503
00:20:09,750 --> 00:20:06,799
as our guests take their seats allow me

504
00:20:11,590 --> 00:20:09,760
to uh uh welcome them as i'll do

505
00:20:13,029 --> 00:20:11,600
momentarily but also i want to i want to

506
00:20:15,430 --> 00:20:13,039
recognize all the distinguished members

507
00:20:17,110 --> 00:20:15,440
of the national space council uh and all

508
00:20:19,350 --> 00:20:17,120
the distinguished americans who've

509
00:20:21,190 --> 00:20:19,360
gathered us uh for this this first

510
00:20:23,270 --> 00:20:21,200
meeting um

511
00:20:24,549 --> 00:20:23,280
uh if you would uh hold your applause

512
00:20:25,590 --> 00:20:24,559
i'll get through this whole list but i

513
00:20:27,190 --> 00:20:25,600

want to make sure you know all the

514

00:20:28,789 --> 00:20:27,200

members of this council secretary of

515

00:20:29,830 --> 00:20:28,799

state rex tillerson

516

00:20:31,990 --> 00:20:29,840

is here

517

00:20:33,990 --> 00:20:32,000

deputy secretary defense paul shanahan

518

00:20:36,549 --> 00:20:34,000

our secretary of commerce wilbur ross

519

00:20:38,310 --> 00:20:36,559

secretary of transportation elaine chao

520

00:20:39,510 --> 00:20:38,320

acting secretary of homeland security

521

00:20:41,669 --> 00:20:39,520

elaine duke

522

00:20:43,029 --> 00:20:41,679

director of national intelligence

523

00:20:44,390 --> 00:20:43,039

dan coats

524

00:20:46,070 --> 00:20:44,400

director of the office of management and

525

00:20:47,669 --> 00:20:46,080

budget mick mulvaney

526
00:20:50,390 --> 00:20:47,679
assistant to the president for national

527
00:20:52,070 --> 00:20:50,400
security affairs general h.r mcmaster

528
00:20:53,190 --> 00:20:52,080
the administrator

529
00:20:55,270 --> 00:20:53,200
of uh

530
00:20:57,110 --> 00:20:55,280
of nasa robert lightfoot

531
00:21:00,230 --> 00:20:57,120
deputy chief technology officer for the

532
00:21:01,669 --> 00:21:00,240
united states uh michael crazios

533
00:21:03,590 --> 00:21:01,679
assistant to the president for homeland

534
00:21:05,830 --> 00:21:03,600
security tom bossert and the vice

535
00:21:08,310 --> 00:21:05,840
chairman of the joint chiefs of staff

536
00:21:09,830 --> 00:21:08,320
general paul selva would you join me in

537
00:21:17,510 --> 00:21:09,840
thanking all of the members of the panel

538
00:21:20,950 --> 00:21:19,110

with that this first meeting of the

539

00:21:23,190 --> 00:21:20,960

national space council's called order i

540

00:21:25,430 --> 00:21:23,200

want to thank uh i want to thank all the

541

00:21:27,270 --> 00:21:25,440

distinguished uh guests who are with us

542

00:21:29,830 --> 00:21:27,280

today for presentations on this first

543

00:21:31,590 --> 00:21:29,840

panel as i said in my opening remarks

544

00:21:33,350 --> 00:21:31,600

today's meeting is an opportunity for us

545

00:21:35,029 --> 00:21:33,360

to hear from leaders in our space

546

00:21:36,789 --> 00:21:35,039

community

547

00:21:38,149 --> 00:21:36,799

and we have a great lineup today and i'm

548

00:21:40,549 --> 00:21:38,159

eager to hear their thoughts as our

549

00:21:43,430 --> 00:21:40,559

entire council is our first panel is

550

00:21:47,029 --> 00:21:43,440

focused on the civil space program and

551
00:21:49,350 --> 00:21:47,039
deep space exploration efforts

552
00:21:51,590 --> 00:21:49,360
you just received a proper interdiction

553
00:21:53,430 --> 00:21:51,600
onto the stage so let me begin with the

554
00:21:55,190 --> 00:21:53,440
chairman president ceo of lockheed

555
00:21:56,630 --> 00:21:55,200
martin i'm marilyn hewson for your

556
00:21:58,390 --> 00:21:56,640
opening remarks

557
00:22:00,230 --> 00:21:58,400
thank you mr vice president mr vice

558
00:22:02,230 --> 00:22:00,240
president and distinguished members of

559
00:22:04,070 --> 00:22:02,240
the national space council

560
00:22:07,430 --> 00:22:04,080
it is an honor to appear before you

561
00:22:10,470 --> 00:22:07,440
today to contribute to a bold new vision

562
00:22:13,510 --> 00:22:10,480
for u.s leadership in space

563
00:22:15,110 --> 00:22:13,520

this is an exciting time for our nation

564

00:22:17,430 --> 00:22:15,120

the re-establishment of the national

565

00:22:20,470 --> 00:22:17,440

space council comes as a new generation

566

00:22:23,750 --> 00:22:20,480

of young americans looks to the moon

567

00:22:26,549 --> 00:22:23,760

mars and beyond with optimism

568

00:22:29,350 --> 00:22:26,559

energy and wonder

569

00:22:31,190 --> 00:22:29,360

space has always been a frontier worthy

570

00:22:34,310 --> 00:22:31,200

of the american spirit

571

00:22:37,110 --> 00:22:34,320

it demands our ingenuity and daring and

572

00:22:39,669 --> 00:22:37,120

it drives us to visionary research and

573

00:22:41,909 --> 00:22:39,679

long-term collaboration

574

00:22:45,190 --> 00:22:41,919

and throughout history we have proven

575

00:22:47,590 --> 00:22:45,200

that u.s ventures in space lead to broad

576

00:22:51,590 --> 00:22:47,600

societal benefits that lift our national

577

00:22:53,909 --> 00:22:51,600

economy and strengthen us as one people

578

00:22:56,310 --> 00:22:53,919

for decades our technological leadership

579

00:22:59,750 --> 00:22:56,320

in space has strengthened our national

580

00:23:02,390 --> 00:22:59,760

security so that americans can live work

581

00:23:04,710 --> 00:23:02,400

and trade in peace

582

00:23:07,190 --> 00:23:04,720

and just this past month we once again

583

00:23:08,390 --> 00:23:07,200

saw the tremendous value of our space

584

00:23:10,470 --> 00:23:08,400

infrastructure

585

00:23:13,669 --> 00:23:10,480

as our nation was hit by three

586

00:23:16,070 --> 00:23:13,679

hurricanes of extraordinary power

587

00:23:18,470 --> 00:23:16,080

because of our investments in space our

588

00:23:20,310 --> 00:23:18,480

satellites helped government leaders

589

00:23:22,950 --> 00:23:20,320

plan for the worst

590

00:23:25,750 --> 00:23:22,960

they helped millions of citizens prepare

591

00:23:29,669 --> 00:23:25,760

and evacuate key areas and in the

592

00:23:31,830 --> 00:23:29,679

process countless lives were saved

593

00:23:33,669 --> 00:23:31,840

at lockheed martin we have been proud to

594

00:23:36,710 --> 00:23:33,679

invest and to support our nation's

595

00:23:39,990 --> 00:23:36,720

ventures in space from interplanetary

596

00:23:42,390 --> 00:23:40,000

exploration to national security

597

00:23:44,549 --> 00:23:42,400

and among our many partnerships today we

598

00:23:47,590 --> 00:23:44,559

are honored to be building the orion

599

00:23:50,070 --> 00:23:47,600

deep space exploration vehicle for nasa

600

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

which will soon take american astronauts

601
00:23:54,710 --> 00:23:52,400
back to the moon and farther than we've

602
00:23:56,710 --> 00:23:54,720
ever gone before

603
00:23:59,190 --> 00:23:56,720
as we look to the challenges of the 21st

604
00:24:02,070 --> 00:23:59,200
century it is clear that the pace of

605
00:24:05,430 --> 00:24:02,080
technological change is accelerating and

606
00:24:08,149 --> 00:24:05,440
that it is imperative our nation act

607
00:24:11,110 --> 00:24:08,159
at lockheed martin we see three keys to

608
00:24:13,990 --> 00:24:11,120
securing american leadership in space

609
00:24:15,990 --> 00:24:14,000
our nation will need clear and strong

610
00:24:19,830 --> 00:24:16,000
government leadership

611
00:24:21,590 --> 00:24:19,840
visionary programs and stable sustained

612
00:24:23,830 --> 00:24:21,600
investment

613
00:24:26,950 --> 00:24:23,840

by taking these positive actions we will

614

00:24:29,350 --> 00:24:26,960

enable industry to plan invest and

615

00:24:32,070 --> 00:24:29,360

innovate over the long term

616

00:24:34,950 --> 00:24:32,080

and in turn our nation will foster a

617

00:24:36,470 --> 00:24:34,960

robust u.s supply chain with advanced

618

00:24:38,870 --> 00:24:36,480

manufacturers

619

00:24:40,630 --> 00:24:38,880

high quality jobs and transformative

620

00:24:43,029 --> 00:24:40,640

technologies

621

00:24:46,470 --> 00:24:43,039

nothing better represents america's

622

00:24:48,390 --> 00:24:46,480

optimism about the future than space and

623

00:24:50,710 --> 00:24:48,400

nothing is more inspiring to the next

624

00:24:52,950 --> 00:24:50,720

generation of science technology

625

00:24:56,230 --> 00:24:52,960

engineering and math students than in

626
00:24:58,950 --> 00:24:56,240
america resolved to explore and unlock

627
00:25:00,230 --> 00:24:58,960
the mysteries of the universe together

628
00:25:02,470 --> 00:25:00,240
thank you and i look forward to your

629
00:25:04,390 --> 00:25:02,480
questions

630
00:25:06,710 --> 00:25:04,400
uh thank you very much maryland for your

631
00:25:08,230 --> 00:25:06,720
comments next we'll hear opening remarks

632
00:25:11,590 --> 00:25:08,240
from the chairman president ceo of the

633
00:25:14,070 --> 00:25:11,600
boeing company dennis mullenberg welcome

634
00:25:16,470 --> 00:25:14,080
thank you good morning mr vice president

635
00:25:18,390 --> 00:25:16,480
distinguished guests industry colleagues

636
00:25:20,390 --> 00:25:18,400
and fellow panelists

637
00:25:22,310 --> 00:25:20,400
i want to begin by thanking you mr vice

638
00:25:25,190 --> 00:25:22,320

president for reconstituting the

639

00:25:27,350 --> 00:25:25,200

national space council that's a big step

640

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

for our country an important one and i

641

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

believe through this forum the

642

00:25:32,710 --> 00:25:31,039

government industry and academia can

643

00:25:36,549 --> 00:25:32,720

discuss how to co-author the next

644

00:25:38,549 --> 00:25:36,559

chapter of american leadership in space

645

00:25:40,390 --> 00:25:38,559

boeing employees around the globe strive

646

00:25:42,470 --> 00:25:40,400

every day to deliver on our

647

00:25:44,230 --> 00:25:42,480

inspirational purpose and mission to

648

00:25:46,710 --> 00:25:44,240

connect protect

649

00:25:48,470 --> 00:25:46,720

explore and inspire the world through

650

00:25:50,390 --> 00:25:48,480

aerospace innovation

651
00:25:52,870 --> 00:25:50,400
our aim is to lead the world in space

652
00:25:56,470 --> 00:25:52,880
exploration and to be a global champion

653
00:25:58,710 --> 00:25:56,480
for robust funding advocacy talent and

654
00:26:01,430 --> 00:25:58,720
execution in both the civilian and

655
00:26:03,909 --> 00:26:01,440
military space arenas

656
00:26:06,070 --> 00:26:03,919
we are drawn to exploring the unknown

657
00:26:07,590 --> 00:26:06,080
and unraveling the universe's greatest

658
00:26:09,909 --> 00:26:07,600
mysteries

659
00:26:12,630 --> 00:26:09,919
it is this innate fascination with what

660
00:26:15,350 --> 00:26:12,640
comes next that has inspired us to join

661
00:26:17,510 --> 00:26:15,360
with nasa and international partners in

662
00:26:19,750 --> 00:26:17,520
a shared mission that has over the

663
00:26:20,950 --> 00:26:19,760

course of decades celebrated lunar

664

00:26:23,269 --> 00:26:20,960

footsteps

665

00:26:25,430 --> 00:26:23,279

space shuttle launches and the assembly

666

00:26:26,950 --> 00:26:25,440

of the international space station to

667

00:26:28,950 --> 00:26:26,960

name a few

668

00:26:31,430 --> 00:26:28,960

while proud of our past

669

00:26:33,269 --> 00:26:31,440

we are focused on the future

670

00:26:35,750 --> 00:26:33,279

we continue to innovate and lead in

671

00:26:38,549 --> 00:26:35,760

every aspect of civil space operations

672

00:26:40,549 --> 00:26:38,559

for example nasa's space launch system

673

00:26:43,029 --> 00:26:40,559

built by boeing and our teammates will

674

00:26:44,070 --> 00:26:43,039

be the largest and most powerful rocket

675

00:26:44,789 --> 00:26:44,080

ever built

676
00:26:46,950 --> 00:26:44,799
for

677
00:26:49,750 --> 00:26:46,960
propelling the orion capsule and

678
00:26:51,590 --> 00:26:49,760
humanity further into the solar system

679
00:26:54,230 --> 00:26:51,600
than ever before

680
00:26:56,070 --> 00:26:54,240
and our cst 100 starliner

681
00:26:58,549 --> 00:26:56,080
launched on the 100 percent mission

682
00:27:01,750 --> 00:26:58,559
successful united launch alliance atlas

683
00:27:05,190 --> 00:27:01,760
v rocket will return american astronauts

684
00:27:08,149 --> 00:27:05,200
to space on an american-built capsule in

685
00:27:10,149 --> 00:27:08,159
the not too distant future

686
00:27:11,990 --> 00:27:10,159
while others may dream

687
00:27:14,070 --> 00:27:12,000
we actually do

688
00:27:16,630 --> 00:27:14,080

and we do with the resources and

689

00:27:18,950 --> 00:27:16,640

expertise to deliver on our commitments

690

00:27:20,389 --> 00:27:18,960

working together we will help humankind

691

00:27:22,230 --> 00:27:20,399

explore deep space

692

00:27:24,230 --> 00:27:22,240

and play a leadership role in america's

693

00:27:26,149 --> 00:27:24,240

journey to mars

694

00:27:29,350 --> 00:27:26,159

as well as revolutionize launch and

695

00:27:31,830 --> 00:27:29,360

space access through pioneering work on

696

00:27:34,549 --> 00:27:31,840

programs like the x-37b

697

00:27:36,630 --> 00:27:34,559

and the xs1 phantom express with our

698

00:27:38,070 --> 00:27:36,640

united states air force and darpa

699

00:27:40,070 --> 00:27:38,080

customers

700

00:27:42,149 --> 00:27:40,080

we also are delivering advanced military

701
00:27:44,630 --> 00:27:42,159
space solutions such as our wideband

702
00:27:47,350 --> 00:27:44,640
global satcom satellites to provide

703
00:27:49,830 --> 00:27:47,360
critical anywhere anytime communications

704
00:27:52,389 --> 00:27:49,840
for troops around the globe

705
00:27:53,909 --> 00:27:52,399
including those deployed in combat but

706
00:27:57,669 --> 00:27:53,919
our collective success on this

707
00:28:00,149 --> 00:27:57,679
unprecedented journey is not guaranteed

708
00:28:01,590 --> 00:28:00,159
everyone in this room government and

709
00:28:03,750 --> 00:28:01,600
industry alike

710
00:28:05,990 --> 00:28:03,760
must commit to fighting for american

711
00:28:07,830 --> 00:28:06,000
leadership in space

712
00:28:09,350 --> 00:28:07,840
we believe the aerospace industry has an

713
00:28:11,430 --> 00:28:09,360

important role to play in partnering

714

00:28:13,029 --> 00:28:11,440

with the government to enact policies

715

00:28:15,510 --> 00:28:13,039

that not only will advance our efforts

716

00:28:18,389 --> 00:28:15,520

in space but also grow the economy

717

00:28:21,269 --> 00:28:18,399

support american jobs with an emphasis

718

00:28:23,190 --> 00:28:21,279

on restoring u.s manufacturing

719

00:28:25,510 --> 00:28:23,200

that's why i continue to ga engage on

720

00:28:26,950 --> 00:28:25,520

behalf of boeing in arenas like this as

721

00:28:29,549 --> 00:28:26,960

well as chairman of the aerospace

722

00:28:31,750 --> 00:28:29,559

industries association a trade group

723

00:28:33,510 --> 00:28:31,760

representing the us aerospace and

724

00:28:35,830 --> 00:28:33,520

defense industry

725

00:28:37,510 --> 00:28:35,840

where we are engaged on capitol hill

726

00:28:39,430 --> 00:28:37,520

with the administration

727

00:28:41,350 --> 00:28:39,440

and internationally

728

00:28:42,470 --> 00:28:41,360

as america's largest manufacturing

729

00:28:44,470 --> 00:28:42,480

exporter

730

00:28:46,710 --> 00:28:44,480

we're a big part of the 80 billion a

731

00:28:49,110 --> 00:28:46,720

year favorable trade balance that the

732

00:28:51,510 --> 00:28:49,120

u.s aerospace sector injects

733

00:28:53,669 --> 00:28:51,520

into the nation's economy

734

00:28:55,029 --> 00:28:53,679

in addition to the roughly 140 000

735

00:28:57,350 --> 00:28:55,039

employees who work directly for the

736

00:28:59,750 --> 00:28:57,360

boeing company across the country our

737

00:29:02,310 --> 00:28:59,760

supply chain of thousands of medium and

738

00:29:05,269 --> 00:29:02,320

small businesses in all 50 states

739

00:29:07,269 --> 00:29:05,279

support an additional 1.3 million

740

00:29:09,590 --> 00:29:07,279

american jobs

741

00:29:11,990 --> 00:29:09,600

consider the tremendous ripple effect

742

00:29:13,990 --> 00:29:12,000

that our industry has on the nation

743

00:29:15,190 --> 00:29:14,000

boosting economies and spurring

744

00:29:17,350 --> 00:29:15,200

innovation

745

00:29:19,909 --> 00:29:17,360

in new technologies

746

00:29:22,549 --> 00:29:19,919

as a company and an industry we remain

747

00:29:24,310 --> 00:29:22,559

committed to investing in our future

748

00:29:27,029 --> 00:29:24,320

from driving innovation to supporting

749

00:29:28,470 --> 00:29:27,039

quality jobs and capital investments and

750

00:29:30,950 --> 00:29:28,480

working with the administration to

751
00:29:34,470 --> 00:29:30,960
advance policies such as comprehensive

752
00:29:36,389 --> 00:29:34,480
tax reform that will enable it

753
00:29:38,630 --> 00:29:36,399
continued space exploration will take

754
00:29:40,710 --> 00:29:38,640
resources and cooperation

755
00:29:43,430 --> 00:29:40,720
we must commit to an uninterrupted human

756
00:29:45,990 --> 00:29:43,440
presence in orbit and accelerate our

757
00:29:48,310 --> 00:29:46,000
momentum towards deep space all too

758
00:29:50,470 --> 00:29:48,320
often when america withdraws other

759
00:29:52,389 --> 00:29:50,480
nations fill the void

760
00:29:54,149 --> 00:29:52,399
we want the united states to retain its

761
00:29:55,909 --> 00:29:54,159
leadership position build on the

762
00:29:59,029 --> 00:29:55,919
progress and substantial investments

763
00:30:01,190 --> 00:29:59,039

that have been made in recent years

764

00:30:04,310 --> 00:30:01,200

i am inspired by the boundless

765

00:30:07,110 --> 00:30:04,320

opportunity we have before us

766

00:30:09,990 --> 00:30:07,120

space has a near universal ability to

767

00:30:13,430 --> 00:30:10,000

capture our imagination unlike anything

768

00:30:14,870 --> 00:30:13,440

else to energize dreamers and doers

769

00:30:19,269 --> 00:30:14,880

alike

770

00:30:20,870 --> 00:30:19,279

achievements in space can unite a nation

771

00:30:23,430 --> 00:30:20,880

and we are proud and it's a proud

772

00:30:25,350 --> 00:30:23,440

reminder that we can accomplish amazing

773

00:30:27,350 --> 00:30:25,360

things as a country when we work

774

00:30:29,029 --> 00:30:27,360

together

775

00:30:31,430 --> 00:30:29,039

in that spirit i call upon the national

776

00:30:33,990 --> 00:30:31,440

space council to set a bold national

777

00:30:37,269 --> 00:30:34,000

space agenda with clear actionable

778

00:30:38,389 --> 00:30:37,279

objectives and resources to match

779

00:30:40,630 --> 00:30:38,399

that will help the united states

780

00:30:42,630 --> 00:30:40,640

maintain its technological edge engage

781

00:30:44,549 --> 00:30:42,640

and grow future talent critical to our

782

00:30:46,630 --> 00:30:44,559

competitive advantage

783

00:30:49,510 --> 00:30:46,640

and it will excite and inspire

784

00:30:50,789 --> 00:30:49,520

generations of americans to come

785

00:30:53,029 --> 00:30:50,799

in closing

786

00:30:55,750 --> 00:30:53,039

robert gilruth the first director of

787

00:30:57,509 --> 00:30:55,760

nasa's manned spacecraft center

788

00:30:59,750 --> 00:30:57,519

said that one fundamental requirement

789

00:31:02,789 --> 00:30:59,760

for mission success was employing and i

790

00:31:05,190 --> 00:31:02,799

quote the kind of people who will not

791

00:31:06,710 --> 00:31:05,200

permit it to fail

792

00:31:08,230 --> 00:31:06,720

vice president pence

793

00:31:09,190 --> 00:31:08,240

and members of the national space

794

00:31:12,070 --> 00:31:09,200

council

795

00:31:13,669 --> 00:31:12,080

we are those people

796

00:31:15,430 --> 00:31:13,679

and you have our full commitment as the

797

00:31:18,630 --> 00:31:15,440

boeing company and our teammates to

798

00:31:21,110 --> 00:31:18,640

ensure we will succeed in this important

799

00:31:23,190 --> 00:31:21,120

endeavor boeing will be there leading

800

00:31:25,190 --> 00:31:23,200

every step of the way thank you

801
00:31:26,470 --> 00:31:25,200
and i look forward to your questions

802
00:31:27,350 --> 00:31:26,480
great uh

803
00:31:29,350 --> 00:31:27,360
uh

804
00:31:31,350 --> 00:31:29,360
thank you dennis thank you for those

805
00:31:33,110 --> 00:31:31,360
words we look forward to dialogue before

806
00:31:35,669 --> 00:31:33,120
we get to questions

807
00:31:39,350 --> 00:31:35,679
david thompson who is president ceo of

808
00:31:41,110 --> 00:31:39,360
orbital atk welcome

809
00:31:43,190 --> 00:31:41,120
mr vice president members of the

810
00:31:44,710 --> 00:31:43,200
national space council ladies and

811
00:31:46,870 --> 00:31:44,720
gentlemen good morning

812
00:31:49,509 --> 00:31:46,880
thank you for inviting me to participate

813
00:31:52,549 --> 00:31:49,519

in this important and timely discussion

814

00:31:54,630 --> 00:31:52,559

of our country's civil space programs

815

00:31:56,870 --> 00:31:54,640

with strong leadership from the national

816

00:31:58,789 --> 00:31:56,880

space council there are many exciting

817

00:32:01,430 --> 00:31:58,799

opportunities available

818

00:32:03,669 --> 00:32:01,440

to this administration for near-term

819

00:32:05,909 --> 00:32:03,679

space achievements i would like to

820

00:32:08,149 --> 00:32:05,919

highlight three areas that i believe

821

00:32:11,190 --> 00:32:08,159

hold great promise for future

822

00:32:13,750 --> 00:32:11,200

accomplishments by nasa and other space

823

00:32:14,710 --> 00:32:13,760

related enterprises in the next five

824

00:32:18,149 --> 00:32:14,720

years

825

00:32:20,710 --> 00:32:18,159

first human voyages to cis lunar space

826

00:32:22,870 --> 00:32:20,720

today nasa is on the threshold of

827

00:32:25,430 --> 00:32:22,880

completing the development and in about

828

00:32:27,909 --> 00:32:25,440

two years conducting the initial flight

829

00:32:30,710 --> 00:32:27,919

of america's first deep space

830

00:32:34,149 --> 00:32:30,720

transportation system since the apollo

831

00:32:37,190 --> 00:32:34,159

saturn vehicles of the late 1960s and

832

00:32:39,269 --> 00:32:37,200

early 1970s the space launch system

833

00:32:41,350 --> 00:32:39,279

rocket and its companion orion

834

00:32:44,149 --> 00:32:41,360

spacecraft will give our country the

835

00:32:46,870 --> 00:32:44,159

capability of returning astronauts to

836

00:32:49,430 --> 00:32:46,880

the vicinity of the moon both to further

837

00:32:52,870 --> 00:32:49,440

explore the lunar environment and to

838

00:32:55,029 --> 00:32:52,880

test the technologies and operational

839

00:32:57,110 --> 00:32:55,039

operations required for future

840

00:33:00,070 --> 00:32:57,120

expeditions to mars

841

00:33:03,110 --> 00:33:00,080

now with renewed sense of purpose and

842

00:33:05,509 --> 00:33:03,120

urgency nasa and its industrial partners

843

00:33:08,710 --> 00:33:05,519

should be challenged to substantially

844

00:33:13,269 --> 00:33:08,720

accelerate the use and to fully exploit

845

00:33:15,190 --> 00:33:13,279

the capabilities of the sls orion system

846

00:33:18,630 --> 00:33:15,200

backed by this administration's

847

00:33:21,110 --> 00:33:18,640

financial and moral support u.s

848

00:33:23,430 --> 00:33:21,120

astronauts can carry out several

849

00:33:24,470 --> 00:33:23,440

cis lunar voyages during the next five

850

00:33:26,870 --> 00:33:24,480

years

851
00:33:29,669 --> 00:33:26,880
including flights to the moon to in

852
00:33:32,549 --> 00:33:29,679
place and activate the first elements of

853
00:33:35,029 --> 00:33:32,559
a lunar orbit station which nasa calls

854
00:33:37,190 --> 00:33:35,039
the deep space gateway

855
00:33:38,630 --> 00:33:37,200
second international and commercial

856
00:33:40,789 --> 00:33:38,640
partnerships

857
00:33:43,029 --> 00:33:40,799
the international space station program

858
00:33:46,389 --> 00:33:43,039
has been a remarkably successful

859
00:33:49,110 --> 00:33:46,399
collaboration of 16 countries led by the

860
00:33:51,350 --> 00:33:49,120
united states but facilitated and

861
00:33:54,230 --> 00:33:51,360
enhanced by the technological

862
00:33:56,950 --> 00:33:54,240
operational and financial contributions

863
00:34:00,070 --> 00:33:56,960

of many of our closest allies in europe

864

00:34:02,389 --> 00:34:00,080

north and south america and asia as we

865

00:34:04,389 --> 00:34:02,399

extend the reach of human activity to

866

00:34:07,190 --> 00:34:04,399

the lunar domain we should seek to

867

00:34:08,790 --> 00:34:07,200

establish new long-term partnerships

868

00:34:10,790 --> 00:34:08,800

with those countries

869

00:34:13,510 --> 00:34:10,800

who share similar goals and who can

870

00:34:15,750 --> 00:34:13,520

contribute important elements of a deep

871

00:34:18,310 --> 00:34:15,760

space infrastructure

872

00:34:20,869 --> 00:34:18,320

similarly over the past several decades

873

00:34:23,669 --> 00:34:20,879

nasa has pioneered an array of

874

00:34:25,669 --> 00:34:23,679

successful public-private partnerships

875

00:34:27,909 --> 00:34:25,679

that have resulted in accelerated

876
00:34:29,909 --> 00:34:27,919
innovation

877
00:34:31,750 --> 00:34:29,919
and new more affordable space

878
00:34:34,629 --> 00:34:31,760
capabilities for both government

879
00:34:37,349 --> 00:34:34,639
missions and commercial applications

880
00:34:40,149 --> 00:34:37,359
as the space agency plans and implements

881
00:34:42,629 --> 00:34:40,159
our return to cis lunar space it should

882
00:34:44,869 --> 00:34:42,639
aggressively engage with u s commercial

883
00:34:47,190 --> 00:34:44,879
enterprises that are willing to

884
00:34:49,909 --> 00:34:47,200
privately develop and operate systems

885
00:34:53,669 --> 00:34:49,919
that can provide a range of in-space

886
00:34:56,470 --> 00:34:53,679
utilities logistics and related services

887
00:34:58,710 --> 00:34:56,480
it should also encourage commercial use

888
00:35:01,510 --> 00:34:58,720

of the lunar orbit outposts for surface

889

00:35:02,550 --> 00:35:01,520

activities with scientific and economic

890

00:35:04,950 --> 00:35:02,560

potential

891

00:35:06,950 --> 00:35:04,960

by doing so nasa can leverage its

892

00:35:09,349 --> 00:35:06,960

limited budgets with the cost

893

00:35:11,589 --> 00:35:09,359

efficiencies of commercial development

894

00:35:14,230 --> 00:35:11,599

and operational approaches and through

895

00:35:17,750 --> 00:35:14,240

access to the resources of our private

896

00:35:19,270 --> 00:35:17,760

capital markets and third space-based

897

00:35:21,750 --> 00:35:19,280

science missions

898

00:35:23,829 --> 00:35:21,760

nasa's robotic spacecraft in earth orbit

899

00:35:25,670 --> 00:35:23,839

and throughout the solar system have

900

00:35:27,109 --> 00:35:25,680

revolutionized the fields of

901
00:35:30,150 --> 00:35:27,119
astrophysics

902
00:35:31,510 --> 00:35:30,160
solar physics planetary exploration and

903
00:35:33,430 --> 00:35:31,520
earth science

904
00:35:35,270 --> 00:35:33,440
during the last few decades space

905
00:35:38,150 --> 00:35:35,280
missions to the planets have revealed

906
00:35:40,710 --> 00:35:38,160
their wonders and charted humankind's

907
00:35:43,190 --> 00:35:40,720
path to the solar system other nasa

908
00:35:45,750 --> 00:35:43,200
missions have observed the universe with

909
00:35:48,390 --> 00:35:45,760
unprecedented resolution displaying its

910
00:35:51,030 --> 00:35:48,400
vastness and majesty and beginning the

911
00:35:52,630 --> 00:35:51,040
search for life elsewhere still other

912
00:35:54,950 --> 00:35:52,640
missions have monitored earth and

913
00:35:58,069 --> 00:35:54,960

provided us with essential information

914

00:36:00,470 --> 00:35:58,079

to be better stewards of our planet to

915

00:36:02,630 --> 00:36:00,480

assure us leadership in space science

916

00:36:05,349 --> 00:36:02,640

and robotic exploration for the next

917

00:36:07,510 --> 00:36:05,359

decade and beyond it will be critical

918

00:36:09,270 --> 00:36:07,520

for the space council to advocate for

919

00:36:10,390 --> 00:36:09,280

continued robust funding of these

920

00:36:14,550 --> 00:36:10,400

programs

921

00:36:17,349 --> 00:36:14,560

be a leader in developing the needed

922

00:36:19,750 --> 00:36:17,359

technologies to enable the use of a new

923

00:36:21,589 --> 00:36:19,760

generation of small satellites for

924

00:36:23,990 --> 00:36:21,599

scientific purposes

925

00:36:26,310 --> 00:36:24,000

in conclusion the years immediately

926
00:36:29,190 --> 00:36:26,320
ahead offer america the chance to lead

927
00:36:31,190 --> 00:36:29,200
the world in a new golden age of space

928
00:36:34,470 --> 00:36:31,200
achievement if we are bold in our

929
00:36:36,870 --> 00:36:34,480
aspirations and resolute in our actions

930
00:36:38,470 --> 00:36:36,880
under your leadership mr vice president

931
00:36:41,270 --> 00:36:38,480
the national space council can

932
00:36:44,310 --> 00:36:41,280
orchestrate the combined creativity

933
00:36:46,550 --> 00:36:44,320
energies and skills of nasa other space

934
00:36:49,030 --> 00:36:46,560
related agencies and the u.s private

935
00:36:50,230 --> 00:36:49,040
sector to benefit our country's domestic

936
00:36:52,710 --> 00:36:50,240
economy

937
00:36:55,109 --> 00:36:52,720
scientific and technological progress

938
00:36:57,190 --> 00:36:55,119

and international standing thank you for

939

00:36:59,190 --> 00:36:57,200

this opportunity to present my views on

940

00:37:01,270 --> 00:36:59,200

this important topic i'll be happy to

941

00:37:02,710 --> 00:37:01,280

respond to your questions

942

00:37:04,390 --> 00:37:02,720

that's great thank you thank you david

943

00:37:05,510 --> 00:37:04,400

thompson thank you for those thoughtful

944

00:37:07,589 --> 00:37:05,520

comments

945

00:37:09,430 --> 00:37:07,599

uh the chair will begin

946

00:37:12,790 --> 00:37:09,440

with a

947

00:37:17,670 --> 00:37:16,310

i struck by your testimony this morning

948

00:37:19,990 --> 00:37:17,680

each of you

949

00:37:23,030 --> 00:37:20,000

marilyn you spoke about the imperative

950

00:37:24,710 --> 00:37:23,040

of american action um dennis you you

951
00:37:26,630 --> 00:37:24,720
spoke about the commitment to

952
00:37:28,069 --> 00:37:26,640
uninterrupted space that

953
00:37:29,670 --> 00:37:28,079
you cautioned about when america

954
00:37:31,030 --> 00:37:29,680
withdraws

955
00:37:33,109 --> 00:37:31,040
and david you spoke about the need to

956
00:37:35,430 --> 00:37:33,119
accelerate

957
00:37:39,589 --> 00:37:35,440
my my question is can you can you favor

958
00:37:43,109 --> 00:37:39,599
us with um how do you view america's

959
00:37:47,349 --> 00:37:46,150
have we fallen behind

960
00:37:48,950 --> 00:37:47,359
as

961
00:37:51,190 --> 00:37:48,960
we believe

962
00:37:53,990 --> 00:37:51,200
is that your judgment from the outside

963
00:37:56,150 --> 00:37:54,000

and how quickly can we seize american

964

00:37:57,109 --> 00:37:56,160

leadership again in a broad range of

965

00:37:59,349 --> 00:37:57,119

areas

966

00:38:00,870 --> 00:37:59,359

in space and maybe just uh

967

00:38:02,390 --> 00:38:00,880

briefly on that and then i'll go to the

968

00:38:04,390 --> 00:38:02,400

rest of the panel

969

00:38:05,589 --> 00:38:04,400

maryland and then maybe

970

00:38:07,750 --> 00:38:05,599

others

971

00:38:10,390 --> 00:38:07,760

thank you mr vice president i would say

972

00:38:12,790 --> 00:38:10,400

first of all that it is very important

973

00:38:14,310 --> 00:38:12,800

today that we that it is an imperative

974

00:38:16,069 --> 00:38:14,320

in my view

975

00:38:19,270 --> 00:38:16,079

national security

976

00:38:22,069 --> 00:38:19,280

economic growth as well as being able to

977

00:38:24,630 --> 00:38:22,079

help with education and understanding of

978

00:38:26,950 --> 00:38:24,640

our world is imperative around space it

979

00:38:28,310 --> 00:38:26,960

has been for many many years it's even

980

00:38:30,310 --> 00:38:28,320

more so today

981

00:38:31,829 --> 00:38:30,320

to a question about being behind i think

982

00:38:34,069 --> 00:38:31,839

as you hear from the national security

983

00:38:36,069 --> 00:38:34,079

panel you'll hear more insight to this

984

00:38:37,910 --> 00:38:36,079

but i do think that we have to be

985

00:38:39,829 --> 00:38:37,920

vigilant on that front as you've

986

00:38:41,829 --> 00:38:39,839

outlined in your remarks from an

987

00:38:44,150 --> 00:38:41,839

economic security standpoint and from an

988

00:38:47,030 --> 00:38:44,160

economic growth standpoint space is an

989

00:38:50,069 --> 00:38:47,040

inspirational area for us as a nation

990

00:38:52,150 --> 00:38:50,079

not just because it's a new frontier but

991

00:38:54,069 --> 00:38:52,160

because it makes our lives better we can

992

00:38:56,230 --> 00:38:54,079

look at so many technologies that we

993

00:38:58,870 --> 00:38:56,240

have gained through our our exploration

994

00:39:01,990 --> 00:38:58,880

of space and i think getting our young

995

00:39:04,230 --> 00:39:02,000

people the next generation as well as as

996

00:39:06,069 --> 00:39:04,240

americans today focused on that will

997

00:39:08,390 --> 00:39:06,079

bring more jobs will bring more

998

00:39:10,150 --> 00:39:08,400

inspiration and will help us to continue

999

00:39:12,150 --> 00:39:10,160

to lead as a nation great so it's an

1000

00:39:12,829 --> 00:39:12,160

imperative but dennis how quickly do we

1001
00:39:16,069 --> 00:39:12,839
get

1002
00:39:18,470 --> 00:39:16,079
back in the pole position in every area

1003
00:39:20,710 --> 00:39:18,480
of space exploration in your mind

1004
00:39:22,550 --> 00:39:20,720
how quickly can we get there

1005
00:39:24,550 --> 00:39:22,560
sir i think we can get there quickly if

1006
00:39:27,109 --> 00:39:24,560
we have focus and commitment and

1007
00:39:29,589 --> 00:39:27,119
resourcing i share the sense of urgency

1008
00:39:31,510 --> 00:39:29,599
here we see countries around the world

1009
00:39:32,710 --> 00:39:31,520
investing in space to gain competitive

1010
00:39:34,790 --> 00:39:32,720
advantage

1011
00:39:36,710 --> 00:39:34,800
we know that investing in space is

1012
00:39:38,710 --> 00:39:36,720
important from a national security and

1013
00:39:40,790 --> 00:39:38,720

economic standpoint we have the

1014

00:39:44,069 --> 00:39:40,800

resources available we have the talent

1015

00:39:47,030 --> 00:39:44,079

available we have the right programs in

1016

00:39:49,990 --> 00:39:47,040

place now it is important that we have

1017

00:39:52,710 --> 00:39:50,000

long-term stability on funding

1018

00:39:54,630 --> 00:39:52,720

a clear commitment and clear actionable

1019

00:39:56,710 --> 00:39:54,640

objectives and with that i think we can

1020

00:39:58,790 --> 00:39:56,720

rally the whole country there there is

1021

00:40:01,190 --> 00:39:58,800

nothing more inspiring than the

1022

00:40:03,030 --> 00:40:01,200

country's space program in terms of

1023

00:40:05,270 --> 00:40:03,040

rallying today's industrial government

1024

00:40:07,670 --> 00:40:05,280

partnerships and building the next

1025

00:40:08,790 --> 00:40:07,680

generation of talent right so i think we

1026

00:40:11,349 --> 00:40:08,800

can do it quickly and i think it's

1027

00:40:13,349 --> 00:40:11,359

measured in a matter of a handful of

1028

00:40:14,790 --> 00:40:13,359

years and we can make clear progress

1029

00:40:16,309 --> 00:40:14,800

right out of the gates

1030

00:40:20,550 --> 00:40:16,319

david you were talking about the ability

1031

00:40:23,829 --> 00:40:21,589

multiple

1032

00:40:25,990 --> 00:40:23,839

missions

1033

00:40:28,230 --> 00:40:26,000

the next five years do you share the

1034

00:40:31,109 --> 00:40:28,240

belief how quickly we can get

1035

00:40:32,870 --> 00:40:31,119

back in the forefront uh yes sir mr vice

1036

00:40:35,349 --> 00:40:32,880

president i do uh

1037

00:40:38,630 --> 00:40:35,359

i think nasa has done a fantastic job of

1038

00:40:41,109 --> 00:40:38,640

building the uh the basic uh uh

1039

00:40:44,069 --> 00:40:41,119

infrastructure that will allow us within

1040

00:40:46,390 --> 00:40:44,079

a period of five years or less to return

1041

00:40:48,870 --> 00:40:46,400

uh american astronauts to the vicinity

1042

00:40:51,990 --> 00:40:48,880

of the moon and shortly thereafter if we

1043

00:40:53,990 --> 00:40:52,000

so choose to return both astronauts and

1044

00:40:54,950 --> 00:40:54,000

their robotic helpers to the surface of

1045

00:40:57,349 --> 00:40:54,960

the moon

1046

00:40:59,510 --> 00:40:57,359

uh so i believe this is uh this this is

1047

00:41:01,990 --> 00:40:59,520

feasible within a period of time of

1048

00:41:03,910 --> 00:41:02,000

approximately five years right

1049

00:41:06,630 --> 00:41:03,920

uh well thank you all with that uh

1050

00:41:08,550 --> 00:41:06,640

secretary of state rex tillerson

1051
00:41:10,470 --> 00:41:08,560
well thank all of you for being with us

1052
00:41:12,630 --> 00:41:10,480
this morning and i think an important

1053
00:41:14,790 --> 00:41:12,640
point that has been made

1054
00:41:17,190 --> 00:41:14,800
in terms of the real value delivery of

1055
00:41:19,109 --> 00:41:17,200
undertaking a robust and vigorous deep

1056
00:41:20,870 --> 00:41:19,119
space exploration program you touched on

1057
00:41:22,870 --> 00:41:20,880
is the inspiration

1058
00:41:25,349 --> 00:41:22,880
that it provides to

1059
00:41:26,870 --> 00:41:25,359
so many young boys young girls young men

1060
00:41:28,710 --> 00:41:26,880
and women to enter

1061
00:41:30,230 --> 00:41:28,720
fields of science technology engineering

1062
00:41:31,430 --> 00:41:30,240
and math study and then take that on to

1063
00:41:32,950 --> 00:41:31,440

their careers

1064

00:41:34,870 --> 00:41:32,960

that was the case for me neil

1065

00:41:36,630 --> 00:41:34,880

armstrong's landing on the moon inspired

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00:41:38,069 --> 00:41:36,640

me to want to go into a lifelong career

1067

00:41:40,230 --> 00:41:38,079

of engineering

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00:41:42,150 --> 00:41:40,240

and so it is a broad impact not just for

1069

00:41:44,470 --> 00:41:42,160

our space program but it is how we

1070

00:41:47,109 --> 00:41:44,480

create the ability of our nation to have

1071

00:41:48,790 --> 00:41:47,119

a very robust innovative spirit and

1072

00:41:50,790 --> 00:41:48,800

which is so fundamental to the broader

1073

00:41:53,349 --> 00:41:50,800

economic competitiveness of the u.s and

1074

00:41:55,109 --> 00:41:53,359

so i really share strongly the views

1075

00:41:57,030 --> 00:41:55,119

that this is going to deliver enormous

1076
00:41:58,710 --> 00:41:57,040
value far beyond just

1077
00:42:01,270 --> 00:41:58,720
our accomplishments and deep space

1078
00:42:02,950 --> 00:42:01,280
exploration and with that i had a couple

1079
00:42:05,670 --> 00:42:02,960
of questions one is

1080
00:42:08,550 --> 00:42:05,680
as we think about deep space exploration

1081
00:42:10,069 --> 00:42:08,560
and we have in in our space programs in

1082
00:42:13,030 --> 00:42:10,079
the past we've had very successful

1083
00:42:14,470 --> 00:42:13,040
international consortium cooperation

1084
00:42:17,270 --> 00:42:14,480
partnerships

1085
00:42:19,270 --> 00:42:17,280
as we think about deep space exploration

1086
00:42:21,109 --> 00:42:19,280
what's the proper in your view what is

1087
00:42:22,390 --> 00:42:21,119
the proper architecture around an

1088
00:42:23,670 --> 00:42:22,400

international

1089

00:42:25,750 --> 00:42:23,680

effort

1090

00:42:27,910 --> 00:42:25,760

to put humans into deep space

1091

00:42:29,829 --> 00:42:27,920

exploration programs are there areas

1092

00:42:31,270 --> 00:42:29,839

that we should reserve to ourselves or

1093

00:42:33,270 --> 00:42:31,280

other areas that really lend themselves

1094

00:42:34,790 --> 00:42:33,280

to international consortium

1095

00:42:36,950 --> 00:42:34,800

and then as you think about that what

1096

00:42:39,750 --> 00:42:36,960

are there particular countries

1097

00:42:41,910 --> 00:42:39,760

in your experience that we should be

1098

00:42:43,589 --> 00:42:41,920

developing this relationship and this

1099

00:42:47,589 --> 00:42:43,599

architecture with in particular where

1100

00:42:51,910 --> 00:42:49,510

mr secretary if i can take a first cut

1101

00:42:53,750 --> 00:42:51,920

at that i think a good model is the work

1102

00:42:56,470 --> 00:42:53,760

we've done together on the international

1103

00:42:58,390 --> 00:42:56,480

space station over the last many years

1104

00:42:59,990 --> 00:42:58,400

that has been a very successful endeavor

1105

00:43:03,270 --> 00:43:00,000

for our country with a number of

1106

00:43:05,270 --> 00:43:03,280

industrial partnerships and uh and

1107

00:43:07,190 --> 00:43:05,280

partnerships with other countries

1108

00:43:09,750 --> 00:43:07,200

the key to success however is american

1109

00:43:11,910 --> 00:43:09,760

leadership so collaboration works it can

1110

00:43:12,950 --> 00:43:11,920

make sense but it requires american

1111

00:43:15,750 --> 00:43:12,960

leadership

1112

00:43:17,270 --> 00:43:15,760

and america architecting the system i

1113

00:43:19,510 --> 00:43:17,280

think there are similar opportunities

1114

00:43:21,270 --> 00:43:19,520

for deep space exploration but again i

1115

00:43:24,309 --> 00:43:21,280

think america needs to lead with the

1116

00:43:26,550 --> 00:43:24,319

technology lead with the architecture

1117

00:43:28,710 --> 00:43:26,560

lead in terms of building an

1118

00:43:30,470 --> 00:43:28,720

infrastructure that will allow

1119

00:43:32,950 --> 00:43:30,480

international collaboration there are

1120

00:43:34,630 --> 00:43:32,960

certain elements of technology and

1121

00:43:36,470 --> 00:43:34,640

innovation too that i think are

1122

00:43:38,710 --> 00:43:36,480

appropriate for the united states to

1123

00:43:41,030 --> 00:43:38,720

keep for itself and that has to be part

1124

00:43:42,630 --> 00:43:41,040

of architecting such a program

1125

00:43:44,550 --> 00:43:42,640

but i think the opportunity to bring in

1126
00:43:46,630 --> 00:43:44,560
additional resources talents with many

1127
00:43:48,470 --> 00:43:46,640
of our global partners our allies

1128
00:43:50,870 --> 00:43:48,480
finding intersections between national

1129
00:43:53,109 --> 00:43:50,880
security and economic security are very

1130
00:43:55,990 --> 00:43:53,119
viable and those are the places where i

1131
00:43:57,349 --> 00:43:56,000
would look for partnerships

1132
00:43:59,589 --> 00:43:57,359
i would add on the deep space

1133
00:44:01,510 --> 00:43:59,599
exploration side orion is a good example

1134
00:44:03,030 --> 00:44:01,520
of that today we have the european space

1135
00:44:05,430 --> 00:44:03,040
agency that is building the service

1136
00:44:07,670 --> 00:44:05,440
module for that this is going to be you

1137
00:44:09,910 --> 00:44:07,680
know it's a it's a proven technology

1138
00:44:12,230 --> 00:44:09,920

it's a capsule that we are moving

1139

00:44:14,390 --> 00:44:12,240

forward with with nasa and we're very

1140

00:44:16,309 --> 00:44:14,400

pleased with where it is in its progress

1141

00:44:18,230 --> 00:44:16,319

so it's working today i think where we

1142

00:44:19,990 --> 00:44:18,240

also would look is

1143

00:44:21,589 --> 00:44:20,000

other countries is involved with the

1144

00:44:22,390 --> 00:44:21,599

infrastructure that we put in place in

1145

00:44:24,150 --> 00:44:22,400

space

1146

00:44:26,150 --> 00:44:24,160

but i would also think an important area

1147

00:44:29,349 --> 00:44:26,160

that we should keep in front of us as a

1148

00:44:31,750 --> 00:44:29,359

government is that in space we need to

1149

00:44:33,670 --> 00:44:31,760

have an international framework

1150

00:44:36,150 --> 00:44:33,680

regulatory framework because there are

1151
00:44:37,750 --> 00:44:36,160
so there are over 70 countries that are

1152
00:44:39,190 --> 00:44:37,760
that have missions in space today a

1153
00:44:40,309 --> 00:44:39,200
variety of different things that they're

1154
00:44:42,790 --> 00:44:40,319
doing and so

1155
00:44:44,710 --> 00:44:42,800
the the us should lead on helping to get

1156
00:44:45,990 --> 00:44:44,720
in place that regulatory framework

1157
00:44:47,990 --> 00:44:46,000
that's so important for those

1158
00:44:51,990 --> 00:44:48,000
international partnerships and for just

1159
00:44:56,950 --> 00:44:55,589
mr secretary i would agree i think the

1160
00:44:58,790 --> 00:44:56,960
discussions have started at a

1161
00:45:00,710 --> 00:44:58,800
preliminary level

1162
00:45:03,750 --> 00:45:00,720
between nasa and the european space

1163
00:45:05,030 --> 00:45:03,760

agency and and i would uh

1164

00:45:07,190 --> 00:45:05,040
recommend

1165

00:45:08,309 --> 00:45:07,200
the space council encourage

1166

00:45:11,190 --> 00:45:08,319
those

1167

00:45:13,750 --> 00:45:11,200
discussions i think nasa and esa have

1168

00:45:16,230 --> 00:45:13,760
have been good partners on a variety of

1169

00:45:18,470 --> 00:45:16,240
human and robotic space

1170

00:45:20,950 --> 00:45:18,480
initiatives in the past and

1171

00:45:22,550 --> 00:45:20,960
could form the core international

1172

00:45:23,670 --> 00:45:22,560
coalition to

1173

00:45:25,190 --> 00:45:23,680
see

1174

00:45:31,349 --> 00:45:25,200
humans move

1175

00:45:34,710 --> 00:45:32,870
uh thank you mr secretary if you have no

1176

00:45:36,230 --> 00:45:34,720

other questions i'll take a moment to

1177

00:45:40,069 --> 00:45:36,240

remind you that neil armstrong was a

1178

00:45:44,080 --> 00:45:41,510

that would be purdue university in

1179

00:45:45,990 --> 00:45:44,090

indiana

1180

00:45:48,390 --> 00:45:46,000

[Laughter]

1181

00:45:50,309 --> 00:45:48,400

i appreciate very uh thoughtful comments

1182

00:45:51,670 --> 00:45:50,319

and appreciate the secretary's presence

1183

00:45:54,309 --> 00:45:51,680

here today and

1184

00:45:56,710 --> 00:45:54,319

uh his engagement on this council uh

1185

00:46:00,870 --> 00:45:56,720

acting nasa administrator um

1186

00:46:04,390 --> 00:46:02,630

all right thank you vice president um i

1187

00:46:05,750 --> 00:46:04,400

think the the question i would have i'm

1188

00:46:07,430 --> 00:46:05,760

going to kind of direct it to david but

1189

00:46:08,630 --> 00:46:07,440

i'll let the other two jump in if you

1190

00:46:11,030 --> 00:46:08,640

get a chance

1191

00:46:12,309 --> 00:46:11,040

clearly we've advanced a lot since the

1192

00:46:13,510 --> 00:46:12,319

last time we went to the moon and

1193

00:46:15,270 --> 00:46:13,520

there's a lot of advancements that are

1194

00:46:17,030 --> 00:46:15,280

out there and i i'd be very interested

1195

00:46:19,190 --> 00:46:17,040

in your thoughts on the role of robotics

1196

00:46:20,790 --> 00:46:19,200

or other technologies um as we look at

1197

00:46:22,790 --> 00:46:20,800

going to lunar operations specifically

1198

00:46:24,870 --> 00:46:22,800

for you david um

1199

00:46:27,190 --> 00:46:24,880

you guys are working a lot in satellite

1200

00:46:28,230 --> 00:46:27,200

servicing and you're your cygnus cargo

1201

00:46:29,589 --> 00:46:28,240

vehicle that you're flying the

1202

00:46:31,750 --> 00:46:29,599

international space station today you're

1203

00:46:33,510 --> 00:46:31,760

looking at autonomous operations there

1204

00:46:35,510 --> 00:46:33,520

how do you see that as an enabler as we

1205

00:46:36,710 --> 00:46:35,520

move forward into this area

1206

00:46:38,550 --> 00:46:36,720

or other technologies that you want to

1207

00:46:40,630 --> 00:46:38,560

speak on that

1208

00:46:44,069 --> 00:46:40,640

thank you very much robert

1209

00:46:46,790 --> 00:46:44,079

i see uh the the near future uh

1210

00:46:48,790 --> 00:46:46,800

activities uh in uh the vicinity of the

1211

00:46:50,230 --> 00:46:48,800

moon differing in several important

1212

00:46:53,670 --> 00:46:50,240

respects from

1213

00:46:55,430 --> 00:46:53,680

our last human flights uh uh to the moon

1214

00:46:56,790 --> 00:46:55,440

uh almost 45

1215

00:46:58,710 --> 00:46:56,800

years ago

1216

00:47:00,550 --> 00:46:58,720

first i believe these

1217

00:47:03,190 --> 00:47:00,560

up these upcoming missions will

1218

00:47:05,670 --> 00:47:03,200

ultimately be of longer duration the the

1219

00:47:07,109 --> 00:47:05,680

longest period of time that uh humans

1220

00:47:09,750 --> 00:47:07,119

have ever been in the vicinity of the

1221

00:47:12,069 --> 00:47:09,760

moon is less than five days

1222

00:47:14,710 --> 00:47:12,079

and as we go back i think we will

1223

00:47:17,190 --> 00:47:14,720

quickly amass the experience of weeks or

1224

00:47:19,589 --> 00:47:17,200

months of operations

1225

00:47:23,030 --> 00:47:19,599

in lunar orbit and on the surface of the

1226

00:47:26,150 --> 00:47:23,040

moon with human tended

1227

00:47:29,349 --> 00:47:26,160

platforms and and reusable systems that

1228

00:47:32,230 --> 00:47:29,359

can be uh left behind to be serviced by

1229

00:47:33,109 --> 00:47:32,240

many uh subsequent crews with respect to

1230

00:47:35,349 --> 00:47:33,119

uh

1231

00:47:37,349 --> 00:47:35,359

robotics and other autonomous systems

1232

00:47:39,270 --> 00:47:37,359

there have been enormous advances

1233

00:47:42,470 --> 00:47:39,280

in some cases spearheaded by nasa in

1234

00:47:45,270 --> 00:47:42,480

other cases by by the private sector or

1235

00:47:48,150 --> 00:47:45,280

the military in these technologies over

1236

00:47:50,630 --> 00:47:48,160

the intervening uh four decades

1237

00:47:54,069 --> 00:47:50,640

nasa has done uh quite a bit of this on

1238

00:47:57,349 --> 00:47:54,079

its own with its robotic emissaries to

1239

00:47:58,790 --> 00:47:57,359

explore the solar system

1240

00:48:00,390 --> 00:47:58,800

and now

1241

00:48:02,309 --> 00:48:00,400

in low orbit

1242

00:48:05,910 --> 00:48:02,319

private companies are

1243

00:48:07,829 --> 00:48:05,920

also deploying robotic systems of quite

1244

00:48:09,990 --> 00:48:07,839

an advanced uh nature so i would

1245

00:48:12,069 --> 00:48:10,000

envision

1246

00:48:13,829 --> 00:48:12,079

human activities

1247

00:48:15,190 --> 00:48:13,839

on the moon and near the moon being

1248

00:48:16,870 --> 00:48:15,200

substantially

1249

00:48:19,670 --> 00:48:16,880

uh enabled

1250

00:48:22,230 --> 00:48:19,680

made more productive and made much safer

1251
00:48:23,829 --> 00:48:22,240
due to the presence of robotics uh and

1252
00:48:26,069 --> 00:48:23,839
other autonomous systems that could

1253
00:48:27,829 --> 00:48:26,079
operate together with our men and women

1254
00:48:30,790 --> 00:48:27,839
that would uh that would be there uh

1255
00:48:32,150 --> 00:48:30,800
representing our country thank you

1256
00:48:35,190 --> 00:48:32,160
robert if i could just add a

1257
00:48:37,109 --> 00:48:35,200
complimentary uh point to uh to david's

1258
00:48:39,190 --> 00:48:37,119
we see the opportunity for robotics in

1259
00:48:40,870 --> 00:48:39,200
space and collaboration between humans

1260
00:48:42,710 --> 00:48:40,880
and robots is an important technology

1261
00:48:45,349 --> 00:48:42,720
step it does come in the form of

1262
00:48:48,710 --> 00:48:45,359
vehicles uh another another example

1263
00:48:51,190 --> 00:48:48,720

being the x-37b uh the phantom express

1264

00:48:53,430 --> 00:48:51,200

rapid launch capabilities we also see a

1265

00:48:55,829 --> 00:48:53,440

future with automation and robotics in

1266

00:48:57,750 --> 00:48:55,839

space in areas like space manufacturing

1267

00:49:00,069 --> 00:48:57,760

and we see the opportunity for zero

1268

00:49:03,270 --> 00:49:00,079

gravity low gravity manufacturing as

1269

00:49:05,109 --> 00:49:03,280

being a viable commercial practice in

1270

00:49:07,510 --> 00:49:05,119

space at some point that could either be

1271

00:49:09,670 --> 00:49:07,520

in low earth orbit or lunar

1272

00:49:12,069 --> 00:49:09,680

and uh as we're doing on earth with

1273

00:49:14,230 --> 00:49:12,079

combinations of of humans and robots

1274

00:49:16,549 --> 00:49:14,240

working in our factories robotic

1275

00:49:17,829 --> 00:49:16,559

application to space manufacturing

1276

00:49:19,750 --> 00:49:17,839

i think is another leading edge

1277

00:49:21,750 --> 00:49:19,760

technology area it's an important place

1278

00:49:23,510 --> 00:49:21,760

for america to lead

1279

00:49:25,030 --> 00:49:23,520

great

1280

00:49:27,190 --> 00:49:25,040

thank you

1281

00:49:28,390 --> 00:49:27,200

anyone else have a comment in response

1282

00:49:29,190 --> 00:49:28,400

in addition

1283

00:49:31,430 --> 00:49:29,200

great

1284

00:49:33,030 --> 00:49:31,440

good um last question on this panel

1285

00:49:34,549 --> 00:49:33,040

we'll go to uh the deputy secretary of

1286

00:49:37,430 --> 00:49:34,559

defense paul shanahan

1287

00:49:39,829 --> 00:49:37,440

hey good afternoon or yes good morning

1288

00:49:41,829 --> 00:49:39,839

you know um one of the the themes that

1289

00:49:42,790 --> 00:49:41,839

uh each of you mentioned in your remarks

1290

00:49:45,589 --> 00:49:42,800

was

1291

00:49:47,990 --> 00:49:45,599

stable consistent funding

1292

00:49:50,390 --> 00:49:48,000

and you know the question is as you look

1293

00:49:53,750 --> 00:49:50,400

across the three different domains

1294

00:49:55,910 --> 00:49:53,760

civil commercial military

1295

00:49:57,750 --> 00:49:55,920

what's the synergy we should try to

1296

00:50:00,230 --> 00:49:57,760

exploit how do you think about really

1297

00:50:05,430 --> 00:50:00,240

leveraging some of those common missions

1298

00:50:10,069 --> 00:50:07,109

yeah well first of all

1299

00:50:11,589 --> 00:50:10,079

i think your point of of matching up and

1300

00:50:13,430 --> 00:50:11,599

uh and creating synergy across

1301
00:50:14,950 --> 00:50:13,440
commercial and defense sectors is very

1302
00:50:16,630 --> 00:50:14,960
important it's important to the talent

1303
00:50:17,990 --> 00:50:16,640
base it's important to the techniques

1304
00:50:20,390 --> 00:50:18,000
and processes

1305
00:50:22,230 --> 00:50:20,400
and frankly uh that combination can help

1306
00:50:24,390 --> 00:50:22,240
create some stability in funding and

1307
00:50:26,150 --> 00:50:24,400
programmatic profiles

1308
00:50:27,750 --> 00:50:26,160
i think it's also important that from a

1309
00:50:29,910 --> 00:50:27,760
policy standpoint if we look at the

1310
00:50:32,150 --> 00:50:29,920
national budget not only the defense

1311
00:50:33,510 --> 00:50:32,160
budget but all of the elements that fuel

1312
00:50:36,069 --> 00:50:33,520
innovation

1313
00:50:38,230 --> 00:50:36,079

year to year stability and alternatives

1314

00:50:39,750 --> 00:50:38,240

to the budget cap

1315

00:50:42,710 --> 00:50:39,760

approach that we have in place today

1316

00:50:44,790 --> 00:50:42,720

sequestration we need an alternative

1317

00:50:46,470 --> 00:50:44,800

that's good for the u.s government it's

1318

00:50:48,309 --> 00:50:46,480

good for the economy it's good for

1319

00:50:50,549 --> 00:50:48,319

industry so we can do long-term planning

1320

00:50:52,390 --> 00:50:50,559

together without that long-term view and

1321

00:50:54,790 --> 00:50:52,400

long-term stability and funding it's

1322

00:50:56,710 --> 00:50:54,800

difficult to build a supply chain it's

1323

00:50:59,750 --> 00:50:56,720

difficult to make the investments that

1324

00:51:01,109 --> 00:50:59,760

create long-term space infrastructure

1325

00:51:03,190 --> 00:51:01,119

i think that's one of the most important

1326

00:51:05,270 --> 00:51:03,200

things we can do as a country

1327

00:51:09,109 --> 00:51:05,280

i would add to that to your point there

1328

00:51:11,510 --> 00:51:09,119

is complementary uh when you take the

1329

00:51:13,430 --> 00:51:11,520

national security activities that we do

1330

00:51:15,270 --> 00:51:13,440

they do flow over into commercial

1331

00:51:17,190 --> 00:51:15,280

opportunities and civil opportunities as

1332

00:51:18,630 --> 00:51:17,200

well so the money that we're spending

1333

00:51:20,870 --> 00:51:18,640

the investments that we're making as a

1334

00:51:23,430 --> 00:51:20,880

nation on national security or on our

1335

00:51:25,589 --> 00:51:23,440

civil space programs it's complementary

1336

00:51:27,670 --> 00:51:25,599

across and we can get the full bang for

1337

00:51:29,910 --> 00:51:27,680

the buck but to dennis's point we have

1338

00:51:32,470 --> 00:51:29,920

been faced with a very challenging

1339

00:51:34,309 --> 00:51:32,480

budget environment in the space arena as

1340

00:51:36,790 --> 00:51:34,319

well as in other areas of our government

1341

00:51:38,790 --> 00:51:36,800

and so that is a message to you as a

1342

00:51:40,230 --> 00:51:38,800

space council that we really do need to

1343

00:51:42,230 --> 00:51:40,240

make sure that we have stable funding

1344

00:51:44,069 --> 00:51:42,240

that we are that we have aspirational

1345

00:51:45,430 --> 00:51:44,079

programs that we're investing in so that

1346

00:51:51,109 --> 00:51:45,440

we can continue

1347

00:51:55,270 --> 00:51:53,030

very good

1348

00:51:56,230 --> 00:51:55,280

david anything thank you

1349

00:51:57,990 --> 00:51:56,240

um

1350

00:51:59,829 --> 00:51:58,000

uh well if there's no other questions

1351
00:52:01,829 --> 00:51:59,839
from the panel

1352
00:52:05,030 --> 00:52:01,839
uh we'll allow this very distinguished

1353
00:52:07,349 --> 00:52:05,040
panel to um

1354
00:52:09,750 --> 00:52:07,359
step away but i hope everyone in

1355
00:52:11,270 --> 00:52:09,760
attendance will join me in thanking

1356
00:52:13,270 --> 00:52:11,280
marilyn houston david mullenberg and

1357
00:52:14,470 --> 00:52:13,280
david thompson for just outstanding

1358
00:52:25,670 --> 00:52:14,480
presentations

1359
00:52:28,950 --> 00:52:27,430
as our next panel begins to make their

1360
00:52:30,470 --> 00:52:28,960
way i would uh

1361
00:52:32,309 --> 00:52:30,480
call everyone

1362
00:52:33,990 --> 00:52:32,319
on the space council's attention to your

1363
00:52:36,230 --> 00:52:34,000

packets today there's a recommendation

1364

00:52:38,790 --> 00:52:36,240
to the president for a new policy

1365

00:52:40,470 --> 00:52:38,800
on deep space human exploration meets

1366

00:52:42,390 --> 00:52:40,480
the president's vision for america to

1367

00:52:44,829 --> 00:52:42,400
lead in space again

1368

00:52:47,030 --> 00:52:44,839
the recommendation is the national space

1369

00:52:49,109 --> 00:52:47,040
council policy

1370

00:52:51,910 --> 00:52:49,119
be amended

1371

00:52:54,069 --> 00:52:51,920
as is transcribed there that we shall

1372

00:52:55,750 --> 00:52:54,079
lead in innovative and sustainable

1373

00:52:57,990 --> 00:52:55,760
program of exploration with commercial

1374

00:53:00,790 --> 00:52:58,000
international partners to enable human

1375

00:53:02,230 --> 00:53:00,800
expansion across the solar system

1376
00:53:03,670 --> 00:53:02,240
to bring new orleans knowledge and

1377
00:53:05,349 --> 00:53:03,680
opportunities beginning with missions

1378
00:53:06,710 --> 00:53:05,359
beyond low earth orbit the united states

1379
00:53:08,790 --> 00:53:06,720
will lead and return humans to the moon

1380
00:53:10,470 --> 00:53:08,800
for long-term exploration followed by

1381
00:53:12,470 --> 00:53:10,480
human missions to mars and

1382
00:53:14,390 --> 00:53:12,480
other destinations unless anyone on the

1383
00:53:15,910 --> 00:53:14,400
council has an objection

1384
00:53:17,670 --> 00:53:15,920
i would direct the executive secretary

1385
00:53:19,270 --> 00:53:17,680
of the council to prepare a decision

1386
00:53:21,030 --> 00:53:19,280
memo to the president

1387
00:53:24,470 --> 00:53:21,040
with this recommendation

1388
00:53:27,990 --> 00:53:25,589

hearing none

1389

00:53:29,910 --> 00:53:28,000

so moved

1390

00:53:33,030 --> 00:53:29,920

with that uh secretary ross do you have

1391

00:53:35,030 --> 00:53:33,040

a comment no sir i agree with it good

1392

00:53:37,430 --> 00:53:35,040

thank you thank you

1393

00:53:39,190 --> 00:53:37,440

saw your light on there wilbur i'm

1394

00:53:40,710 --> 00:53:39,200

always ready to recognize you

1395

00:53:42,470 --> 00:53:40,720

um

1396

00:53:44,790 --> 00:53:42,480

with that let me uh let me turn to the

1397

00:53:47,349 --> 00:53:44,800

acting administrator uh robert lighthood

1398

00:53:49,109 --> 00:53:47,359

you've got a big job ahead of you um

1399

00:53:50,150 --> 00:53:49,119

council's going to need the whole team

1400

00:53:51,510 --> 00:53:50,160

at nasa

1401
00:53:52,870 --> 00:53:51,520
to work with the office management and

1402
00:53:55,670 --> 00:53:52,880
budget to provide the president with a

1403
00:53:57,750 --> 00:53:55,680
recommended plan to fulfill that policy

1404
00:53:59,030 --> 00:53:57,760
we'll need you and your team at nasa

1405
00:54:07,510 --> 00:53:59,040
uh

1406
00:54:10,390 --> 00:54:07,520
reinforces what we heard today

1407
00:54:13,109 --> 00:54:10,400
about the importance of

1408
00:54:14,390 --> 00:54:13,119
of urgency but also a sustainable

1409
00:54:16,870 --> 00:54:14,400
commitment of the united states to

1410
00:54:18,950 --> 00:54:16,880
consistent presence in space so with

1411
00:54:20,630 --> 00:54:18,960
that uh welcome your comments yeah thank

1412
00:54:23,270 --> 00:54:20,640
you mr vice president i think you know

1413
00:54:25,750 --> 00:54:23,280

as we sit here today mark vande high and

1414

00:54:27,030 --> 00:54:25,760

randy bresnik are doing a spacewalk at

1415

00:54:28,790 --> 00:54:27,040

the international space station so

1416

00:54:31,510 --> 00:54:28,800

they're outside the station above us 200

1417

00:54:33,829 --> 00:54:31,520

some odd miles above us today

1418

00:54:35,670 --> 00:54:33,839

and i am confident and excited about the

1419

00:54:36,710 --> 00:54:35,680

opportunity to bring a plan back to the

1420

00:54:38,789 --> 00:54:36,720

president

1421

00:54:40,470 --> 00:54:38,799

that allows future astronauts like that

1422

00:54:42,230 --> 00:54:40,480

to do the same kind of work further and

1423

00:54:43,670 --> 00:54:42,240

further into space um so it's an

1424

00:54:44,950 --> 00:54:43,680

exciting time for us a good opportunity

1425

00:54:46,549 --> 00:54:44,960

for us to to do this and i look forward

1426

00:54:49,510 --> 00:54:46,559

to working with the council omb

1427

00:54:51,270 --> 00:54:49,520

um as we go forward so we're ready to do

1428

00:54:53,349 --> 00:54:51,280

it great

1429

00:54:55,270 --> 00:54:53,359

thanks robert thanks for your leadership

1430

00:54:58,549 --> 00:54:55,280

as our acting administrator

1431

00:55:00,309 --> 00:54:58,559

at nasa and uh uh thank you all

1432

00:55:01,990 --> 00:55:00,319

uh we're going to begin to turn our

1433

00:55:03,510 --> 00:55:02,000

attention to the next panel this panel

1434

00:55:04,870 --> 00:55:03,520

is focused on the entrepreneurial side

1435

00:55:07,190 --> 00:55:04,880

of space which commonly called

1436

00:55:09,309 --> 00:55:07,200

commercial space

1437

00:55:11,510 --> 00:55:09,319

before i do that i did want to recognize

1438

00:55:12,950 --> 00:55:11,520

a couple of folks who are in the

1439

00:55:14,549 --> 00:55:12,960

audience today as we talk about a

1440

00:55:15,910 --> 00:55:14,559

sustainable commitment to space i don't

1441

00:55:17,030 --> 00:55:15,920

want to fail to recognize members of

1442

00:55:18,470 --> 00:55:17,040

congress

1443

00:55:20,309 --> 00:55:18,480

who are present with us today we're

1444

00:55:22,309 --> 00:55:20,319

grateful for their presence congressman

1445

00:55:24,630 --> 00:55:22,319

dana robacher congressman

1446

00:55:26,549 --> 00:55:24,640

steve palazzo and congressman jim

1447

00:55:28,630 --> 00:55:26,559

bridenstine is with us today would you

1448

00:55:36,470 --> 00:55:28,640

all join me in welcoming their presence

1449

00:55:40,630 --> 00:55:38,630

um also let me uh

1450

00:55:43,589 --> 00:55:40,640

point a personal privilege to people

1451
00:55:46,150 --> 00:55:43,599
that have been great champions of

1452
00:55:47,349 --> 00:55:46,160
of uh american leadership in space

1453
00:55:48,470 --> 00:55:47,359
throughout their long and storied

1454
00:55:49,910 --> 00:55:48,480
careers

1455
00:55:51,430 --> 00:55:49,920
the former chairman of the house science

1456
00:55:53,109 --> 00:55:51,440
committee bob walker is here and the

1457
00:55:55,430 --> 00:55:53,119
former speaker of the house newt

1458
00:56:03,030 --> 00:55:55,440
gingrich is with us today thank you both

1459
00:56:07,589 --> 00:56:05,510
that is our next panel steps uh to the

1460
00:56:10,069 --> 00:56:07,599
stage the panelists before us represent

1461
00:56:11,190 --> 00:56:10,079
uh some new and exciting companies that

1462
00:56:12,630 --> 00:56:11,200
are pushing the bounds of what we

1463
00:56:14,549 --> 00:56:12,640

thought was possible

1464

00:56:16,950 --> 00:56:14,559

even shaking things up a little bit in

1465

00:56:18,630 --> 00:56:16,960

aerospace markets globally

1466

00:56:20,950 --> 00:56:18,640

to say the least

1467

00:56:23,030 --> 00:56:20,960

our first panelists will be ms gwynne

1468

00:56:25,030 --> 00:56:23,040

shotwell the president of spacex our

1469

00:56:28,069 --> 00:56:25,040

second panelist will be mr bob smith the

1470

00:56:29,270 --> 00:56:28,079

ceo of blue origin our final pass

1471

00:56:30,710 --> 00:56:29,280

panelists

1472

00:56:33,589 --> 00:56:30,720

will be fati

1473

00:56:37,349 --> 00:56:33,599

osman ceo of sierra nevada

1474

00:56:39,030 --> 00:56:37,359

corporation before we recognize um

1475

00:56:40,950 --> 00:56:39,040

ms shotwell would you join me in

1476

00:56:42,549 --> 00:56:40,960

welcoming this panel

1477

00:56:46,950 --> 00:56:42,559

back to the national space council thank

1478

00:56:46,960 --> 00:56:55,750

miss shot well you're recognized

1479

00:57:00,470 --> 00:56:58,789

a technologist here mr vice president

1480

00:57:02,230 --> 00:57:00,480

and distinguished members of the council

1481

00:57:04,630 --> 00:57:02,240

i'm honored to be here today in this

1482

00:57:07,349 --> 00:57:04,640

extraordinary venue to represent more

1483

00:57:10,549 --> 00:57:07,359

than 6 000 men and women of spacex who

1484

00:57:12,630 --> 00:57:10,559

work tirelessly each day to provide nasa

1485

00:57:14,230 --> 00:57:12,640

the department of defense and our

1486

00:57:16,069 --> 00:57:14,240

commercial customers with critical

1487

00:57:18,230 --> 00:57:16,079

launches to space

1488

00:57:20,470 --> 00:57:18,240

we are driven by a deep sense of mission

1489

00:57:23,589 --> 00:57:20,480

to revolutionize space technologies and

1490

00:57:25,349 --> 00:57:23,599

to help this nation in the the world

1491

00:57:26,630 --> 00:57:25,359

to help this nation and the world become

1492

00:57:31,750 --> 00:57:26,640

truly space

1493

00:57:34,470 --> 00:57:31,760

now is the time for swift and bold

1494

00:57:36,230 --> 00:57:34,480

action a permanent presence on the moon

1495

00:57:38,390 --> 00:57:36,240

and american boots on the surface of

1496

00:57:40,870 --> 00:57:38,400

mars are not impossible and they are not

1497

00:57:43,270 --> 00:57:40,880

long-term goals we can achieve rapid

1498

00:57:45,349 --> 00:57:43,280

progress if we undertake concerted

1499

00:57:48,309 --> 00:57:45,359

efforts that optimize america's greatest

1500

00:57:50,230 --> 00:57:48,319

strengths ingenuity innovation and

1501
00:57:52,470 --> 00:57:50,240
entrepreneurialism

1502
00:57:54,710 --> 00:57:52,480
america is out innovating the rest of

1503
00:57:57,109 --> 00:57:54,720
the world in space launch so far this

1504
00:58:00,470 --> 00:57:57,119
year spacex has successfully conducted

1505
00:58:02,390 --> 00:58:00,480
13 launches more than any other nation

1506
00:58:04,630 --> 00:58:02,400
and we have also repeatedly demonstrated

1507
00:58:06,710 --> 00:58:04,640
the ability to re-fly previously flown

1508
00:58:08,230 --> 00:58:06,720
rockets for commercial customers we have

1509
00:58:09,430 --> 00:58:08,240
another one of those missions upcoming

1510
00:58:11,349 --> 00:58:09,440
in a week

1511
00:58:13,109 --> 00:58:11,359
this is a market commercial space launch

1512
00:58:16,230 --> 00:58:13,119
that the united states used to dominate

1513
00:58:18,630 --> 00:58:16,240

in the 90s we lost it in the 2000s and

1514

00:58:20,950 --> 00:58:18,640

we have been we are bringing that back

1515

00:58:23,030 --> 00:58:20,960

uh to the united states

1516

00:58:27,270 --> 00:58:23,040

along with the thousands of jobs that

1517

00:58:29,990 --> 00:58:28,950

spacex is bringing this critical market

1518

00:58:32,230 --> 00:58:30,000

back

1519

00:58:35,030 --> 00:58:32,240

and we are pleased to be doing so

1520

00:58:38,230 --> 00:58:35,040

also as recently announced by my boss mr

1521

00:58:40,710 --> 00:58:38,240

elon musk the ceo of spacex we also plan

1522

00:58:42,470 --> 00:58:40,720

to move forward rapidly with a program a

1523

00:58:44,470 --> 00:58:42,480

commercial program

1524

00:58:46,230 --> 00:58:44,480

for an american rocket and a spaceship

1525

00:58:47,910 --> 00:58:46,240

capable of carrying large numbers of

1526

00:58:50,309 --> 00:58:47,920

humans to mars

1527

00:58:51,670 --> 00:58:50,319

as well as the surface of the moon

1528

00:58:53,990 --> 00:58:51,680

though i sit on the commercial space

1529

00:58:56,230 --> 00:58:54,000

panel today and as i've mentioned we are

1530

00:58:58,710 --> 00:58:56,240

a key player both in the civil and the

1531

00:59:00,390 --> 00:58:58,720

national security space markets earlier

1532

00:59:02,549 --> 00:59:00,400

this year we carried the national

1533

00:59:04,870 --> 00:59:02,559

reconnaissance office l-76 mission to

1534

00:59:07,190 --> 00:59:04,880

orbit last month we successfully

1535

00:59:08,069 --> 00:59:07,200

launched the air force's x-37b into

1536

00:59:10,150 --> 00:59:08,079

orbit

1537

00:59:11,349 --> 00:59:10,160

next year we will have the profound

1538

00:59:14,150 --> 00:59:11,359

honor

1539

00:59:15,910 --> 00:59:14,160

of carrying u.s astronauts into space on

1540

00:59:18,069 --> 00:59:15,920

an american rocket for the first time

1541

00:59:20,710 --> 00:59:18,079

since 2011.

1542

00:59:23,910 --> 00:59:20,720

new rockets spacecraft and plans for

1543

00:59:25,829 --> 00:59:23,920

space commerce around in short there is

1544

00:59:26,870 --> 00:59:25,839

a renaissance underway right now in

1545

00:59:28,710 --> 00:59:26,880

space

1546

00:59:30,789 --> 00:59:28,720

against this background we urge the

1547

00:59:33,270 --> 00:59:30,799

council to undertake a unified effort

1548

00:59:35,430 --> 00:59:33,280

across the federal space enterprise you

1549

00:59:37,910 --> 00:59:35,440

have the opportunity to help accelerate

1550

00:59:40,069 --> 00:59:37,920

low earth orbit and deep space efforts

1551
00:59:42,630 --> 00:59:40,079
by employing public-private partnerships

1552
00:59:44,710 --> 00:59:42,640
to yield speedy and efficient results

1553
00:59:46,870 --> 00:59:44,720
and by implementing meaningful

1554
00:59:48,710 --> 00:59:46,880
regulatory reforms

1555
00:59:50,549 --> 00:59:48,720
overall the council can work to alter

1556
00:59:52,710 --> 00:59:50,559
and improve procurement agility and

1557
00:59:54,710 --> 00:59:52,720
flexibility so that the government can

1558
00:59:56,150 --> 00:59:54,720
behave more like a commercial buyer

1559
00:59:57,829 --> 00:59:56,160
where applicable

1560
00:59:59,510 --> 00:59:57,839
if we want to achieve rapid progress in

1561
01:00:01,430 --> 00:59:59,520
space the us government must remove

1562
01:00:04,470 --> 01:00:01,440
bureaucratic practices that run counter

1563
01:00:06,230 --> 01:00:04,480

to innovation and and speed we urge the

1564

01:00:07,670 --> 01:00:06,240

council to look back to the nasa

1565

01:00:10,230 --> 01:00:07,680

commercial orbital transportation

1566

01:00:12,150 --> 01:00:10,240

services program or cots for important

1567

01:00:14,390 --> 01:00:12,160

lessons learned about the effectiveness

1568

01:00:15,829 --> 01:00:14,400

of public-private partnerships and how

1569

01:00:18,470 --> 01:00:15,839

to carry them out

1570

01:00:20,789 --> 01:00:18,480

the firm fixed price pay-for-performance

1571

01:00:23,990 --> 01:00:20,799

competitive principles embodied in the

1572

01:00:26,950 --> 01:00:24,000

cots programs allowed nasa to rapidly

1573

01:00:29,349 --> 01:00:26,960

yield two new spacecraft and two new

1574

01:00:31,349 --> 01:00:29,359

rockets capable of carrying cargo to the

1575

01:00:32,549 --> 01:00:31,359

international space station

1576

01:00:34,710 --> 01:00:32,559

these lessons should be applied to

1577

01:00:36,630 --> 01:00:34,720

mayor's america's space program beyond

1578

01:00:38,789 --> 01:00:36,640

low earth orbit including a new

1579

01:00:40,549 --> 01:00:38,799

competitive public-private partnership

1580

01:00:43,109 --> 01:00:40,559

model on the cots approach for deep

1581

01:00:45,510 --> 01:00:43,119

space exploration this would augment

1582

01:00:47,109 --> 01:00:45,520

budgets with private capital complement

1583

01:00:49,670 --> 01:00:47,119

existing technologies that are being

1584

01:00:51,829 --> 01:00:49,680

pursued and accelerate technologies for

1585

01:00:53,349 --> 01:00:51,839

new destinations in space

1586

01:00:55,270 --> 01:00:53,359

including deep space communications

1587

01:00:56,789 --> 01:00:55,280

networks and also landers on the moon

1588

01:00:58,230 --> 01:00:56,799

and mars

1589

01:00:59,510 --> 01:00:58,240

the council can also establish

1590

01:01:01,510 --> 01:00:59,520

directives that

1591

01:01:03,510 --> 01:01:01,520

achieve rapid government adoption of new

1592

01:01:05,750 --> 01:01:03,520

commercial capabilities like reusable

1593

01:01:07,910 --> 01:01:05,760

launch vehicles rapid and complete

1594

01:01:09,910 --> 01:01:07,920

reusability is the next great

1595

01:01:12,390 --> 01:01:09,920

advancement for space flight and will

1596

01:01:14,390 --> 01:01:12,400

fundamentally alter the economics and re

1597

01:01:15,990 --> 01:01:14,400

and access to space

1598

01:01:18,150 --> 01:01:16,000

finally the council could commit to

1599

01:01:20,309 --> 01:01:18,160

reforming modernizing and streamlining

1600

01:01:22,710 --> 01:01:20,319

federal regulations governing space

1601
01:01:24,950 --> 01:01:22,720
launch regulations written decades ago

1602
01:01:27,270 --> 01:01:24,960
must be updated to keep pace with the

1603
01:01:29,430 --> 01:01:27,280
new technologies and the high cadence of

1604
01:01:31,190 --> 01:01:29,440
launch from the united states if we want

1605
01:01:33,829 --> 01:01:31,200
a strong space launch industry here at

1606
01:01:35,670 --> 01:01:33,839
home mr vice president and members of

1607
01:01:37,270 --> 01:01:35,680
the council thank you so much for this

1608
01:01:40,309 --> 01:01:37,280
invitation and i look forward to your

1609
01:01:44,470 --> 01:01:42,870
uh thank you very much uh gwen great uh

1610
01:01:45,349 --> 01:01:44,480
great comments we appreciate it look

1611
01:01:48,150 --> 01:01:45,359
forward

1612
01:01:51,270 --> 01:01:48,160
uh to the dialogue that will follow

1613
01:01:53,349 --> 01:01:51,280

bob smith is ceo of blue origin and is

1614

01:01:54,950 --> 01:01:53,359

recognized and welcomed to the national

1615

01:01:57,109 --> 01:01:54,960

space council

1616

01:01:59,270 --> 01:01:57,119

thank you mr vice president members of

1617

01:02:01,190 --> 01:01:59,280

the national space council thank you for

1618

01:02:02,150 --> 01:02:01,200

the opportunity to speak before you

1619

01:02:04,390 --> 01:02:02,160

today

1620

01:02:06,230 --> 01:02:04,400

at blue origin our vision is to enable a

1621

01:02:07,990 --> 01:02:06,240

future where millions of people are

1622

01:02:09,910 --> 01:02:08,000

living and working in space

1623

01:02:12,549 --> 01:02:09,920

this vision was set forth by our founder

1624

01:02:14,630 --> 01:02:12,559

jeff bezos who as a five-year-old

1625

01:02:16,549 --> 01:02:14,640

watched neil armstrong and bless aldrin

1626
01:02:18,549 --> 01:02:16,559
walk on the moon

1627
01:02:19,589 --> 01:02:18,559
this event sparked his lifelong passion

1628
01:02:21,430 --> 01:02:19,599
for space

1629
01:02:23,990 --> 01:02:21,440
this passion is what all of us at blue

1630
01:02:25,829 --> 01:02:24,000
origin think about each and every day

1631
01:02:28,150 --> 01:02:25,839
i'm a child of the apollo era and saw

1632
01:02:29,270 --> 01:02:28,160
with my own eyes the immense progress we

1633
01:02:31,430 --> 01:02:29,280
made then

1634
01:02:33,109 --> 01:02:31,440
to accomplish things that were almost

1635
01:02:34,950 --> 01:02:33,119
unthinkable at the time

1636
01:02:36,710 --> 01:02:34,960
i am proud now to be part of leading

1637
01:02:38,390 --> 01:02:36,720
this organization forward

1638
01:02:40,710 --> 01:02:38,400

and representing the commercial space

1639

01:02:42,549 --> 01:02:40,720

industry's desire to work with the

1640

01:02:44,870 --> 01:02:42,559

government to see progress like this

1641

01:02:46,710 --> 01:02:44,880

once again in my lifetime

1642

01:02:48,870 --> 01:02:46,720

the traditional government-driven space

1643

01:02:52,710 --> 01:02:48,880

enterprise gave the u.s leadership in

1644

01:02:54,309 --> 01:02:52,720

space over the past 60 years

1645

01:02:56,150 --> 01:02:54,319

through the apollo program through the

1646

01:02:59,190 --> 01:02:56,160

space shuttle program the international

1647

01:03:02,069 --> 01:02:59,200

space station and our national security

1648

01:03:03,430 --> 01:03:02,079

capabilities which are unrivaled by any

1649

01:03:04,870 --> 01:03:03,440

other country

1650

01:03:06,870 --> 01:03:04,880

however we believe the future of the

1651
01:03:08,870 --> 01:03:06,880
united states leadership in space will

1652
01:03:10,870 --> 01:03:08,880
build on these civil and national

1653
01:03:13,430 --> 01:03:10,880
security accomplishments and they will

1654
01:03:15,589 --> 01:03:13,440
continue by driving economic activity

1655
01:03:17,349 --> 01:03:15,599
commercial innovation and human space

1656
01:03:19,589 --> 01:03:17,359
flight resulting in an economic

1657
01:03:21,510 --> 01:03:19,599
expansion into space on the way to

1658
01:03:22,710 --> 01:03:21,520
millions of people living and working in

1659
01:03:24,870 --> 01:03:22,720
space

1660
01:03:26,230 --> 01:03:24,880
the first step in making this happen is

1661
01:03:28,069 --> 01:03:26,240
lowering the cost

1662
01:03:30,549 --> 01:03:28,079
of access to space by building

1663
01:03:32,309 --> 01:03:30,559

operationally reusable launch systems

1664

01:03:34,789 --> 01:03:32,319

blue origin is working on this today

1665

01:03:36,390 --> 01:03:34,799

designing reusability in from the

1666

01:03:38,470 --> 01:03:36,400

beginning on all of our programs that

1667

01:03:40,950 --> 01:03:38,480

will take people and payloads to the

1668

01:03:42,549 --> 01:03:40,960

earth orbit the moon and beyond

1669

01:03:44,309 --> 01:03:42,559

we are investing significant private

1670

01:03:46,390 --> 01:03:44,319

capital in our programs that are making

1671

01:03:47,510 --> 01:03:46,400

great progress towards increasing access

1672

01:03:49,190 --> 01:03:47,520

to space

1673

01:03:51,589 --> 01:03:49,200

our new shepard vehicle

1674

01:03:53,270 --> 01:03:51,599

will take scientific payloads and people

1675

01:03:55,109 --> 01:03:53,280

into space where they will experience

1676

01:03:57,190 --> 01:03:55,119

weightlessness and

1677

01:03:59,510 --> 01:03:57,200

witness incredible views

1678

01:04:01,670 --> 01:03:59,520

new shepard is named after the first

1679

01:04:03,430 --> 01:04:01,680

american go to space alan shepard

1680

01:04:04,470 --> 01:04:03,440

and launches from our facility in west

1681

01:04:06,069 --> 01:04:04,480

texas

1682

01:04:07,670 --> 01:04:06,079

the next launch of new shepard will be

1683

01:04:09,510 --> 01:04:07,680

later this year

1684

01:04:11,270 --> 01:04:09,520

the advances in reusability that we have

1685

01:04:12,870 --> 01:04:11,280

developed with new shepard are making

1686

01:04:14,630 --> 01:04:12,880

their way into new glen

1687

01:04:17,270 --> 01:04:14,640

our orbital rocket that will launch from

1688

01:04:19,430 --> 01:04:17,280

historic launch complex 36 at cape

1689

01:04:21,349 --> 01:04:19,440

canaveral taking people and payloads to

1690

01:04:23,670 --> 01:04:21,359

low earth orbit and beyond

1691

01:04:25,349 --> 01:04:23,680

new glenn is named after the first

1692

01:04:27,829 --> 01:04:25,359

american to orbit the earth senator john

1693

01:04:29,910 --> 01:04:27,839

glenn our massive factory at the cape

1694

01:04:31,829 --> 01:04:29,920

where we build new glen is on track to

1695

01:04:33,750 --> 01:04:31,839

be completed by the end of the year

1696

01:04:35,990 --> 01:04:33,760

we've also invested in building our own

1697

01:04:37,910 --> 01:04:36,000

reusable engines to power our launch

1698

01:04:40,950 --> 01:04:37,920

vehicles and to benefit the great air

1699

01:04:42,710 --> 01:04:40,960

launch industry our be 3 engine which

1700

01:04:44,950 --> 01:04:42,720

launches new shepard to space is an

1701

01:04:46,789 --> 01:04:44,960

amazing advancement in engine technology

1702

01:04:50,549 --> 01:04:46,799

and has demonstrated remarkable throttle

1703

01:04:53,190 --> 01:04:50,559

ability and robustness of design

1704

01:04:54,710 --> 01:04:53,200

we will soon begin testing our be4

1705

01:04:56,549 --> 01:04:54,720

engine which will take new glenn to

1706

01:04:57,670 --> 01:04:56,559

space and is being developed in

1707

01:04:59,750 --> 01:04:57,680

partnership

1708

01:05:02,710 --> 01:04:59,760

with united launch alliance for the next

1709

01:05:05,990 --> 01:05:02,720

generation vehicle vulcan and will end

1710

01:05:07,109 --> 01:05:06,000

america's dependence on russian engines

1711

01:05:09,670 --> 01:05:07,119

this has been accomplished with

1712

01:05:12,150 --> 01:05:09,680

virtually all private money

1713

01:05:14,710 --> 01:05:12,160

the opportunity before you is to further

1714

01:05:16,069 --> 01:05:14,720

u.s leadership in space by ensuring that

1715

01:05:18,470 --> 01:05:16,079

the united states

1716

01:05:21,349 --> 01:05:18,480

drives the coming economic expansion in

1717

01:05:23,270 --> 01:05:21,359

space this can only be done through

1718

01:05:25,430 --> 01:05:23,280

public private partnerships

1719

01:05:27,190 --> 01:05:25,440

for example our new glenn launch vehicle

1720

01:05:29,349 --> 01:05:27,200

will be more capable than existing

1721

01:05:31,750 --> 01:05:29,359

launch vehicles flying today and can be

1722

01:05:33,829 --> 01:05:31,760

used not only for human space flight and

1723

01:05:36,549 --> 01:05:33,839

other commercial missions but also for

1724

01:05:38,309 --> 01:05:36,559

civil and national security payloads

1725

01:05:40,549 --> 01:05:38,319

therefore we are in early discussions

1726

01:05:43,190 --> 01:05:40,559

with the national security community and

1727

01:05:44,390 --> 01:05:43,200

nasa about how to certify new glenn for

1728

01:05:46,470 --> 01:05:44,400

their use

1729

01:05:48,710 --> 01:05:46,480

we also believe strongly that it is time

1730

01:05:50,549 --> 01:05:48,720

for america to return to the moon the

1731

01:05:52,150 --> 01:05:50,559

moon is a key step on the path to

1732

01:05:54,150 --> 01:05:52,160

long-term exploration of the solar

1733

01:05:56,950 --> 01:05:54,160

system and we have proposed the blue

1734

01:05:59,190 --> 01:05:56,960

moon lunar lander concept as a low-cost

1735

01:06:01,750 --> 01:05:59,200

cargo delivery system to enable nasa and

1736

01:06:04,150 --> 01:06:01,760

commercial activities on the moon blue

1737

01:06:06,150 --> 01:06:04,160

moon can be done within the next five

1738

01:06:09,109 --> 01:06:06,160

years and we are willing to invest

1739

01:06:11,270 --> 01:06:09,119

alongside nasa to make this happen

1740

01:06:13,430 --> 01:06:11,280

such public-private partnerships allow

1741

01:06:14,549 --> 01:06:13,440

the country to meet big objectives

1742

01:06:16,470 --> 01:06:14,559

rapidly

1743

01:06:18,950 --> 01:06:16,480

while also promoting more economic

1744

01:06:20,069 --> 01:06:18,960

development and u.s strategic leadership

1745

01:06:21,750 --> 01:06:20,079

in space

1746

01:06:24,789 --> 01:06:21,760

thank you for your time and i'm happy to

1747

01:06:28,309 --> 01:06:26,309

well thank you bob thank you for those

1748

01:06:30,630 --> 01:06:28,319

thoughtful comments i look forward to

1749

01:06:33,029 --> 01:06:30,640

our dialogue with the panel

1750

01:06:35,029 --> 01:06:33,039

mr fatih osman

1751

01:06:39,430 --> 01:06:35,039

of sierra nevada corporation is

1752

01:06:42,390 --> 01:06:40,710

good morning

1753

01:06:43,910 --> 01:06:42,400

i'd like to echo my colleagues in

1754

01:06:46,309 --> 01:06:43,920

thanking the vice president and the

1755

01:06:47,349 --> 01:06:46,319

council for the opportunity to address

1756

01:06:49,510 --> 01:06:47,359

you today

1757

01:06:51,670 --> 01:06:49,520

now is the time for bold action

1758

01:06:54,950 --> 01:06:51,680

i am fadi osman ceo of sierra nevada

1759

01:06:57,829 --> 01:06:54,960

corporation my wife erin osmond my real

1760

01:06:58,630 --> 01:06:57,839

boss who is also here sitting

1761

01:07:03,349 --> 01:06:58,640

is

1762

01:07:05,190 --> 01:07:03,359

sole owners

1763

01:07:07,029 --> 01:07:05,200

snc is a unique company we bring the

1764

01:07:09,190 --> 01:07:07,039

best of both worlds a reliable garment

1765

01:07:11,829 --> 01:07:09,200

contractor that challenges the status

1766

01:07:14,069 --> 01:07:11,839

quo with an entrepreneurial culture

1767

01:07:16,069 --> 01:07:14,079

erin and i are blessed to live the most

1768

01:07:17,910 --> 01:07:16,079

amazing american dream

1769

01:07:20,470 --> 01:07:17,920

we came to nevada from turkey as

1770

01:07:22,069 --> 01:07:20,480

graduate students in 1980s

1771

01:07:23,910 --> 01:07:22,079

and have been proud u.s citizens for

1772

01:07:25,349 --> 01:07:23,920

almost 30 years

1773

01:07:28,069 --> 01:07:25,359

we have established an innovative

1774

01:07:29,910 --> 01:07:28,079

business model we invest our own capital

1775

01:07:32,710 --> 01:07:29,920

and focus on agility speed and

1776

01:07:34,549 --> 01:07:32,720

affordability with that approach snc has

1777

01:07:36,309 --> 01:07:34,559

grown from 20 employees into a

1778

01:07:38,789 --> 01:07:36,319

multi-billion dollar business with over

1779

01:07:40,470 --> 01:07:38,799

3 000 people with facilities in 20

1780

01:07:42,789 --> 01:07:40,480

states

1781

01:07:44,390 --> 01:07:42,799

in addition to snc's core national

1782

01:07:46,470 --> 01:07:44,400

security business

1783

01:07:48,870 --> 01:07:46,480

we have 25 years of experience and

1784

01:07:51,190 --> 01:07:48,880

innovation in space from satellites to

1785

01:07:53,829 --> 01:07:51,200

rocket engines and more our products

1786

01:07:55,349 --> 01:07:53,839

have been part of 450 successful

1787

01:07:57,589 --> 01:07:55,359

missions to space

1788

01:07:59,589 --> 01:07:57,599

our dream chaser is the next generation

1789

01:08:01,510 --> 01:07:59,599

space shuttle technology

1790

01:08:03,349 --> 01:08:01,520

this multi-mission spacecraft has been

1791

01:08:05,270 --> 01:08:03,359

selected by nasa

1792

01:08:07,670 --> 01:08:05,280

to service the international space

1793

01:08:10,390 --> 01:08:07,680

station dreamchaser is the only

1794

01:08:12,390 --> 01:08:10,400

commercial low earth orbit reusable

1795

01:08:15,190 --> 01:08:12,400

lifting body vehicle

1796

01:08:17,669 --> 01:08:15,200

it can launch from many rockets it can

1797

01:08:19,269 --> 01:08:17,679

land on many commercial airports

1798

01:08:20,789 --> 01:08:19,279

it can do many missions including

1799

01:08:22,309 --> 01:08:20,799

international ones

1800

01:08:23,349 --> 01:08:22,319

like the one planned with the united

1801
01:08:25,829 --> 01:08:23,359
nations

1802
01:08:28,229 --> 01:08:25,839
giving 84 member countries affordable

1803
01:08:30,470 --> 01:08:28,239
access to space

1804
01:08:32,950 --> 01:08:30,480
the council is critical to driving a

1805
01:08:34,789 --> 01:08:32,960
unified strategy policy and vision to

1806
01:08:36,470 --> 01:08:34,799
lead in space i will encourage great

1807
01:08:38,470 --> 01:08:36,480
greater cooperation among the three

1808
01:08:40,789 --> 01:08:38,480
recognized space communities

1809
01:08:43,189 --> 01:08:40,799
civil commercial and national security

1810
01:08:45,349 --> 01:08:43,199
to leverage their combined resources for

1811
01:08:47,269 --> 01:08:45,359
commercial space we need to create an

1812
01:08:50,149 --> 01:08:47,279
environment that promotes investment

1813
01:08:51,829 --> 01:08:50,159

manages risk and creates opportunity

1814

01:08:53,590 --> 01:08:51,839

specifically i'll

1815

01:08:54,709 --> 01:08:53,600

ask the council to address the three

1816

01:08:57,349 --> 01:08:54,719

following

1817

01:08:59,590 --> 01:08:57,359

points first infrastructure

1818

01:09:01,510 --> 01:08:59,600

commercial space is booming

1819

01:09:03,030 --> 01:09:01,520

the u.s should lead the effort and

1820

01:09:05,990 --> 01:09:03,040

invest in the building essential

1821

01:09:08,229 --> 01:09:06,000

infrastructure the highways in space for

1822

01:09:10,229 --> 01:09:08,239

a strong space economy the right

1823

01:09:12,709 --> 01:09:10,239

policies and regulations can provide

1824

01:09:15,349 --> 01:09:12,719

oversight and accelerate capital to new

1825

01:09:17,030 --> 01:09:15,359

initiatives creating jobs and markets

1826

01:09:19,110 --> 01:09:17,040

with huge returns including new

1827

01:09:21,189 --> 01:09:19,120

scientific discoveries

1828

01:09:23,030 --> 01:09:21,199

second commercialization

1829

01:09:25,510 --> 01:09:23,040

the global commercial space market is

1830

01:09:28,229 --> 01:09:25,520

valued at over 335 billion dollars a

1831

01:09:30,470 --> 01:09:28,239

year the us has a unique opportunity to

1832

01:09:32,149 --> 01:09:30,480

establish a roadmap based on an open

1833

01:09:33,590 --> 01:09:32,159

architecture framework

1834

01:09:35,829 --> 01:09:33,600

that

1835

01:09:37,110 --> 01:09:35,839

fosters competition and affordability

1836

01:09:39,749 --> 01:09:37,120

this will provide an integrated

1837

01:09:41,829 --> 01:09:39,759

capability that can leverage

1838

01:09:43,910 --> 01:09:41,839

and service civil commercial and

1839

01:09:45,189 --> 01:09:43,920

national security

1840

01:09:46,630 --> 01:09:45,199

and international partners and

1841

01:09:48,550 --> 01:09:46,640

consortiums

1842

01:09:50,630 --> 01:09:48,560

incentives are critical as well to

1843

01:09:53,269 --> 01:09:50,640

stimulate the space economy and ensure

1844

01:09:55,830 --> 01:09:53,279

u.s global leadership for example like a

1845

01:09:57,510 --> 01:09:55,840

free trade zone a space economic zone

1846

01:09:58,790 --> 01:09:57,520

could be created at the international

1847

01:10:02,229 --> 01:09:58,800

space station

1848

01:10:04,229 --> 01:10:02,239

and aboard u.s flag space vehicles

1849

01:10:06,310 --> 01:10:04,239

third and final continuation of the

1850

01:10:08,149 --> 01:10:06,320

international space station the u.s

1851

01:10:10,550 --> 01:10:08,159

should make the decision now

1852

01:10:12,790 --> 01:10:10,560

to continue operating the iss through

1853

01:10:14,630 --> 01:10:12,800

the end of the next decade this was a

1854

01:10:16,870 --> 01:10:14,640

hard lesson learned when we retired the

1855

01:10:19,430 --> 01:10:16,880

space shuttle

1856

01:10:21,350 --> 01:10:19,440

the iss is considered to be a stepping

1857

01:10:23,590 --> 01:10:21,360

stone for exploration

1858

01:10:26,229 --> 01:10:23,600

and we need to preserve it to open new

1859

01:10:29,350 --> 01:10:26,239

doors into space and go to deep space

1860

01:10:31,990 --> 01:10:29,360

in closing let me address the future

1861

01:10:33,990 --> 01:10:32,000

this administration is focused on space

1862

01:10:36,870 --> 01:10:34,000

this will light a fire in our national

1863

01:10:39,189 --> 01:10:36,880

imagination and inspire our children

1864

01:10:41,189 --> 01:10:39,199

after all space is multi-generational

1865

01:10:42,830 --> 01:10:41,199

and a bridge to bring cultures and

1866

01:10:45,669 --> 01:10:42,840

worlds

1867

01:10:49,510 --> 01:10:45,679

together for aaron and me

1868

01:10:51,510 --> 01:10:49,520

snc for enemy our own mission statement

1869

01:10:54,630 --> 01:10:51,520

reflects this focus

1870

01:10:57,110 --> 01:10:54,640

dream innovate inspire and empower the

1871

01:10:59,910 --> 01:10:57,120

next generation to transform humanity

1872

01:11:02,229 --> 01:10:59,920

through technology and imagination

1873

01:11:04,470 --> 01:11:02,239

i want to thank president trump and vice

1874

01:11:06,470 --> 01:11:04,480

president pence for reinstating the

1875

01:11:07,990 --> 01:11:06,480

national space council and reigniting

1876

01:11:10,470 --> 01:11:08,000

the dream

1877

01:11:12,709 --> 01:11:10,480

we need this kind of bold action and we

1878

01:11:14,310 --> 01:11:12,719

stand ready to help you bring speed and

1879

01:11:15,590 --> 01:11:14,320

agility space

1880

01:11:22,310 --> 01:11:15,600

thank you again and i look forward to

1881

01:11:27,270 --> 01:11:24,950

well thank you all

1882

01:11:29,510 --> 01:11:27,280

uh thank you all for your words more

1883

01:11:31,350 --> 01:11:29,520

importantly thank you for your uh

1884

01:11:33,990 --> 01:11:31,360

inspiring example

1885

01:11:35,830 --> 01:11:34,000

uh of american ingenuity and creativity

1886

01:11:38,149 --> 01:11:35,840

uh i know

1887

01:11:40,709 --> 01:11:38,159

we're all we're all moved and millions

1888

01:11:42,870 --> 01:11:40,719

of americans follow with great interest

1889

01:11:44,950 --> 01:11:42,880

uh of these companies and and all that

1890

01:11:47,990 --> 01:11:44,960

you've done and uh

1891

01:11:50,149 --> 01:11:48,000

we're honored to have you here

1892

01:11:52,830 --> 01:11:50,159

and uh let me uh the chair will ask

1893

01:11:56,870 --> 01:11:52,840

a very quick question

1894

01:12:00,550 --> 01:11:56,880

um gwen you talked about regulatory uh

1895

01:12:01,990 --> 01:12:00,560

reform uh fati you talked about um

1896

01:12:04,870 --> 01:12:02,000

uh the kind of regulation that would

1897

01:12:07,430 --> 01:12:04,880

create infrastructure in space a space a

1898

01:12:09,510 --> 01:12:07,440

highway bob you reflected

1899

01:12:11,590 --> 01:12:09,520

on on the same

1900

01:12:12,870 --> 01:12:11,600

making sure that the u.s drives economic

1901

01:12:14,550 --> 01:12:12,880

expansion

1902

01:12:16,830 --> 01:12:14,560

in space can

1903

01:12:18,550 --> 01:12:16,840

anyone on the panel speak briefly to

1904

01:12:20,149 --> 01:12:18,560

[Music]

1905

01:12:27,270 --> 01:12:20,159

what

1906

01:12:29,350 --> 01:12:27,280

omb commerce transportation

1907

01:12:31,669 --> 01:12:29,360

in the area of regulatory reform and i

1908

01:12:33,350 --> 01:12:31,679

believe the testimony was that we we

1909

01:12:35,270 --> 01:12:33,360

have not updated

1910

01:12:37,030 --> 01:12:35,280

regulations with regard to space since

1911

01:12:40,550 --> 01:12:37,040

the days of apollo

1912

01:12:41,990 --> 01:12:40,560

and gwen since you raised the issue

1913

01:12:42,870 --> 01:12:42,000

can each of you speak to that and then

1914

01:12:44,310 --> 01:12:42,880

i'll go to the secretary of

1915

01:12:45,990 --> 01:12:44,320

transportation

1916

01:12:48,470 --> 01:12:46,000

we actually have a detailed white paper

1917

01:12:50,950 --> 01:12:48,480

with some recommended approaches but

1918

01:12:53,590 --> 01:12:50,960

just to give a kind of a very top level

1919

01:12:55,430 --> 01:12:53,600

um we are working well with the faa to

1920

01:12:57,990 --> 01:12:55,440

get our launches licensed however i

1921

01:12:59,910 --> 01:12:58,000

think it requires heroics uh when you

1922

01:13:01,510 --> 01:12:59,920

make any changes to those launch license

1923

01:13:04,550 --> 01:13:01,520

when you have to change a launch pad

1924

01:13:06,709 --> 01:13:04,560

from 40 to 39a or back to 40 you have to

1925

01:13:08,310 --> 01:13:06,719

basically apply for a new license so if

1926

01:13:10,950 --> 01:13:08,320

we could look at the

1927

01:13:13,830 --> 01:13:10,960

the cfr right now and really streamline

1928

01:13:15,990 --> 01:13:13,840

the licensing process to allow for a

1929

01:13:17,910 --> 01:13:16,000

wrap much more rapid cadence of launch

1930

01:13:19,750 --> 01:13:17,920

as we're starting to see this share

1931

01:13:21,430 --> 01:13:19,760

and that will only continue to grow so

1932

01:13:23,350 --> 01:13:21,440

we need to streamline the process we

1933

01:13:26,390 --> 01:13:23,360

need to shorten the timelines

1934

01:13:29,350 --> 01:13:26,400

it takes six months then you reapply 90

1935

01:13:31,350 --> 01:13:29,360

days 30 days and then 15 days to file a

1936

01:13:33,590 --> 01:13:31,360

flight plan i think if the airline

1937

01:13:36,310 --> 01:13:33,600

industry had to follow such regulations

1938

01:13:37,669 --> 01:13:36,320

maybe they'd change faster um but

1939

01:13:38,870 --> 01:13:37,679

those kinds of things the regulations

1940

01:13:40,550 --> 01:13:38,880

are there but they definitely need to be

1941

01:13:42,870 --> 01:13:40,560

streamlined in order to facilitate the

1942

01:13:46,790 --> 01:13:42,880

very rapid cadence of launch

1943

01:13:46,800 --> 01:13:51,510

a little technical problem yeah

1944

01:13:55,750 --> 01:13:54,229

there we go sorry about that so the

1945

01:13:57,270 --> 01:13:55,760

fundamental i had the same problem did

1946

01:13:59,750 --> 01:13:57,280

you all right thank you

1947

01:14:01,350 --> 01:13:59,760

well i would just echo what gwen largely

1948

01:14:04,390 --> 01:14:01,360

said but put a finer point on it it

1949

01:14:05,910 --> 01:14:04,400

really comes down to reusability

1950

01:14:08,470 --> 01:14:05,920

that is the difference when you have

1951

01:14:10,149 --> 01:14:08,480

expendable launch capability there are

1952

01:14:12,229 --> 01:14:10,159

existing frameworks by which to handle

1953

01:14:13,830 --> 01:14:12,239

that but once you get into reusability

1954

01:14:16,070 --> 01:14:13,840

now you're into a different regulatory

1955

01:14:18,310 --> 01:14:16,080

regime and so we actually now have

1956

01:14:20,229 --> 01:14:18,320

duplicative uh overlap between the

1957

01:14:22,229 --> 01:14:20,239

united states air force and what we also

1958

01:14:23,830 --> 01:14:22,239

see from the faa so this is a good

1959

01:14:25,590 --> 01:14:23,840

opportunity for actually to go change

1960

01:14:27,350 --> 01:14:25,600

that regulatory environment because

1961

01:14:28,709 --> 01:14:27,360

reusability will be the thing that

1962

01:14:30,630 --> 01:14:28,719

actually changes the economics of

1963

01:14:33,590 --> 01:14:30,640

getting to space and having millions of

1964

01:14:36,950 --> 01:14:35,030

in terms of your question for

1965

01:14:38,550 --> 01:14:36,960

infrastructure i think uh

1966

01:14:39,910 --> 01:14:38,560

i was excited when i heard about the

1967

01:14:40,950 --> 01:14:39,920

trillion dollar infrastructure

1968

01:14:42,390 --> 01:14:40,960

investment

1969

01:14:44,310 --> 01:14:42,400

that was promised

1970

01:14:45,990 --> 01:14:44,320

just a fraction of that could be

1971

01:14:47,590 --> 01:14:46,000

invested in space

1972

01:14:49,750 --> 01:14:47,600

as well as the earth i mean you build

1973

01:14:51,110 --> 01:14:49,760

roads bridges and

1974

01:14:52,149 --> 01:14:51,120

highways

1975

01:14:54,310 --> 01:14:52,159

but

1976

01:14:56,550 --> 01:14:54,320

you can envision to

1977

01:14:58,630 --> 01:14:56,560

have a toll-free road

1978

01:15:00,229 --> 01:14:58,640

highway in space that we allow other

1979

01:15:03,030 --> 01:15:00,239

people

1980

01:15:05,910 --> 01:15:03,040

many commercial companies creating jobs

1981

01:15:08,070 --> 01:15:05,920

going out there giving them access

1982

01:15:10,149 --> 01:15:08,080

lower the cost of access which our

1983

01:15:13,510 --> 01:15:10,159

colleagues are doing a great job in

1984

01:15:15,110 --> 01:15:13,520

terms of uh inexpensive rockets but uh

1985

01:15:16,630 --> 01:15:15,120

additional infrastructure investment if

1986

01:15:17,830 --> 01:15:16,640

it is made then eventually you can

1987

01:15:20,149 --> 01:15:17,840

charge at all

1988

01:15:22,229 --> 01:15:20,159

and it will be self-sustaining so i i

1989

01:15:24,070 --> 01:15:22,239

think there's a lot of job creative

1990

01:15:26,709 --> 01:15:24,080

creation potential here if we lean

1991

01:15:29,270 --> 01:15:26,719

forward and and lead and reusability

1992

01:15:31,189 --> 01:15:29,280

will be key to lower the access space

1993

01:15:32,790 --> 01:15:31,199

shuttle is the best example sitting here

1994

01:15:35,030 --> 01:15:32,800

like our dream chaser

1995

01:15:36,870 --> 01:15:35,040

has been used over and over and uh i

1996

01:15:39,110 --> 01:15:36,880

think that's eventually going to be like

1997

01:15:41,510 --> 01:15:39,120

airplanes airlines

1998

01:15:43,270 --> 01:15:41,520

carrying people back and forth

1999

01:15:46,070 --> 01:15:43,280

well thank you for that uh secretary of

2000

01:15:48,390 --> 01:15:46,080

transportation elena

2001

01:15:49,110 --> 01:15:48,400

hey gwen great to see you thank you bob

2002

01:15:52,470 --> 01:15:49,120

and

2003

01:15:55,030 --> 01:15:52,480

remarks as well

2004

01:15:57,189 --> 01:15:55,040

gwen it was so interesting to visit your

2005

01:15:59,590 --> 01:15:57,199

facilities out in los angeles

2006

01:16:00,709 --> 01:15:59,600

it was really like a visit to the future

2007

01:16:02,790 --> 01:16:00,719

you know one of the most interesting

2008

01:16:06,550 --> 01:16:02,800

potential applications of commercial

2009

01:16:10,630 --> 01:16:06,560

space is this idea of flying passengers

2010

01:16:12,550 --> 01:16:10,640

like to any city on earth in 30 minutes

2011

01:16:14,470 --> 01:16:12,560

that that sounds like something you know

2012

01:16:16,149 --> 01:16:14,480

that would completely obviously

2013

01:16:18,550 --> 01:16:16,159

revolutionize long distance

2014

01:16:20,630 --> 01:16:18,560

transportation so can you share with us

2015

01:16:24,550 --> 01:16:20,640

a little bit as to what the vision is

2016

01:16:27,350 --> 01:16:24,560

and how this new future would look

2017

01:16:30,149 --> 01:16:27,360

thank you madam secretary last week

2018

01:16:32,470 --> 01:16:30,159

elon announced uh or basically gave an

2019

01:16:33,830 --> 01:16:32,480

update on the big falcon rocket program

2020

01:16:36,070 --> 01:16:33,840

big falcon rocket and big falcon

2021

01:16:38,070 --> 01:16:36,080

spaceship that program was meant to

2022

01:16:39,750 --> 01:16:38,080

complement the existing launch vehicle

2023

01:16:41,750 --> 01:16:39,760

suite that we have which is falcon 9

2024

01:16:43,189 --> 01:16:41,760

which is flying regularly now falcon

2025

01:16:46,709 --> 01:16:43,199

heavy which will start flying very

2026

01:16:48,390 --> 01:16:46,719

shortly and then the the bfr system

2027

01:16:50,390 --> 01:16:48,400

complements it and gets us through the

2028

01:16:53,590 --> 01:16:50,400

full suite of national security space

2029

01:16:55,910 --> 01:16:53,600

launch it also enables much larger

2030

01:16:58,550 --> 01:16:55,920

passenger carrying vehicles the dragon

2031

01:16:59,669 --> 01:16:58,560

spacecraft which we will fly

2032

01:17:01,030 --> 01:16:59,679

shortly

2033

01:17:03,030 --> 01:17:01,040

for crew

2034

01:17:05,350 --> 01:17:03,040

can carry up to seven people for nasa

2035

01:17:07,510 --> 01:17:05,360

we're flying four people bfr is planned

2036

01:17:08,709 --> 01:17:07,520

to fly hundreds of people both to low

2037

01:17:11,189 --> 01:17:08,719

earth orbit

2038

01:17:14,229 --> 01:17:11,199

our ultimate destination is mars but

2039

01:17:16,070 --> 01:17:14,239

that system is being designed also to do

2040

01:17:17,990 --> 01:17:16,080

kind of earth hops and those are some of

2041

01:17:23,590 --> 01:17:18,000

the first tests that you'll actually see

2042

01:17:27,910 --> 01:17:25,350

others on the panel

2043

01:17:31,030 --> 01:17:27,920

to the overall theme

2044

01:17:32,870 --> 01:17:31,040

you had actually a contract from far

2045

01:17:34,390 --> 01:17:32,880

east country in terms of transporting

2046

01:17:37,270 --> 01:17:34,400

from

2047

01:17:39,510 --> 01:17:37,280

indonesia to puerto rico

2048

01:17:41,430 --> 01:17:39,520

we did a study several million dollars

2049

01:17:42,709 --> 01:17:41,440

and that's a great possibility it was

2050

01:17:45,830 --> 01:17:42,719

taking about

2051
01:17:48,070 --> 01:17:45,840
45 minutes a very short time it's

2052
01:17:49,669 --> 01:17:48,080
expensive right now but i think if you

2053
01:17:51,830 --> 01:17:49,679
look into the future it will be

2054
01:17:52,709 --> 01:17:51,840
affordable

2055
01:17:55,590 --> 01:17:52,719
uh

2056
01:17:57,270 --> 01:17:55,600
thank you madam secretary anything else

2057
01:18:08,060 --> 01:17:57,280
well good uh let me go to the secretary

2058
01:18:08,070 --> 01:18:18,630
[Music]

2059
01:18:27,990 --> 01:18:20,790
through noaa operates

2060
01:18:31,270 --> 01:18:28,000
satellites 11 for civil use

2061
01:18:33,590 --> 01:18:31,280
mostly weather and and earth mapping and

2062
01:18:36,470 --> 01:18:33,600
five for the air force

2063
01:18:38,149 --> 01:18:36,480

and we've had a lot of prop partnerships

2064

01:18:41,510 --> 01:18:38,159

with other countries and with some

2065

01:18:44,470 --> 01:18:41,520

private sector and i've been intrigued

2066

01:18:47,030 --> 01:18:44,480

that in low gravity and no gravity

2067

01:18:49,990 --> 01:18:47,040

environments materials take on different

2068

01:18:52,790 --> 01:18:50,000

properties from what they have here on

2069

01:18:55,750 --> 01:18:52,800

earth and i wonder is that an area that

2070

01:18:57,350 --> 01:18:55,760

you think is ripe for commercialization

2071

01:19:00,310 --> 01:18:57,360

or are there other

2072

01:19:02,550 --> 01:19:00,320

segments of space that are more ripe so

2073

01:19:05,270 --> 01:19:02,560

that we really can have public-private

2074

01:19:07,669 --> 01:19:05,280

partnerships in meaningful dollars

2075

01:19:09,510 --> 01:19:07,679

because so far the monies we've gotten

2076

01:19:12,790 --> 01:19:09,520

really haven't been big dollars in the

2077

01:19:18,630 --> 01:19:15,270

can i answer that

2078

01:19:20,790 --> 01:19:18,640

that's a very exciting area because

2079

01:19:22,870 --> 01:19:20,800

we have so many requests

2080

01:19:25,189 --> 01:19:22,880

as part of our commercialization of the

2081

01:19:27,910 --> 01:19:25,199

dream chaser program outside of nasa

2082

01:19:29,830 --> 01:19:27,920

from pharmaceutical companies and

2083

01:19:32,229 --> 01:19:29,840

building new materials in space growing

2084

01:19:34,550 --> 01:19:32,239

crystals that are not possible under

2085

01:19:36,390 --> 01:19:34,560

earth conditions but microgravity allows

2086

01:19:38,149 --> 01:19:36,400

you to do that so there's so many

2087

01:19:40,310 --> 01:19:38,159

possible industrial

2088

01:19:42,070 --> 01:19:40,320

potential including 3d printing in space

2089

01:19:43,590 --> 01:19:42,080

that can allow you to do other things

2090

01:19:46,070 --> 01:19:43,600

that you couldn't do

2091

01:19:48,149 --> 01:19:46,080

industrially on earth so it is a very

2092

01:19:50,550 --> 01:19:48,159

exciting area that i believe it's

2093

01:19:52,950 --> 01:19:50,560

going to be a big economic stimulus

2094

01:19:54,709 --> 01:19:52,960

eventually

2095

01:19:56,149 --> 01:19:54,719

i would just add that if you look

2096

01:19:57,590 --> 01:19:56,159

broadly within the

2097

01:19:59,270 --> 01:19:57,600

what the commercial activities are going

2098

01:20:01,270 --> 01:19:59,280

to be

2099

01:20:02,630 --> 01:20:01,280

a continuation of what we're doing today

2100

01:20:04,310 --> 01:20:02,640

is very much what's going to happen in

2101
01:20:06,229 --> 01:20:04,320
the near term so we're going to have

2102
01:20:07,430 --> 01:20:06,239
observation satellites and communication

2103
01:20:09,830 --> 01:20:07,440
satellites that's obviously going to be

2104
01:20:12,149 --> 01:20:09,840
a key commercial customer but the next

2105
01:20:14,229 --> 01:20:12,159
one for blue origin is going to be space

2106
01:20:15,430 --> 01:20:14,239
tourism so within the next 18 months

2107
01:20:17,430 --> 01:20:15,440
we're going to be launching humans into

2108
01:20:18,950 --> 01:20:17,440
space and this won't be

2109
01:20:20,629 --> 01:20:18,960
astronauts people that we've been

2110
01:20:21,750 --> 01:20:20,639
trained and specialized within an area

2111
01:20:24,310 --> 01:20:21,760
but these are going to be everyday

2112
01:20:26,470 --> 01:20:24,320
citizens um so that that by itself is

2113
01:20:28,149 --> 01:20:26,480

going to open up new ways of actually

2114

01:20:30,390 --> 01:20:28,159

thinking about commerce into space was

2115

01:20:32,470 --> 01:20:30,400

going to be very exciting beyond that as

2116

01:20:34,629 --> 01:20:32,480

we reduce the overall

2117

01:20:37,270 --> 01:20:34,639

cost of getting to space many of those

2118

01:20:39,350 --> 01:20:37,280

things come to play such as space power

2119

01:20:40,950 --> 01:20:39,360

manufacturing in space and using a lot

2120

01:20:43,270 --> 01:20:40,960

of and exploiting a lot of the resources

2121

01:20:45,189 --> 01:20:43,280

that are actually in space today so i

2122

01:20:46,470 --> 01:20:45,199

think once we get to those

2123

01:20:47,669 --> 01:20:46,480

first three levels then we're going to

2124

01:20:49,510 --> 01:20:47,679

be able to actually go a little bit

2125

01:20:51,430 --> 01:20:49,520

further and faster in terms of actually

2126
01:20:54,790 --> 01:20:51,440
getting higher economic activity in that

2127
01:20:58,390 --> 01:20:56,790
i do believe strongly that once you put

2128
01:21:02,310 --> 01:20:58,400
people

2129
01:21:03,990 --> 01:21:02,320
orbit and beyond the space enterprise

2130
01:21:06,709 --> 01:21:04,000
will proliferate in ways that we can't

2131
01:21:08,550 --> 01:21:06,719
even imagine right now

2132
01:21:10,550 --> 01:21:08,560
very well so thank you mr secretary if

2133
01:21:13,189 --> 01:21:10,560
you have nothing else

2134
01:21:13,199 --> 01:21:16,790
just been shut off again

2135
01:21:20,870 --> 01:21:19,030
that that was my big set of questions

2136
01:21:23,590 --> 01:21:20,880
the other one though was

2137
01:21:25,750 --> 01:21:23,600
when we have international partnerships

2138
01:21:29,030 --> 01:21:25,760

how do you modulate it so that we make

2139

01:21:31,510 --> 01:21:29,040

sure we keep control and we keep our

2140

01:21:36,070 --> 01:21:31,520

leadership position as opposed to

2141

01:21:41,189 --> 01:21:38,550

secretary tillerson has a very robust

2142

01:21:44,070 --> 01:21:41,199

set of rules called itar which prevents

2143

01:21:46,149 --> 01:21:44,080

the proliferation of technology to

2144

01:21:48,390 --> 01:21:46,159

countries uh outside the united states

2145

01:21:52,149 --> 01:21:48,400

no no i didn't mean the export of

2146

01:21:55,189 --> 01:21:52,159

technology we have bis so i'm well aware

2147

01:21:58,950 --> 01:21:55,199

of the limits on that i was talking

2148

01:22:02,310 --> 01:21:58,960

about if somebody pays very small rent

2149

01:22:04,550 --> 01:22:02,320

to use a space on a space station

2150

01:22:06,390 --> 01:22:04,560

and develops a product how do we get

2151
01:22:08,390 --> 01:22:06,400
some benefit out of it rather than it

2152
01:22:13,350 --> 01:22:08,400
being the third party or the

2153
01:22:17,189 --> 01:22:15,270
well if i i can try to answer that

2154
01:22:18,950 --> 01:22:17,199
because we are right now in the process

2155
01:22:20,629 --> 01:22:18,960
of working with united nations as i

2156
01:22:24,470 --> 01:22:20,639
referred earlier they signed an

2157
01:22:26,629 --> 01:22:24,480
agreement with us to the mission in 2021

2158
01:22:28,550 --> 01:22:26,639
with 84 countries who cannot afford

2159
01:22:30,390 --> 01:22:28,560
access to space there are a lot of

2160
01:22:32,790 --> 01:22:30,400
universities and

2161
01:22:35,030 --> 01:22:32,800
experimentation lined up to to be

2162
01:22:37,830 --> 01:22:35,040
included in that mission everybody pays

2163
01:22:38,709 --> 01:22:37,840

a small part to be a part of that but we

2164

01:22:41,510 --> 01:22:38,719

are

2165

01:22:43,750 --> 01:22:41,520

managing

2166

01:22:45,750 --> 01:22:43,760

who can get on there what's going to be

2167

01:22:48,390 --> 01:22:45,760

the outcome ip management rights and

2168

01:22:50,390 --> 01:22:48,400

those are evolving but we have a

2169

01:22:52,070 --> 01:22:50,400

tangible example right now right around

2170

01:22:53,669 --> 01:22:52,080

the corner for that mission that's going

2171

01:22:55,189 --> 01:22:53,679

to be very interesting to prove that but

2172

01:22:57,110 --> 01:22:55,199

i am excited because it's the u.s

2173

01:22:58,870 --> 01:22:57,120

leadership it's our airplane

2174

01:23:00,870 --> 01:22:58,880

american space plane

2175

01:23:03,110 --> 01:23:00,880

taking these nations and experiments in

2176

01:23:05,830 --> 01:23:03,120

space so we will have

2177

01:23:07,830 --> 01:23:05,840

more say on this than if he left let

2178

01:23:09,590 --> 01:23:07,840

somebody else do like chinese set up a

2179

01:23:15,110 --> 01:23:09,600

space station free access and everybody

2180

01:23:20,070 --> 01:23:18,070

thank you thank you mr secretary um

2181

01:23:22,149 --> 01:23:20,080

recognize the secretary of state and

2182

01:23:23,590 --> 01:23:22,159

then a wrap up question from the

2183

01:23:25,590 --> 01:23:23,600

director

2184

01:23:27,590 --> 01:23:25,600

of omb before we move on to our final

2185

01:23:29,110 --> 01:23:27,600

panel and i will say gwen

2186

01:23:30,390 --> 01:23:29,120

that the secretary of state would

2187

01:23:36,629 --> 01:23:30,400

greatly welcome

2188

01:23:40,310 --> 01:23:38,310

30 minutes to destinations around the

2189

01:23:41,830 --> 01:23:40,320

world would be great mr secretary i'm

2190

01:23:44,070 --> 01:23:41,840

all in

2191

01:23:46,070 --> 01:23:44,080

uh kind of picking up on

2192

01:23:48,629 --> 01:23:46,080

several comments

2193

01:23:50,709 --> 01:23:48,639

around regulatory obstacles but i want

2194

01:23:52,070 --> 01:23:50,719

to go extend that a bit to international

2195

01:23:55,510 --> 01:23:52,080

space law

2196

01:23:57,669 --> 01:23:55,520

and how it

2197

01:23:59,830 --> 01:23:57,679

where it stands today how it develops to

2198

01:24:01,510 --> 01:23:59,840

accommodate how rapidly

2199

01:24:03,910 --> 01:24:01,520

the use of space

2200

01:24:05,990 --> 01:24:03,920

is changing from a commercial

2201

01:24:08,550 --> 01:24:06,000

perspective and

2202

01:24:10,470 --> 01:24:08,560

whether you are encountering obstacles

2203

01:24:12,870 --> 01:24:10,480

from other countries

2204

01:24:14,550 --> 01:24:12,880

in in this space

2205

01:24:17,350 --> 01:24:14,560

in this area of the development of

2206

01:24:19,590 --> 01:24:17,360

international space law and what how do

2207

01:24:22,470 --> 01:24:19,600

we need to be thinking about that from

2208

01:24:24,470 --> 01:24:22,480

our standpoint of diplomacy

2209

01:24:26,470 --> 01:24:24,480

foreign policy

2210

01:24:30,070 --> 01:24:26,480

because obviously we want to create the

2211

01:24:32,470 --> 01:24:30,080

conditions that allow our u.s commercial

2212

01:24:34,709 --> 01:24:32,480

entities to compete and to thrive

2213

01:24:36,950 --> 01:24:34,719

maintain that leadership position regain

2214

01:24:38,550 --> 01:24:36,960

that leadership position so

2215

01:24:41,430 --> 01:24:38,560

kind of pushing this regulatory

2216

01:24:44,470 --> 01:24:41,440

environment out in to now the space

2217

01:24:46,149 --> 01:24:44,480

environment are there areas of concern

2218

01:24:47,430 --> 01:24:46,159

you can identify are obstacles you're

2219

01:24:48,870 --> 01:24:47,440

encountering

2220

01:24:53,750 --> 01:24:48,880

that would be helpful for us to

2221

01:24:58,790 --> 01:24:57,030

i believe with the movement to go beyond

2222

01:25:00,470 --> 01:24:58,800

earth orbit

2223

01:25:03,350 --> 01:25:00,480

the faa is

2224

01:25:05,990 --> 01:25:03,360

undertaking or looking at ways of

2225

01:25:08,709 --> 01:25:06,000

regulating that activity and i wouldn't

2226

01:25:10,310 --> 01:25:08,719

say that we've had any um any issues yet

2227

01:25:11,910 --> 01:25:10,320

but know that there are that these

2228

01:25:13,270 --> 01:25:11,920

things are coming

2229

01:25:15,910 --> 01:25:13,280

and that we will have to have a

2230

01:25:17,830 --> 01:25:15,920

regulatory regime that does cover um

2231

01:25:20,310 --> 01:25:17,840

private missions to the moon private

2232

01:25:22,629 --> 01:25:20,320

missions to mars as well so my guess is

2233

01:25:25,270 --> 01:25:22,639

we are kind of just starting that

2234

01:25:27,990 --> 01:25:25,280

journey and we will be working hopefully

2235

01:25:30,229 --> 01:25:28,000

very closely to make sure that the

2236

01:25:32,229 --> 01:25:30,239

regulatory regime is there for us to do

2237

01:25:35,510 --> 01:25:32,239

work our good work in a very rapid

2238

01:25:39,590 --> 01:25:37,270

i would just add that

2239

01:25:41,430 --> 01:25:39,600

a regular review of what the export

2240

01:25:43,430 --> 01:25:41,440

regime is between department of commerce

2241

01:25:45,350 --> 01:25:43,440

department of state is always

2242

01:25:47,110 --> 01:25:45,360

a good thing to go do those tend to get

2243

01:25:49,669 --> 01:25:47,120

locked in for long periods of time as

2244

01:25:51,270 --> 01:25:49,679

technology advances getting that update

2245

01:25:52,870 --> 01:25:51,280

on a regular basis i think is very

2246

01:25:54,870 --> 01:25:52,880

valuable allows us to actually

2247

01:25:56,709 --> 01:25:54,880

understand where that sharp line is

2248

01:25:59,030 --> 01:25:56,719

because at blue we all tell everyone to

2249

01:26:01,270 --> 01:25:59,040

take one big step away from that red

2250

01:26:02,950 --> 01:26:01,280

line but we want to make sure that we

2251
01:26:05,590 --> 01:26:02,960
actually are doing whatever we can do to

2252
01:26:07,189 --> 01:26:05,600
actually spur commerce second thing to

2253
01:26:08,629 --> 01:26:07,199
to your question is really around the

2254
01:26:10,629 --> 01:26:08,639
outer space treaty the outer space

2255
01:26:12,550 --> 01:26:10,639
treaty is i think a good framework that

2256
01:26:14,390 --> 01:26:12,560
we have today i think it supports what

2257
01:26:15,830 --> 01:26:14,400
we want to go do in the future i think

2258
01:26:17,270 --> 01:26:15,840
there are details that have to be worked

2259
01:26:19,270 --> 01:26:17,280
out on that but that's a discussion that

2260
01:26:20,709 --> 01:26:19,280
i think we can go on as we get closer to

2261
01:26:23,590 --> 01:26:20,719
some of those actually becoming an

2262
01:26:25,750 --> 01:26:23,600
impediment

2263
01:26:27,990 --> 01:26:25,760

i'll just add to that uh

2264

01:26:30,470 --> 01:26:28,000

one quick point that uh it goes back to

2265

01:26:32,149 --> 01:26:30,480

our leadership u.s leadership i think

2266

01:26:34,390 --> 01:26:32,159

right now for instance my company has

2267

01:26:36,950 --> 01:26:34,400

ten international agreements with esa

2268

01:26:39,110 --> 01:26:36,960

jax and everybody else to do this and

2269

01:26:40,470 --> 01:26:39,120

and a lot of them want to come here and

2270

01:26:44,390 --> 01:26:40,480

we want to come to the united states to

2271

01:26:47,270 --> 01:26:44,400

create jobs so to allow them

2272

01:26:50,070 --> 01:26:47,280

to be able to establish here and work

2273

01:26:51,669 --> 01:26:50,080

jointly together to go to outer space

2274

01:26:54,229 --> 01:26:51,679

and i will say that we will leverage

2275

01:26:56,390 --> 01:26:54,239

these agreements with esa and

2276

01:26:57,189 --> 01:26:56,400

canadian space agency and jaxa and other

2277

01:26:59,510 --> 01:26:57,199

ones

2278

01:27:01,990 --> 01:26:59,520

to be able to keep our leadership and

2279

01:27:04,149 --> 01:27:02,000

other countries will have to follow so

2280

01:27:07,030 --> 01:27:04,159

i think there is room for uh improvement

2281

01:27:10,149 --> 01:27:08,870

thank you mr secretary and uh director

2282

01:27:12,390 --> 01:27:10,159

of office management and budget mick

2283

01:27:14,709 --> 01:27:12,400

mulvaney real briefly and i want to stay

2284

01:27:16,070 --> 01:27:14,719

in the regulatory environment here for a

2285

01:27:17,510 --> 01:27:16,080

second which you folks may not be aware

2286

01:27:19,750 --> 01:27:17,520

of is that the vice president presided

2287

01:27:21,110 --> 01:27:19,760

over a deregulatory day just this week

2288

01:27:22,870 --> 01:27:21,120

so you've sort of come to the right

2289

01:27:24,310 --> 01:27:22,880

group

2290

01:27:26,629 --> 01:27:24,320

and i'm fascinated by some of the

2291

01:27:27,990 --> 01:27:26,639

stories already about how regs get in

2292

01:27:29,350 --> 01:27:28,000

your way i would encourage you maybe

2293

01:27:31,030 --> 01:27:29,360

this is more of a recommendation than a

2294

01:27:32,550 --> 01:27:31,040

question because a lot of good questions

2295

01:27:33,590 --> 01:27:32,560

have been asked is that if you folks

2296

01:27:35,030 --> 01:27:33,600

could please

2297

01:27:37,750 --> 01:27:35,040

the office of management budget no one

2298

01:27:39,830 --> 01:27:37,760

understands us which we kind of like um

2299

01:27:41,430 --> 01:27:39,840

one of the things we we have within omb

2300

01:27:43,669 --> 01:27:41,440

is the office of information regulatory

2301
01:27:45,830 --> 01:27:43,679
affairs so we touch just about every reg

2302
01:27:47,350 --> 01:27:45,840
or every d-reg effort within the

2303
01:27:49,110 --> 01:27:47,360
government we're also involved in

2304
01:27:51,270 --> 01:27:49,120
legislating regulatory change or

2305
01:27:54,390 --> 01:27:51,280
legislative change so a few folks could

2306
01:27:56,870 --> 01:27:54,400
be specifically identifying regs that

2307
01:27:59,110 --> 01:27:56,880
are impeding innovation and impeding

2308
01:28:00,790 --> 01:27:59,120
investment specifically identifying

2309
01:28:02,149 --> 01:28:00,800
changes in law keeping in mind there are

2310
01:28:04,070 --> 01:28:02,159
some things that we can do as an

2311
01:28:04,950 --> 01:28:04,080
administration without going to congress

2312
01:28:06,790 --> 01:28:04,960
but there are some things that we

2313
01:28:08,229 --> 01:28:06,800

absolutely can and should go to congress

2314

01:28:09,750 --> 01:28:08,239

to help

2315

01:28:11,590 --> 01:28:09,760

get get some assistance with so if you

2316

01:28:13,510 --> 01:28:11,600

could identify for us

2317

01:28:15,350 --> 01:28:13,520

specific examples as you've done today

2318

01:28:16,790 --> 01:28:15,360

on the difficulties of getting launch

2319

01:28:18,950 --> 01:28:16,800

permission difficulties getting flight

2320

01:28:20,470 --> 01:28:18,960

plans filed difficult duplication

2321

01:28:21,990 --> 01:28:20,480

between various federal agencies by the

2322

01:28:23,669 --> 01:28:22,000

way that's something we hear from a lot

2323

01:28:26,070 --> 01:28:23,679

of different folks who work with the

2324

01:28:28,709 --> 01:28:26,080

government um we we are actually in a

2325

01:28:30,709 --> 01:28:28,719

position to help you in a in a fairly

2326

01:28:31,830 --> 01:28:30,719

short order as far as government service

2327

01:28:34,070 --> 01:28:31,840

goes so thank you for doing this today i

2328

01:28:35,910 --> 01:28:34,080

don't have a question uh mr president

2329

01:28:37,590 --> 01:28:35,920

but i would encourage them to get the

2330

01:28:39,669 --> 01:28:37,600

office of management budget anything

2331

01:28:42,070 --> 01:28:39,679

they can on where they need help on

2332

01:28:44,070 --> 01:28:42,080

d-reg

2333

01:28:46,070 --> 01:28:44,080

uh well thank you thank you director and

2334

01:28:49,189 --> 01:28:46,080

uh we'll uh

2335

01:28:51,510 --> 01:28:49,199

uh reiterate uh the director's request

2336

01:28:52,629 --> 01:28:51,520

uh uh that you that you forward that

2337

01:28:54,470 --> 01:28:52,639

information

2338

01:28:57,030 --> 01:28:54,480

with that uh before we dismiss the panel

2339

01:28:58,420 --> 01:28:57,040

let me uh let me request secretary chow

2340

01:29:00,070 --> 01:28:58,430

secretary ross

2341

01:29:03,189 --> 01:29:00,080

[Music]

2342

01:29:05,430 --> 01:29:03,199

as well as director mulvaney

2343

01:29:06,790 --> 01:29:05,440

let's uh i we think uh

2344

01:29:09,110 --> 01:29:06,800

based on this panel and some of the

2345

01:29:12,709 --> 01:29:09,120

reflections it is a time for a full

2346

01:29:15,510 --> 01:29:12,719

review of our regulatory framework

2347

01:29:17,669 --> 01:29:15,520

for commercial space enterprise so would

2348

01:29:19,030 --> 01:29:17,679

would each of you work

2349

01:29:20,470 --> 01:29:19,040

with the executive secretary of the

2350

01:29:22,470 --> 01:29:20,480

council to pull together a plan to

2351

01:29:24,629 --> 01:29:22,480

present to the president the objective

2352

01:29:25,910 --> 01:29:24,639

would be to remove barriers american

2353

01:29:27,750 --> 01:29:25,920

innovation

2354

01:29:29,910 --> 01:29:27,760

by streamlining regulations reducing

2355

01:29:33,030 --> 01:29:29,920

bureaucratic hurdles uh

2356

01:29:34,550 --> 01:29:33,040

space companies uh elaine uh wilbur yes

2357

01:29:36,229 --> 01:29:34,560

of course you're recognized

2358

01:29:37,750 --> 01:29:36,239

good look forward to working with them

2359

01:29:39,830 --> 01:29:37,760

we've actually already asked since we've

2360

01:29:41,750 --> 01:29:39,840

been sitting here for the spacex white

2361

01:29:43,590 --> 01:29:41,760

paper on the d-reg so good that's

2362

01:29:45,830 --> 01:29:43,600

already started well will you get your

2363

01:29:47,590 --> 01:29:45,840

team working on that i think our our

2364

01:29:58,310 --> 01:29:47,600

objective is let's have something to

2365

01:30:02,790 --> 01:30:01,030

well think urgency so

2366

01:30:04,870 --> 01:30:02,800

uh i think we're gonna i think if we put

2367

01:30:05,990 --> 01:30:04,880

a 45-day window on that i think it would

2368

01:30:07,270 --> 01:30:06,000

meet

2369

01:30:09,270 --> 01:30:07,280

the chair's expectation of the

2370

01:30:10,390 --> 01:30:09,280

president's expectation so thank you

2371

01:30:12,870 --> 01:30:10,400

very much

2372

01:30:14,310 --> 01:30:12,880

uh so thank you mr secretary uh and uh

2373

01:30:16,950 --> 01:30:14,320

would everyone join me in thanking this

2374

01:30:28,070 --> 01:30:16,960

panel for their outstanding presentation

2375

01:30:32,149 --> 01:30:30,149

our final panel of the day will focus on

2376

01:30:33,030 --> 01:30:32,159

the national security aspects of the

2377

01:30:35,669 --> 01:30:33,040

space

2378

01:30:37,750 --> 01:30:35,679

enterprise

2379

01:30:39,910 --> 01:30:37,760

our first panelists will be dr michael

2380

01:30:41,590 --> 01:30:39,920

griffin former nasa administrator and

2381

01:30:43,590 --> 01:30:41,600

former deputy director for technology

2382

01:30:45,990 --> 01:30:43,600

and strategic defense initiative

2383

01:30:46,830 --> 01:30:46,000

office our second panelist is admiral

2384

01:30:49,510 --> 01:30:46,840

james

2385

01:30:51,830 --> 01:30:49,520

ellis a distinguished american as well

2386

01:30:53,669 --> 01:30:51,840

former head of the strategic command and

2387

01:30:55,430 --> 01:30:53,679

now fellow at the hoover institution our

2388

01:30:58,629 --> 01:30:55,440

final panelist is ms

2389

01:31:00,629 --> 01:30:58,639

pamela melroy a former shuttle commander

2390

01:31:02,629 --> 01:31:00,639

and deputy director of the tactical

2391

01:31:04,149 --> 01:31:02,639

technologies office

2392

01:31:06,629 --> 01:31:04,159

at darpa would everyone join me in

2393

01:31:08,230 --> 01:31:06,639

welcoming this extraordinary panel

2394

01:31:15,669 --> 01:31:08,240

to the national space council today

2395

01:31:18,470 --> 01:31:15,679

[Applause]

2396

01:31:20,149 --> 01:31:18,480

dr griffin you're recognized for opening

2397

01:31:21,510 --> 01:31:20,159

remarks and

2398

01:31:29,669 --> 01:31:21,520

welcome back to the national space

2399

01:31:32,950 --> 01:31:31,189

mr vice president members of the

2400

01:31:35,030 --> 01:31:32,960

national space council

2401
01:31:37,350 --> 01:31:35,040
executive secretary pace thank you for

2402
01:31:39,830 --> 01:31:37,360
inviting me to speak at the meeting and

2403
01:31:43,189 --> 01:31:39,840
to air my views in regard to national

2404
01:31:45,510 --> 01:31:43,199
security space priorities and concerns

2405
01:31:47,750 --> 01:31:45,520
there are many such concerns it is past

2406
01:31:50,470 --> 01:31:47,760
time that we begin to address them

2407
01:31:53,189 --> 01:31:50,480
with both policy and budget

2408
01:31:55,030 --> 01:31:53,199
in my remarks today i will address only

2409
01:31:57,350 --> 01:31:55,040
a few that i consider to be of the

2410
01:31:58,470 --> 01:31:57,360
highest priority

2411
01:32:01,189 --> 01:31:58,480
first

2412
01:32:02,229 --> 01:32:01,199
we need persistent timely

2413
01:32:07,030 --> 01:32:02,239

global

2414

01:32:09,110 --> 01:32:07,040

land sea air and space domain awareness

2415

01:32:11,189 --> 01:32:09,120

we lead the world still in our ability

2416

01:32:13,350 --> 01:32:11,199

to provide exquisite intelligence when

2417

01:32:14,470 --> 01:32:13,360

our focus must be on very specific

2418

01:32:16,470 --> 01:32:14,480

targets

2419

01:32:19,110 --> 01:32:16,480

but increasingly what is needed is less

2420

01:32:22,229 --> 01:32:19,120

exquisite but more timely comprehensive

2421

01:32:24,790 --> 01:32:22,239

and persistent domain awareness

2422

01:32:27,350 --> 01:32:24,800

this can only be done from space

2423

01:32:30,229 --> 01:32:27,360

also it must be recognized that space

2424

01:32:32,790 --> 01:32:30,239

itself is a neglected domain

2425

01:32:34,709 --> 01:32:32,800

to be both blunt and clear

2426

01:32:37,910 --> 01:32:34,719

the united states must know what is

2427

01:32:39,669 --> 01:32:37,920

being launched from where it originates

2428

01:32:41,910 --> 01:32:39,679

to where it is going

2429

01:32:43,910 --> 01:32:41,920

what are its characteristics

2430

01:32:45,270 --> 01:32:43,920

what are its likely purposes

2431

01:32:46,470 --> 01:32:45,280

everywhere

2432

01:32:49,030 --> 01:32:46,480

all the time

2433

01:32:51,270 --> 01:32:49,040

to a level of accuracy sufficient for

2434

01:32:54,149 --> 01:32:51,280

targeting and fire control should that

2435

01:32:55,189 --> 01:32:54,159

be required

2436

01:32:56,870 --> 01:32:55,199

second

2437

01:32:58,709 --> 01:32:56,880

our adversaries

2438

01:33:01,350 --> 01:32:58,719

well understand

2439

01:33:03,350 --> 01:33:01,360

that in today's world our space assets

2440

01:33:05,910 --> 01:33:03,360

are critical to the way in which we

2441

01:33:07,910 --> 01:33:05,920

fight and win wars

2442

01:33:11,350 --> 01:33:07,920

the technological advantage that they

2443

01:33:13,830 --> 01:33:11,360

confer is by itself a deterrent to many

2444

01:33:16,550 --> 01:33:13,840

adversarial actions

2445

01:33:19,270 --> 01:33:16,560

bad actors can be dissuaded if they know

2446

01:33:21,750 --> 01:33:19,280

that they are unlikely to prevail

2447

01:33:23,669 --> 01:33:21,760

thus our space infrastructure has been

2448

01:33:26,229 --> 01:33:23,679

is being and will continue to be

2449

01:33:28,149 --> 01:33:26,239

targeted by those who seek to alter the

2450

01:33:30,390 --> 01:33:28,159

global order while blunting our

2451

01:33:32,470 --> 01:33:30,400

opposition to that

2452

01:33:34,470 --> 01:33:32,480

our adversaries can already and are

2453

01:33:37,590 --> 01:33:34,480

increasing their ability to

2454

01:33:39,830 --> 01:33:37,600

project their power into space

2455

01:33:42,149 --> 01:33:39,840

while we must develop defenses against

2456

01:33:44,709 --> 01:33:42,159

such actions defense by itself will

2457

01:33:47,669 --> 01:33:44,719

always be insufficient

2458

01:33:51,350 --> 01:33:47,679

defense must succeed every time

2459

01:33:53,350 --> 01:33:51,360

the adversary must succeed only once

2460

01:33:56,229 --> 01:33:53,360

accordingly we must develop our own

2461

01:33:58,390 --> 01:33:56,239

capabilities to project power in space

2462

01:34:00,870 --> 01:33:58,400

we must be able to hold adversary space

2463

01:34:02,830 --> 01:34:00,880

capabilities at risk even as they seek

2464

01:34:05,990 --> 01:34:02,840

to do so to

2465

01:34:07,990 --> 01:34:06,000

ours third these new capabilities are

2466

01:34:11,669 --> 01:34:08,000

dependent upon our ability to launch

2467

01:34:13,510 --> 01:34:11,679

them in a reliable timely routine and

2468

01:34:15,350 --> 01:34:13,520

cost effective fashion

2469

01:34:17,030 --> 01:34:15,360

attributes which hardly describe the

2470

01:34:18,470 --> 01:34:17,040

present state of affairs in the space

2471

01:34:20,149 --> 01:34:18,480

launch industry

2472

01:34:22,709 --> 01:34:20,159

it is past time for the national

2473

01:34:24,470 --> 01:34:22,719

security space launch community to take

2474

01:34:25,990 --> 01:34:24,480

control of its requirements and

2475

01:34:28,149 --> 01:34:26,000

capabilities

2476
01:34:30,950 --> 01:34:28,159
and yes commercial providers can offer

2477
01:34:33,030 --> 01:34:30,960
some useful capability but at bottom

2478
01:34:35,910 --> 01:34:33,040
national security space launch bears the

2479
01:34:37,910 --> 01:34:35,920
same relationship to commercial launch

2480
01:34:39,590 --> 01:34:37,920
that military aircraft do to the air

2481
01:34:41,430 --> 01:34:39,600
transport industry

2482
01:34:43,109 --> 01:34:41,440
they share an industrial base but they

2483
01:34:45,189 --> 01:34:43,119
do not share an operational

2484
01:34:47,030 --> 01:34:45,199
infrastructure

2485
01:34:50,550 --> 01:34:47,040
i have been a champion for commercial

2486
01:34:51,990 --> 01:34:50,560
space launch throughout my career

2487
01:34:54,149 --> 01:34:52,000
parenthetically i am the first

2488
01:34:56,709 --> 01:34:54,159

government official ever to buy a

2489

01:35:00,390 --> 01:34:56,719

commercial space launch on purely arms

2490

01:35:02,470 --> 01:35:00,400

length commercial terms

2491

01:35:05,430 --> 01:35:02,480

but always have always done so in the

2492

01:35:08,149 --> 01:35:05,440

context of a carefully formulated risk

2493

01:35:10,390 --> 01:35:08,159

calculus if you agree with me that space

2494

01:35:11,910 --> 01:35:10,400

launches like submarines and aircraft

2495

01:35:14,390 --> 01:35:11,920

carriers a street

2496

01:35:16,790 --> 01:35:14,400

strategic asset for our nation

2497

01:35:19,030 --> 01:35:16,800

then we must also agree to treat it as

2498

01:35:20,790 --> 01:35:19,040

such

2499

01:35:23,350 --> 01:35:20,800

allow me to close by noting that the

2500

01:35:25,590 --> 01:35:23,360

concerns i have addressed by no means

2501
01:35:27,510 --> 01:35:25,600
constitute an exhaustive list they are

2502
01:35:29,590 --> 01:35:27,520
merely those that i consider to be of

2503
01:35:31,830 --> 01:35:29,600
the very highest priority

2504
01:35:34,229 --> 01:35:31,840
but inciting them or any other specific

2505
01:35:35,910 --> 01:35:34,239
issues we must not lose focus on what

2506
01:35:38,550 --> 01:35:35,920
should be the overriding goal of

2507
01:35:40,550 --> 01:35:38,560
national space policy

2508
01:35:42,390 --> 01:35:40,560
the united states has had a leading role

2509
01:35:44,790 --> 01:35:42,400
in world affairs

2510
01:35:47,270 --> 01:35:44,800
and together with our allies

2511
01:35:49,669 --> 01:35:47,280
has promised promoted and generally

2512
01:35:52,229 --> 01:35:49,679
enforced a stable rules-based world

2513
01:35:54,550 --> 01:35:52,239

order for over seven decades

2514

01:35:56,629 --> 01:35:54,560

this power and influence was realized

2515

01:35:58,229 --> 01:35:56,639

through the sacrifices of our world war

2516

01:35:59,750 --> 01:35:58,239

ii generation

2517

01:36:01,669 --> 01:35:59,760

maintained through more than four

2518

01:36:03,350 --> 01:36:01,679

decades of national resolve during the

2519

01:36:05,430 --> 01:36:03,360

cold war

2520

01:36:06,950 --> 01:36:05,440

and renewed in the wake of the 9 11

2521

01:36:09,430 --> 01:36:06,960

attacks

2522

01:36:11,270 --> 01:36:09,440

in today's world the continued exercise

2523

01:36:14,070 --> 01:36:11,280

of that leadership depends critically

2524

01:36:16,229 --> 01:36:14,080

upon maintaining and executing our

2525

01:36:18,390 --> 01:36:16,239

and maintaining and extending our

2526
01:36:19,510 --> 01:36:18,400
preeminence in space in all of its many

2527
01:36:22,310 --> 01:36:19,520
aspects

2528
01:36:24,550 --> 01:36:22,320
our adversaries understand that and are

2529
01:36:26,470 --> 01:36:24,560
actively working to prevent it

2530
01:36:28,390 --> 01:36:26,480
we must work together to ensure that

2531
01:36:31,270 --> 01:36:28,400
they do not succeed

2532
01:36:36,470 --> 01:36:32,709
thank you

2533
01:36:39,270 --> 01:36:36,480
uh the stirring words

2534
01:36:40,390 --> 01:36:39,280
admiral james ellis mr vice president

2535
01:36:42,390 --> 01:36:40,400
and distinguished members of the

2536
01:36:44,550 --> 01:36:42,400
national space council thank you for

2537
01:36:46,790 --> 01:36:44,560
allowing me to appear before you at this

2538
01:36:48,310 --> 01:36:46,800

your inaugural meeting

2539

01:36:51,590 --> 01:36:48,320

the national security of the united

2540

01:36:53,910 --> 01:36:51,600

states is inextricably linked to space

2541

01:36:56,629 --> 01:36:53,920

but the technological advances in an

2542

01:36:59,270 --> 01:36:56,639

increased national security reliance on

2543

01:37:01,030 --> 01:36:59,280

space systems by our joint forces

2544

01:37:03,590 --> 01:37:01,040

allies and partners

2545

01:37:05,030 --> 01:37:03,600

have created a superbly capable critical

2546

01:37:07,030 --> 01:37:05,040

infrastructure

2547

01:37:09,109 --> 01:37:07,040

in space that has not been matched by

2548

01:37:12,550 --> 01:37:09,119

coherent supporting protection

2549

01:37:14,790 --> 01:37:12,560

capabilities lost mitigation strategies

2550

01:37:16,229 --> 01:37:14,800

and clearly articulated national

2551

01:37:17,910 --> 01:37:16,239

policies

2552

01:37:19,669 --> 01:37:17,920

as you've noted mr vice president the

2553

01:37:21,750 --> 01:37:19,679

threats range from sophisticated direct

2554

01:37:23,590 --> 01:37:21,760

descent asap weapons to the

2555

01:37:25,510 --> 01:37:23,600

proliferation of low-tech jammers that

2556

01:37:28,229 --> 01:37:25,520

can disrupt satellite communication

2557

01:37:30,070 --> 01:37:28,239

links without touching the spacecraft

2558

01:37:32,229 --> 01:37:30,080

they include the electromagnetic pulse

2559

01:37:34,790 --> 01:37:32,239

impact of the detonation of a nuclear

2560

01:37:37,109 --> 01:37:34,800

weapon in space but also the potential

2561

01:37:40,070 --> 01:37:37,119

for cyber or terrorist attacks on the

2562

01:37:42,790 --> 01:37:40,080

satellite ground control systems i make

2563

01:37:45,750 --> 01:37:42,800

two points here first not all threats to

2564

01:37:47,910 --> 01:37:45,760

our space assets originate in space and

2565

01:37:49,990 --> 01:37:47,920

not all our defense mitigation and

2566

01:37:51,030 --> 01:37:50,000

deterrence efforts should be focused

2567

01:37:53,030 --> 01:37:51,040

there

2568

01:37:55,669 --> 01:37:53,040

second the ability to threaten our

2569

01:37:58,149 --> 01:37:55,679

national security space assets is not

2570

01:38:00,070 --> 01:37:58,159

solely resident in nation states

2571

01:38:02,870 --> 01:38:00,080

it is also increasingly available to

2572

01:38:04,950 --> 01:38:02,880

non-state actors and individuals

2573

01:38:06,149 --> 01:38:04,960

as with other of our national security

2574

01:38:08,709 --> 01:38:06,159

challenges

2575

01:38:10,870 --> 01:38:08,719

a few dragons have been replaced by a

2576

01:38:12,470 --> 01:38:10,880

hundred snakes

2577

01:38:14,390 --> 01:38:12,480

to capably function in this newly

2578

01:38:16,790 --> 01:38:14,400

contested environment we need enhanced

2579

01:38:18,629 --> 01:38:16,800

and focused space situational space

2580

01:38:21,270 --> 01:38:18,639

intelligence excuse me and space

2581

01:38:23,270 --> 01:38:21,280

situational awareness as my colleague dr

2582

01:38:25,430 --> 01:38:23,280

griffin has noted we also need

2583

01:38:28,709 --> 01:38:25,440

dramatically improved technical and

2584

01:38:30,629 --> 01:38:28,719

tactical capabilities for the warfighter

2585

01:38:33,270 --> 01:38:30,639

we need a coherent architecture to make

2586

01:38:35,990 --> 01:38:33,280

robustness and resilience specified and

2587

01:38:37,350 --> 01:38:36,000

quantified requirements in all elements

2588

01:38:39,510 --> 01:38:37,360

of our systems

2589

01:38:43,669 --> 01:38:39,520

and we need a system reconstitution and

2590

01:38:45,510 --> 01:38:43,679

mitigation capability that is truly

2591

01:38:47,270 --> 01:38:45,520

responsive

2592

01:38:48,950 --> 01:38:47,280

we must include commercial and allied

2593

01:38:51,669 --> 01:38:48,960

partners in these conversations and

2594

01:38:54,149 --> 01:38:51,679

appreciate that if added to all space

2595

01:38:56,709 --> 01:38:54,159

platforms even relatively simple

2596

01:38:58,790 --> 01:38:56,719

technologies such as that motion sensor

2597

01:39:01,350 --> 01:38:58,800

that turns on your garage light when

2598

01:39:03,990 --> 01:39:01,360

someone walks up your driveway can add

2599

01:39:06,870 --> 01:39:04,000

insight and understanding to a global

2600

01:39:08,950 --> 01:39:06,880

space neighborhood watch

2601
01:39:11,270 --> 01:39:08,960
we need better tools to analyze as a

2602
01:39:13,350 --> 01:39:11,280
complete system our space related

2603
01:39:16,390 --> 01:39:13,360
critical infrastructure so that we

2604
01:39:17,669 --> 01:39:16,400
understand where the need is most urgent

2605
01:39:20,709 --> 01:39:17,679
and finally

2606
01:39:22,790 --> 01:39:20,719
we simply must get it all done faster

2607
01:39:26,550 --> 01:39:22,800
because the threats are growing faster

2608
01:39:28,229 --> 01:39:26,560
than our ability to counter them

2609
01:39:30,390 --> 01:39:28,239
a friend of mine once told me that you

2610
01:39:33,430 --> 01:39:30,400
know you are really in a crisis when

2611
01:39:36,950 --> 01:39:33,440
they start waving the rules

2612
01:39:39,430 --> 01:39:36,960
in national security space we are there

2613
01:39:41,830 --> 01:39:39,440

and it's time to appropriately unleash

2614

01:39:46,070 --> 01:39:41,840

our world-class developmental

2615

01:39:49,109 --> 01:39:46,080

manufacturing and operational expertise

2616

01:39:51,350 --> 01:39:49,119

finally in space as in the cyber world

2617

01:39:54,629 --> 01:39:51,360

national security strategies from land

2618

01:39:56,550 --> 01:39:54,639

air and sea do not always translate

2619

01:39:59,510 --> 01:39:56,560

and classic concepts of kinetic

2620

01:40:01,270 --> 01:39:59,520

deterrence may not apply

2621

01:40:03,430 --> 01:40:01,280

a shared understanding of both what we

2622

01:40:05,430 --> 01:40:03,440

are trying to do and what are the limits

2623

01:40:07,189 --> 01:40:05,440

on which we are allowed to do

2624

01:40:09,350 --> 01:40:07,199

is essential

2625

01:40:12,310 --> 01:40:09,360

clear and unambiguous policy and

2626

01:40:14,470 --> 01:40:12,320

strategy guidance from all of you

2627

01:40:17,030 --> 01:40:14,480

will be vital to ensuring we achieve

2628

01:40:18,229 --> 01:40:17,040

unity of purpose and effectiveness of

2629

01:40:19,990 --> 01:40:18,239

outcome

2630

01:40:22,629 --> 01:40:20,000

that clarity is also critical to

2631

01:40:24,709 --> 01:40:22,639

reassuring our allies and deterring

2632

01:40:26,950 --> 01:40:24,719

potential adversaries

2633

01:40:28,629 --> 01:40:26,960

we must lead global efforts to shape

2634

01:40:30,709 --> 01:40:28,639

collective behavior

2635

01:40:33,270 --> 01:40:30,719

and be very clear in our declaratory

2636

01:40:34,629 --> 01:40:33,280

policies about what we stand for in

2637

01:40:38,070 --> 01:40:34,639

space

2638

01:40:40,070 --> 01:40:38,080

and what we will not stand for

2639

01:40:42,470 --> 01:40:40,080

we must not confuse effort with outcome

2640

01:40:44,709 --> 01:40:42,480

or technology with strategy

2641

01:40:47,590 --> 01:40:44,719

in space as on earth

2642

01:40:49,189 --> 01:40:47,600

tactical energy in a strategic vacuum

2643

01:40:51,270 --> 01:40:49,199

no pun intended

2644

01:40:53,430 --> 01:40:51,280

is a recipe for failure

2645

01:40:55,910 --> 01:40:53,440

and in preserving america's national

2646

01:40:58,709 --> 01:40:55,920

security space capabilities and that of

2647

01:41:01,270 --> 01:40:58,719

our partners and allies around the globe

2648

01:41:02,390 --> 01:41:01,280

failure is not an option

2649

01:41:06,870 --> 01:41:02,400

thank you and i look forward to your

2650

01:41:11,510 --> 01:41:09,189

uh thank you admiral for those uh

2651
01:41:12,790 --> 01:41:11,520
very strong remarks we look forward to

2652
01:41:15,430 --> 01:41:12,800
our

2653
01:41:18,149 --> 01:41:15,440
panels discussion momentarily

2654
01:41:20,149 --> 01:41:18,159
with that the chair recognizes

2655
01:41:23,109 --> 01:41:20,159
colonel pamela melroy

2656
01:41:26,310 --> 01:41:23,119
who has a distinguished career

2657
01:41:28,229 --> 01:41:26,320
as an air force test pilot but also

2658
01:41:28,520 --> 01:41:28,239
an astronaut

2659
01:41:29,590 --> 01:41:28,530
who

2660
01:41:32,470 --> 01:41:29,600
[Music]

2661
01:41:34,790 --> 01:41:32,480
piloted the discovery behind me

2662
01:41:36,709 --> 01:41:34,800
in 2000 and was the commander of

2663
01:41:38,790 --> 01:41:36,719

discovery's mission in

2664

01:41:43,189 --> 01:41:38,800

2007 i think that's worth a round of

2665

01:41:43,199 --> 01:41:47,669

for the applause is for discovery

2666

01:41:53,109 --> 01:41:50,709

thank you mr vice president good morning

2667

01:41:54,870 --> 01:41:53,119

mr vice president members of the

2668

01:41:57,270 --> 01:41:54,880

national space council thank you for

2669

01:42:00,229 --> 01:41:57,280

inviting me to speak to you today

2670

01:42:03,510 --> 01:42:00,239

i am deeply concerned about sustaining

2671

01:42:05,910 --> 01:42:03,520

the u.s ability to use our space assets

2672

01:42:09,030 --> 01:42:05,920

to ensure air naval and ground

2673

01:42:12,310 --> 01:42:09,040

superiority and to shore up our

2674

01:42:14,950 --> 01:42:12,320

diminishing space superiority

2675

01:42:17,669 --> 01:42:14,960

speed the tempo of decision and

2676
01:42:20,390 --> 01:42:17,679
information is the problem because our

2677
01:42:22,790 --> 01:42:20,400
adversaries have figured out how to move

2678
01:42:25,510 --> 01:42:22,800
inside our military decision loop and

2679
01:42:27,990 --> 01:42:25,520
our existing precision kill chain is

2680
01:42:29,910 --> 01:42:28,000
inadequate to address many new and

2681
01:42:31,590 --> 01:42:29,920
pressing threats

2682
01:42:33,990 --> 01:42:31,600
you're going to hear me echo several

2683
01:42:35,990 --> 01:42:34,000
comments made by dr griffin and admiral

2684
01:42:38,070 --> 01:42:36,000
ellis i'm going to do a little bit of a

2685
01:42:40,390 --> 01:42:38,080
dive into what i consider the two most

2686
01:42:43,109 --> 01:42:40,400
pressing issues

2687
01:42:45,830 --> 01:42:43,119
the first issue is the tempo of space

2688
01:42:49,189 --> 01:42:45,840

domain awareness knowing what's going on

2689

01:42:51,830 --> 01:42:49,199

in space real time rather than forensic

2690

01:42:53,590 --> 01:42:51,840

information days after the fact

2691

01:42:56,229 --> 01:42:53,600

currently the air force has about a

2692

01:42:58,470 --> 01:42:56,239

dozen dedicated exquisite sensors with

2693

01:43:00,310 --> 01:42:58,480

superb accuracy

2694

01:43:01,830 --> 01:43:00,320

they're scattered widely they can be

2695

01:43:04,790 --> 01:43:01,840

affected by weather

2696

01:43:06,790 --> 01:43:04,800

and can only take periodic snapshots of

2697

01:43:09,750 --> 01:43:06,800

objects in space

2698

01:43:12,629 --> 01:43:09,760

hours and even days go by without

2699

01:43:15,189 --> 01:43:12,639

updates to orbital locations

2700

01:43:18,390 --> 01:43:15,199

today there are emerging threats to our

2701
01:43:19,830 --> 01:43:18,400
spacecraft that can maneuver in minutes

2702
01:43:21,990 --> 01:43:19,840
and hours

2703
01:43:26,470 --> 01:43:22,000
the possibility of missing a dynamic

2704
01:43:28,950 --> 01:43:26,480
threat to our spacecraft is unacceptable

2705
01:43:30,390 --> 01:43:28,960
we have to have more sensors to get more

2706
01:43:32,470 --> 01:43:30,400
frequent updates

2707
01:43:34,950 --> 01:43:32,480
but these sensors don't have to be as

2708
01:43:36,070 --> 01:43:34,960
precise and as expensive as our current

2709
01:43:38,390 --> 01:43:36,080
sensors

2710
01:43:40,870 --> 01:43:38,400
the frequency of observations combined

2711
01:43:42,870 --> 01:43:40,880
with our current sensor data makes up

2712
01:43:45,030 --> 01:43:42,880
for the lack of precision

2713
01:43:47,669 --> 01:43:45,040

the proliferation of commercial space

2714

01:43:49,750 --> 01:43:47,679

surveillance sensors is a potential fit

2715

01:43:52,310 --> 01:43:49,760

for this need

2716

01:43:54,870 --> 01:43:52,320

the second area where increased tempo is

2717

01:43:57,750 --> 01:43:54,880

needed is tactical intelligence to

2718

01:44:00,390 --> 01:43:57,760

support the ability to find a target

2719

01:44:02,950 --> 01:44:00,400

track and engage it as well as to

2720

01:44:04,950 --> 01:44:02,960

perform battle damage assessment the

2721

01:44:07,430 --> 01:44:04,960

entire kill chain

2722

01:44:09,910 --> 01:44:07,440

in recent decades we've become expert at

2723

01:44:12,310 --> 01:44:09,920

using air assets to supply information

2724

01:44:14,870 --> 01:44:12,320

for our precision weapon systems

2725

01:44:16,790 --> 01:44:14,880

in the future we can't assume a

2726
01:44:18,550 --> 01:44:16,800
permissive operating environment for

2727
01:44:21,030 --> 01:44:18,560
those air assets

2728
01:44:23,830 --> 01:44:21,040
now we do have truly magnificent space

2729
01:44:26,229 --> 01:44:23,840
capability for strategic intelligence

2730
01:44:27,590 --> 01:44:26,239
critical for the planning awareness and

2731
01:44:30,070 --> 01:44:27,600
attribution

2732
01:44:31,109 --> 01:44:30,080
however this capability is spread very

2733
01:44:33,590 --> 01:44:31,119
thin

2734
01:44:37,750 --> 01:44:33,600
cannot be redirected in short tactical

2735
01:44:39,350 --> 01:44:37,760
time scales and may now be held at risk

2736
01:44:41,350 --> 01:44:39,360
additionally our command and control

2737
01:44:44,550 --> 01:44:41,360
structure isn't designed to absorb and

2738
01:44:46,790 --> 01:44:44,560

disseminate information quickly at large

2739

01:44:49,350 --> 01:44:46,800

geographic scales such as the pacific

2740

01:44:51,109 --> 01:44:49,360

region or for multiple concurrent

2741

01:44:54,149 --> 01:44:51,119

operations

2742

01:44:56,629 --> 01:44:54,159

enhancing our architecture with low-cost

2743

01:44:59,510 --> 01:44:56,639

small satellite constellations can

2744

01:45:01,270 --> 01:44:59,520

provide persistence and re-tasking on

2745

01:45:03,189 --> 01:45:01,280

short time scales

2746

01:45:05,590 --> 01:45:03,199

these constellations should be under the

2747

01:45:08,229 --> 01:45:05,600

direct control of the warfighter as

2748

01:45:09,910 --> 01:45:08,239

tactical intelligence assets

2749

01:45:13,189 --> 01:45:09,920

these constellations must have

2750

01:45:15,189 --> 01:45:13,199

collection algorithms onboard processing

2751

01:45:18,550 --> 01:45:15,199
and dissemination of information

2752

01:45:20,550 --> 01:45:18,560
directly to cockpits and ship bridges

2753

01:45:23,109 --> 01:45:20,560
without humans in the loop

2754

01:45:25,350 --> 01:45:23,119
enabling us to compress that kill chain

2755

01:45:26,629 --> 01:45:25,360
in a denied environment

2756

01:45:32,070 --> 01:45:26,639
thank you and i look forward to your

2757

01:45:36,470 --> 01:45:33,990
thank you very much colonel

2758

01:45:39,669 --> 01:45:36,480
and to all the members of the panel

2759

01:45:41,270 --> 01:45:39,679
uh before we get to members of uh the

2760

01:45:43,350 --> 01:45:41,280
national space council the chair would

2761

01:45:45,109 --> 01:45:43,360
just

2762

01:45:47,830 --> 01:45:45,119
pose a question given each of your

2763

01:45:49,270 --> 01:45:47,840

extraordinary background uh in in this

2764

01:45:51,189 --> 01:45:49,280

area

2765

01:45:56,390 --> 01:45:51,199

uh with regard to national security and

2766

01:46:01,189 --> 01:45:58,070

there's much talk it seems in the public

2767

01:46:02,950 --> 01:46:01,199

about not wanting to militarize

2768

01:46:04,390 --> 01:46:02,960

uh space

2769

01:46:06,709 --> 01:46:04,400

uh but

2770

01:46:07,750 --> 01:46:06,719

uh is is it

2771

01:46:10,149 --> 01:46:07,760

is it

2772

01:46:13,510 --> 01:46:10,159

accurate for the lay person to know that

2773

01:46:15,189 --> 01:46:13,520

that from the time sputnik went up we

2774

01:46:16,870 --> 01:46:15,199

to one degree or another have

2775

01:46:18,870 --> 01:46:16,880

militarized space

2776

01:46:19,750 --> 01:46:18,880

and that um

2777

01:46:21,750 --> 01:46:19,760

uh

2778

01:46:23,350 --> 01:46:21,760

the question for is whether we

2779

01:46:26,629 --> 01:46:23,360

weaponized

2780

01:46:27,669 --> 01:46:26,639

space at this point and

2781

01:46:41,030 --> 01:46:27,679

i

2782

01:46:42,629 --> 01:46:41,040

to space uh are

2783

01:46:44,709 --> 01:46:42,639

are our adversaries and potential

2784

01:46:48,070 --> 01:46:44,719

adversaries moving

2785

01:46:50,390 --> 01:46:48,080

toward weaponizing uh space uh in ways

2786

01:46:52,390 --> 01:46:50,400

that should inform our development of

2787

01:46:57,510 --> 01:46:52,400

national policy

2788

01:47:01,590 --> 01:46:59,669

i guess i'll start uh

2789

01:47:04,950 --> 01:47:01,600

the choice as to whether or not to

2790

01:47:06,790 --> 01:47:04,960

weaponize space is not one that we

2791

01:47:10,149 --> 01:47:06,800

can make

2792

01:47:12,390 --> 01:47:10,159

we can only decide to match

2793

01:47:15,109 --> 01:47:12,400

and raise our adversaries who are

2794

01:47:17,030 --> 01:47:15,119

already weaponizing space

2795

01:47:19,270 --> 01:47:17,040

i would add that space was first

2796

01:47:21,270 --> 01:47:19,280

weaponized during world war ii with the

2797

01:47:25,109 --> 01:47:21,280

german v2

2798

01:47:31,430 --> 01:47:29,030

that course is long out of the barn

2799

01:47:34,390 --> 01:47:31,440

our best chance for avoiding

2800

01:47:36,390 --> 01:47:34,400

future conflict in space

2801

01:47:38,870 --> 01:47:36,400

and frankly its collaterally related

2802

01:47:42,470 --> 01:47:38,880

conflicts on earth

2803

01:47:47,030 --> 01:47:42,480

is to be and to appear to be so strong

2804

01:47:50,390 --> 01:47:48,310

admiral

2805

01:47:52,070 --> 01:47:50,400

thank you mr vice president uh

2806

01:47:54,310 --> 01:47:52,080

i think as uh

2807

01:47:56,229 --> 01:47:54,320

as you know there are parallels historic

2808

01:47:58,229 --> 01:47:56,239

perhaps with the maritime domain and

2809

01:48:00,149 --> 01:47:58,239

virtually every arena in which the

2810

01:48:02,070 --> 01:48:00,159

united states and

2811

01:48:03,990 --> 01:48:02,080

before that nations around the world

2812

01:48:06,229 --> 01:48:04,000

operated and exerted influence has

2813

01:48:08,950 --> 01:48:06,239

progressed through a series that moved

2814

01:48:11,350 --> 01:48:08,960

from initially exploration and then

2815

01:48:14,149 --> 01:48:11,360

commerce and ultimately potential

2816

01:48:15,830 --> 01:48:14,159

conflict we hope as we all do to avoid

2817

01:48:17,990 --> 01:48:15,840

that conflict in space but as i

2818

01:48:19,270 --> 01:48:18,000

mentioned in my remarks it's entirely

2819

01:48:21,669 --> 01:48:19,280

appropriate that we appreciate the

2820

01:48:24,149 --> 01:48:21,679

difference between militarization and

2821

01:48:26,070 --> 01:48:24,159

weaponization we understand the reliance

2822

01:48:28,470 --> 01:48:26,080

as you've heard from my colleagues here

2823

01:48:31,030 --> 01:48:28,480

on the panel that our national security

2824

01:48:33,590 --> 01:48:31,040

architecture has on on those space

2825

01:48:35,990 --> 01:48:33,600

elements and that we move uh uh

2826

01:48:38,790 --> 01:48:36,000

effectively and uh and with forethought

2827

01:48:41,430 --> 01:48:38,800

to uh to ensure that we are preserving

2828

01:48:43,430 --> 01:48:41,440

those capabilities so uh we in the

2829

01:48:45,910 --> 01:48:43,440

military as as a retired guy i think

2830

01:48:47,750 --> 01:48:45,920

i'll still say that proudly

2831

01:48:50,070 --> 01:48:47,760

you have to deal with capabilities not

2832

01:48:52,310 --> 01:48:50,080

with intent and the capabilities are

2833

01:48:53,830 --> 01:48:52,320

well known uh their growth

2834

01:48:56,390 --> 01:48:53,840

as you've articulated in your opening

2835

01:48:58,550 --> 01:48:56,400

remarks is well documented we can't

2836

01:49:01,189 --> 01:48:58,560

predict the intent john f kennedy in

2837

01:49:02,070 --> 01:49:01,199

1962 said it's up to us to define

2838

01:49:04,229 --> 01:49:02,080

whether

2839

01:49:06,070 --> 01:49:04,239

the space domain becomes a an ocean of

2840

01:49:08,070 --> 01:49:06,080

peace as he called it or an area of

2841

01:49:10,390 --> 01:49:08,080

conflict we have that choice along with

2842

01:49:12,390 --> 01:49:10,400

our allies but deterrent concepts

2843

01:49:14,470 --> 01:49:12,400

understanding of what our policies are

2844

01:49:16,550 --> 01:49:14,480

and and what as i said in my remarks

2845

01:49:18,709 --> 01:49:16,560

what we what we stand for in space in

2846

01:49:20,870 --> 01:49:18,719

terms of norms and acceptable behaviors

2847

01:49:22,310 --> 01:49:20,880

and what we simply will not stand for is

2848

01:49:24,629 --> 01:49:22,320

going to be an essential element of

2849

01:49:26,470 --> 01:49:24,639

guaranteeing the continued access not

2850

01:49:27,910 --> 01:49:26,480

just for national security purposes but

2851

01:49:29,830 --> 01:49:27,920

as you've heard from the previous panels

2852

01:49:31,350 --> 01:49:29,840

for economic and uh and research

2853

01:49:33,589 --> 01:49:31,360

purposes as well

2854

01:49:36,629 --> 01:49:33,599

thank you colonel

2855

01:49:38,629 --> 01:49:36,639

i think uh dr griffin and admiral ellis

2856

01:49:40,629 --> 01:49:38,639

have said um

2857

01:49:42,070 --> 01:49:40,639

quite clearly what i totally agree with

2858

01:49:44,149 --> 01:49:42,080

which is that

2859

01:49:45,109 --> 01:49:44,159

this is not our choice it's it's already

2860

01:49:46,470 --> 01:49:45,119

happened

2861

01:49:49,030 --> 01:49:46,480

and

2862

01:49:51,270 --> 01:49:49,040

i do want to add one comment about the

2863

01:49:52,470 --> 01:49:51,280

critical nature of attribution

2864

01:49:54,070 --> 01:49:52,480

so

2865

01:49:55,669 --> 01:49:54,080

attribution is important for a lot of

2866

01:49:56,870 --> 01:49:55,679

different reasons

2867

01:49:59,589 --> 01:49:56,880

one is

2868

01:50:01,350 --> 01:49:59,599

just to be able to clearly state

2869

01:50:02,870 --> 01:50:01,360

when a bad actor has done something and

2870

01:50:05,030 --> 01:50:02,880

what they have done

2871

01:50:07,589 --> 01:50:05,040

but i think it's also important as

2872

01:50:10,950 --> 01:50:07,599

admiral ellis put it so eloquently what

2873

01:50:13,510 --> 01:50:10,960

we won't stand for and the attribution

2874

01:50:15,589 --> 01:50:13,520

has to be a critical element of that

2875

01:50:17,669 --> 01:50:15,599

i think thank you colonel i we have a

2876

01:50:20,629 --> 01:50:17,679

number of members of the council that

2877

01:50:25,510 --> 01:50:20,639

have uh questions but i appreciate your

2878

01:50:29,910 --> 01:50:26,229

and

2879

01:50:31,510 --> 01:50:29,920

clear the line between militarization

2880

01:50:34,790 --> 01:50:31,520

and weaponization

2881

01:50:37,910 --> 01:50:34,800

that uh but i i'm i'm uh

2882

01:50:39,990 --> 01:50:37,920

uh i find uh myself in strong agreement

2883

01:50:42,950 --> 01:50:40,000

with each of your echo about them

2884

01:50:43,990 --> 01:50:42,960

thereby the importance of deterrence

2885

01:50:46,310 --> 01:50:44,000

um

2886

01:50:48,629 --> 01:50:46,320

for keeping it an ocean of peace

2887

01:50:50,830 --> 01:50:48,639

uh the director of uh

2888

01:50:53,669 --> 01:50:50,840

national intelligence dan coats

2889

01:50:55,109 --> 01:50:53,679

recognized mr vice president thank you

2890

01:50:56,550 --> 01:50:55,119

particularly

2891

01:50:57,910 --> 01:50:56,560

of course i've paid attention to every

2892

01:50:59,750 --> 01:50:57,920

panel but

2893

01:51:01,830 --> 01:50:59,760

particularly keen attention to what was

2894

01:51:04,870 --> 01:51:01,840

just said with this panel

2895

01:51:08,070 --> 01:51:04,880

um the intelligence community

2896

01:51:10,870 --> 01:51:08,080

understands that um

2897

01:51:12,790 --> 01:51:10,880

our dominance in space relative to the

2898

01:51:15,430 --> 01:51:12,800

intelligence that we need

2899

01:51:17,270 --> 01:51:15,440

to keep america safe and informed

2900

01:51:19,750 --> 01:51:17,280

whether it's our fighters or whether

2901

01:51:22,790 --> 01:51:19,760

it's our national assets

2902

01:51:24,950 --> 01:51:22,800

is of critical importance

2903

01:51:28,550 --> 01:51:24,960

the dominance that we've had in space

2904

01:51:32,310 --> 01:51:30,070

at least

2905

01:51:33,510 --> 01:51:32,320

on the way to being equaled or perhaps

2906

01:51:37,270 --> 01:51:33,520

equaled

2907

01:51:41,030 --> 01:51:37,280

by adversaries who wish to do us harm

2908

01:51:43,830 --> 01:51:41,040

and we have to recognize that as

2909

01:51:46,310 --> 01:51:43,840

wonderful it is to hear about the

2910

01:51:48,149 --> 01:51:46,320

vision and the future for space and what

2911

01:51:49,189 --> 01:51:48,159

it can provide commercially what it can

2912

01:51:50,550 --> 01:51:49,199

provide

2913

01:51:52,550 --> 01:51:50,560

for

2914

01:51:53,510 --> 01:51:52,560

human exploration

2915

01:51:54,310 --> 01:51:53,520

uh

2916

01:51:57,270 --> 01:51:54,320

we

2917

01:51:58,950 --> 01:51:57,280

end up here sobered up by the fact that

2918

01:52:00,390 --> 01:51:58,960

like

2919

01:52:02,070 --> 01:52:00,400

other

2920

01:52:04,390 --> 01:52:02,080

innovations that have occurred the

2921

01:52:06,229 --> 01:52:04,400

internet and so forth and all the

2922

01:52:07,750 --> 01:52:06,239

all the blessings that it brings and all

2923

01:52:08,950 --> 01:52:07,760

the uh

2924

01:52:11,189 --> 01:52:08,960

uh

2925

01:52:13,510 --> 01:52:11,199

optimism it brings about the future it's

2926
01:52:14,390 --> 01:52:13,520
a double-edged sword uh there's a dark

2927
01:52:18,790 --> 01:52:14,400
side

2928
01:52:20,229 --> 01:52:18,800
forces us to be prepared

2929
01:52:22,070 --> 01:52:20,239
and so i think one of the important

2930
01:52:23,510 --> 01:52:22,080
things this council can do

2931
01:52:24,950 --> 01:52:23,520
is to ensure

2932
01:52:26,629 --> 01:52:24,960
that we

2933
01:52:30,390 --> 01:52:26,639
achieve the dominance and space

2934
01:52:31,669 --> 01:52:30,400
necessary for us to protect our people

2935
01:52:37,350 --> 01:52:31,679
to

2936
01:52:39,669 --> 01:52:37,360
keep our adversaries in a position where

2937
01:52:42,390 --> 01:52:39,679
they can't provide the dominance that

2938
01:52:45,750 --> 01:52:42,400

could do us do us wrong so

2939

01:52:48,470 --> 01:52:45,760

the candor uh and means in which uh this

2940

01:52:50,149 --> 01:52:48,480

uh part of the this panel has brought i

2941

01:52:53,189 --> 01:52:50,159

think is something that we need to focus

2942

01:52:57,189 --> 01:52:55,589

uh uh thank you director coats any any

2943

01:52:59,030 --> 01:52:57,199

comments from the panel following the

2944

01:53:01,510 --> 01:52:59,040

director's

2945

01:53:03,910 --> 01:53:01,520

remarks before i recognize

2946

01:53:06,229 --> 01:53:03,920

the acting director of homeland security

2947

01:53:07,910 --> 01:53:06,239

allow me another indiana

2948

01:53:10,070 --> 01:53:07,920

privilege

2949

01:53:12,870 --> 01:53:10,080

by recognizing an astronaut who's with

2950

01:53:15,750 --> 01:53:12,880

us today who spent 168 days in space

2951
01:53:16,470 --> 01:53:15,760
four missions 41 hours of space walks

2952
01:53:18,550 --> 01:53:16,480
and

2953
01:53:20,709 --> 01:53:18,560
he is he is the pride of his home state

2954
01:53:28,709 --> 01:53:20,719
of indiana astronaut david wolf is with

2955
01:53:32,790 --> 01:53:31,669
may not forgive me for that but uh i had

2956
01:53:35,270 --> 01:53:32,800
to do it

2957
01:53:37,589 --> 01:53:35,280
uh secretary dude thank you following

2958
01:53:40,310 --> 01:53:37,599
the time to get my microphone on before

2959
01:53:41,830 --> 01:53:40,320
you called on me i appreciate it um i i

2960
01:53:43,430 --> 01:53:41,840
definitely agree

2961
01:53:46,629 --> 01:53:43,440
that we need a

2962
01:53:47,830 --> 01:53:46,639
space strategy a a space security

2963
01:53:49,430 --> 01:53:47,840

strategy

2964

01:53:51,910 --> 01:53:49,440

and i've heard two different things

2965

01:53:54,310 --> 01:53:51,920

among the three panels one is critical

2966

01:53:57,270 --> 01:53:54,320

infrastructure in space so we have

2967

01:54:00,550 --> 01:53:57,280

commercial we have a national defense

2968

01:54:03,109 --> 01:54:00,560

and it would almost argue for

2969

01:54:04,149 --> 01:54:03,119

addressing some of the threats

2970

01:54:05,109 --> 01:54:04,159

as

2971

01:54:07,270 --> 01:54:05,119

they

2972

01:54:09,189 --> 01:54:07,280

as critical infrastructure align with

2973

01:54:11,270 --> 01:54:09,199

that so in the commercial sector we'd

2974

01:54:13,430 --> 01:54:11,280

have to make sure we have cyber security

2975

01:54:15,430 --> 01:54:13,440

and national defense the resilience you

2976

01:54:17,830 --> 01:54:15,440

talked about but then someone and i

2977

01:54:19,830 --> 01:54:17,840

believe it was you admirals mentioned

2978

01:54:22,470 --> 01:54:19,840

space as a crim as critical

2979

01:54:24,950 --> 01:54:22,480

infrastructure in in if we take your

2980

01:54:27,270 --> 01:54:24,960

recommendation for this strategy should

2981

01:54:30,390 --> 01:54:27,280

we be looking at space as a critical

2982

01:54:33,350 --> 01:54:30,400

infrastructure and all the security

2983

01:54:35,270 --> 01:54:33,360

needs we'd have it across the national

2984

01:54:37,990 --> 01:54:35,280

defense homeland security and commercial

2985

01:54:40,390 --> 01:54:38,000

do you have any recommendations

2986

01:54:42,470 --> 01:54:40,400

well i think you're exactly right uh

2987

01:54:44,470 --> 01:54:42,480

madam secretary the

2988

01:54:46,310 --> 01:54:44,480

the reality is that in space as in so

2989

01:54:49,350 --> 01:54:46,320

many other domains as

2990

01:54:50,950 --> 01:54:49,360

director coats knows well uh the line

2991

01:54:52,950 --> 01:54:50,960

between what is a national security

2992

01:54:55,750 --> 01:54:52,960

asset and what is a commercial asset has

2993

01:54:57,350 --> 01:54:55,760

long been blurred uh we rely very very

2994

01:54:59,350 --> 01:54:57,360

heavily in the in the military in

2995

01:55:01,510 --> 01:54:59,360

today's military on on commercial

2996

01:55:02,790 --> 01:55:01,520

entities and so uh that's the reason

2997

01:55:04,070 --> 01:55:02,800

that the definition critical

2998

01:55:05,750 --> 01:55:04,080

infrastructure writ large it's

2999

01:55:08,310 --> 01:55:05,760

inappropriate anymore to parse it out

3000

01:55:10,470 --> 01:55:08,320

very narrowly on military only or

3001
01:55:12,470 --> 01:55:10,480
national security only or intelligence

3002
01:55:14,709 --> 01:55:12,480
community only capabilities because we

3003
01:55:16,470 --> 01:55:14,719
are reliant on that that full range of

3004
01:55:17,990 --> 01:55:16,480
capabilities as residents space

3005
01:55:19,910 --> 01:55:18,000
including commercial in order to

3006
01:55:22,149 --> 01:55:19,920
accomplish that mission it's a complete

3007
01:55:24,310 --> 01:55:22,159
system now and needs to be addressed as

3008
01:55:26,470 --> 01:55:24,320
such and that's why i use the the

3009
01:55:28,310 --> 01:55:26,480
critical infrastructure term and think

3010
01:55:31,189 --> 01:55:28,320
that a strategy needs to be focused on

3011
01:55:33,510 --> 01:55:31,199
how we can effectively secure

3012
01:55:36,790 --> 01:55:33,520
that in its entirety not just predict

3013
01:55:41,350 --> 01:55:36,800

one element of it that may have a dod or

3014

01:55:46,229 --> 01:55:44,070

i'd like to echo that and there's a

3015

01:55:48,550 --> 01:55:46,239

a piece of this that it's a systems

3016

01:55:50,149 --> 01:55:48,560

engineering problem so you've heard from

3017

01:55:51,669 --> 01:55:50,159

three panels today

3018

01:55:54,629 --> 01:55:51,679

uh each

3019

01:55:56,390 --> 01:55:54,639

civil commercial and national security

3020

01:55:58,629 --> 01:55:56,400

space are all

3021

01:56:01,030 --> 01:55:58,639

inextricably linked together

3022

01:56:02,070 --> 01:56:01,040

particularly by this infrastructure but

3023

01:56:04,070 --> 01:56:02,080

also

3024

01:56:06,709 --> 01:56:04,080

by other technologies

3025

01:56:08,870 --> 01:56:06,719

and when you stop and think about the

3026

01:56:11,669 --> 01:56:08,880

number of atm transactions that go

3027

01:56:13,750 --> 01:56:11,679

through commercial geo satellites today

3028

01:56:15,189 --> 01:56:13,760

and ask yourself about critical

3029

01:56:17,830 --> 01:56:15,199

infrastructure

3030

01:56:19,510 --> 01:56:17,840

you begin to see that it's not just a

3031

01:56:22,709 --> 01:56:19,520

launch pad

3032

01:56:24,790 --> 01:56:22,719

or other types of capabilities that are

3033

01:56:25,750 --> 01:56:24,800

in that critical path

3034

01:56:27,990 --> 01:56:25,760

so

3035

01:56:29,910 --> 01:56:28,000

from from my perspective it's very very

3036

01:56:32,470 --> 01:56:29,920

important that the strategy

3037

01:56:35,109 --> 01:56:32,480

looks across all the domains and is an

3038

01:56:37,430 --> 01:56:35,119

integrated systems engineering approach

3039

01:56:39,910 --> 01:56:37,440

to what is the architecture of that

3040

01:56:41,990 --> 01:56:39,920

infrastructure that we need how will we

3041

01:56:44,870 --> 01:56:42,000

support it and if we make changes to

3042

01:56:48,550 --> 01:56:44,880

what we're doing today in one area how

3043

01:56:53,430 --> 01:56:51,830

i'd like to add a quick comment

3044

01:56:56,629 --> 01:56:53,440

to put some numbers on what admiral

3045

01:56:59,430 --> 01:56:56,639

ellis was talking about 80 percent of

3046

01:57:02,229 --> 01:56:59,440

our national security communications go

3047

01:57:04,950 --> 01:57:02,239

via commercial satellite routes

3048

01:57:07,350 --> 01:57:04,960

if we were to lose that infrastructure

3049

01:57:11,270 --> 01:57:07,360

our national security communications

3050

01:57:13,030 --> 01:57:11,280

would be greatly reduced in capability

3051
01:57:15,109 --> 01:57:13,040
when we talk about economic

3052
01:57:17,030 --> 01:57:15,119
infrastructure

3053
01:57:19,510 --> 01:57:17,040
i don't think the general public

3054
01:57:21,910 --> 01:57:19,520
realizes the extent to which

3055
01:57:23,270 --> 01:57:21,920
the global positioning system's timing

3056
01:57:25,589 --> 01:57:23,280
signal

3057
01:57:27,910 --> 01:57:25,599
is critical for these atm transactions

3058
01:57:29,109 --> 01:57:27,920
and and every other point of sale

3059
01:57:30,629 --> 01:57:29,119
transaction

3060
01:57:32,870 --> 01:57:30,639
conducted in the united states and

3061
01:57:35,510 --> 01:57:32,880
throughout most of the world

3062
01:57:37,750 --> 01:57:35,520
i ha i have to ask the question to what

3063
01:57:41,109 --> 01:57:37,760

extent do we believe

3064

01:57:43,189 --> 01:57:41,119

that we have defended ourselves if an

3065

01:57:44,950 --> 01:57:43,199

adversary can bring our economic system

3066

01:57:46,870 --> 01:57:44,960

near collapse

3067

01:57:48,070 --> 01:57:46,880

we may not lose a single piece of

3068

01:57:53,910 --> 01:57:48,080

hardware

3069

01:57:58,629 --> 01:57:56,470

uh uh thank the panel thank you uh madam

3070

01:58:01,510 --> 01:57:58,639

secretary uh secretary of state rex

3071

01:58:04,950 --> 01:58:03,510

uh you have

3072

01:58:06,149 --> 01:58:04,960

you've touched on a couple of areas that

3073

01:58:08,149 --> 01:58:06,159

i think are really important and i want

3074

01:58:10,070 --> 01:58:08,159

to go a little deeper on them

3075

01:58:14,229 --> 01:58:10,080

we know that our adversaries are

3076

01:58:15,990 --> 01:58:14,239

developing anti-satellite weapons

3077

01:58:18,310 --> 01:58:16,000

other capabilities to degrade our

3078

01:58:21,030 --> 01:58:18,320

capabilities both our military and our

3079

01:58:24,149 --> 01:58:21,040

security capabilities and impacts on

3080

01:58:26,629 --> 01:58:24,159

commercial capabilities as well

3081

01:58:28,390 --> 01:58:26,639

and as you've pointed out deterrence

3082

01:58:29,669 --> 01:58:28,400

you know having a strong posture has

3083

01:58:31,189 --> 01:58:29,679

always been

3084

01:58:33,750 --> 01:58:31,199

what has

3085

01:58:36,149 --> 01:58:33,760

been reliable in the past and much of

3086

01:58:37,270 --> 01:58:36,159

that is built with allies and partners

3087

01:58:39,030 --> 01:58:37,280

in the past

3088

01:58:41,669 --> 01:58:39,040

we have existing

3089

01:58:42,709 --> 01:58:41,679

structures of alliances today to what

3090

01:58:45,030 --> 01:58:42,719

extent

3091

01:58:45,910 --> 01:58:45,040

are they the proper platforms to build

3092

01:58:47,750 --> 01:58:45,920

out

3093

01:58:49,510 --> 01:58:47,760

these capabilities through allies and

3094

01:58:52,310 --> 01:58:49,520

partners whom also are developing

3095

01:58:55,109 --> 01:58:52,320

certain capabilities in space themselves

3096

01:58:56,790 --> 01:58:55,119

or is the nature of this threat

3097

01:58:57,910 --> 01:58:56,800

does it require

3098

01:59:00,709 --> 01:58:57,920

a different

3099

01:59:02,629 --> 01:59:00,719

platform or structure for building and

3100

01:59:05,030 --> 01:59:02,639

strengthening these approaches through

3101
01:59:07,430 --> 01:59:05,040
allies and partners and the the second

3102
01:59:09,910 --> 01:59:07,440
question i have gets to the conflict the

3103
01:59:11,589 --> 01:59:09,920
likelihood of conflict and and i think

3104
01:59:12,950 --> 01:59:11,599
this was touched on earlier as well we

3105
01:59:14,870 --> 01:59:12,960
have a lot of

3106
01:59:17,510 --> 01:59:14,880
we've practiced a lot

3107
01:59:19,830 --> 01:59:17,520
to deconflict maritime operations with

3108
01:59:22,229 --> 01:59:19,840
our adversaries to deconflict air

3109
01:59:24,229 --> 01:59:22,239
operations

3110
01:59:26,310 --> 01:59:24,239
we have not practiced and we do not have

3111
01:59:27,990 --> 01:59:26,320
the standards and norms to practice

3112
01:59:29,589 --> 01:59:28,000
deconfliction

3113
01:59:30,870 --> 01:59:29,599

in space

3114

01:59:33,270 --> 01:59:30,880

and

3115

01:59:35,830 --> 01:59:33,280

do you have ideas about the ways to

3116

01:59:37,350 --> 01:59:35,840

address that and what are the norms that

3117

01:59:39,669 --> 01:59:37,360

would be the basis

3118

01:59:41,350 --> 01:59:39,679

for beginning to engage in deconfliction

3119

01:59:43,189 --> 01:59:41,360

capabilities

3120

01:59:46,070 --> 01:59:43,199

uh as well so

3121

01:59:49,189 --> 01:59:46,080

two separate but not unrelated

3122

01:59:53,589 --> 01:59:51,669

well i'll be glad to take the first shot

3123

01:59:55,510 --> 01:59:53,599

first in in in

3124

01:59:57,270 --> 01:59:55,520

interest of brevity uh allies are

3125

01:59:58,950 --> 01:59:57,280

absolutely essential in this effort

3126

02:00:01,430 --> 01:59:58,960

going forward

3127

02:00:04,870 --> 02:00:01,440

if if anything even more so than the

3128

02:00:07,109 --> 02:00:04,880

atmospheric and the maritime domain

3129

02:00:09,189 --> 02:00:07,119

space is a true global commons and the

3130

02:00:11,510 --> 02:00:09,199

number of participants that are involved

3131

02:00:13,350 --> 02:00:11,520

actively in space with satellites and

3132

02:00:15,750 --> 02:00:13,360

space programs of their own is well over

3133

02:00:17,669 --> 02:00:15,760

a hundred now and so if we're talking

3134

02:00:20,070 --> 02:00:17,679

about coming together and collective

3135

02:00:22,149 --> 02:00:20,080

security it makes a great deal of sense

3136

02:00:24,390 --> 02:00:22,159

to uh to integrate those efforts and

3137

02:00:26,390 --> 02:00:24,400

have commonality when appropriate we

3138

02:00:27,589 --> 02:00:26,400

understand the challenges of technology

3139

02:00:29,510 --> 02:00:27,599

transfer that was talked about in

3140

02:00:31,510 --> 02:00:29,520

another panel but i do think the mutual

3141

02:00:33,830 --> 02:00:31,520

security elements of this are going to

3142

02:00:35,589 --> 02:00:33,840

be essential because just as dr griffin

3143

02:00:37,189 --> 02:00:35,599

indicated a lot of our communications go

3144

02:00:39,510 --> 02:00:37,199

through commercial satellites not all of

3145

02:00:41,669 --> 02:00:39,520

those commercial satellites we use are

3146

02:00:43,910 --> 02:00:41,679

us satellites and so i think there's a

3147

02:00:45,510 --> 02:00:43,920

there's a logical extension there with

3148

02:00:48,310 --> 02:00:45,520

regard to uh

3149

02:00:49,750 --> 02:00:48,320

to conflict and deconflict i think if i

3150

02:00:51,990 --> 02:00:49,760

might default back to the maritime

3151

02:00:54,310 --> 02:00:52,000

domain again over many centuries we had

3152

02:00:56,950 --> 02:00:54,320

an ability to to rub the rough edges off

3153

02:00:59,109 --> 02:00:56,960

these relationships and create

3154

02:01:01,189 --> 02:00:59,119

rules of the road in the maritime domain

3155

02:01:04,470 --> 02:01:01,199

and ultimately

3156

02:01:06,149 --> 02:01:04,480

acceptable behaviors even supranational

3157

02:01:07,830 --> 02:01:06,159

organizations such as the international

3158

02:01:09,189 --> 02:01:07,840

maritime organization and the

3159

02:01:11,189 --> 02:01:09,199

international civil aviation

3160

02:01:13,270 --> 02:01:11,199

organization were constructed and

3161

02:01:14,870 --> 02:01:13,280

ultimately uh follow on treaties and

3162

02:01:16,629 --> 02:01:14,880

relationships which of these are

3163

02:01:18,709 --> 02:01:16,639

applicable to space is something we need

3164

02:01:20,629 --> 02:01:18,719

to explore not all of them as i said

3165

02:01:22,950 --> 02:01:20,639

earlier may work but i think that's the

3166

02:01:24,790 --> 02:01:22,960

direction we need to go so that we can

3167

02:01:27,510 --> 02:01:24,800

help people understand and avoid

3168

02:01:29,589 --> 02:01:27,520

accidents and avoid miscalculation on

3169

02:01:31,350 --> 02:01:29,599

the part of on the part of allies it's

3170

02:01:33,830 --> 02:01:31,360

not that we have to tell people exactly

3171

02:01:35,830 --> 02:01:33,840

what we will do in every situation but

3172

02:01:37,990 --> 02:01:35,840

it's absolutely essential that that they

3173

02:01:40,229 --> 02:01:38,000

understand uh and we communicate through

3174

02:01:43,189 --> 02:01:40,239

whatever means not necessarily publicly

3175

02:01:44,310 --> 02:01:43,199

where our our our major concerns are so

3176

02:01:46,070 --> 02:01:44,320

that we uh

3177

02:01:49,189 --> 02:01:46,080

we don't uh stumble into uh

3178

02:01:55,030 --> 02:01:49,199

confrontation much less conflict uh on a

3179

02:01:59,510 --> 02:01:57,589

uh i think that

3180

02:02:01,669 --> 02:01:59,520

from an international perspective we

3181

02:02:02,550 --> 02:02:01,679

have a strong partnership in the five

3182

02:02:05,589 --> 02:02:02,560

eyes

3183

02:02:07,510 --> 02:02:05,599

and we really should be building on that

3184

02:02:11,430 --> 02:02:07,520

when you think about resilience and

3185

02:02:13,750 --> 02:02:11,440

persistence and reconstitution

3186

02:02:16,629 --> 02:02:13,760

the geographical diversity that comes

3187

02:02:18,149 --> 02:02:16,639

with having partners around the world

3188

02:02:20,470 --> 02:02:18,159

both in space surveillance but

3189

02:02:22,310 --> 02:02:20,480

potentially in launch in

3190

02:02:24,149 --> 02:02:22,320

command and control nodes ground

3191

02:02:26,070 --> 02:02:24,159

tracking stations and so forth

3192

02:02:28,950 --> 02:02:26,080

absolutely essential

3193

02:02:30,950 --> 02:02:28,960

as a part of that architecture

3194

02:02:33,669 --> 02:02:30,960

i thought admiral ellis's comments about

3195

02:02:36,310 --> 02:02:33,679

norms were very good i will make one

3196

02:02:38,629 --> 02:02:36,320

additional comment to that which is that

3197

02:02:40,950 --> 02:02:38,639

norms and standards need to be things

3198

02:02:42,790 --> 02:02:40,960

that we are also willing to do

3199

02:02:44,950 --> 02:02:42,800

it will not work if we

3200

02:02:47,030 --> 02:02:44,960

say oh we don't want people to do

3201
02:02:48,550 --> 02:02:47,040
certain things oh but oh well if we need

3202
02:02:50,950 --> 02:02:48,560
to do it we're just going to go ahead

3203
02:02:53,030 --> 02:02:50,960
and do it anyway and and that's why

3204
02:02:54,390 --> 02:02:53,040
those norms and standards need to be

3205
02:02:55,430 --> 02:02:54,400
based on

3206
02:02:58,390 --> 02:02:55,440
safety

3207
02:03:00,709 --> 02:02:58,400
and uh clarity in other words not

3208
02:03:03,510 --> 02:03:00,719
confusing people about intentions and so

3209
02:03:05,189 --> 02:03:03,520
forth and a wonderful example of norms

3210
02:03:06,550 --> 02:03:05,199
and standards that have been adopted

3211
02:03:08,629 --> 02:03:06,560
internationally

3212
02:03:11,189 --> 02:03:08,639
that have a strong technical basis are

3213
02:03:13,510 --> 02:03:11,199

the orbital debris mitigation standards

3214

02:03:15,669 --> 02:03:13,520

developed by nasa and proliferated

3215

02:03:17,350 --> 02:03:15,679

throughout the world that most countries

3216

02:03:19,750 --> 02:03:17,360

have agreed to do

3217

02:03:22,709 --> 02:03:19,760

on from a safety standpoint right the

3218

02:03:25,830 --> 02:03:22,719

sustainability of space and so those

3219

02:03:29,589 --> 02:03:25,840

norms and standards need to be based on

3220

02:03:33,830 --> 02:03:29,599

practical safety and clarity as opposed

3221

02:03:36,709 --> 02:03:35,030

all right thank you

3222

02:03:39,430 --> 02:03:36,719

at the panel dr griffin another thought

3223

02:03:41,589 --> 02:03:39,440

on this uh just a quick comment uh you

3224

02:03:43,750 --> 02:03:41,599

asked about secretary mr secretary asked

3225

02:03:46,550 --> 02:03:43,760

about alliances

3226

02:03:49,109 --> 02:03:46,560

the united states is a great nation

3227

02:03:51,750 --> 02:03:49,119

i hope we all hope all always will be

3228

02:03:54,470 --> 02:03:51,760

great nations of course must be prepared

3229

02:03:56,550 --> 02:03:54,480

sometimes to lead alone if necessary but

3230

02:03:58,790 --> 02:03:56,560

great nations also understand

3231

02:04:01,189 --> 02:03:58,800

the value of alliances and partnerships

3232

02:04:05,109 --> 02:04:01,199

and nowhere is this more true or has

3233

02:04:10,709 --> 02:04:07,910

going forward

3234

02:04:12,709 --> 02:04:10,719

if if we want to know what a conflict of

3235

02:04:13,830 --> 02:04:12,719

the future looks like without our space

3236

02:04:15,430 --> 02:04:13,840

assets

3237

02:04:17,109 --> 02:04:15,440

we need to look to the past and look at

3238

02:04:19,750 --> 02:04:17,119

world war ii i don't think we want to

3239

02:04:21,750 --> 02:04:19,760

repeat that experience our allies don't

3240

02:04:24,149 --> 02:04:21,760

want to repeat it the value of the

3241

02:04:26,950 --> 02:04:24,159

western alliance that we have the value

3242

02:04:29,350 --> 02:04:26,960

of our alliances with japan south korea

3243

02:04:31,830 --> 02:04:29,360

other nations pam mentioned the five

3244

02:04:35,990 --> 02:04:34,229

these are critical to carry forward with

3245

02:04:39,270 --> 02:04:36,000

us in space

3246

02:04:41,830 --> 02:04:39,280

absolutely critical

3247

02:04:44,149 --> 02:04:41,840

uh well i want to thank the panel and uh

3248

02:04:46,870 --> 02:04:44,159

a few more comments uh

3249

02:04:48,629 --> 02:04:46,880

uh let me recognize uh

3250

02:04:51,030 --> 02:04:48,639

the president's homeland security

3251
02:04:52,550 --> 02:04:51,040
adviser tom bossert for a comment or

3252
02:04:55,030 --> 02:04:52,560
question

3253
02:04:58,310 --> 02:04:55,040
ah thank you mr vice president and i am

3254
02:05:00,149 --> 02:04:58,320
thrilled to be part of this long overdue

3255
02:05:01,189 --> 02:05:00,159
council i think the national space

3256
02:05:02,709 --> 02:05:01,199
council

3257
02:05:04,390 --> 02:05:02,719
has a lot of challenges ahead of it and

3258
02:05:06,310 --> 02:05:04,400
a lot of opportunities so

3259
02:05:08,629 --> 02:05:06,320
maybe a quick question and dr griffin

3260
02:05:10,950 --> 02:05:08,639
you've already perhaps addressed it

3261
02:05:12,950 --> 02:05:10,960
so i'll ask to

3262
02:05:14,870 --> 02:05:12,960
if i can get you to expand upon your

3263
02:05:16,950 --> 02:05:14,880

thoughts from a security perspective

3264

02:05:18,470 --> 02:05:16,960

both physical and cyber

3265

02:05:20,149 --> 02:05:18,480

i'm really interested in your views and

3266

02:05:21,510 --> 02:05:20,159

the panel's views on the vulnerabilities

3267

02:05:23,669 --> 02:05:21,520

and challenges

3268

02:05:25,189 --> 02:05:23,679

to a reliable sustained space-based

3269

02:05:26,390 --> 02:05:25,199

positioning navigation and timing

3270

02:05:27,990 --> 02:05:26,400

infrastructure

3271

02:05:29,350 --> 02:05:28,000

and in particular the relationships are

3272

02:05:30,950 --> 02:05:29,360

the actions that we need to take to

3273

02:05:32,629 --> 02:05:30,960

maintain american

3274

02:05:35,830 --> 02:05:32,639

preeminence i understand there's

3275

02:05:37,910 --> 02:05:35,840

competitors the gps system uh that we've

3276

02:05:39,109 --> 02:05:37,920

relied upon so heavily but i also

3277

02:05:40,550 --> 02:05:39,119

understand there are vulnerabilities

3278

02:05:41,910 --> 02:05:40,560

that are being exploited on a regular

3279

02:05:43,350 --> 02:05:41,920

basis and that

3280

02:05:45,109 --> 02:05:43,360

that timing

3281

02:05:47,510 --> 02:05:45,119

function is not only critical physically

3282

02:05:49,430 --> 02:05:47,520

but to our cyber operations and so if i

3283

02:05:51,990 --> 02:05:49,440

could ask that question and then

3284

02:05:54,470 --> 02:05:52,000

before i finish add to mick mulvaney's

3285

02:05:56,390 --> 02:05:54,480

comments this isn't a question but uh

3286

02:05:58,390 --> 02:05:56,400

perhaps off the stage i'd like to

3287

02:06:00,310 --> 02:05:58,400

understand your considerations

3288

02:06:02,470 --> 02:06:00,320

and your views on the considerations

3289

02:06:04,470 --> 02:06:02,480

involved in delineating outer space

3290

02:06:07,830 --> 02:06:04,480

in our declarative policy as that

3291

02:06:11,430 --> 02:06:09,350

well i'll go first

3292

02:06:13,430 --> 02:06:11,440

to the second question to answer your

3293

02:06:16,069 --> 02:06:13,440

second question whether on or off stage

3294

02:06:18,069 --> 02:06:16,079

i'm always available for

3295

02:06:20,310 --> 02:06:18,079

those sorts of discussions you have only

3296

02:06:22,709 --> 02:06:20,320

to ask

3297

02:06:24,550 --> 02:06:22,719

obviously i'm a person who leans forward

3298

02:06:26,470 --> 02:06:24,560

in saying that

3299

02:06:29,589 --> 02:06:26,480

we need to be very clear as admiral

3300

02:06:31,830 --> 02:06:29,599

ellis has so sinc so succinctly said

3301

02:06:34,229 --> 02:06:31,840

about what we will do and and what we

3302

02:06:35,990 --> 02:06:34,239

will accept and what we won't accept

3303

02:06:38,470 --> 02:06:36,000

and and i do think that needs to be part

3304

02:06:41,430 --> 02:06:38,480

of our declarative policy with regard to

3305

02:06:43,189 --> 02:06:41,440

gps and and frankly other as

3306

02:06:46,550 --> 02:06:43,199

other elements of our critical

3307

02:06:50,069 --> 02:06:49,189

we need to be extremely clear

3308

02:06:52,470 --> 02:06:50,079

that

3309

02:06:54,550 --> 02:06:52,480

an attack on these assets

3310

02:06:55,669 --> 02:06:54,560

is an attack on the united states

3311

02:06:58,470 --> 02:06:55,679

because it

3312

02:07:00,790 --> 02:06:58,480

influences critically

3313

02:07:04,470 --> 02:07:00,800

our way of dealing with conflict and

3314

02:07:09,109 --> 02:07:06,390

gps is

3315

02:07:10,950 --> 02:07:09,119

vulnerable in a number of ways i'm not

3316

02:07:14,229 --> 02:07:10,960

going to go into those ways in this

3317

02:07:20,950 --> 02:07:17,510

we need to do everything we can to

3318

02:07:28,149 --> 02:07:24,830

gps derived but gps independent methods

3319

02:07:31,510 --> 02:07:28,159

of capturing and preserving our timing

3320

02:07:33,270 --> 02:07:31,520

signals and our navigational information

3321

02:07:35,990 --> 02:07:33,280

we need to make it clear that we will

3322

02:07:39,109 --> 02:07:36,000

protect our space assets

3323

02:07:41,990 --> 02:07:39,119

that we do not allow our adversaries an

3324

02:07:43,270 --> 02:07:42,000

unfettered field of force application in

3325

02:07:45,510 --> 02:07:43,280

space

3326

02:07:46,950 --> 02:07:45,520

that we choose not to be the first but

3327

02:07:54,310 --> 02:07:46,960

that we will

3328

02:07:54,320 --> 02:07:57,189

i'm sorry

3329

02:08:01,830 --> 02:07:59,189

well thank you further for the question

3330

02:08:04,229 --> 02:08:01,840

i echo mike's comments on on pnt and

3331

02:08:05,910 --> 02:08:04,239

your your understanding certainly uh dr

3332

02:08:08,149 --> 02:08:05,920

bossert uh

3333

02:08:10,310 --> 02:08:08,159

it's also worth noting that you know

3334

02:08:12,550 --> 02:08:10,320

we've made great strides since gps was

3335

02:08:14,470 --> 02:08:12,560

first invented it began as a transit

3336

02:08:16,629 --> 02:08:14,480

system for the navy years ago and we

3337

02:08:18,069 --> 02:08:16,639

worked through gps one two and three and

3338

02:08:19,589 --> 02:08:18,079

while we could all agree that we need to

3339

02:08:20,870 --> 02:08:19,599

have that capability to move much more

3340

02:08:22,790 --> 02:08:20,880

rapidly through that there are

3341

02:08:24,950 --> 02:08:22,800

opportunities to incrementally involve

3342

02:08:26,629 --> 02:08:24,960

evolve our capabilities in space to

3343

02:08:28,229 --> 02:08:26,639

ensure that continued access and

3344

02:08:29,830 --> 02:08:28,239

security that we need to fully

3345

02:08:31,510 --> 02:08:29,840

capitalize on and as mike has as

3346

02:08:32,870 --> 02:08:31,520

indicated a lot of those elements are

3347

02:08:35,669 --> 02:08:32,880

are classified but they're certainly

3348

02:08:37,589 --> 02:08:35,679

doable uh secondly with regard to

3349

02:08:39,109 --> 02:08:37,599

the declaratory policy we

3350

02:08:41,189 --> 02:08:39,119

you know you can look back in history

3351
02:08:42,550 --> 02:08:41,199
and we've had declaratory policies and

3352
02:08:44,229 --> 02:08:42,560
declarative doesn't mean necessarily in

3353
02:08:45,589 --> 02:08:44,239
a public press release we've let

3354
02:08:47,030 --> 02:08:45,599
adversaries know particularly in

3355
02:08:49,430 --> 02:08:47,040
relation to elements of the nuclear

3356
02:08:51,589 --> 02:08:49,440
command and control network how we would

3357
02:08:53,350 --> 02:08:51,599
view anything that disrupted or

3358
02:08:55,270 --> 02:08:53,360
disturbed much less destroyed those

3359
02:08:57,430 --> 02:08:55,280
capabilities and so there's a precedent

3360
02:08:59,109 --> 02:08:57,440
for this kind of a communication once we

3361
02:09:00,709 --> 02:08:59,119
decide exactly

3362
02:09:04,470 --> 02:09:00,719
what that policy and strategy needs to

3363
02:09:08,160 --> 02:09:05,350

colonel

3364

02:09:10,470 --> 02:09:08,170

uh yes i'd just like to add that um

3365

02:09:12,550 --> 02:09:10,480

[Music]

3366

02:09:15,350 --> 02:09:12,560

this is not something that's caught us

3367

02:09:17,750 --> 02:09:15,360

all by surprise uh when i was at darpa

3368

02:09:20,069 --> 02:09:17,760

we were working closely with the

3369

02:09:21,189 --> 02:09:20,079

service labs and the services

3370

02:09:23,750 --> 02:09:21,199

to

3371

02:09:25,350 --> 02:09:23,760

ensure that we had gps independent

3372

02:09:27,430 --> 02:09:25,360

methods of navigation and that

3373

02:09:28,790 --> 02:09:27,440

technology development is absolutely

3374

02:09:31,109 --> 02:09:28,800

essential

3375

02:09:33,510 --> 02:09:31,119

interestingly you know long term it can

3376

02:09:36,069 --> 02:09:33,520

have a different technology benefit as

3377

02:09:37,510 --> 02:09:36,079

we reach out into the solar system

3378

02:09:39,910 --> 02:09:37,520

where we will not have the benefit of

3379

02:09:41,750 --> 02:09:39,920

gps position information

3380

02:09:43,270 --> 02:09:41,760

so that's a very important technology

3381

02:09:47,030 --> 02:09:43,280

development effort

3382

02:09:49,189 --> 02:09:47,040

but i'd like to reiterate exactly what

3383

02:09:51,510 --> 02:09:49,199

what dr griffin said

3384

02:09:53,750 --> 02:09:51,520

because although we may have those

3385

02:09:56,790 --> 02:09:53,760

capabilities for national security to be

3386

02:09:58,790 --> 02:09:56,800

gps independent that is not the case for

3387

02:10:00,790 --> 02:09:58,800

our economic

3388

02:10:02,149 --> 02:10:00,800

environment here in the u.s

3389

02:10:03,189 --> 02:10:02,159

and

3390

02:10:05,589 --> 02:10:03,199

of course

3391

02:10:07,990 --> 02:10:05,599

the economic health of the u.s is a

3392

02:10:09,109 --> 02:10:08,000

national security matter and it will be

3393

02:10:11,189 --> 02:10:09,119

years

3394

02:10:13,589 --> 02:10:11,199

before any changes occur in that

3395

02:10:15,430 --> 02:10:13,599

environment they will change very slowly

3396

02:10:18,629 --> 02:10:15,440

there's tremendous commercial dependence

3397

02:10:20,790 --> 02:10:18,639

on it and so i i agree with dr griffin

3398

02:10:22,790 --> 02:10:20,800

that an attack on gps is an attack on

3399

02:10:24,629 --> 02:10:22,800

the us

3400

02:10:25,830 --> 02:10:24,639

thank you very much to the panel and uh

3401

02:10:28,229 --> 02:10:25,840

thank you tom

3402

02:10:30,470 --> 02:10:28,239

i'm going to recognize the vice chairman

3403

02:10:32,870 --> 02:10:30,480

of the joint chiefs of staff general

3404

02:10:34,550 --> 02:10:32,880

paul selva and then

3405

02:10:36,069 --> 02:10:34,560

the deputy secretary of defense for some

3406

02:10:39,510 --> 02:10:36,079

closing remarks before we hear from the

3407

02:10:42,629 --> 02:10:41,109

general you're recognized thank you mr

3408

02:10:44,470 --> 02:10:42,639

vice president thank you to all of our

3409

02:10:46,870 --> 02:10:44,480

panel members for taking your personal

3410

02:10:49,830 --> 02:10:46,880

time to be here today to represent

3411

02:10:52,550 --> 02:10:49,840

all three segments of our

3412

02:10:54,149 --> 02:10:52,560

space architecture and infrastructure

3413

02:10:57,189 --> 02:10:54,159

and it occurs to me as i listen to all

3414

02:10:59,669 --> 02:10:57,199

three panels particularly this one

3415

02:11:03,350 --> 02:10:59,679

that command and control

3416

02:11:06,149 --> 02:11:03,360

is inexorably linked to very elegant

3417

02:11:07,990 --> 02:11:06,159

and timely as you said pamela space

3418

02:11:09,830 --> 02:11:08,000

situational awareness

3419

02:11:12,470 --> 02:11:09,840

and i would i'd like to ask the panel

3420

02:11:14,390 --> 02:11:12,480

can you give us a couple of concrete

3421

02:11:16,229 --> 02:11:14,400

near-term things

3422

02:11:18,790 --> 02:11:16,239

you think we can do

3423

02:11:21,750 --> 02:11:18,800

not only to facilitate the command and

3424

02:11:23,750 --> 02:11:21,760

control of commercial and civil space

3425

02:11:25,589 --> 02:11:23,760

but also to provide for the kind of

3426
02:11:26,870 --> 02:11:25,599
space situational awareness that's

3427
02:11:28,950 --> 02:11:26,880
necessary

3428
02:11:30,390 --> 02:11:28,960
to enforce those norms and standards of

3429
02:11:33,430 --> 02:11:30,400
safe behavior

3430
02:11:34,950 --> 02:11:33,440
as well as to attribute the kinds of

3431
02:11:37,270 --> 02:11:34,960
attacks or

3432
02:11:40,709 --> 02:11:37,280
interference with our systems that we

3433
02:11:43,750 --> 02:11:40,719
might observe through that structure

3434
02:11:46,629 --> 02:11:43,760
i think this is a case where

3435
02:11:48,790 --> 02:11:46,639
safety lies in numbers

3436
02:11:51,510 --> 02:11:48,800
i believe that the concept of a

3437
02:11:55,990 --> 02:11:51,520
centralized command and control node

3438
02:12:00,870 --> 02:11:58,229

is frankly as as dead as the battleship

3439

02:12:02,709 --> 02:12:00,880

after pearl harbor

3440

02:12:04,390 --> 02:12:02,719

every node

3441

02:12:06,870 --> 02:12:04,400

in our networks

3442

02:12:09,830 --> 02:12:06,880

with today's information technology

3443

02:12:11,030 --> 02:12:09,840

every node can be a command and control

3444

02:12:12,709 --> 02:12:11,040

node

3445

02:12:15,109 --> 02:12:12,719

we need to work out a strategy in a

3446

02:12:17,189 --> 02:12:15,119

hierarchy for how such

3447

02:12:21,430 --> 02:12:17,199

devolution would take place in the event

3448

02:12:22,950 --> 02:12:21,440

of conflict but the enemy should know

3449

02:12:25,109 --> 02:12:22,960

that

3450

02:12:27,669 --> 02:12:25,119

there is no central point of attack

3451
02:12:30,709 --> 02:12:27,679
which could render us

3452
02:12:34,629 --> 02:12:30,719
uh incapacitated

3453
02:12:38,629 --> 02:12:36,390
thank you general uh

3454
02:12:40,069 --> 02:12:38,639
i echo mike's comments and and i i hope

3455
02:12:41,510 --> 02:12:40,079
you didn't interpret my comments on the

3456
02:12:43,589 --> 02:12:41,520
neighborhood watch and my opening

3457
02:12:45,270 --> 02:12:43,599
statement is trivializing it i believe

3458
02:12:46,550 --> 02:12:45,280
that along the lines of mike's

3459
02:12:48,550 --> 02:12:46,560
conversation in addition to command and

3460
02:12:50,870 --> 02:12:48,560
control each of these resources up there

3461
02:12:53,830 --> 02:12:50,880
can be outfitted with a rudimentary

3462
02:12:56,229 --> 02:12:53,840
sensor suite of some stripe that could

3463
02:12:58,149 --> 02:12:56,239

then collectively feed this this network

3464

02:13:00,950 --> 02:12:58,159

and this awareness we're we're belatedly

3465

02:13:02,709 --> 02:13:00,960

arguably moving on a much more capable

3466

02:13:05,030 --> 02:13:02,719

space fence that ought to be just the

3467

02:13:06,709 --> 02:13:05,040

first step in uh in ensuring uh

3468

02:13:08,229 --> 02:13:06,719

situational awareness as you are are

3469

02:13:11,030 --> 02:13:08,239

fully aware there are now commercial

3470

02:13:13,910 --> 02:13:11,040

enterprises out there that can network

3471

02:13:15,990 --> 02:13:13,920

uh ground-based systems of sensors to to

3472

02:13:17,589 --> 02:13:16,000

not with the same fidelity and accuracy

3473

02:13:19,510 --> 02:13:17,599

of our of our national security

3474

02:13:21,189 --> 02:13:19,520

resources but certainly contribute

3475

02:13:23,350 --> 02:13:21,199

information and insight to this this is

3476

02:13:24,790 --> 02:13:23,360

a collective effort this is a team sport

3477

02:13:27,430 --> 02:13:24,800

going forward and by team i don't just

3478

02:13:29,350 --> 02:13:27,440

mean u.s civilian i mean allies and

3479

02:13:33,750 --> 02:13:29,360

partners as well around the globe and

3480

02:13:38,470 --> 02:13:36,149

admiral ellis is right there have been

3481

02:13:40,550 --> 02:13:38,480

tremendous advances in distributed

3482

02:13:42,629 --> 02:13:40,560

sensor networks where you have

3483

02:13:44,950 --> 02:13:42,639

distributed sensors that all

3484

02:13:47,030 --> 02:13:44,960

coordinate together where the

3485

02:13:49,990 --> 02:13:47,040

the hole is greater than the sum of the

3486

02:13:51,990 --> 02:13:50,000

parts and that technology is widely

3487

02:13:53,589 --> 02:13:52,000

available

3488

02:13:56,229 --> 02:13:53,599

as i talked about

3489

02:13:59,270 --> 02:13:56,239

there's some commercial sensors now for

3490

02:14:01,189 --> 02:13:59,280

space surveillance essentially

3491

02:14:03,350 --> 02:14:01,199

academic telescopes commercial

3492

02:14:05,990 --> 02:14:03,360

telescopes and radars

3493

02:14:08,470 --> 02:14:06,000

and and this information is available

3494

02:14:09,589 --> 02:14:08,480

today it's being purchased by commercial

3495

02:14:11,430 --> 02:14:09,599

entities

3496

02:14:14,149 --> 02:14:11,440

by the sda

3497

02:14:16,470 --> 02:14:14,159

i think that's an immediate step

3498

02:14:18,069 --> 02:14:16,480

that could be taken would be to bring

3499

02:14:20,550 --> 02:14:18,079

this data in

3500

02:14:22,709 --> 02:14:20,560

one of the biggest concerns about it is

3501
02:14:24,149 --> 02:14:22,719
how can you trust this data

3502
02:14:25,430 --> 02:14:24,159
even today

3503
02:14:26,390 --> 02:14:25,440
there are

3504
02:14:28,550 --> 02:14:26,400
analysts

3505
02:14:31,030 --> 02:14:28,560
who look at all the data that comes in

3506
02:14:33,510 --> 02:14:31,040
even from our certified sensors and

3507
02:14:35,830 --> 02:14:33,520
analyze it to evaluate whether there's

3508
02:14:37,910 --> 02:14:35,840
biases that are developing whether

3509
02:14:39,430 --> 02:14:37,920
weather is

3510
02:14:41,430 --> 02:14:39,440
having a negative effect on the

3511
02:14:44,390 --> 02:14:41,440
information that we're gathering but

3512
02:14:45,350 --> 02:14:44,400
that's pretty much a hand

3513
02:14:47,910 --> 02:14:45,360

done

3514

02:14:50,229 --> 02:14:47,920

process it takes about four or five days

3515

02:14:51,830 --> 02:14:50,239

to really be sure

3516

02:14:53,350 --> 02:14:51,840

how confident you are and the quality of

3517

02:14:55,750 --> 02:14:53,360

what you're looking at

3518

02:14:56,790 --> 02:14:55,760

all of that can be automated relatively

3519

02:14:59,030 --> 02:14:56,800

easily

3520

02:15:00,149 --> 02:14:59,040

and that's a very very important aspect

3521

02:15:02,629 --> 02:15:00,159

of it

3522

02:15:04,629 --> 02:15:02,639

when you get a new piece of information

3523

02:15:05,750 --> 02:15:04,639

you need to be able to tell immediately

3524

02:15:07,589 --> 02:15:05,760

whether

3525

02:15:08,790 --> 02:15:07,599

something actually just happened on

3526

02:15:11,030 --> 02:15:08,800

orbit

3527

02:15:12,790 --> 02:15:11,040

or if one of your distributed sensors

3528

02:15:14,870 --> 02:15:12,800

has been spoofed and is giving you

3529

02:15:17,589 --> 02:15:14,880

incorrect information and that is

3530

02:15:19,189 --> 02:15:17,599

incredibly important and it is possible

3531

02:15:20,870 --> 02:15:19,199

to automate that

3532

02:15:22,790 --> 02:15:20,880

we've seen the technologies be developed

3533

02:15:24,790 --> 02:15:22,800

for it so i think that

3534

02:15:26,069 --> 02:15:24,800

general in in the near term that's

3535

02:15:27,109 --> 02:15:26,079

something that should be looked at

3536

02:15:29,030 --> 02:15:27,119

that's great

3537

02:15:31,990 --> 02:15:29,040

for the last comment or a question the

3538

02:15:34,550 --> 02:15:32,000

deputy secretary of defense pat shanahan

3539

02:15:36,870 --> 02:15:34,560

thank you mr vice president um

3540

02:15:39,669 --> 02:15:36,880

maybe to bring us home and and where we

3541

02:15:41,350 --> 02:15:39,679

started space is the opportunity

3542

02:15:42,709 --> 02:15:41,360

and i think the uh

3543

02:15:44,470 --> 02:15:42,719

previous

3544

02:15:46,629 --> 02:15:44,480

comments kind of steered us towards some

3545

02:15:48,470 --> 02:15:46,639

of the challenges but uh

3546

02:15:49,830 --> 02:15:48,480

and this question i think goes to uh

3547

02:15:51,669 --> 02:15:49,840

admiral ellis so you've had an

3548

02:15:53,510 --> 02:15:51,679

extraordinary career

3549

02:15:55,350 --> 02:15:53,520

and some very remarkable experiences

3550

02:15:57,750 --> 02:15:55,360

maybe in the

3551
02:15:59,189 --> 02:15:57,760
context of of looking forward when you

3552
02:16:00,629 --> 02:15:59,199
think about

3553
02:16:02,149 --> 02:16:00,639
how

3554
02:16:05,030 --> 02:16:02,159
and this pertains your experience in the

3555
02:16:06,629 --> 02:16:05,040
navy as a pilot as strategic command

3556
02:16:09,189 --> 02:16:06,639
commander

3557
02:16:11,430 --> 02:16:09,199
as maritime law evolved does that serve

3558
02:16:14,390 --> 02:16:11,440
as a basis for us to think about

3559
02:16:16,310 --> 02:16:14,400
international convention or regulation

3560
02:16:19,109 --> 02:16:16,320
and how should we use that

3561
02:16:21,030 --> 02:16:19,119
to shape this opportunity

3562
02:16:22,709 --> 02:16:21,040
thank you mr secretary i i certainly do

3563
02:16:24,950 --> 02:16:22,719

think it does apply it's a template

3564

02:16:26,950 --> 02:16:24,960

against which we can compare the space

3565

02:16:29,109 --> 02:16:26,960

uh environment and our challenges there

3566

02:16:30,390 --> 02:16:29,119

and quite frankly cyberspace as well as

3567

02:16:32,549 --> 02:16:30,400

i mentioned earlier some things will

3568

02:16:34,389 --> 02:16:32,559

translate some things may not

3569

02:16:35,750 --> 02:16:34,399

and and that's part of our judgment on

3570

02:16:38,790 --> 02:16:35,760

our evaluation process but it's

3571

02:16:40,870 --> 02:16:38,800

certainly a starting point uh and as you

3572

02:16:42,549 --> 02:16:40,880

know and as we discussed

3573

02:16:43,669 --> 02:16:42,559

over time we've

3574

02:16:45,990 --> 02:16:43,679

come to

3575

02:16:48,230 --> 02:16:46,000

establish and agree to and actively

3576

02:16:49,589 --> 02:16:48,240

participate in and support a global

3577

02:16:51,750 --> 02:16:49,599

understanding of what the rules of

3578

02:16:53,509 --> 02:16:51,760

behavior are and what they are not we

3579

02:16:55,429 --> 02:16:53,519

can call out people very clearly and

3580

02:16:57,750 --> 02:16:55,439

very candidly when they violate those

3581

02:16:59,190 --> 02:16:57,760

rules it's taken a long time to do that

3582

02:17:01,030 --> 02:16:59,200

unfortunately in space things have

3583

02:17:02,150 --> 02:17:01,040

evolved at a pace there where those

3584

02:17:03,830 --> 02:17:02,160

kinds of policies and those

3585

02:17:06,309 --> 02:17:03,840

opportunities haven't been presented

3586

02:17:08,709 --> 02:17:06,319

things happen too fast i mean the the

3587

02:17:11,190 --> 02:17:08,719

technology we are talking about today

3588

02:17:13,910 --> 02:17:11,200

you know began uh you know essentially

3589

02:17:15,110 --> 02:17:13,920

about 60 years ago and so uh it's time

3590

02:17:18,150 --> 02:17:15,120

to play catch-up and i think the

3591

02:17:20,309 --> 02:17:18,160

maritime can uh begin a a discussion it

3592

02:17:21,990 --> 02:17:20,319

can talk about the the treaties as i

3593

02:17:23,669 --> 02:17:22,000

mentioned and the supranational

3594

02:17:25,030 --> 02:17:23,679

organizations but at the end of the day

3595

02:17:27,270 --> 02:17:25,040

we also need to get it down to the

3596

02:17:29,349 --> 02:17:27,280

tactical uh you know we created even

3597

02:17:31,110 --> 02:17:29,359

during the dark days of the cold war uh

3598

02:17:32,950 --> 02:17:31,120

the so-called incident at sea agreements

3599

02:17:34,790 --> 02:17:32,960

with the russians where we agreed what

3600

02:17:37,110 --> 02:17:34,800

we would and would not do under certain

3601
02:17:38,870 --> 02:17:37,120
circumstances to avoid miscalculation

3602
02:17:41,110 --> 02:17:38,880
and accidents and collisions and and

3603
02:17:43,509 --> 02:17:41,120
potentially uh misunderstandings and

3604
02:17:45,030 --> 02:17:43,519
misinterpretation of hostile intent and

3605
02:17:47,589 --> 02:17:45,040
those kinds of dialogues that full

3606
02:17:49,190 --> 02:17:47,599
spectrum of engagement based on the

3607
02:17:51,110 --> 02:17:49,200
those applicable elements of the

3608
02:17:53,030 --> 02:17:51,120
maritime experience i think are a great

3609
02:17:55,110 --> 02:17:53,040
starting point for that policy and

3610
02:17:57,589 --> 02:17:55,120
strategy discussion and as the

3611
02:17:59,669 --> 02:17:57,599
preeminent space faring leader

3612
02:18:01,429 --> 02:17:59,679
we need to lead that effort and not just

3613
02:18:03,669 --> 02:18:01,439

accept what gets handed to us or what

3614

02:18:05,830 --> 02:18:03,679

evolves or what someone else who might

3615

02:18:08,150 --> 02:18:05,840

risk us ill as was mentioned earlier

3616

02:18:10,309 --> 02:18:08,160

might choose to advance as a as an

3617

02:18:11,509 --> 02:18:10,319

alternative solution that's great thank

3618

02:18:21,110 --> 02:18:11,519

you

3619

02:18:22,709 --> 02:18:21,120

this extraordinary group of americans

3620

02:18:29,589 --> 02:18:22,719

for uh

3621

02:18:34,389 --> 02:18:31,349

this obviously been an

3622

02:18:36,950 --> 02:18:34,399

enormously important uh discussion uh

3623

02:18:39,270 --> 02:18:36,960

for our country and uh uh one that we

3624

02:18:41,509 --> 02:18:39,280

will continue uh on the national space

3625

02:18:43,349 --> 02:18:41,519

council in appropriate settings

3626

02:18:46,629 --> 02:18:43,359

um i'm grateful for the panelists for

3627

02:18:48,549 --> 02:18:46,639

their time and and i want to commend uh

3628

02:18:50,389 --> 02:18:48,559

members of the council for your uh

3629

02:18:52,549 --> 02:18:50,399

thoughtful participation in this panel

3630

02:18:54,469 --> 02:18:52,559

and in the previous panels general

3631

02:18:56,230 --> 02:18:54,479

mcmaster president's national security

3632

02:18:59,669 --> 02:18:56,240

advisor you and your team been working

3633

02:19:02,709 --> 02:18:59,679

on guiding interagency development

3634

02:19:05,030 --> 02:19:02,719

of this the space strategic framework i

3635

02:19:07,270 --> 02:19:05,040

wondered if you would

3636

02:19:09,750 --> 02:19:07,280

offer a few thoughts uh

3637

02:19:11,589 --> 02:19:09,760

perhaps an unclassified overview on the

3638

02:19:13,509 --> 02:19:11,599

status of those efforts

3639

02:19:15,110 --> 02:19:13,519

thank you mr vice president and thanks

3640

02:19:16,950 --> 02:19:15,120

to everyone who came today and

3641

02:19:18,469 --> 02:19:16,960

especially you know those around the

3642

02:19:20,790 --> 02:19:18,479

table who we've been working with over

3643

02:19:22,870 --> 02:19:20,800

the past several months to develop the

3644

02:19:25,110 --> 02:19:22,880

space strategic framework a framework

3645

02:19:27,429 --> 02:19:25,120

that i think will be valuable as we

3646

02:19:29,589 --> 02:19:27,439

continue this discussion as we learn

3647

02:19:31,750 --> 02:19:29,599

from the expertise that's here today and

3648

02:19:33,589 --> 02:19:31,760

and even beyond this room

3649

02:19:35,509 --> 02:19:33,599

so as marilyn houston mentioned on the

3650

02:19:38,790 --> 02:19:35,519

first panel mr vice president the pace

3651
02:19:40,950 --> 02:19:38,800
of technology is increasing and what we

3652
02:19:44,150 --> 02:19:40,960
see is a combination

3653
02:19:47,509 --> 02:19:44,160
of greater counter space threats

3654
02:19:50,230 --> 02:19:47,519
and a greater demand for space services

3655
02:19:52,309 --> 02:19:50,240
rapidly expanding commercial industry

3656
02:19:55,590 --> 02:19:52,319
and untapped potential of space

3657
02:19:58,550 --> 02:19:55,600
exploration all of this is calling for

3658
02:20:01,270 --> 02:19:58,560
an integrated strategy to ensure that

3659
02:20:02,630 --> 02:20:01,280
the united states vital interests are

3660
02:20:04,550 --> 02:20:02,640
advanced

3661
02:20:06,309 --> 02:20:04,560
and so much of the strategic framework

3662
02:20:07,750 --> 02:20:06,319
is classified mr vice president but what

3663
02:20:09,590 --> 02:20:07,760

i'll do today is

3664

02:20:12,870 --> 02:20:09,600

is highlight some of the key elements

3665

02:20:14,630 --> 02:20:12,880

very quickly uh that are unclassified

3666

02:20:17,910 --> 02:20:14,640

and what i'd like to do is is really

3667

02:20:19,429 --> 02:20:17,920

discuss four four key elements of of the

3668

02:20:22,630 --> 02:20:19,439

strategy first

3669

02:20:24,389 --> 02:20:22,640

our strategic framework seeks to ensure

3670

02:20:25,830 --> 02:20:24,399

us leadership

3671

02:20:27,910 --> 02:20:25,840

preeminence

3672

02:20:30,469 --> 02:20:27,920

and freedom of action in space and i

3673

02:20:32,309 --> 02:20:30,479

think based on the discussion today

3674

02:20:35,270 --> 02:20:32,319

will actually emphasize across all

3675

02:20:37,110 --> 02:20:35,280

domains more in in the document as well

3676
02:20:39,670 --> 02:20:37,120
but to ensure that that that preeminence

3677
02:20:40,710 --> 02:20:39,680
for decades to come

3678
02:20:42,550 --> 02:20:40,720
second

3679
02:20:44,230 --> 02:20:42,560
while the strategic framework promotes

3680
02:20:45,990 --> 02:20:44,240
an america first approach it is

3681
02:20:47,910 --> 02:20:46,000
consistent with what the panelists have

3682
02:20:49,830 --> 02:20:47,920
said and what you have said many times

3683
02:20:51,030 --> 02:20:49,840
mr vice president that america first

3684
02:20:53,750 --> 02:20:51,040
doesn't mean

3685
02:20:55,990 --> 02:20:53,760
america alone to the contrary we will

3686
02:20:58,950 --> 02:20:56,000
secure the benefits of space not only

3687
02:21:01,429 --> 02:20:58,960
for ourselves but for and with

3688
02:21:04,230 --> 02:21:01,439

our friends and allies as an essential

3689

02:21:06,389 --> 02:21:04,240

part of this of this framework third

3690

02:21:08,309 --> 02:21:06,399

the framework defines our vital

3691

02:21:10,870 --> 02:21:08,319

interests in space and again we may

3692

02:21:13,030 --> 02:21:10,880

modify this about how space relates to

3693

02:21:15,110 --> 02:21:13,040

vital interests and other domains

3694

02:21:17,030 --> 02:21:15,120

as well based on dr griffin's and other

3695

02:21:18,469 --> 02:21:17,040

and others emphasis on on the cross

3696

02:21:21,270 --> 02:21:18,479

domain aspects

3697

02:21:22,230 --> 02:21:21,280

but we want to ensure unfettered access

3698

02:21:30,230 --> 02:21:22,240

to

3699

02:21:32,389 --> 02:21:30,240

economic prosperity and scientific

3700

02:21:34,389 --> 02:21:32,399

knowledge of the nation and i think that

3701

02:21:37,190 --> 02:21:34,399

parallels really the the composition of

3702

02:21:40,389 --> 02:21:37,200

the three panels today and then fourth

3703

02:21:43,429 --> 02:21:40,399

uh as as uh dennis mullenberg mentioned

3704

02:21:45,670 --> 02:21:43,439

the framework also outlines four primary

3705

02:21:47,270 --> 02:21:45,680

objectives in pursuit of our vital

3706

02:21:49,349 --> 02:21:47,280

interests and this is the beginning of

3707

02:21:51,110 --> 02:21:49,359

an integrated strategy to to guard

3708

02:21:53,990 --> 02:21:51,120

against what admiral said is you know we

3709

02:21:56,150 --> 02:21:54,000

don't want this a strategic vacuum and

3710

02:21:57,110 --> 02:21:56,160

these are the four the four objectives

3711

02:21:59,110 --> 02:21:57,120

first

3712

02:22:00,550 --> 02:21:59,120

to strengthen the safety

3713

02:22:03,429 --> 02:22:00,560

stability

3714

02:22:05,270 --> 02:22:03,439

and sustainability of space activities i

3715

02:22:07,590 --> 02:22:05,280

think based on dr griffin's comments we

3716

02:22:09,030 --> 02:22:07,600

might add resilience there

3717

02:22:09,910 --> 02:22:09,040

there as well

3718

02:22:13,270 --> 02:22:09,920

second

3719

02:22:15,349 --> 02:22:13,280

to deter and when necessary defeat

3720

02:22:17,670 --> 02:22:15,359

adversary space and counter space

3721

02:22:20,070 --> 02:22:17,680

threats that are hostile to the national

3722

02:22:23,030 --> 02:22:20,080

interests of the united states and our

3723

02:22:26,710 --> 02:22:23,040

allies we may not start it again uh but

3724

02:22:28,550 --> 02:22:26,720

but we will finish it will be the last

3725

02:22:30,550 --> 02:22:28,560

consistent with what we've heard from

3726
02:22:32,389 --> 02:22:30,560
from the great panelists today we will

3727
02:22:34,710 --> 02:22:32,399
as a third objective partner with the

3728
02:22:37,270 --> 02:22:34,720
u.s commercial sector to ensure that

3729
02:22:39,670 --> 02:22:37,280
american companies remain the leading

3730
02:22:41,429 --> 02:22:39,680
providers of traditional and innovative

3731
02:22:43,830 --> 02:22:41,439
space technologies

3732
02:22:45,429 --> 02:22:43,840
goods and services on the international

3733
02:22:47,750 --> 02:22:45,439
space market

3734
02:22:51,670 --> 02:22:47,760
and then fourth the fourth objective to

3735
02:22:53,750 --> 02:22:51,680
maintain and extend us human presence

3736
02:22:56,710 --> 02:22:53,760
and robotic explorations

3737
02:22:58,230 --> 02:22:56,720
beyond earth to transform knowledge of

3738
02:22:59,830 --> 02:22:58,240

ourselves

3739

02:23:03,030 --> 02:22:59,840

our planet

3740

02:23:05,030 --> 02:23:03,040

our solar system and and the universe

3741

02:23:06,469 --> 02:23:05,040

and so with your concurrence mr vice

3742

02:23:09,349 --> 02:23:06,479

president once you're able to review

3743

02:23:11,830 --> 02:23:09,359

this what we will do with your approval

3744

02:23:14,070 --> 02:23:11,840

is we will now begin to to flesh out the

3745

02:23:15,590 --> 02:23:14,080

strategic framework we'll identify and

3746

02:23:17,190 --> 02:23:15,600

we'll do this collaboratively with those

3747

02:23:19,510 --> 02:23:17,200

who are here today and beyond we'll

3748

02:23:21,510 --> 02:23:19,520

identify the specific tasks

3749

02:23:24,230 --> 02:23:21,520

the the resources

3750

02:23:26,469 --> 02:23:24,240

and uh and and the authorities required

3751
02:23:28,469 --> 02:23:26,479
we'll identify measures of effectiveness

3752
02:23:29,750 --> 02:23:28,479
and we'll do a periodic assessment of

3753
02:23:32,469 --> 02:23:29,760
what we're doing we're going to move out

3754
02:23:34,790 --> 02:23:32,479
mr vice president and as as admiral

3755
02:23:37,830 --> 02:23:34,800
ellis has said as as colonel mcelroy

3756
02:23:39,510 --> 02:23:37,840
said we have to emphasize speed and and

3757
02:23:41,510 --> 02:23:39,520
and move out quickly

3758
02:23:43,429 --> 02:23:41,520
thank you mr vice president well uh

3759
02:23:44,870 --> 02:23:43,439
thank you general and uh

3760
02:23:46,870 --> 02:23:44,880
uh

3761
02:23:48,389 --> 02:23:46,880
if there is um

3762
02:23:51,429 --> 02:23:48,399
no further comment from members of the

3763
02:23:55,429 --> 02:23:51,439

council regarding the strategy

3764

02:23:58,469 --> 02:23:55,439

that general mcmaster uh outlined

3765

02:24:00,550 --> 02:23:58,479

um and hearing none um

3766

02:24:02,550 --> 02:24:00,560

i would simply direct you to continue to

3767

02:24:04,389 --> 02:24:02,560

work with other members of the council

3768

02:24:08,070 --> 02:24:04,399

and to develop an implementation plan

3769

02:24:09,990 --> 02:24:08,080

for that framework over the next 45 days

3770

02:24:11,429 --> 02:24:10,000

for a presentation to

3771

02:24:13,110 --> 02:24:11,439

president trump

3772

02:24:14,790 --> 02:24:13,120

with his

3773

02:24:16,710 --> 02:24:14,800

for his approval

3774

02:24:18,710 --> 02:24:16,720

so we'll we'll proceed on that basis

3775

02:24:20,070 --> 02:24:18,720

general thank you very much

3776

02:24:21,349 --> 02:24:20,080

um

3777

02:24:24,230 --> 02:24:21,359

we uh

3778

02:24:25,990 --> 02:24:24,240

we are at the end of uh this first

3779

02:24:27,590 --> 02:24:26,000

meeting of the national space council i

3780

02:24:29,990 --> 02:24:27,600

i want to uh

3781

02:24:33,510 --> 02:24:30,000

i want to thank uh each of the members

3782

02:24:35,590 --> 02:24:33,520

of the council and your staffs for uh

3783

02:24:37,830 --> 02:24:35,600

what has uh been a

3784

02:24:40,150 --> 02:24:37,840

um an enlightening

3785

02:24:43,270 --> 02:24:40,160

uh and engaging dialogue

3786

02:24:44,630 --> 02:24:43,280

uh in it and uh from where i'm sitting

3787

02:24:46,550 --> 02:24:44,640

and i trust where the president is

3788

02:24:49,270 --> 02:24:46,560

sending a very good start

3789

02:24:51,510 --> 02:24:49,280

uh on um a new beginning

3790

02:24:53,830 --> 02:24:51,520

uh for um uh

3791

02:24:57,429 --> 02:24:53,840

the national space council and for the

3792

02:24:58,950 --> 02:24:57,439

development of renewed american energy

3793

02:25:02,950 --> 02:24:58,960

in space uh

3794

02:25:04,389 --> 02:25:02,960

exploration both in the area of uh

3795

02:25:11,030 --> 02:25:04,399

of

3796

02:25:12,950 --> 02:25:11,040

our presence in space that contributes

3797

02:25:14,309 --> 02:25:12,960

to our national security

3798

02:25:15,990 --> 02:25:14,319

um

3799

02:25:18,070 --> 02:25:16,000

also i want to thank our staff in

3800

02:25:20,309 --> 02:25:18,080

particular uh and you could stand while

3801

02:25:22,070 --> 02:25:20,319

i say your name darris meeks who is our

3802

02:25:24,550 --> 02:25:22,080

policy director scott pace who is

3803

02:25:26,630 --> 02:25:24,560

leading national space council

3804

02:25:28,389 --> 02:25:26,640

jared stout and the team thank you for

3805

02:25:30,230 --> 02:25:28,399

pulling together a very

3806

02:25:36,070 --> 02:25:30,240

successful day

3807

02:25:40,870 --> 02:25:37,990

lastly to be brief to my fellow council

3808

02:25:43,990 --> 02:25:40,880

members you have your marching orders

3809

02:25:45,910 --> 02:25:44,000

let's work on a 45-day time frame for

3810

02:25:47,510 --> 02:25:45,920

turning around recommendations and

3811

02:25:50,710 --> 02:25:47,520

proposals

3812

02:25:52,070 --> 02:25:50,720

to the to the president based upon this

3813

02:25:54,230 --> 02:25:52,080

first meeting of the national space

3814

02:25:56,389 --> 02:25:54,240

council

3815

02:25:57,910 --> 02:25:56,399

i think today we prove that

3816

02:26:00,070 --> 02:25:57,920

that many of the best ideas that will

3817

02:26:02,389 --> 02:26:00,080

shape american space policy will come

3818

02:26:04,790 --> 02:26:02,399

from outside the halls of government

3819

02:26:05,990 --> 02:26:04,800

and i can assure all of those president

3820

02:26:08,630 --> 02:26:06,000

that we're going to continue to avail

3821

02:26:11,270 --> 02:26:08,640

ourselves of the very best and brightest

3822

02:26:13,110 --> 02:26:11,280

american minds as we develop policies

3823

02:26:15,270 --> 02:26:13,120

for presentation to president trump i'm

3824

02:26:18,150 --> 02:26:15,280

pleased to report in that vein that very

3825

02:26:21,190 --> 02:26:18,160

soon the president has directed us to

3826
02:26:23,429 --> 02:26:21,200
relaunch the national space council's

3827
02:26:25,670 --> 02:26:23,439
advisory group

3828
02:26:27,429 --> 02:26:25,680
to foster close coordination cooperation

3829
02:26:29,670 --> 02:26:27,439
technology information this group will

3830
02:26:32,230 --> 02:26:29,680
bring together a broad range

3831
02:26:33,349 --> 02:26:32,240
of truly exceptional americans

3832
02:26:34,710 --> 02:26:33,359
men and women who are committed to

3833
02:26:36,790 --> 02:26:34,720
advancing

3834
02:26:38,150 --> 02:26:36,800
and renewing american

3835
02:26:40,230 --> 02:26:38,160
leadership

3836
02:26:42,309 --> 02:26:40,240
in space in the days ahead

3837
02:26:43,910 --> 02:26:42,319
nasa will enter a notice

3838
02:26:46,230 --> 02:26:43,920

into the federal register to kick off

3839

02:26:47,510 --> 02:26:46,240

the process of recruiting candidates for

3840

02:26:49,670 --> 02:26:47,520

the group and

3841

02:26:51,190 --> 02:26:49,680

the president will make a selection

3842

02:26:52,150 --> 02:26:51,200

based on the recommendations of the

3843

02:26:55,190 --> 02:26:52,160

national

3844

02:26:57,910 --> 02:26:55,200

space council for who is appointed

3845

02:26:59,990 --> 02:26:57,920

to that and we encourage

3846

02:27:00,950 --> 02:27:00,000

we encourage any citizens who have an

3847

02:27:01,750 --> 02:27:00,960

interest

3848

02:27:04,790 --> 02:27:01,760

to

3849

02:27:05,990 --> 02:27:04,800

express

3850

02:27:07,429 --> 02:27:06,000

that interest

3851
02:27:09,190 --> 02:27:07,439
going forward

3852
02:27:11,590 --> 02:27:09,200
the members will all be private citizens

3853
02:27:13,110 --> 02:27:11,600
but their work for this council will be

3854
02:27:14,550 --> 02:27:13,120
the highest

3855
02:27:17,349 --> 02:27:14,560
public service

3856
02:27:19,910 --> 02:27:17,359
so i think we heard many themes today uh

3857
02:27:21,590 --> 02:27:19,920
i i won't uh i won't take any more of

3858
02:27:24,469 --> 02:27:21,600
people's times other than to say thank

3859
02:27:25,750 --> 02:27:24,479
you uh thank you to all of our

3860
02:27:27,270 --> 02:27:25,760
could we give another round of applause

3861
02:27:36,150 --> 02:27:27,280
for the distinguished panels that

3862
02:27:39,990 --> 02:27:37,830
we're grateful for your time i'm

3863
02:27:41,349 --> 02:27:40,000

grateful for and inspired by your words

3864

02:27:43,429 --> 02:27:41,359

and your leadership i'm grateful for

3865

02:27:45,190 --> 02:27:43,439

members of the national space council

3866

02:27:47,270 --> 02:27:45,200

cabinet members who are here thank you

3867

02:27:49,349 --> 02:27:47,280

for making this a priority

3868

02:27:51,429 --> 02:27:49,359

we got a lot of work to do

3869

02:27:53,190 --> 02:27:51,439

but

3870

02:27:54,950 --> 02:27:53,200

as the president said in his inaugural

3871

02:27:56,790 --> 02:27:54,960

address in america we understand that a

3872

02:27:59,910 --> 02:27:56,800

nation is only living as long as it is

3873

02:28:01,510 --> 02:27:59,920

striving uh and uh with the president's

3874

02:28:03,510 --> 02:28:01,520

strong leadership with the participation

3875

02:28:05,830 --> 02:28:03,520

of this council with the support of many

3876

02:28:08,950 --> 02:28:05,840

distinguished americans i'm confident

3877

02:28:20,350 --> 02:28:08,960

america will lead in space again

3878

02:28:20,360 --> 02:28:30,070

[Music]

3879

02:28:30,080 --> 02:28:33,630

so