



HOUSTON | WE HAVE A
PODCAST

1
00:00:00,767 --> 00:00:02,435
>> "HOUSTON, WE HAVE A PODCAST."

2
00:00:02,435 --> 00:00:03,436
WELCOME TO THE OFFICIAL

3
00:00:03,436 --> 00:00:04,504
PODCAST OF THE NASA

4
00:00:04,504 --> 00:00:05,472
JOHNSON SPACE CENTER,

5
00:00:05,472 --> 00:00:07,374
EPISODE 63, "REACH NEW HEIGHTS

6
00:00:07,374 --> 00:00:08,775
"AND REVEAL THE UNKNOWN."

7
00:00:08,775 --> 00:00:09,809
I'M GARY JORDAN, AND I'LL BE

8
00:00:09,809 --> 00:00:10,810
YOUR HOST TODAY.

9
00:00:10,810 --> 00:00:11,678
SO IF YOU'RE NEW TO THE SHOW,

10
00:00:11,678 --> 00:00:12,812
WE BRING IN EXPERTS TO TALK

11
00:00:12,812 --> 00:00:13,847
ABOUT ALL THE COOLEST PARTS

12
00:00:13,847 --> 00:00:14,647
ABOUT WHAT'S GOING ON

13
00:00:14,647 --> 00:00:15,815

RIGHT HERE AT NASA.

14

00:00:15,815 --> 00:00:16,950

NOW, THE PODCAST IS NORMALLY

15

00:00:16,950 --> 00:00:17,951

AN AUDIO SHOW.

16

00:00:17,951 --> 00:00:18,685

BUT WE DID SOMETHING

17

00:00:18,685 --> 00:00:20,587

A LITTLE EXTRA FOR THIS EPISODE.

18

00:00:20,587 --> 00:00:21,354

JUST RECENTLY, WE HAD

19

00:00:21,354 --> 00:00:22,188

A SPECIAL VISIT FROM

20

00:00:22,188 --> 00:00:24,023

VICE PRESIDENT MIKE PENCE,

21

00:00:24,023 --> 00:00:25,458

WHO ADDRESSED AN EXCITING FUTURE

22

00:00:25,458 --> 00:00:26,726

FOR US HERE AT NASA.

23

00:00:26,726 --> 00:00:27,761

AND WHILE HE WAS HERE, I WAS

24

00:00:27,761 --> 00:00:28,795

LUCKY ENOUGH TO SIT DOWN

25

00:00:28,795 --> 00:00:30,096

AND CHAT WITH SOME OF NASA'S

26

00:00:30,096 --> 00:00:31,664

LEADERS ABOUT THIS FUTURE.

27

00:00:31,664 --> 00:00:32,932

SO OUR GUESTS ON "HOUSTON,

28

00:00:32,932 --> 00:00:34,367

"WE HAVE A PODCAST" TODAY ARE

29

00:00:34,367 --> 00:00:36,636

JIM BRIDENSTINE AND MARK GEYER.

30

00:00:36,636 --> 00:00:38,271

MR. BRIDENSTINE IS THE 13TH

31

00:00:38,271 --> 00:00:39,606

ADMINISTRATOR OF NASA,

32

00:00:39,606 --> 00:00:41,941

SWORN IN ON APRIL 23, 2018.

33

00:00:41,941 --> 00:00:43,276

AND MR. GEYER IS THE 12TH

34

00:00:43,276 --> 00:00:44,477

DIRECTOR OF THE JOHNSON

35

00:00:44,477 --> 00:00:45,378

SPACE CENTER, AS OF

36

00:00:45,378 --> 00:00:47,480

MAY 25, 2018.

37

00:00:47,480 --> 00:00:48,348

WE HAD A GREAT DISCUSSION

38

00:00:48,348 --> 00:00:49,382

ABOUT THIS VERY EXCITING

39

00:00:49,382 --> 00:00:50,583
PERIOD WE'RE IN FOR HUMAN

40

00:00:50,583 --> 00:00:51,918
SPACE FLIGHT, AND WHAT IT MEANS

41

00:00:51,918 --> 00:00:53,219
FOR US HERE AT HOUSTON.

42

00:00:53,219 --> 00:00:54,888
WE DISCUSS NASA AS A WHOLE,

43

00:00:54,888 --> 00:00:56,022
COMMERCIAL CREW,

44

00:00:56,022 --> 00:00:57,257
THE COMMERCIALIZATION OF SPACE,

45

00:00:57,257 --> 00:00:58,925
AND THE MISSION AND DIRECTION

46

00:00:58,925 --> 00:01:00,827
OF AMERICA'S SPACE AGENCY.

47

00:01:00,827 --> 00:01:01,861
SO WITH NO FURTHER DELAY,

48

00:01:01,861 --> 00:01:02,829
LET'S JUMP RIGHT AHEAD TO

49

00:01:02,829 --> 00:01:04,297
OUR TALK WITH NASA ADMINISTRATOR

50

00:01:04,297 --> 00:01:06,232
JIM BRIDENSTINE, AND DIRECTOR

51
00:01:06,232 --> 00:01:07,634
OF THE JOHNSON SPACE CENTER,

52
00:01:07,634 --> 00:01:08,735
MARK GEYER.

53
00:01:08,735 --> 00:01:09,869
ENJOY.

54
00:01:11,304 --> 00:01:19,145
[MUSIC]

55
00:01:19,145 --> 00:01:20,013
>> T-MINUS 5 SECONDS

56
00:01:20,013 --> 00:01:23,116
AND COUNTING-- MARK.

57
00:01:23,116 --> 00:01:24,284
MISSION START.

58
00:01:24,284 --> 00:01:25,351
T-0-- ALL LAUNCH COMMAND

59
00:01:25,351 --> 00:01:26,352
LIGHTS ARE GREEN.

60
00:01:26,352 --> 00:01:27,387
OH, THERE SHE GOES.

61
00:01:27,387 --> 00:01:29,422
"HOUSTON, WE HAVE A PODCAST."

62
00:01:30,356 --> 00:01:33,660
[MUSIC]

63
00:01:33,660 --> 00:01:34,494

>> JIM AND MARK, THANK YOU

64

00:01:34,494 --> 00:01:35,295
SO MUCH FOR COMING

65

00:01:35,295 --> 00:01:35,995
ON THE PODCAST TODAY.

66

00:01:35,995 --> 00:01:37,564
THIS IS SUCH AN EXCITING DAY,

67

00:01:37,564 --> 00:01:39,132
BUT ALSO JUST AN EXCITING TIME

68

00:01:39,132 --> 00:01:40,233
FOR US HERE AT THE AGENCY.

69

00:01:40,233 --> 00:01:40,867
SO I APPRECIATE

70

00:01:40,867 --> 00:01:41,601
YOU COMING ON TODAY.

71

00:01:41,601 --> 00:01:42,402
>> GREAT TO BE HERE.

72

00:01:42,402 --> 00:01:43,336
>> YEAH, THANKS.

73

00:01:43,336 --> 00:01:44,938
>> SO-SO JUST TO SORT OF RECAP

74

00:01:44,938 --> 00:01:46,039
THE EVENTS OF TODAY, WE HAD

75

00:01:46,039 --> 00:01:47,507
VICE PRESIDENT MIKE PENCE

76

00:01:47,507 --> 00:01:48,708

HERE, UH, TO ADDRESS

77

00:01:48,708 --> 00:01:50,477

SOME FANTASTIC MISSIONS

78

00:01:50,477 --> 00:01:51,544

AND-AND OPPORTUNITIES THAT

79

00:01:51,544 --> 00:01:52,779

WE HAVE HERE AT NASA

80

00:01:52,779 --> 00:01:53,746

TO LOOK FORWARD TO.

81

00:01:53,746 --> 00:01:54,814

IS-- I'M-- THAT'S WHAT I--

82

00:01:54,814 --> 00:01:55,648

I REALLY MEAN,

83

00:01:55,648 --> 00:01:56,783

"IT'S AN EXCITING TIME."

84

00:01:56,783 --> 00:01:57,584

SO IF WE CAN JUST GIVE,

85

00:01:57,584 --> 00:01:59,085

LIKE, A QUICK SUMMARY, UH,

86

00:01:59,085 --> 00:02:00,253

JIM, IF YOU WANT TO--

87

00:02:00,253 --> 00:02:01,054

>> YOU BET.

88

00:02:01,054 --> 00:02:01,888

>> --UH, FOR WHAT WAS

89

00:02:01,888 --> 00:02:02,722
SAID TODAY.

90

00:02:02,722 --> 00:02:04,090
>> SO IT WAS, UH-- IT WAS

91

00:02:04,090 --> 00:02:05,358
HIS OPPORTUNITY TO COME

92

00:02:05,358 --> 00:02:06,993
AND LAY OUT, FOR THE FOLKS HERE

93

00:02:06,993 --> 00:02:08,294
AT THE JOHNSON SPACE CENTER,

94

00:02:08,294 --> 00:02:09,362
BUT ALSO, FOR EVERYBODY

95

00:02:09,362 --> 00:02:11,131
WHO WORKS AT NASA NATIONALLY--

96

00:02:11,131 --> 00:02:11,831
>> MM-HMM.

97

00:02:11,831 --> 00:02:13,600
>> --UH, REALLY HIS VISION FOR

98

00:02:13,600 --> 00:02:15,802
CIVIL SPACE, FOR OUR JOURNEY

99

00:02:15,802 --> 00:02:16,936
BACK TO THE MOON, FOR

100

00:02:16,936 --> 00:02:18,738
COMMERCIALIZING LOW EARTH ORBIT,

101
00:02:18,738 --> 00:02:21,207
UH, FOR BUILDING SLS AND ORION,

102
00:02:21,207 --> 00:02:22,208
TO GET HUMANS DEEPER

103
00:02:22,208 --> 00:02:24,077
INTO SPACE THAN EVER BEFORE.

104
00:02:24,077 --> 00:02:25,712
UM, AND REALLY GET, UH--

105
00:02:25,712 --> 00:02:27,480
GET THE-- GET NASA

106
00:02:27,480 --> 00:02:29,516
AND ITS WORKFORCE ENTHUSED ABOUT

107
00:02:29,516 --> 00:02:31,017
THE NEXT CHAPTER OF

108
00:02:31,017 --> 00:02:32,385
HUMANS IN SPACE.

109
00:02:32,385 --> 00:02:34,654
AND SO, UM, I WOULD, UH,

110
00:02:34,654 --> 00:02:35,655
I WOULD SAY, BASED ON

111
00:02:35,655 --> 00:02:37,090
HIS-HIS SPEECH TODAY,

112
00:02:37,090 --> 00:02:37,957
I-I THINK-- I THINK

113
00:02:37,957 --> 00:02:39,359

IT WAS EFFECTIVE.

114

00:02:39,359 --> 00:02:40,126

[LAUGHS]

115

00:02:40,126 --> 00:02:41,194

>> I ABSOLUTELY AGREE.

116

00:02:41,194 --> 00:02:41,961

AND HE WAS HERE

117

00:02:41,961 --> 00:02:42,929

AT THE JOHNSON SPACE CENTER

118

00:02:42,929 --> 00:02:43,730

BECAUSE WE DO PLAY

119

00:02:43,730 --> 00:02:44,664

AN INTEGRAL ROLE.

120

00:02:44,664 --> 00:02:45,665

SO MARK, WHAT IS-- WHAT IS

121

00:02:45,665 --> 00:02:46,432

THE ROLE OF THE JOHNSON

122

00:02:46,432 --> 00:02:47,767

SPACE CENTER IN ALL OF THIS?

123

00:02:47,767 --> 00:02:49,669

>> SO JOHNSON HAS, IN THE PAST,

124

00:02:49,669 --> 00:02:50,837

AND STILL, PLAYS

125

00:02:50,837 --> 00:02:52,438

AN INCREDIBLE CORE ROLE

126
00:02:52,438 --> 00:02:53,439
TO HUMAN SPACE FLIGHT.

127
00:02:53,439 --> 00:02:54,140
>> MM-HMM.

128
00:02:54,140 --> 00:02:55,408
>> SO WE DO-- OF COURSE, WE DO

129
00:02:55,408 --> 00:02:56,142
THE OBVIOUS THINGS--

130
00:02:56,142 --> 00:02:57,844
THE ASTRONAUTS ARE TRAINED

131
00:02:57,844 --> 00:03:00,179
AND PICKED AND FLOWN FROM HERE.

132
00:03:00,179 --> 00:03:01,481
WE DO OPERATIONS,

133
00:03:01,481 --> 00:03:02,916
SO WE CONTROL THE SPACECRAFT

134
00:03:02,916 --> 00:03:03,917
AND WORK WITH THE CREWS HERE

135
00:03:03,917 --> 00:03:05,351
IN-IN MISSION OPERATIONS.

136
00:03:05,351 --> 00:03:07,287
AND THEN, ALSO, WE DO

137
00:03:07,287 --> 00:03:09,455
DESIGN WORK, UH, LIKE ORION,

138
00:03:09,455 --> 00:03:11,090

PROGRAMS LIKE ORION.

139

00:03:11,090 --> 00:03:12,225

WE MANAGE PROGRAMS LIKE

140

00:03:12,225 --> 00:03:14,894

SPACE STATION, WHICH TIES, UH,

141

00:03:14,894 --> 00:03:15,995

THE WORLD TOGETHER,

142

00:03:15,995 --> 00:03:17,463

ON AN INCREDIBLE PROGRAM.

143

00:03:17,463 --> 00:03:18,331

THEN WE DO HUMAN HEALTH

144

00:03:18,331 --> 00:03:19,299

AND PERFORMANCE, WHICH IS

145

00:03:19,299 --> 00:03:21,367

PART OF SEEING HOW THE BODY

146

00:03:21,367 --> 00:03:22,769

BEHAVES IN SPACE, WHICH

147

00:03:22,769 --> 00:03:23,703

KIND OF TIES TO OUR WORK

148

00:03:23,703 --> 00:03:25,138

WITH ASTRONAUTS.

149

00:03:25,138 --> 00:03:26,105

AND THEN WHAT-WHAT WAS GREAT

150

00:03:26,105 --> 00:03:26,973

ABOUT THE VISIT TODAY,

151

00:03:26,973 --> 00:03:28,808

I THINK, WAS HE ALSO VISITED,

152

00:03:28,808 --> 00:03:30,109

UH, THE CURATION FACILITY--

153

00:03:30,109 --> 00:03:31,044

>> THAT'S RIGHT.

154

00:03:31,044 --> 00:03:32,011

>> --WHICH IS WHERE IN THE--

155

00:03:32,011 --> 00:03:33,379

REALLY, IN THE UNITED STATES,

156

00:03:33,379 --> 00:03:34,547

WHENEVER WE BRING SAMPLES BACK

157

00:03:34,547 --> 00:03:36,282

FROM OTHER WORLDS, THEY COME

158

00:03:36,282 --> 00:03:37,483

HERE TO THE-- TO THE JOHNSON

159

00:03:37,483 --> 00:03:38,484

SPACE CENTER.

160

00:03:38,484 --> 00:03:39,218

SO THAT'S A KEY PIECE,

161

00:03:39,218 --> 00:03:39,919

I THINK, A LOT OF PEOPLE

162

00:03:39,919 --> 00:03:40,853

FORGET THAT WE DO.

163

00:03:40,853 --> 00:03:41,554

>> YEAH.

164

00:03:41,554 --> 00:03:42,288

A HUGE ARRAY OF ACTIVITIES,

165

00:03:42,288 --> 00:03:43,156

A LOT OF IT DEALING WITH

166

00:03:43,156 --> 00:03:44,691

RESEARCH, AND SORT OF TRYING

167

00:03:44,691 --> 00:03:45,925

TO UNDERSTAND WHAT WE NEED

168

00:03:45,925 --> 00:03:47,060

TO KNOW TO GO OUT FURTHER

169

00:03:47,060 --> 00:03:47,961

INTO SPACE.

170

00:03:47,961 --> 00:03:48,695

>> EXACTLY.

171

00:03:48,695 --> 00:03:49,395

>> AND THEN THE ACTUAL

172

00:03:49,395 --> 00:03:50,530

TECHNOLOGIES BEHIND THAT.

173

00:03:50,530 --> 00:03:51,564

UH, JIM, YOU WERE-- YOU WERE,

174

00:03:51,564 --> 00:03:52,932

UM, A-APPOINTED, UH,

175

00:03:52,932 --> 00:03:54,500

VERY RECENTLY HERE.

176

00:03:54,500 --> 00:03:56,102

SO YOU'VE BEEN-- WHEN-WHEN

177

00:03:56,102 --> 00:03:56,903

YOU FIRST CAME ON, YOU SAID

178

00:03:56,903 --> 00:03:58,905

YOU RECOGNIZE NASA AS A FAMILY.

179

00:03:58,905 --> 00:03:59,706

>> YEAH.

180

00:03:59,706 --> 00:04:00,473

>> UM, NOW THAT YOU'VE BEEN

181

00:04:00,473 --> 00:04:01,107

HERE A COUPLE MONTHS,

182

00:04:01,107 --> 00:04:01,808

DO YOU FEEL LIKE

183

00:04:01,808 --> 00:04:02,475

YOU'RE PART OF THE FAMILY?

184

00:04:02,475 --> 00:04:03,343

>> WITHOUT QUESTION.

185

00:04:03,343 --> 00:04:05,778

UH, FOLKS HAVE BEEN JUST SO,

186

00:04:05,778 --> 00:04:07,347

UH, WELCOMING AND NICE.

187

00:04:07,347 --> 00:04:08,915

UH, IN FACT, I HAD MY FAMILY

188

00:04:08,915 --> 00:04:10,283

HERE AT THE JOHNSON SPACE CENTER

189

00:04:10,283 --> 00:04:11,851

JUST A COUPLE OF WEEKS AGO.

190

00:04:11,851 --> 00:04:13,720

UM, AND WHAT AN AMAZING

191

00:04:13,720 --> 00:04:14,988

OPPORTUNITY FOR MY KIDS,

192

00:04:14,988 --> 00:04:16,189

TO BE ABLE TO INTERACT WITH

193

00:04:16,189 --> 00:04:17,390

THE BRILLIANT FOLKS THAT ARE

194

00:04:17,390 --> 00:04:19,258

HERE, AND, UM, REALLY--

195

00:04:19,258 --> 00:04:20,460

HAVE THE-- HAVE A CHANCE

196

00:04:20,460 --> 00:04:21,394

TO SPEND TIME WITH

197

00:04:21,394 --> 00:04:22,729

SOME OF THE SMARTEST MINDS

198

00:04:22,729 --> 00:04:24,163

IN OUR COUNTRY.

199

00:04:24,163 --> 00:04:26,332

UM, SO YEAH, IT-IT HAS BEEN--

200

00:04:26,332 --> 00:04:27,300

IT HAS REALLY FELT LIKE

201
00:04:27,300 --> 00:04:28,101
A FAMILY.

202
00:04:28,101 --> 00:04:29,035
AND-AND HAVING MY FAMILY HERE

203
00:04:29,035 --> 00:04:31,137
REALLY, UH, I THINK, UH,

204
00:04:31,137 --> 00:04:32,171
SOLIDIFIED THAT.

205
00:04:32,171 --> 00:04:32,739
>> THAT'S RIGHT.

206
00:04:32,739 --> 00:04:33,673
SO YOU'VE BEEN-- YOU'VE BEEN

207
00:04:33,673 --> 00:04:34,974
A PROPONENT FOR SPACE FLIGHT

208
00:04:34,974 --> 00:04:37,243
AND-AND NASA, JUST IN GENERAL,

209
00:04:37,243 --> 00:04:38,411
EVEN THROUGHOUT YOUR CAREER.

210
00:04:38,411 --> 00:04:39,212
NOW, COMING HERE AND BEING

211
00:04:39,212 --> 00:04:40,880
PART OF NASA, WHEN SOMEONE

212
00:04:40,880 --> 00:04:42,615
COMES UP TO YOU NOW AND SAYS,

213
00:04:42,615 --> 00:04:44,017

"WHAT DOES NASA DO?"

214

00:04:44,017 --> 00:04:45,218
KNOWING-KNOWING KIND OF,

215

00:04:45,218 --> 00:04:46,986
WHAT WE DO FROM THE INSIDE NOW--

216

00:04:46,986 --> 00:04:47,720
>> YOU BET.

217

00:04:47,720 --> 00:04:48,588
>> --WHAT DO YOU SAY?

218

00:04:48,588 --> 00:04:50,223
>> WE INCREASE THE AWESOME.

219

00:04:50,223 --> 00:04:51,257
THAT'S WHAT WE DO.

220

00:04:51,257 --> 00:04:52,158
[LAUGHS]

221

00:04:52,158 --> 00:04:52,825
>> I LOVE IT.

222

00:04:52,825 --> 00:04:53,893
>> AS A-- WE-WE ARE A PART OF

223

00:04:53,893 --> 00:04:54,694
THE FEDERAL GOVERNMENT

224

00:04:54,694 --> 00:04:55,962
THAT WORKS ON REALLY,

225

00:04:55,962 --> 00:04:57,630
REALLY AWESOME THINGS.

226

00:04:57,630 --> 00:04:58,431

>> YEAH.

227

00:04:58,431 --> 00:05:00,400

>> AND, UM, YOU KNOW,

228

00:05:00,400 --> 00:05:02,268

THE-- MY-MY JOB, AS THE NASA

229

00:05:02,268 --> 00:05:04,037

ADMINISTRATOR, IS REALLY

230

00:05:04,037 --> 00:05:05,538

FOCUSED ON MAKING SURE THAT

231

00:05:05,538 --> 00:05:06,372

WE'RE FOLLOWING THROUGH

232

00:05:06,372 --> 00:05:07,340

ON THE PRESIDENT'S

233

00:05:07,340 --> 00:05:09,042

SPACE POLICY DIRECTIVES.

234

00:05:09,042 --> 00:05:09,742

>> MM-HMM.

235

00:05:09,742 --> 00:05:10,543

>> HIS FIRST SPACE POLICY

236

00:05:10,543 --> 00:05:11,244

DIRECTIVE IS THAT

237

00:05:11,244 --> 00:05:12,278

WE'RE GOING TO THE MOON.

238

00:05:12,278 --> 00:05:13,012

AND WE'RE GONNA GO

239

00:05:13,012 --> 00:05:14,480

IN A SUSTAINABLE WAY.

240

00:05:14,480 --> 00:05:15,415

HIS SECOND SPACE POLICY

241

00:05:15,415 --> 00:05:17,250

DIRECTIVE IS ABOUT REGULATION,

242

00:05:17,250 --> 00:05:18,251

AND ENABLING COMMERCIAL

243

00:05:18,251 --> 00:05:19,452

PARTNERSHIPS.

244

00:05:19,452 --> 00:05:20,353

AND OF COURSE, HIS THIRD

245

00:05:20,353 --> 00:05:22,755

SPACE POLICY DIRECTIVE IS ABOUT

246

00:05:22,755 --> 00:05:24,390

SPACE SITUATIONAL AWARENESS,

247

00:05:24,390 --> 00:05:26,192

AND SPACE TRAFFIC MANAGEMENT.

248

00:05:26,192 --> 00:05:27,560

UM, AND OF COURSE, NASA PLAYS

249

00:05:27,560 --> 00:05:29,662

A ROLE AND/OR WILL BENEFIT

250

00:05:29,662 --> 00:05:30,997

FROM EACH OF THOSE.

251
00:05:30,997 --> 00:05:32,632
UH, AND SO, WE'RE REALLY

252
00:05:32,632 --> 00:05:33,433
PUTTING TOGETHER

253
00:05:33,433 --> 00:05:35,001
THE ARCHITECTURE THAT, UM,

254
00:05:35,001 --> 00:05:35,968
THAT FOLLOWS THROUGH ON

255
00:05:35,968 --> 00:05:37,503
THE PRESIDENT'S DIRECTIVES.

256
00:05:37,503 --> 00:05:39,806
AND THEN, UM, WATCHING,

257
00:05:39,806 --> 00:05:40,606
YOU KNOW, WHAT THE GREAT

258
00:05:40,606 --> 00:05:42,909
WORKFORCE HERE DOES IN ENABLING

259
00:05:42,909 --> 00:05:44,043
OUR MISSIONS TO GO FORWARD

260
00:05:44,043 --> 00:05:45,344
IN A REALLY AMAZING WAY.

261
00:05:45,344 --> 00:05:46,813
SO PEOPLE SAY, YOU KNOW,

262
00:05:46,813 --> 00:05:47,947
"WHAT DOES NASA DO?"

263
00:05:47,947 --> 00:05:50,283

UM, A LOT OF PEOPLE-- YOU KNOW,

264

00:05:50,283 --> 00:05:51,884

YOU THINK ABOUT THE HISTORY.

265

00:05:51,884 --> 00:05:53,886

THERE'S A LOT OF AWESOMENESS

266

00:05:53,886 --> 00:05:54,620

IN THE HISTORY.

267

00:05:54,620 --> 00:05:55,555

UH, AND YOU THINK ABOUT

268

00:05:55,555 --> 00:05:56,489

THE SPACE SHUTTLES,

269

00:05:56,489 --> 00:05:57,223

AND THE RETIREMENT

270

00:05:57,223 --> 00:05:58,324

OF THE SPACE SHUTTLES.

271

00:05:58,324 --> 00:05:59,225

>> MM-HMM.

272

00:05:59,225 --> 00:06:00,226

>> UM, PEOPLE REMEMBER THAT.

273

00:06:00,226 --> 00:06:01,928

UM, REMEMBER THOSE DAYS

274

00:06:01,928 --> 00:06:02,962

GOING BACK TO, YOU KNOW,

275

00:06:02,962 --> 00:06:04,964

GEMINI AND APOLLO,

276

00:06:04,964 --> 00:06:07,567

AND MERCURY BEFORE THAT, UM,

277

00:06:07,567 --> 00:06:08,401

AND OF COURSE, THEY REMEMBER

278

00:06:08,401 --> 00:06:09,669

THE SPACE SHUTTLES.

279

00:06:09,669 --> 00:06:10,503

BUT AT THIS POINT,

280

00:06:10,503 --> 00:06:11,771

WE'RE FOCUSED ON GETTING

281

00:06:11,771 --> 00:06:13,172

AMERICAN ASTRONAUTS TO LAUNCH

282

00:06:13,172 --> 00:06:14,407

ON AMERICAN ROCKETS AGAIN

283

00:06:14,407 --> 00:06:15,341

FROM AMERICAN SOIL

284

00:06:15,341 --> 00:06:16,275

FOR THE FIRST TIME SINCE

285

00:06:16,275 --> 00:06:17,443

2011, THE RETIREMENT OF

286

00:06:17,443 --> 00:06:18,678

THE SPACE SHUTTLES.

287

00:06:18,678 --> 00:06:21,147

UM, AND-AND SO, UM,

288

00:06:21,147 --> 00:06:22,115

WE'RE GONNA GET THERE,

289

00:06:22,115 --> 00:06:23,816

AND, UH, LOOK FORWARD TO BEING

290

00:06:23,816 --> 00:06:24,617

AT THE HELM WHEN

291

00:06:24,617 --> 00:06:25,718

ALL OF THAT HAPPENS AGAIN.

292

00:06:25,718 --> 00:06:26,486

>> THAT'S RIGHT.

293

00:06:26,486 --> 00:06:27,120

THIS IS ONE-- THIS IS

294

00:06:27,120 --> 00:06:28,287

ONE OF THOSE EXCITING THINGS

295

00:06:28,287 --> 00:06:29,288

THAT I WAS TALKING ABOUT.

296

00:06:29,288 --> 00:06:29,956

>> OH YEAH.

297

00:06:29,956 --> 00:06:30,790

>> YOU KNOW, LAUNCHING FROM

298

00:06:30,790 --> 00:06:31,591

AMERICAN SOIL AGAIN.

299

00:06:31,591 --> 00:06:32,692

SO WHEN WE'RE-- I DO WANT

300

00:06:32,692 --> 00:06:33,459

TO GO THROUGH ALL OF THESE

301
00:06:33,459 --> 00:06:34,460
EXCITING THINGS, RIGHT?

302
00:06:34,460 --> 00:06:35,762
LAUNCHING FROM AMERICAN SOIL,

303
00:06:35,762 --> 00:06:36,929
THIS-THIS COMMERCIALIZATION,

304
00:06:36,929 --> 00:06:38,197
THIS-THIS DEEP SPACE

305
00:06:38,197 --> 00:06:39,398
EXPLORATION.

306
00:06:39,398 --> 00:06:40,399
BUT I WANT TO KNOW, S-SINCE

307
00:06:40,399 --> 00:06:41,334
I HAVE YOU HERE, WHAT'S

308
00:06:41,334 --> 00:06:42,969
YOUR ROLE, AS THE ADMINISTRATOR,

309
00:06:42,969 --> 00:06:43,870
AT NASA, TO MAKE

310
00:06:43,870 --> 00:06:44,804
ALL OF THIS HAPPEN?

311
00:06:44,804 --> 00:06:45,738
>> SO AGAIN, UH, FOLLOWING

312
00:06:45,738 --> 00:06:46,773
THROUGH ON THE PRESIDENT'S

313
00:06:46,773 --> 00:06:48,174

SPACE POLICY DIRECTIVES--

314

00:06:48,174 --> 00:06:48,841

>> MM-HMM.

315

00:06:48,841 --> 00:06:49,609

>> AND THEN, ULTIMATELY, UH,

316

00:06:49,609 --> 00:06:50,676

GUIDING THE AGENCY

317

00:06:50,676 --> 00:06:52,311

AS-AS YOU THINK ABOUT THE POLICY

318

00:06:52,311 --> 00:06:53,379

AND THE-- AND THE DIRECTIONS

319

00:06:53,379 --> 00:06:55,248

THAT-THAT WE'RE-- THAT-THAT--

320

00:06:55,248 --> 00:06:56,115

THE DIRECTIONS THAT

321

00:06:56,115 --> 00:06:57,183

WE'RE TAKING.

322

00:06:57,183 --> 00:06:58,851

UM, YOU KNOW, THE-- YOU KNOW,

323

00:06:58,851 --> 00:07:01,587

MY-MY ROLE IS REALLY GUIDANCE.

324

00:07:01,587 --> 00:07:04,323

UM, AND I WORK A LOT WITH

325

00:07:04,323 --> 00:07:05,725

THE INTER-AGENCY.

326
00:07:05,725 --> 00:07:07,560
UM, A LOT OF PEOPLE THINK SPACE

327
00:07:07,560 --> 00:07:09,061
AND THEY THINK NASA.

328
00:07:09,061 --> 00:07:10,163
BUT, UH, FOR ALL OF

329
00:07:10,163 --> 00:07:11,230
OUR COMMERCIAL PARTNERS,

330
00:07:11,230 --> 00:07:12,498
A LOT OF THEM PROVIDE THINGS

331
00:07:12,498 --> 00:07:13,766
IN SPACE THAT ARE LICENSED,

332
00:07:13,766 --> 00:07:14,734
IF YOU WILL, BY

333
00:07:14,734 --> 00:07:16,335
THE FAA OFFICE OF COMMERCIAL

334
00:07:16,335 --> 00:07:18,037
SPACE TRANSPORTATION.

335
00:07:18,037 --> 00:07:19,338
WHEN YOU THINK ABOUT, UM,

336
00:07:19,338 --> 00:07:20,940
YOU KNOW, REMOTE SENSING

337
00:07:20,940 --> 00:07:22,208
AND IMAGERY, ALL OF--

338
00:07:22,208 --> 00:07:23,509

ALL OF THAT IS LICENSED BY

339

00:07:23,509 --> 00:07:24,777

THE-THE COMMERCE DEPARTMENT

340

00:07:24,777 --> 00:07:26,212

THROUGH-THROUGH NOAA, UH,

341

00:07:26,212 --> 00:07:28,347

SO-SO THERE-THERE'S A LOT OF

342

00:07:28,347 --> 00:07:29,315

ACTIVITY IN SPACE.

343

00:07:29,315 --> 00:07:30,249

THE DEPARTMENT OF DEFENSE,

344

00:07:30,249 --> 00:07:31,250

THE INTELLIGENCE COMMUNITY,

345

00:07:31,250 --> 00:07:32,785

THE DEPARTMENT OF-OF

346

00:07:32,785 --> 00:07:34,053

TRANSPORTATION.

347

00:07:34,053 --> 00:07:35,822

UH, THERE'S A LOT OF ACTIVITY

348

00:07:35,822 --> 00:07:37,190

THAT ISN'T SPECIFIC TO NASA,

349

00:07:37,190 --> 00:07:38,825

WHERE WE NEED INTER-AGENCY

350

00:07:38,825 --> 00:07:40,026

KIND OF COLLABORATION.

351
00:07:40,026 --> 00:07:40,726
SO I WORK WITH

352
00:07:40,726 --> 00:07:41,828
THE INTER-AGENCY.

353
00:07:41,828 --> 00:07:43,930
UM, I ALSO WORK AS-AS

354
00:07:43,930 --> 00:07:45,431
A FORMER MEMBER OF CONGRESS.

355
00:07:45,431 --> 00:07:46,499
UH, I WORK ON THE HILL,

356
00:07:46,499 --> 00:07:48,167
TO MAKE SURE THAT, UM,

357
00:07:48,167 --> 00:07:49,101
OUR, YOU KNOW, BUDGET

358
00:07:49,101 --> 00:07:50,803
REQUIREMENTS ARE-ARE BEING MET

359
00:07:50,803 --> 00:07:52,505
TO ACCOMPLISH THE OBJECTIVES

360
00:07:52,505 --> 00:07:53,806
SET FORTH BY THE PRESIDENT,

361
00:07:53,806 --> 00:07:55,508
AND OF COURSE, BY CONGRESS.

362
00:07:55,508 --> 00:07:56,943
UH, THEY AUTHORIZE, YOU KNOW,

363
00:07:56,943 --> 00:07:57,810

WHAT WE'RE SUPPOSED TO

364

00:07:57,810 --> 00:07:58,578

BE DOING.

365

00:07:58,578 --> 00:07:59,345

AND OF COURSE,

366

00:07:59,345 --> 00:08:00,146

THEY APPROPRIATE THE FUNDS

367

00:08:00,146 --> 00:08:01,447

TO ACCOMPLISH THOSE OBJECTIVES.

368

00:08:01,447 --> 00:08:03,316

SO, UM, YOU KNOW, MY GOAL IS

369

00:08:03,316 --> 00:08:04,217

TO MAKE SURE THAT WE ARE

370

00:08:04,217 --> 00:08:05,818

WITHIN-WITHIN THE LAW,

371

00:08:05,818 --> 00:08:07,019

THAT WE'RE FOLLOWING THROUGH

372

00:08:07,019 --> 00:08:08,921

ON THE PRESIDENT'S GUIDANCE.

373

00:08:08,921 --> 00:08:11,057

UH, AND THAT, UM, AT THE END

374

00:08:11,057 --> 00:08:12,091

OF THE DAY, UH,

375

00:08:12,091 --> 00:08:13,125

WE'RE-WE'RE HEADING

376

00:08:13,125 --> 00:08:14,460
IN THE RIGHT DIRECTION.

377

00:08:14,460 --> 00:08:15,361
>> SO WITH THIS GUIDANCE,

378

00:08:15,361 --> 00:08:16,829
WITH-WITH THESE DIRECTIVES,

379

00:08:16,829 --> 00:08:18,631
UM, MARK, IN THE JOHNSON

380

00:08:18,631 --> 00:08:20,099
SPACE CENTER, WHAT ARE WE DOING

381

00:08:20,099 --> 00:08:23,002
TO SORT OF TAKE THIS PATH?

382

00:08:23,002 --> 00:08:24,270
>> SO WE HAVE, OF COURSE,

383

00:08:24,270 --> 00:08:27,406
UM-- WE'RE FINISHING, UH,

384

00:08:27,406 --> 00:08:29,242
THE COMMERCIAL CREW VEHICLES.

385

00:08:29,242 --> 00:08:30,309
AND PART OF OUR JOB

386

00:08:30,309 --> 00:08:31,410
AT JOHNSON SPACE CENTER

387

00:08:31,410 --> 00:08:32,411
IS TO BE KIND OF

388

00:08:32,411 --> 00:08:33,679

THE SPACECRAFT EXPERTS.

389

00:08:33,679 --> 00:08:34,580

>> OKAY.

390

00:08:34,580 --> 00:08:35,348

>> SO WE'RE FOLLOWING ALONG

391

00:08:35,348 --> 00:08:36,182

WITH THE PROVIDERS, AND

392

00:08:36,182 --> 00:08:37,149

FOLLOWING ALONG ON THE DESIGN,

393

00:08:37,149 --> 00:08:38,451

AND CHECKING THE REQUIREMENTS.

394

00:08:38,451 --> 00:08:39,185

SO WE'RE GETTING INTO

395

00:08:39,185 --> 00:08:41,554

A CERTIFICATION PART OF THAT.

396

00:08:41,554 --> 00:08:42,188

ARE WE READY?

397

00:08:42,188 --> 00:08:43,055

ARE THESE VEHICLES MEETING

398

00:08:43,055 --> 00:08:43,723

THE REQUIREMENTS?

399

00:08:43,723 --> 00:08:44,490

ARE THEY READY TO

400

00:08:44,490 --> 00:08:45,391

PUT OUR CREWS IN 'EM?

401
00:08:45,391 --> 00:08:46,993
AND THAT'S GONNA BE ESSENTIAL,

402
00:08:46,993 --> 00:08:48,995
UM, BECAUSE WE'RE TRYING

403
00:08:48,995 --> 00:08:51,197
TO BASICALLY OPERATE

404
00:08:53,399 --> 00:08:52,298
THE SPACE STATION,

405
00:08:53,399 --> 00:08:54,166
AND AS JIM SAID,

406
00:08:54,166 --> 00:08:55,334
FLY FROM U.S. SOIL.

407
00:08:55,334 --> 00:08:56,002
>> MM-HMM.

408
00:08:56,002 --> 00:08:57,904
>> KEEP-- CUT THE COSTS DOWN.

409
00:08:57,904 --> 00:08:58,871
SO A KEY PART OF THAT IS

410
00:08:58,871 --> 00:09:00,239
FINISHING THAT PART OF THE JOB.

411
00:09:00,239 --> 00:09:00,973
>> HMM.

412
00:09:00,973 --> 00:09:01,741
>> AND THEN ON SPACE STATION,

413
00:09:01,741 --> 00:09:02,608

OF COURSE, WE'RE DOING

414

00:09:02,608 --> 00:09:04,610

RESEARCH FOR HOW THE HUMAN

415

00:09:04,610 --> 00:09:06,913

BODY BEHAVES IN LONG DURATION.

416

00:09:06,913 --> 00:09:08,247

AND THAT'S A KEY PART OF

417

00:09:08,247 --> 00:09:09,982

ANY EXPLORATION PLAN, RIGHT?

418

00:09:09,982 --> 00:09:10,783

HOW-HOW ARE WE GOING TO KEEP

419

00:09:10,783 --> 00:09:12,885

OUR CREWS SAFE AND HEALTHY FOR

420

00:09:12,885 --> 00:09:14,153

THESE LONG DURATION MISSIONS?

421

00:09:14,153 --> 00:09:14,887

SO THAT'S A BIG PART

422

00:09:14,887 --> 00:09:15,588

THAT WE'RE DOING TODAY

423

00:09:15,588 --> 00:09:17,089

THAT APPLIES.

424

00:09:17,089 --> 00:09:19,225

THEN SLS ORION, UH,

425

00:09:19,225 --> 00:09:20,426

AS I'VE MENTIONED BEFORE

426

00:09:20,426 --> 00:09:21,294

MANY TIMES, SO WE'RE-WE'RE

427

00:09:21,294 --> 00:09:22,528

ALMOST READY TO FLY.

428

00:09:22,528 --> 00:09:23,629

>> MM-HMM.

429

00:09:23,629 --> 00:09:24,497

>> UH, IN 2020,

430

00:09:24,497 --> 00:09:25,164

WE'LL BE FLYIN'.

431

00:09:25,164 --> 00:09:25,932

AND THOSE ARE KEY MISSIONS

432

00:09:25,932 --> 00:09:28,834

THAT ENABLE, UH, SPACE, UH,

433

00:09:28,834 --> 00:09:30,169

POLICY DIRECTIVE NUMBER ONE,

434

00:09:30,169 --> 00:09:31,170

GOING BACK TO THE MOON.

435

00:09:31,170 --> 00:09:31,904

'CAUSE YOU NEED THE KINDA

436

00:09:31,904 --> 00:09:33,272

ENERGY THAT SLS PROVIDES,

437

00:09:33,272 --> 00:09:34,307

AND THE KIND OF SYSTEMS THAT

438

00:09:34,307 --> 00:09:35,541

ORION PROVIDES TO GET A CREW

439

00:09:35,541 --> 00:09:36,842
OUT PAST THE MOON.

440

00:09:36,842 --> 00:09:37,510
>> YEAH.

441

00:09:37,510 --> 00:09:38,244
>> SO THOSE ARE GONNA BE

442

00:09:38,244 --> 00:09:38,978
VERY VISIBLE THINGS

443

00:09:38,978 --> 00:09:40,079
IN THE NEAR TERM.

444

00:09:40,079 --> 00:09:42,114
AND THEN, REALLY, WE'VE BEEN

445

00:09:42,114 --> 00:09:43,149
WORKING, YOU KNOW, FOR A WHILE

446

00:09:43,149 --> 00:09:44,250
ABOUT WHAT WE'RE GOING TO DO

447

00:09:44,250 --> 00:09:45,484
AROUND THE MOON, RIGHT?

448

00:09:45,484 --> 00:09:46,285
HOW WE'RE GOING TO USE

449

00:09:46,285 --> 00:09:47,920
THIS GATEWAY TO BASICALLY

450

00:09:47,920 --> 00:09:49,288
PROVIDE ACCESS TO THE MOON.

451
00:09:49,288 --> 00:09:50,056
AND SO WE'RE IN THE EARLY

452
00:09:50,056 --> 00:09:51,090
STAGES, BUT JOHNSON PLAYS

453
00:09:51,090 --> 00:09:53,259
A KEY ROLE IN-IN HOW THAT'S

454
00:09:53,259 --> 00:09:54,060
GOING TO WORK AND HOW

455
00:09:54,060 --> 00:09:55,094
THAT MIGHT COME TOGETHER.

456
00:09:55,094 --> 00:09:56,095
AND WE USE OUR EXPERIENCE

457
00:09:56,095 --> 00:09:57,296
IN HOW TO PARTNER WITH PEOPLE,

458
00:09:57,296 --> 00:09:58,230
BOTH INTERNATIONAL

459
00:09:58,230 --> 00:09:59,765
AND COMMERCIAL, TO FIGURE OUT

460
00:09:59,765 --> 00:10:00,599
THE SMARTEST WAYS

461
00:10:00,599 --> 00:10:01,634
TO MAKE THAT HAPPEN.

462
00:10:01,634 --> 00:10:02,969
SO WE HAVE A LOT OF PIECES

463
00:10:02,969 --> 00:10:04,337

THAT WE'RE PULLING TOGETHER TO

464

00:10:04,337 --> 00:10:06,038

HELP NASA IMPLEMENT THAT PLAN.

465

00:10:06,038 --> 00:10:06,706

>> THAT'S GREAT.

466

00:10:06,706 --> 00:10:07,406

>> WHEN-WHEN YOU THINK ABOUT

467

00:10:07,406 --> 00:10:08,507

THE HUMAN PHYSIOLOGY, WHICH

468

00:10:08,507 --> 00:10:09,976

MARK MENTIONED, THAT'S ONE OF

469

00:10:09,976 --> 00:10:12,845

THE BIG REASONS, UM, THE FIRST

470

00:10:12,845 --> 00:10:14,213

SPACE POLICY DIRECTIVE, UH,

471

00:10:14,213 --> 00:10:15,681

BY THE PRESIDENT IS TO GO

472

00:10:15,681 --> 00:10:17,116

BACK TO THE MOON.

473

00:10:17,116 --> 00:10:18,150

WE-WE KNOW, BECAUSE OF

474

00:10:18,150 --> 00:10:19,218

THE GREAT WORK DONE HERE AT

475

00:10:19,218 --> 00:10:20,453

JOHNSON, WE KNOW WHAT HAPPENS

476
00:10:20,453 --> 00:10:21,654
TO HUMAN PHYSIOLOGY

477
00:10:21,654 --> 00:10:23,022
IN A MICROGRAVITY ENVIRONMENT.

478
00:10:23,022 --> 00:10:24,323
WE KNOW THAT, YOU KNOW,

479
00:10:24,323 --> 00:10:25,691
YOUR-YOUR BONE MASS WILL

480
00:10:25,691 --> 00:10:27,526
DECREASE BY ABOUT 1% TO 3%

481
00:10:27,526 --> 00:10:28,494
PER MONTH.

482
00:10:28,494 --> 00:10:29,428
AND THERE ARE WAYS TO MITIGATE

483
00:10:29,428 --> 00:10:30,830
AGAINST THAT, BUT, UM--

484
00:10:30,830 --> 00:10:32,398
BUT THERE WILL BE A DEGRADATION

485
00:10:32,398 --> 00:10:33,132
OF THE BONE MASS.

486
00:10:33,132 --> 00:10:33,899
WE KNOW THAT THE HEART

487
00:10:33,899 --> 00:10:35,201
WILL BE DECONDITIONED.

488
00:10:35,201 --> 00:10:36,168

UM, WE KNOW THAT

489

00:10:36,168 --> 00:10:37,570

THE NEUROVESTIBULAR SYSTEM

490

00:10:37,570 --> 00:10:39,905

GETS, UM, THROWN OUT OF WHACK

491

00:10:39,905 --> 00:10:41,207

WHILE YOU'RE IN A MICROGRAVITY

492

00:10:41,207 --> 00:10:42,241

ENVIRONMENT, WHEN YOU COME

493

00:10:42,241 --> 00:10:44,543

BACK TO A-A GRAVITY ENVIRONMENT.

494

00:10:44,543 --> 00:10:46,078

SO THE QUESTION IS, YOU KNOW,

495

00:10:46,078 --> 00:10:46,879

IF WE'RE GONNA SEND

496

00:10:46,879 --> 00:10:47,880

ASTRONAUTS TO MARS,

497

00:10:47,880 --> 00:10:49,015

THEY'RE GONNA BE IN

498

00:10:49,015 --> 00:10:49,815

THAT MICROGRAVITY ENVIRONMENT

499

00:10:49,815 --> 00:10:51,283

FOR SIX, SEVEN, EIGHT,

500

00:10:51,283 --> 00:10:52,151

NINE MONTHS.

501
00:10:52,151 --> 00:10:52,918
>> MM-HMM.

502
00:10:52,918 --> 00:10:55,287
>> UM, AND ONCE THEY'RE AT MARS,

503
00:10:55,287 --> 00:10:56,255
THERE'S NO COMIN' HOME

504
00:10:56,255 --> 00:10:57,356
FOR AT LEAST TWO YEARS.

505
00:10:57,356 --> 00:10:58,190
WELL, THE MOON GIVES US

506
00:10:58,190 --> 00:10:59,859
AN OPPORTUNITY, UM,

507
00:10:59,859 --> 00:11:01,927
TO-TO PROVE OUT, YOU KNOW, CAN--

508
00:11:01,927 --> 00:11:04,964
YOU KNOW, ARE-ARE THERE, UM--

509
00:11:04,964 --> 00:11:06,098
ARE THERE WAYS THAT WE CAN HAVE

510
00:11:06,098 --> 00:11:08,200
AN ASTRONAUT IN A MICROGRAVITY

511
00:11:08,200 --> 00:11:09,635
ENVIRONMENT FOR SIX MONTHS,

512
00:11:09,635 --> 00:11:10,403
AND THEN SEND THEM

513
00:11:10,403 --> 00:11:11,837

TO THE MOON, AND SEE IF THAT

514

00:11:11,837 --> 00:11:13,205

REVERSES THE EFFECTS?

515

00:11:13,205 --> 00:11:15,808

LIKE, WH-WHEN YOU'RE IN 1/6 G,

516

00:11:15,808 --> 00:11:16,809

WHICH IS THE SURFACE OF

517

00:11:16,809 --> 00:11:19,111

THE MOON, UM, DOES THAT REVERSE

518

00:11:19,111 --> 00:11:20,212

THE EFFECTS THAT YOU HAD

519

00:11:20,212 --> 00:11:21,714

IN MICROGRAVITY?

520

00:11:21,714 --> 00:11:23,249

UM, AND IF IT DOES, THEN

521

00:11:23,249 --> 00:11:25,117

WE WOULD KNOW THAT IN 1/3 G,

522

00:11:25,117 --> 00:11:26,952

WHICH IS MARS, UH, IT WOULD

523

00:11:26,952 --> 00:11:28,421

PROBABLY ALSO BE EFFECTIVE.

524

00:11:28,421 --> 00:11:29,155

>> MM-HMM.

525

00:11:29,155 --> 00:11:30,656

>> UM, BUT THE REALITY IS,

526

00:11:30,656 --> 00:11:31,991

WE CAN'T SEND ASTRONAUTS

527

00:11:31,991 --> 00:11:33,225

FOR THE FIRST TIME AFTER BEING

528

00:11:33,225 --> 00:11:34,460

IN A MICROGRAVITY ENVIRONMENT

529

00:11:34,460 --> 00:11:36,328

FOR SEVEN MONTHS, PUT THEM

530

00:11:36,328 --> 00:11:37,530

ON A-- ON A SURFACE OF ANOTHER

531

00:11:37,530 --> 00:11:39,932

WORLD AND HAVE THEM BE PERFECT.

532

00:11:39,932 --> 00:11:41,233

THEY HAVE TO BE PERFECT

533

00:11:41,233 --> 00:11:42,201

IN ORDER TO STAY ALIVE

534

00:11:42,201 --> 00:11:43,269

FOR TWO YEARS.

535

00:11:43,269 --> 00:11:43,969

>> YEAH.

536

00:11:43,969 --> 00:11:45,371

>> UM, AND PROVING THAT OUT

537

00:11:45,371 --> 00:11:46,338

AT THE MOON IS REALLY

538

00:11:46,338 --> 00:11:47,440

THE BEST WAY TO DO IT.

539

00:11:47,440 --> 00:11:48,941

AND SO, UM, THAT'S WHAT

540

00:11:48,941 --> 00:11:50,076

SPACE POLICY DIRECTIVE ONE

541

00:11:50,076 --> 00:11:51,277

IS ALL ABOUT, AS WELL AS

542

00:11:51,277 --> 00:11:52,378

RETIRING THE RISK FOR

543

00:11:52,378 --> 00:11:53,412

A LOT OF THE TECHNOLOGIES

544

00:11:53,412 --> 00:11:54,780

AND THE CAPABILITIES.

545

00:11:54,780 --> 00:11:55,614

>> THAT'S RIGHT.

546

00:11:55,614 --> 00:11:56,248

>> YEAH.

547

00:11:56,248 --> 00:11:57,049

>> YEAH, THAT'S-- IT'S ONE OF

548

00:11:57,049 --> 00:11:58,217

THE THINGS-- ONE OF THE NICE

549

00:11:58,217 --> 00:11:59,018

THINGS, I THINK, ABOUT

550

00:11:59,018 --> 00:12:00,052

THE INTERNATIONAL SPACE STATION

551
00:12:00,052 --> 00:12:01,787
IS THAT IT'S SO CLOSE.

552
00:12:01,787 --> 00:12:04,190
250 MILES SOUNDS PRETTY FAR.

553
00:12:04,190 --> 00:12:05,424
BUT HONESTLY, IT'S PRETTY

554
00:12:05,424 --> 00:12:06,158
CLOSE TO HOME.

555
00:12:06,158 --> 00:12:06,859
IF ANYTHING GOES WRONG,

556
00:12:06,859 --> 00:12:07,560
YOU CAN COME BACK.

557
00:12:07,560 --> 00:12:08,360
IT'S THE PERFECT PLACE,

558
00:12:08,360 --> 00:12:09,628
REALLY, TO TEST A LOT OF

559
00:12:09,628 --> 00:12:11,030
THESE CAPABILITIES.

560
00:12:11,030 --> 00:12:11,897
AND THAT'S, I THINK, WHERE

561
00:12:11,897 --> 00:12:13,399
THE COMMERCIAL CREW COMES IN,

562
00:12:13,399 --> 00:12:15,034
RIGHT-- NOW WE'RE DOING

563
00:12:15,034 --> 00:12:16,368

THIS CERTIFICATION PROCESS.

564

00:12:16,368 --> 00:12:17,236

WE'RE WORKING WITH SPACEX

565

00:12:17,236 --> 00:12:19,772

AND BOEING VERY CLOSELY, UH,

566

00:12:19,772 --> 00:12:21,073

TO PROVIDE US THE CAPABILITY

567

00:12:21,073 --> 00:12:22,942

FOR LOWER-- FOR ACCESS

568

00:12:22,942 --> 00:12:23,976

TO LOW EARTH ORBIT.

569

00:12:23,976 --> 00:12:25,044

BUT IT'S NOT JUST THAT, RIGHT?

570

00:12:25,044 --> 00:12:26,212

WE'RE TALKING ABOUT

571

00:12:26,212 --> 00:12:27,313

THE SPACE STATION.

572

00:12:27,313 --> 00:12:28,314

UH, UH-- WE'RE ENDING

573

00:12:28,314 --> 00:12:30,349

DIRECT FEDERAL FUNDING IN 2025.

574

00:12:30,349 --> 00:12:32,618

BUILDING A LOW EARTH ORBIT

575

00:12:32,618 --> 00:12:34,019

ECONOMY, SOMETHING THAT'S,

576
00:12:34,019 --> 00:12:35,421
I DON'T THINK, BEEN DONE BEFORE.

577
00:12:35,421 --> 00:12:36,455
WHAT'S-- SO THAT'S PART OF

578
00:12:36,455 --> 00:12:37,289
THIS DIRECTIVE, RIGHT,

579
00:12:37,289 --> 00:12:38,858
IS ESTABLISHING AN ECONOMY

580
00:12:38,858 --> 00:12:39,792
IN SPACE.

581
00:12:39,792 --> 00:12:41,026
SO HOW ARE WE DOING THAT?

582
00:12:41,026 --> 00:12:41,627
>> YEAH, THAT'S A--

583
00:12:41,627 --> 00:12:42,361
IT'S A GREAT QUESTION.

584
00:12:42,361 --> 00:12:43,028
AND WE'RE GOING TO HAVE TO

585
00:12:43,028 --> 00:12:43,762
WORK THROUGH IT.

586
00:12:43,762 --> 00:12:44,530
>> YEAH?

587
00:12:44,530 --> 00:12:45,498
>> UM, YOU-YOU CAN IMAGINE,

588
00:12:45,498 --> 00:12:46,532

UM, THERE'S ALL KINDS OF

589

00:12:46,532 --> 00:12:47,833

TECHNOLOGIES AND CAPABILITIES

590

00:12:47,833 --> 00:12:49,068

THAT HAVE BEEN DEVELOPED

591

00:12:49,068 --> 00:12:50,002

ALREADY.

592

00:12:50,002 --> 00:12:51,270

AND-AND MARK HAS BEEN REALLY

593

00:12:51,270 --> 00:12:52,371

GOOD ABOUT TALKING ABOUT

594

00:12:52,371 --> 00:12:53,506

HOW THE SPACE STATION,

595

00:12:53,506 --> 00:12:55,241

THE INTERNATIONAL SPACE STATION,

596

00:12:55,241 --> 00:12:57,510

HAS REALLY BEEN A-A KEY DRIVER

597

00:12:57,510 --> 00:13:00,179

OF ENABLING US TO-TO

598

00:13:00,179 --> 00:13:01,847

COMMERCIALIZE LOW EARTH ORBIT.

599

00:13:01,847 --> 00:13:02,515

>> MM-HMM.

600

00:13:02,515 --> 00:13:03,549

>> IF THERE IS NO SPACE STATION,

601
00:13:03,549 --> 00:13:04,283
THERE WOULD BE

602
00:13:04,283 --> 00:13:05,351
NO COMMERCIALIZATION.

603
00:13:05,351 --> 00:13:06,752
AND SO, UM, IT HAS BEEN

604
00:13:06,752 --> 00:13:08,287
A VERY EFFECTIVE TOOL FOR

605
00:13:08,287 --> 00:13:09,722
BUILDING THE SPACE ECONOMY,

606
00:13:09,722 --> 00:13:10,823
IF YOU WILL.

607
00:13:10,823 --> 00:13:11,891
AND NOW, WHEN YOU THINK ABOUT

608
00:13:11,891 --> 00:13:12,958
WHAT THE FUTURE HOLDS, EVEN

609
00:13:12,958 --> 00:13:13,993
EXPERIMENTS THAT ARE HAPPENING

610
00:13:13,993 --> 00:13:15,461
RIGHT NOW, YOU THINK ABOUT

611
00:13:15,461 --> 00:13:16,662
FIBER OPTICS BEING

612
00:13:16,662 --> 00:13:17,630
MANUFACTURED ON

613
00:13:17,630 --> 00:13:18,998

THE INTERNATIONAL SPACE STATION,

614

00:13:18,998 --> 00:13:20,666

WHICH COULD, UM, DRIVE DOWN

615

00:13:20,666 --> 00:13:23,035

THE COST FOR, IN ESSENCE,

616

00:13:23,035 --> 00:13:25,871

MAKING, UM, NOT JUST AMERICA,

617

00:13:25,871 --> 00:13:27,373

BUT THE WORLD MORE CONNECTED.

618

00:13:27,373 --> 00:13:28,641

YOU THINK ABOUT, UM,

619

00:13:28,641 --> 00:13:30,009

THE ABILITY TO PRODUCE

620

00:13:30,009 --> 00:13:31,010

PHARMACEUTICALS IN

621

00:13:31,010 --> 00:13:32,244

A MICROGRAVITY ENVIRONMENT,

622

00:13:32,244 --> 00:13:33,746

WHERE YOU CAN, UM, DO THINGS

623

00:13:33,746 --> 00:13:35,381

THAT YOU CANNOT DO ON EARTH.

624

00:13:35,381 --> 00:13:38,083

YOU THINK ABOUT, UM, TAKING

625

00:13:38,083 --> 00:13:39,485

ADULT STEM CELLS

626
00:13:39,485 --> 00:13:42,688
AND 3D PRINTING HUMAN ORGANS,

627
00:13:42,688 --> 00:13:44,823
UH, TO INCREASE THE-THE-- YOU

628
00:13:44,823 --> 00:13:46,592
KNOW, THE LIVES OF-OF HUMANS.

629
00:13:46,592 --> 00:13:48,227
ALL OF THESE THINGS ARE BEING

630
00:13:48,227 --> 00:13:49,695
DEVELOPED RIGHT NOW, UH,

631
00:13:49,695 --> 00:13:51,096
WITH THE SUPPORT OF NASA ON

632
00:13:51,096 --> 00:13:52,765
THE INTERNATIONAL SPACE STATION.

633
00:13:52,765 --> 00:13:53,966
AND EACH ONE OF THOSE THINGS

634
00:13:53,966 --> 00:13:55,868
IS A MARKET UNTO ITSELF.

635
00:13:55,868 --> 00:13:56,669
>> MM-HMM.

636
00:13:56,669 --> 00:13:57,469
>> UH, AND THERE'S SO MUCH

637
00:13:57,469 --> 00:13:58,237
MORE, RIGHT?

638
00:13:58,237 --> 00:13:58,938

>> YEAH.

639

00:13:58,938 --> 00:14:00,606

>> SO, WHAT WE WANNA MAKE SURE--

640

00:14:00,606 --> 00:14:02,141

AND ON A-ANOTHER PIECE OF THIS,

641

00:14:02,141 --> 00:14:03,008

YOU KNOW, WE TALK ABOUT

642

00:14:03,008 --> 00:14:04,243

COMMERCIAL CREW.

643

00:14:04,243 --> 00:14:05,177

WE'RE GOING TO BE LAUNCHING

644

00:14:05,177 --> 00:14:06,845

COMMERCIAL CREW HERE, UM,

645

00:14:06,845 --> 00:14:07,980

IN THE NEXT YEAR.

646

00:14:07,980 --> 00:14:08,881

WE'RE TALKING ABOUT,

647

00:14:08,881 --> 00:14:11,250

AS-AS-AS WE'VE TALKED ABOUT,

648

00:14:11,250 --> 00:14:12,418

SENDING AMERICAN ASTRONAUTS

649

00:14:12,418 --> 00:14:13,285

ON AMERICAN ROCKETS

650

00:14:13,285 --> 00:14:14,787

FROM AMERICAN SOIL.

651
00:14:14,787 --> 00:14:16,255
ALL OF THAT IS FANTASTIC.

652
00:14:16,255 --> 00:14:17,223
BUT THESE COMMERCIAL CREW

653
00:14:17,223 --> 00:14:18,891
PROVIDERS, AND MANY--

654
00:14:18,891 --> 00:14:19,892
THEY-THEY HAVE SEATS.

655
00:14:19,892 --> 00:14:21,126
THEY HAVE-- THEY HAVE SEVEN

656
00:14:21,126 --> 00:14:22,861
SEATS ON THEIR SPACECRAFT,

657
00:14:22,861 --> 00:14:24,697
WHICH MEANS WE COULD BE FLYING

658
00:14:24,697 --> 00:14:25,831
TOURISTS TO THE INTERNATIONAL

659
00:14:25,831 --> 00:14:26,966
SPACE STATION.

660
00:14:26,966 --> 00:14:28,200
UH, IN OTHER WORDS, THERE'S--

661
00:14:28,200 --> 00:14:29,201
AND I'M NOT SAYING

662
00:14:29,201 --> 00:14:30,069
WE'RE GONNA DO THAT.

663
00:14:30,069 --> 00:14:30,936

I'M SAYING, THAT IS

664

00:14:30,936 --> 00:14:31,770

AN OPPORTUNITY THAT

665

00:14:31,770 --> 00:14:32,838

WE NEED TO LOOK AT.

666

00:14:32,838 --> 00:14:33,505

>> MM-HMM.

667

00:14:33,505 --> 00:14:34,573

>> UH, BECAUSE THERE COULD BE

668

00:14:34,573 --> 00:14:37,176

A DAY WHEN, UM, WE HAVE

669

00:14:37,176 --> 00:14:39,445

NOT JUST TOURISTS BUT, UM,

670

00:14:39,445 --> 00:14:40,579

YOU KNOW, DIFFERENT TYPES OF

671

00:14:40,579 --> 00:14:42,081

SCIENTISTS, UM, DIFFERENT

672

00:14:42,081 --> 00:14:43,682

TYPES OF EVEN JOURNALISTS,

673

00:14:43,682 --> 00:14:45,618

UM, FLYING TO THE INTERNATIONAL

674

00:14:45,618 --> 00:14:47,453

SPACE STATION, UH, TO SHARE

675

00:14:47,453 --> 00:14:48,420

WITH THE WORLD KIND OF

676
00:14:48,420 --> 00:14:50,089
WHAT'S-WHAT'S HAPPENING, UH,

677
00:14:50,089 --> 00:14:51,357
IN-IN LOW EARTH ORBIT.

678
00:14:51,357 --> 00:14:53,325
SO THERE'S ALL KINDS OF WAYS

679
00:14:53,325 --> 00:14:54,226
FOR THE INTERNATIONAL

680
00:14:54,226 --> 00:14:55,160
SPACE STATION TO BECOME

681
00:14:55,160 --> 00:14:56,328
MORE COMMERCIALIZED.

682
00:14:56,328 --> 00:14:58,797
BETWEEN NOW AND-AND 20--

683
00:14:58,797 --> 00:15:00,666
UH, 2025--

684
00:15:00,666 --> 00:15:01,467
>> MM-HMM.

685
00:15:01,467 --> 00:15:02,234
>> UM, THAT'S SEVEN YEARS

686
00:15:02,234 --> 00:15:02,968
FROM NOW-- THERE'S--

687
00:15:02,968 --> 00:15:03,736
>> YEAH.

688
00:15:03,736 --> 00:15:04,436

>> BETWEEN NOW AND THEN,

689

00:15:04,436 --> 00:15:05,137

THERE'S A LOT THAT'S

690

00:15:05,137 --> 00:15:05,938

GONNA CHANGE.

691

00:15:05,938 --> 00:15:07,239

AND IT'S NOT JUST

692

00:15:07,239 --> 00:15:08,340

THE INTERNATIONAL SPACE STATION

693

00:15:08,340 --> 00:15:09,241

THAT COULD BE

694

00:15:09,241 --> 00:15:10,876

MORE COMMERCIALIZED.

695

00:15:10,876 --> 00:15:13,212

IT WOULD BE OTHER PRIVATE

696

00:15:13,212 --> 00:15:15,414

HABITAT-HABITATS IN LOW EARTH

697

00:15:15,414 --> 00:15:16,982

ORBIT THAT WOULD BE ADDING

698

00:15:16,982 --> 00:15:18,917

TO THAT, UM, MARKETPLACE

699

00:15:18,917 --> 00:15:19,885

IN LOW EARTH ORBIT.

700

00:15:19,885 --> 00:15:21,487

SO, UM, THERE'S A LOT OF

701
00:15:21,487 --> 00:15:22,388
REALLY EXCITING THINGS

702
00:15:22,388 --> 00:15:23,088
HAPPENING.

703
00:15:23,088 --> 00:15:23,922
WHAT WE WANNA MAKE SURE WE DO,

704
00:15:23,922 --> 00:15:24,990
THOUGH-- AND MARK AND I HAVE

705
00:15:24,990 --> 00:15:25,858
TALKED ABOUT THIS--

706
00:15:25,858 --> 00:15:26,625
WE WANNA MAKE SURE THAT

707
00:15:26,625 --> 00:15:27,693
WE'RE PLANNING TODAY--

708
00:15:27,693 --> 00:15:28,327
>> MM-HMM.

709
00:15:28,327 --> 00:15:29,395
>> --FOR A FUTURE WHERE

710
00:15:29,395 --> 00:15:30,329
WE HAVE NO GAPS IN

711
00:15:30,329 --> 00:15:31,463
LOW EARTH ORBIT.

712
00:15:31,463 --> 00:15:33,432
WE-WE DON'T WANNA HAVE A DAY

713
00:15:33,432 --> 00:15:34,767

WHEN AMERICAN ASTRONAUTS

714

00:15:34,767 --> 00:15:36,201
ARE NOT THERE.

715

00:15:36,201 --> 00:15:37,202
KIDS THAT ARE GRADUATING FROM

716

00:15:37,202 --> 00:15:39,071
HIGH SCHOOL TODAY HAVE LIVED

717

00:15:39,071 --> 00:15:40,172
THEIR ENTIRE LIVES WITH

718

00:15:40,172 --> 00:15:41,874
A HUMAN LIVING AND WORKING

719

00:15:41,874 --> 00:15:43,108
IN SPACE.

720

00:15:43,108 --> 00:15:44,043
WE WANNA MAKE SURE THAT

721

00:15:44,043 --> 00:15:45,344
THAT HAPPENS, YOU KNOW,

722

00:15:45,344 --> 00:15:46,779
18 YEARS FROM NOW,

723

00:15:46,779 --> 00:15:48,247
AND THEN 18 YEARS FROM THEN,

724

00:15:48,247 --> 00:15:50,015
SO THERE'S NO GAP.

725

00:15:50,015 --> 00:15:51,016
UM, AND SO THAT'S REALLY WHAT

726
00:15:51,016 --> 00:15:52,351
WE'RE WORKING TO ACHIEVE NOW.

727
00:15:52,351 --> 00:15:52,985
>> THAT'S RIGHT.

728
00:15:52,985 --> 00:15:53,786
AND IT'S-IT'S ALREADY

729
00:15:53,786 --> 00:15:54,486
UNDER WORK.

730
00:15:54,486 --> 00:15:55,654
MARK, I KNOW JUST RECENTLY,

731
00:15:55,654 --> 00:15:57,156
THE NASA RESEARCH ANNOUNCEMENT

732
00:15:57,156 --> 00:15:57,923
CAME OUT.

733
00:15:57,923 --> 00:15:58,724
WE SELECTED COMPANIES TO

734
00:15:58,724 --> 00:15:59,525
ACTUALLY TAKE A LOOK

735
00:15:59,525 --> 00:16:00,693
SPECIFICALLY AT THIS.

736
00:16:00,693 --> 00:16:01,794
WHAT CAN WE DO, RIGHT?

737
00:16:01,794 --> 00:16:03,462
SO-SO WHAT'S GOING ON THERE?

738
00:16:03,462 --> 00:16:04,163

>> YEAH, EXACTLY.

739

00:16:04,163 --> 00:16:05,230
THAT'S A G-- A GREAT LEAD-IN,

740

00:16:05,230 --> 00:16:06,632
'CAUSE WE'RE--

741

00:16:06,632 --> 00:16:07,599
YOU KNOW, WE NASA,

742

00:16:07,599 --> 00:16:08,834
WE'RE SMART PEOPLE.

743

00:16:08,834 --> 00:16:09,601
WE'VE BEEN PARTNERING WITH

744

00:16:09,601 --> 00:16:10,869
PEOPLE FOR OUR WHOLE--

745

00:16:10,869 --> 00:16:11,870
OUR WHOLE HISTORY.

746

00:16:11,870 --> 00:16:12,971
SO NOW WE'RE ASKING PEOPLE

747

00:16:12,971 --> 00:16:13,872
THAT ARE ON THE CUTTING EDGE

748

00:16:13,872 --> 00:16:16,141
OF COMMERCIALIZING SPACE.

749

00:16:16,141 --> 00:16:17,376
AND SOME ARE SUPPLIERS.

750

00:16:17,376 --> 00:16:19,244
SOME ARE CREATING DEMAND SIDE.

751
00:16:19,244 --> 00:16:20,012
SO WE ASK THEM,

752
00:16:20,012 --> 00:16:20,879
"WHAT WOULD YOU DO?"

753
00:16:20,879 --> 00:16:21,547
>> RIGHT.

754
00:16:21,547 --> 00:16:22,314
>> "WHAT-WHAT DO YOU THINK

755
00:16:22,314 --> 00:16:23,649
"MAKES SENSE, AS A COMPANY,

756
00:16:23,649 --> 00:16:25,050
"THAT WOULD ENABLE YOU?"

757
00:16:25,050 --> 00:16:25,884
AND "WHAT DO YOU THINK

758
00:16:25,884 --> 00:16:26,885
"NASA'S DOING THAT'S

759
00:16:26,885 --> 00:16:27,920
"STOPPING YOU?"

760
00:16:27,920 --> 00:16:28,620
>> MM-HMM.

761
00:16:28,620 --> 00:16:29,288
>> SO LET'S TALK ABOUT

762
00:16:29,288 --> 00:16:30,055
BOTH OF THOSE, AND WHAT ARE

763
00:16:30,055 --> 00:16:31,590

THE THINGS WE CAN DO AS A--

764

00:16:31,590 --> 00:16:32,925

AS AN AGENCY TO HELP THAT?

765

00:16:32,925 --> 00:16:33,926

'CAUSE WE-- 'CAUSE AS JIM SAID,

766

00:16:33,926 --> 00:16:34,993

THAT'S THE GOAL.

767

00:16:34,993 --> 00:16:35,928

WE'RE TRYING TO BE-- UH,

768

00:16:35,928 --> 00:16:36,862

AND I LIKE THE PHRASE,

769

00:16:36,862 --> 00:16:37,930

"ONE OF MANY CUSTOMERS."

770

00:16:37,930 --> 00:16:39,465

SO HOW DOES THAT HAPPEN?

771

00:16:39,465 --> 00:16:40,366

THAT MEANS THESE OTHER FOLKS

772

00:16:40,366 --> 00:16:41,367

NEED TO BE CUSTOMERS.

773

00:16:41,367 --> 00:16:42,234

THESE OTHER FOLKS NEED TO HAVE

774

00:16:42,234 --> 00:16:44,436

A REASON TO BE IN SPACE.

775

00:16:44,436 --> 00:16:45,504

AND SO, HOW DO WE ENABLE THAT?

776
00:16:45,504 --> 00:16:46,872
SO WE'RE REALLY CASTING A WIDE

777
00:16:46,872 --> 00:16:48,707
NET, ASKING PEOPLE WHO HAVE--

778
00:16:48,707 --> 00:16:50,642
NOT JUST PEOPLE WHO ARE-ARE

779
00:16:50,642 --> 00:16:51,610
THINKING, BUT PEOPLE WHO

780
00:16:51,610 --> 00:16:52,711
HAVE ACTUALLY DONE COMMERCIAL

781
00:16:52,711 --> 00:16:54,613
IDEAS IN SPACE AND SAY,

782
00:16:54,613 --> 00:16:55,714
"OKAY, HOW WOULD IT WORK?"

783
00:16:55,714 --> 00:16:56,382
>> THAT'S RIGHT.

784
00:16:56,382 --> 00:16:57,082
>> SO WE CAN PUT TOGETHER

785
00:16:57,082 --> 00:16:57,716
A REAL PLAN.

786
00:16:57,716 --> 00:16:58,517
I THINK THAT'S THE KEY.

787
00:16:58,517 --> 00:16:59,318
>> YEAH, WORK, AND THEN

788
00:16:59,318 --> 00:17:00,819

ALSO, BE SUSTAINABLE.

789

00:17:00,819 --> 00:17:01,520

>> EXACTLY.

790

00:17:01,520 --> 00:17:02,254

>> SOMETHING-SOMETHING THAT'S

791

00:17:02,254 --> 00:17:03,188

A BUSINESS OPPORTUNITY,

792

00:17:03,188 --> 00:17:04,323

SOMETHING THAT YOU WANT PEOPLE

793

00:17:04,323 --> 00:17:05,958

TO COME AND PARTICIPATE IN.

794

00:17:05,958 --> 00:17:06,859

>> EXACTLY.

795

00:17:06,859 --> 00:17:07,760

>> YOU KNOW, IT'S-IT'S IN A--

796

00:17:07,760 --> 00:17:08,560

IT'S SOMETHING THAT

797

00:17:08,560 --> 00:17:09,361

COMMERCIAL INDUSTRIES

798

00:17:09,361 --> 00:17:10,028

CAN PROFIT FROM.

799

00:17:10,028 --> 00:17:10,763

>> YEAH.

800

00:17:10,763 --> 00:17:11,497

>> UM--

801
00:17:11,497 --> 00:17:12,197
>> I THINK WE SEE WHAT--

802
00:17:12,197 --> 00:17:12,865
IF I-- IF I COULD JUST

803
00:17:12,865 --> 00:17:13,499
ADD TO THAT?

804
00:17:13,499 --> 00:17:14,133
>> YEAH, SURE.

805
00:17:14,133 --> 00:17:14,800
>> I THINK WE'RE SEEING,

806
00:17:14,800 --> 00:17:15,467
ON STATION, WITH THE--

807
00:17:15,467 --> 00:17:16,235
WITH THE NATIONAL LAB AND OTHER

808
00:17:16,235 --> 00:17:18,103
THINGS, WHERE IT'S NOT--

809
00:17:18,103 --> 00:17:20,939
IT'S NOT REAL, REAL SIMPLE

810
00:17:20,939 --> 00:17:22,474
TO START A COMPANY

811
00:17:22,474 --> 00:17:23,842
IN SPACE, RIGHT?

812
00:17:23,842 --> 00:17:24,910
IT'S NOT REAL, REAL SIMPLE

813
00:17:24,910 --> 00:17:26,211

TO START CREATING A PRODUCT

814

00:17:26,211 --> 00:17:26,912
IN SPACE.

815

00:17:26,912 --> 00:17:28,714
IT TAKES, UH, SOME HELP FROM

816

00:17:28,714 --> 00:17:30,816
NASA, JUST TO GET UP THERE.

817

00:17:30,816 --> 00:17:31,617
IT TAKES PEOPLE WITH

818

00:17:31,617 --> 00:17:32,918
EXPERTISE ABOUT WHAT HAPPENS,

819

00:17:32,918 --> 00:17:34,086
UH, IN SPACE.

820

00:17:34,086 --> 00:17:34,787
AND THEN IT TAKES

821

00:17:34,787 --> 00:17:35,921
TRI-TRIAL AND ERROR.

822

00:17:35,921 --> 00:17:37,222
SO THE NATIONAL LAB IS A GREAT

823

00:17:37,222 --> 00:17:38,390
EXAMPLE, WHERE WE TAKE PEOPLE

824

00:17:38,390 --> 00:17:39,725
WHO ARE INTERESTED, WHO AREN'T

825

00:17:39,725 --> 00:17:41,326
OUR NORMAL SPACE FOLKS THAT

826
00:17:41,326 --> 00:17:43,061
HAVE BEEN IN SPACE, ALL SORTS

827
00:17:43,061 --> 00:17:44,730
OF DIFFERENT COMPANIES.

828
00:17:44,730 --> 00:17:46,398
UM, AND THEN WE, UH,

829
00:17:46,398 --> 00:17:47,266
GIVE THEM-- TALK ABOUT

830
00:17:47,266 --> 00:17:48,066
THE OPPORTUNITIES.

831
00:17:48,066 --> 00:17:48,967
WE TIE THEM WITH PEOPLE

832
00:17:48,967 --> 00:17:49,935
WHO HAVE CAPABILITIES.

833
00:17:49,935 --> 00:17:50,769
WE LINK 'EM WITH PEOPLE

834
00:17:50,769 --> 00:17:51,870
WHO HAVE MONEY, SAY,

835
00:17:51,870 --> 00:17:52,638
"HEY, THESE PEOPLE MIGHT BE

836
00:17:52,638 --> 00:17:53,572
"INTERESTED, TOO."

837
00:17:53,572 --> 00:17:54,139
>> YEAH.

838
00:17:54,139 --> 00:17:54,840

>> 'CAUSE IT'S SEEDING THAT

839

00:17:54,840 --> 00:17:55,774

THAT'S REALLY, REALLY IMPORTANT.

840

00:17:55,774 --> 00:17:57,042

AND I THINK WHAT'LL--

841

00:17:57,042 --> 00:17:58,076

THE KEY WAS-- IF O--

842

00:17:58,076 --> 00:17:59,211

WHEN ONE OF THOSE TAKES OFF,

843

00:17:59,211 --> 00:18:00,112

WHERE SOMEBODY REALLY STARTS

844

00:18:00,112 --> 00:18:01,113

MAKING MONEY--

845

00:18:01,113 --> 00:18:01,847

>> MM-HMM.

846

00:18:01,847 --> 00:18:02,881

>> --UH, IN SPACE, UH,

847

00:18:02,881 --> 00:18:03,682

THAT'LL BE GREAT FOR US.

848

00:18:03,682 --> 00:18:04,349

WE JUST NEED TO

849

00:18:04,349 --> 00:18:05,117

GET OUT OF THE WAY.

850

00:18:05,117 --> 00:18:05,884

'CAUSE THEY'RE-THEY'RE GONNA

851
00:18:05,884 --> 00:18:06,452
TO BE DOING THEIR THING.

852
00:18:06,452 --> 00:18:07,753
AND THAT'S REALLY GONNA HELP US

853
00:18:07,753 --> 00:18:08,954
REDUCE OUR FIXED COSTS.

854
00:18:08,954 --> 00:18:09,655
'CAUSE THEY'LL BE BUYING

855
00:18:09,655 --> 00:18:10,656
SERVICES, TOO.

856
00:18:10,656 --> 00:18:11,256
>> FOR SURE.

857
00:18:11,256 --> 00:18:11,990
>> IT'S GOING TO BE GOOD.

858
00:18:11,990 --> 00:18:12,991
>> AND THEN WHEN THAT HAPPENS,

859
00:18:12,991 --> 00:18:14,493
THEN AS MARK SAID, W-WE WILL

860
00:18:14,493 --> 00:18:16,628
BE-- NASA WILL BE ONE CUSTOMER

861
00:18:16,628 --> 00:18:17,663
OF MANY CUSTOMERS, WHICH

862
00:18:17,663 --> 00:18:19,031
DRIVES DOWN OUR PRICE.

863
00:18:19,031 --> 00:18:20,365

BUT WE WILL ALSO HAVE

864

00:18:20,365 --> 00:18:21,834

A LOT OF PROVIDERS.

865

00:18:21,834 --> 00:18:22,868

WHEN I SAY A LOT OF PROVIDERS,

866

00:18:22,868 --> 00:18:23,502

WE'LL HAVE A LOT OF

867

00:18:23,502 --> 00:18:24,970

LAUNCH PROVIDERS.

868

00:18:24,970 --> 00:18:26,071

WE'LL HAVE A LOT OF,

869

00:18:26,071 --> 00:18:27,206

POTENTIALLY, COMMERCIAL

870

00:18:27,206 --> 00:18:28,974

SPACE STATIONS THAT WE CAN TAKE

871

00:18:28,974 --> 00:18:30,409

OUR NASA ASTRONAUTS TO

872

00:18:30,409 --> 00:18:31,477

ON COMMERCIAL LAUNCH,

873

00:18:31,477 --> 00:18:33,278

UM, PROVIDERS.

874

00:18:33,278 --> 00:18:34,813

UM, AND THEN SO IF YOU HAVE

875

00:18:34,813 --> 00:18:36,215

MULTIPLE PROVIDERS, AND WE ARE

876
00:18:36,215 --> 00:18:38,450
ONE OF MANY CUSTOMERS, THEN,

877
00:18:38,450 --> 00:18:40,285
UM, THEY'RE COMPETING

878
00:18:40,285 --> 00:18:41,587
ON INNOVATION.

879
00:18:41,587 --> 00:18:42,888
THEY'RE TRYING TO DO MORE,

880
00:18:42,888 --> 00:18:44,323
UH, IN ORDER TO BECOME

881
00:18:44,323 --> 00:18:45,624
A BIGGER, YOU KNOW--

882
00:18:45,624 --> 00:18:46,391
THEY WANT US TO BE

883
00:18:46,391 --> 00:18:47,826
AN-AN EVEN BIGGER CUSTOMER.

884
00:18:47,826 --> 00:18:48,961
SO THEY'RE GONNA COMPETE

885
00:18:48,961 --> 00:18:49,661
ON INNOVATION.

886
00:18:49,661 --> 00:18:50,362
THEY'RE GONNA COMPETE

887
00:18:50,362 --> 00:18:51,330
ON COSTS.

888
00:18:51,330 --> 00:18:52,631

THAT MEANS NASA CAN DO MORE

889

00:18:52,631 --> 00:18:54,066

THAN IT'S EVER DONE BEFORE.

890

00:18:54,066 --> 00:18:55,300

IT ALSO MEANS THAT WE'RE GONNA

891

00:18:55,300 --> 00:18:56,101

BE ABLE TO TAKE

892

00:18:56,101 --> 00:18:57,503

OUR RESOURCES FROM

893

00:18:57,503 --> 00:18:59,004

THE TAXPAYER AND DO THINGS

894

00:18:59,004 --> 00:18:59,972

FOR WHICH THERE IS

895

00:18:59,972 --> 00:19:01,406

NO COMMERCIAL MARKETPLACE.

896

00:19:01,406 --> 00:19:03,709

WE CAN FLY TO THE MOON ON SLS

897

00:19:03,709 --> 00:19:05,244

AND ORION, WHICH RIGHT NOW,

898

00:19:05,244 --> 00:19:06,278

THERE ISN'T A COMMERCIAL

899

00:19:06,278 --> 00:19:07,379

CAPABILITY THERE.

900

00:19:07,379 --> 00:19:08,013

>> RIGHT.

901
00:19:08,013 --> 00:19:08,881
>> AND OF COURSE, WE CAN BUILD

902
00:19:08,881 --> 00:19:09,882
THE GATEWAY.

903
00:19:09,882 --> 00:19:11,116
AND THE FIRST GATEWAY IS ABOUT

904
00:19:11,116 --> 00:19:12,484
MORE ACCESS TO MORE PARTS

905
00:19:12,484 --> 00:19:13,652
OF THE MOON THAN EVER BEFORE.

906
00:19:13,652 --> 00:19:15,053
AND THE SECOND GATEWAY IS

907
00:19:15,053 --> 00:19:16,321
A DEEP SPACE TRANSPORT

908
00:19:16,321 --> 00:19:17,756
THAT TAKES US TO MARS.

909
00:19:17,756 --> 00:19:19,892
SO ALL OF THOSE CAPABILITIES

910
00:19:19,892 --> 00:19:21,126
ARE DEPENDENT ON

911
00:19:21,126 --> 00:19:22,261
US COMMERCIALIZING

912
00:19:22,261 --> 00:19:22,961
LOW EARTH ORBIT.

913
00:19:22,961 --> 00:19:23,729

WE DON'T WANNA LOSE

914

00:19:23,729 --> 00:19:24,496

LOW EARTH ORBIT.

915

00:19:24,496 --> 00:19:25,230

WE JUST WANT IT TO BE

916

00:19:25,230 --> 00:19:26,365

COMMERCIALIZED.

917

00:19:26,365 --> 00:19:27,666

UM, AND THEN WE CAN TAKE

918

00:19:27,666 --> 00:19:28,967

OUR RESOURCES AND DO THINGS

919

00:19:28,967 --> 00:19:29,868

WHERE THERE IS NO

920

00:19:29,868 --> 00:19:31,136

COMMERCIAL MARKET YET.

921

00:19:31,136 --> 00:19:31,770

>> YEAH.

922

00:19:31,770 --> 00:19:32,437

WE DON'T WANT TO LOSE IT.

923

00:19:32,437 --> 00:19:33,205

IT GOES BACK TO YOUR POINT

924

00:19:33,205 --> 00:19:34,339

OF SAYING CONTINUING

925

00:19:34,339 --> 00:19:35,240

ACCESS, RIGHT?

926
00:19:35,240 --> 00:19:36,308
WE STILL WANT TO BE A PART OF

927
00:19:36,308 --> 00:19:37,242
THAT-- NASA IS ONE OF

928
00:19:37,242 --> 00:19:38,477
MANY CUSTOMERS-- BUT ALSO,

929
00:19:38,477 --> 00:19:39,511
THE ACCESS, YOU KNOW,

930
00:19:39,511 --> 00:19:41,079
FOR-FOR ASTRONAUTS, TOO.

931
00:19:41,079 --> 00:19:42,247
AND EVEN FOR-FOR PRIVATE

932
00:19:42,247 --> 00:19:43,515
COMPANIES, TO-TO SEND PEOPLE

933
00:19:43,515 --> 00:19:44,316
UP THERE.

934
00:19:44,316 --> 00:19:45,050
AND THAT'S-THAT'S ACTUALLY

935
00:19:45,050 --> 00:19:46,585
A MONEY-MAKING ENDEAVOR AS WELL.

936
00:19:46,585 --> 00:19:47,586
BUT THE-- YOU KNOW,

937
00:19:47,586 --> 00:19:49,087
WHILE WE'RE-- WHILE WE'RE ALSO

938
00:19:49,087 --> 00:19:50,255

DOING THAT, THERE'S

939

00:19:50,255 --> 00:19:52,391

THIS-THIS ECONOMY DOWN THERE,

940

00:19:52,391 --> 00:19:53,692

SO WE CAN FOCUS ON,

941

00:19:53,692 --> 00:19:55,193

LIKE YOU'RE SAYING, EXPLORATION.

942

00:19:55,193 --> 00:19:56,161

AND THIS GATEWAY THING,

943

00:19:56,161 --> 00:19:56,895

I DON'T THINK IT'S SOMETHING

944

00:19:56,895 --> 00:19:57,663

WE'VE TOUCHED ON SO MUCH

945

00:19:57,663 --> 00:19:58,564

ON THIS SHOW.

946

00:19:58,564 --> 00:20:01,366

SO-SO WE'VE-- WHAT IS GATEWAY?

947

00:20:01,366 --> 00:20:02,668

WHAT IS THIS THING?

948

00:20:02,668 --> 00:20:04,937

>> SO THE IDEA IS, UM,

949

00:20:04,937 --> 00:20:06,104

SPACE POLICY DIRECTIVE ONE

950

00:20:06,104 --> 00:20:07,406

SAYS WE'RE GOING TO THE MOON.

951
00:20:07,406 --> 00:20:08,106
>> YEAH.

952
00:20:08,106 --> 00:20:08,807
>> IT ALSO SAYS THAT

953
00:20:08,807 --> 00:20:10,576
WE'RE GONNA GO SUSTAINABLY.

954
00:20:10,576 --> 00:20:11,043
>> HMM.

955
00:20:11,043 --> 00:20:12,311
>> IN OTHER WORDS, UM,

956
00:20:12,311 --> 00:20:13,145
WE'RE NOT GONNA DO

957
00:20:13,145 --> 00:20:14,513
FLAGS AND FOOTPRINTS AGAIN.

958
00:20:14,513 --> 00:20:15,147
BUT THIS TIME,

959
00:20:15,147 --> 00:20:15,747
WHEN WE GO TO THE MOON,

960
00:20:15,747 --> 00:20:16,949
WE'RE GOING TO STAY.

961
00:20:16,949 --> 00:20:17,583
>> MM-HMM.

962
00:20:17,583 --> 00:20:18,283
>> SO ONE OF THE WAYS

963
00:20:18,283 --> 00:20:19,217

TO MAKE SURE THAT WE DON'T

964

00:20:19,217 --> 00:20:20,285

COME HOME IS TO PUT

965

00:20:20,285 --> 00:20:23,322

A SPACE STATION AROUND THE MOON

966

00:20:23,322 --> 00:20:25,624

FOR A VERY LONG PERIOD OF TIME.

967

00:20:25,624 --> 00:20:26,692

AND WE'RE-- YOU KNOW,

968

00:20:26,692 --> 00:20:27,092

IT'S GONNA HAVE

969

00:20:27,092 --> 00:20:28,527

SOLAR-ELECTRIC PROPULSION,

970

00:20:28,527 --> 00:20:29,728

WHICH MEANS, UH,

971

00:20:29,728 --> 00:20:31,263

VERY HIGH SPECIFIC IMPULSE.

972

00:20:31,263 --> 00:20:34,633

IN OTHER WORDS, UH, THE, UH--

973

00:20:34,633 --> 00:20:35,934

THE FUEL ECONOMY WILL BE

974

00:20:35,934 --> 00:20:36,935

VERY, VERY HIGH.

975

00:20:36,935 --> 00:20:37,603

>> NICE.

976
00:20:37,603 --> 00:20:38,337
>> UH, SO IT CAN STAY THERE

977
00:20:38,337 --> 00:20:39,504
FOR A LONG PERIOD OF TIME.

978
00:20:39,504 --> 00:20:40,238
AND IT'S IN WHAT'S CALLED

979
00:20:40,238 --> 00:20:41,840
A NEAR RECTILINE--

980
00:20:41,840 --> 00:20:43,642
NEAR RECTILINEAR HALO ORBIT,

981
00:20:43,642 --> 00:20:44,876
WHICH MEANS IT'S KIND OF

982
00:20:44,876 --> 00:20:46,845
BALANCED BETWEEN EARTH OR--

983
00:20:46,845 --> 00:20:47,980
YOU KNOW, EARTH AND THE MOON

984
00:20:47,980 --> 00:20:48,880
ARE-- YOU KNOW, THE GRAVITY

985
00:20:48,880 --> 00:20:49,715
WELLS OF THE TWO

986
00:20:49,715 --> 00:20:50,916
PLANETARY BODIES.

987
00:20:50,916 --> 00:20:52,484
SO ALL OF THAT BEING SAID,

988
00:20:52,484 --> 00:20:53,318

IT CAN BE THERE FOR

989

00:20:53,318 --> 00:20:55,454

A LONG, LONG TIME.

990

00:20:55,454 --> 00:20:57,255

UM, AND THEN WHAT WE NEED IS

991

00:20:57,255 --> 00:20:58,490

WE NEED REUSABILITY.

992

00:20:58,490 --> 00:20:59,591

WE-WE KNOW WHAT HAPPENS

993

00:20:59,591 --> 00:21:00,759

WITH REUSABLE LAUNCH.

994

00:21:00,759 --> 00:21:02,027

THE COSTS GO DOWN,

995

00:21:02,027 --> 00:21:03,462

ACCESS GOES UP.

996

00:21:03,462 --> 00:21:04,663

WE NEED, YOU KNOW,

997

00:21:04,663 --> 00:21:05,931

TUGS BETWEEN EARTH ORBIT

998

00:21:05,931 --> 00:21:08,500

AND LUNAR ORBIT TO BE REUSABLE.

999

00:21:08,500 --> 00:21:09,701

WE NEED LANDERS THAT GO

1000

00:21:09,701 --> 00:21:11,403

FROM THAT GATEWAY,

1001
00:21:11,403 --> 00:21:12,871
THAT SPACE STATION, IN ORBIT

1002
00:21:12,871 --> 00:21:13,805
AROUND THE MOON--

1003
00:21:13,805 --> 00:21:16,041
WE NEED LANDERS TO BE REUSABLE.

1004
00:21:16,041 --> 00:21:18,510
ALL OF THAT, UM, REUSABILITY

1005
00:21:18,510 --> 00:21:19,711
IS WHAT MAKES EVERYTHING

1006
00:21:19,711 --> 00:21:21,046
SUSTAINABLE.

1007
00:21:21,046 --> 00:21:21,713
THE OTHER THING THAT'S

1008
00:21:21,713 --> 00:21:22,547
IMPORTANT IS, WHEN WE GO

1009
00:21:22,547 --> 00:21:24,916
TO THE MOON, WE WANNA HAVE

1010
00:21:24,916 --> 00:21:26,251
ACCESS TO EVERY PART

1011
00:21:26,251 --> 00:21:27,419
OF THE MOON, NOT JUST

1012
00:21:27,419 --> 00:21:29,755
THE EQUATORIAL REGIONS.

1013
00:21:29,755 --> 00:21:32,190

UM, FROM 1969, WHEN WE FIRST

1014

00:21:32,190 --> 00:21:33,025

LANDED ON THE MOON,

1015

00:21:33,025 --> 00:21:34,993

ALL THE WAY UP UNTIL 2008,

1016

00:21:34,993 --> 00:21:36,728

39 YEARS, WE BELIEVED THAT

1017

00:21:36,728 --> 00:21:38,664

THE MOON WAS BONE DRY.

1018

00:21:38,664 --> 00:21:41,366

AND IN 2008, AND THEN MORE

1019

00:21:41,366 --> 00:21:43,769

IN 2009, WE DISCOVERED THAT

1020

00:21:43,769 --> 00:21:45,037

THERE'S HUNDREDS OF BILLIONS

1021

00:21:45,037 --> 00:21:46,438

OF TONS OF WATER ICE

1022

00:21:46,438 --> 00:21:48,006

ON THE SURFACE OF THE MOON.

1023

00:21:48,006 --> 00:21:49,207

WATER ICE REPRESENTS,

1024

00:21:49,207 --> 00:21:51,076

YOU KNOW, WATER TO DRINK,

1025

00:21:51,076 --> 00:21:51,710

OF COURSE.

1026
00:21:51,710 --> 00:21:52,577
BUT IT ALSO REPRESENTS

1027
00:21:52,577 --> 00:21:54,046
AIR TO BREATHE.

1028
00:21:54,046 --> 00:21:56,014
AND IT REPRESENTS ROCKET FUEL--

1029
00:21:56,014 --> 00:21:57,249
HYDROGEN AND OXYGEN,

1030
00:21:57,249 --> 00:21:58,917
ULTIMATELY-- WHEN SEPARATED

1031
00:21:58,917 --> 00:22:00,419
INTO ITS COMPONENT PARTS

1032
00:22:00,419 --> 00:22:02,254
AND PUT INTO CRYOGENIC FORM,

1033
00:22:02,254 --> 00:22:04,022
THAT'S-THAT'S ROCKET FUEL.

1034
00:22:04,022 --> 00:22:07,025
NOW, UM, SPACE POLICY

1035
00:22:07,025 --> 00:22:08,427
DIRECTIVE ONE, SIGNED BY

1036
00:22:08,427 --> 00:22:09,628
THE PRESIDENT, ACTUALLY TALKS

1037
00:22:09,628 --> 00:22:11,663
ABOUT UTILIZING THE RESOURCES

1038
00:22:11,663 --> 00:22:12,698

OF THE MOON.

1039

00:22:12,698 --> 00:22:14,066

SO AGAIN, WE WANNA

1040

00:22:14,066 --> 00:22:15,367

GO SUSTAINABLY.

1041

00:22:15,367 --> 00:22:16,435

WE WANNA NOT DO

1042

00:22:16,435 --> 00:22:17,302

FLAGS AND FOOTPRINTS.

1043

00:22:17,302 --> 00:22:18,637

WE WANNA BE THERE TO STAY.

1044

00:22:18,637 --> 00:22:19,204

>> MM-HMM.

1045

00:22:19,204 --> 00:22:19,771

>> WE WANT TO UTILIZE

1046

00:22:19,771 --> 00:22:21,406

THE RESOURCES OF-OF THE MOON,

1047

00:22:21,406 --> 00:22:23,308

NAMELY, WATER ICE, FOR NOW.

1048

00:22:23,308 --> 00:22:24,109

>> MM-HMM.

1049

00:22:24,109 --> 00:22:25,077

>> BUT IT'S ALSO TRUE--

1050

00:22:25,077 --> 00:22:26,144

AND WE DON'T KNOW, BUT

1051
00:22:26,144 --> 00:22:27,813
IT'S TRUE THAT THERE COULD BE,

1052
00:22:27,813 --> 00:22:30,082
YOU KNOW, PLATINUM GROUP METALS

1053
00:22:30,082 --> 00:22:31,516
ON THE SURFACE OF THE MOON.

1054
00:22:31,516 --> 00:22:33,285
RARE-- YOU KNOW, ON EARTH,

1055
00:22:33,285 --> 00:22:35,487
WE CALL THEM RARE EARTH METALS.

1056
00:22:35,487 --> 00:22:36,321
BUT THEY'RE REALLY

1057
00:22:36,321 --> 00:22:37,355
ASTEROID IMPACTS FROM

1058
00:22:37,355 --> 00:22:38,724
BILLIONS OF YEARS AGO.

1059
00:22:38,724 --> 00:22:40,192
WELL, THE MOON HAS THE SAME--

1060
00:22:40,192 --> 00:22:41,393
THE SAME, YOU KNOW, PATH

1061
00:22:41,393 --> 00:22:42,260
THAT THE MOON HAS

1062
00:22:42,260 --> 00:22:43,929
THROUGH THE SOLAR SYSTEM.

1063
00:22:43,929 --> 00:22:44,863

>> YEAH.

1064

00:22:44,863 --> 00:22:45,831

>> WHICH-WHICH MEANS THAT

1065

00:22:45,831 --> 00:22:47,666

IT PROBABLY IMPACTED THE SAME

1066

00:22:47,666 --> 00:22:48,734

ASTEROID THAT THE EARTH HAS

1067

00:22:48,734 --> 00:22:49,768

IMPACTED, WHICH MEANS

1068

00:22:49,768 --> 00:22:52,170

THERE COULD BE, UM, A-A LOT.

1069

00:22:52,170 --> 00:22:52,971

THERE COULD BE TRILLIONS

1070

00:22:52,971 --> 00:22:53,739

OF DOLLARS WORTH OF

1071

00:22:53,739 --> 00:22:54,740

PLATINUM GROUP METALS

1072

00:22:54,740 --> 00:22:56,241

ON THE SURFACE OF THE MOON.

1073

00:22:56,241 --> 00:22:57,609

WE DON'T KNOW, BUT CERTAINLY,

1074

00:22:57,609 --> 00:23:00,045

UH, WE SHOULD FIND OUT.

1075

00:23:00,045 --> 00:23:01,012

AND IT SHOULD BE

1076
00:23:01,012 --> 00:23:01,646
THE UNITED STATES OF AMERICA

1077
00:23:01,646 --> 00:23:02,380
THAT FINDS OUT,

1078
00:23:02,380 --> 00:23:03,315
NOT SOMEBODY ELSE.

1079
00:23:03,315 --> 00:23:04,282
>> RIGHT, YEAH, SO

1080
00:23:04,282 --> 00:23:05,217
I-I LIKE THIS IDEA OF

1081
00:23:05,217 --> 00:23:06,551
GATEWAY, BECAUSE BASICALLY,

1082
00:23:06,551 --> 00:23:08,186
WHAT YOU'RE DESCRIBING IS-IS

1083
00:23:08,186 --> 00:23:09,087
DEVELOPING NOT ONLY

1084
00:23:09,087 --> 00:23:11,022
THE SPACE STATION AND ACCESS,

1085
00:23:11,022 --> 00:23:12,290
BUT ALSO A CAPABILITY,

1086
00:23:12,290 --> 00:23:13,325
A FLEXIBLE CAPABILITY.

1087
00:23:13,325 --> 00:23:13,959
>> THAT'S RIGHT.

1088
00:23:13,959 --> 00:23:15,827

>> SO IT-IT ORBITS THE MOON.

1089

00:23:15,827 --> 00:23:17,429
BUT BASICALLY, AFTER THAT,

1090

00:23:17,429 --> 00:23:18,997
YOU CAN KIND OF DECIDE,

1091

00:23:18,997 --> 00:23:20,232
OH, YOU-- IT'S ALL ABOUT

1092

00:23:20,232 --> 00:23:21,166
EXPLORATION, RIGHT?

1093

00:23:21,166 --> 00:23:21,800
>> THAT'S RIGHT.

1094

00:23:21,800 --> 00:23:22,534
>> SO AS SOON AS YOU FIND

1095

00:23:22,534 --> 00:23:23,935
SOMETHING NEW, YOU CAN--

1096

00:23:23,935 --> 00:23:24,736
YOU KNOW, OH,

1097

00:23:26,438 --> 00:23:25,670
LET'S GO CHECK THAT OUT.

1098

00:23:26,438 --> 00:23:27,172
>> EXACTLY.

1099

00:23:27,172 --> 00:23:28,039
>> IT'S ENABLING THIS ACCESS.

1100

00:23:28,039 --> 00:23:29,741
IT'S A-- IT'S A AWESOME TIME.

1101
00:23:29,741 --> 00:23:30,542
AND THE THING THAT'S GONNA

1102
00:23:30,542 --> 00:23:31,676
TAKE US THERE, RIGHT, IS

1103
00:23:31,676 --> 00:23:33,578
THE SPACE LAUNCH SYSTEM, RIGHT?

1104
00:23:33,578 --> 00:23:34,479
>> THAT'S W-- YEAH.

1105
00:23:34,479 --> 00:23:35,380
AND-AND IN FACT,

1106
00:23:35,380 --> 00:23:36,615
COMMERCIAL PARTNERS AS WELL.

1107
00:23:36,615 --> 00:23:37,282
>> OH, OKAY.

1108
00:23:37,282 --> 00:23:37,949
>> IT'S ALL GONNA BE

1109
00:23:37,949 --> 00:23:38,884
OPEN ARCHITECTURE.

1110
00:23:38,884 --> 00:23:40,552
SO, UH, WHETHER PEOPLE ARE

1111
00:23:40,552 --> 00:23:42,087
DOCKING OR USING THE POWER

1112
00:23:42,087 --> 00:23:44,189
OF THE GATEWAY, UM, YOU KNOW,

1113
00:23:44,189 --> 00:23:45,524

WE-WE WANT-- WE WANT

1114

00:23:45,524 --> 00:23:46,892

OUR COMMERCIAL PARTNERS TO BE

1115

00:23:46,892 --> 00:23:48,627

ABLE TO BUILD THEIR OWN LANDERS.

1116

00:23:48,627 --> 00:23:50,061

WE WANT OUR-OUR INTERNATIONAL

1117

00:23:50,061 --> 00:23:51,129

PARTNERS TO BE ABLE TO BUILD

1118

00:23:51,129 --> 00:23:52,531

THEIR OWN LANDERS.

1119

00:23:52,531 --> 00:23:53,932

UM, THE-THE GOAL HERE,

1120

00:23:53,932 --> 00:23:55,000

ULTIMATELY, IS FOR

1121

00:23:55,000 --> 00:23:56,234

THE UNITED STATES OF AMERICA

1122

00:23:56,234 --> 00:23:58,904

TO ASSUME THE LEAD, AND THEN

1123

00:23:58,904 --> 00:24:00,405

ENABLE OUR COMMERCIAL

1124

00:24:00,405 --> 00:24:01,573

AND INTERNATIONAL PARTNERS

1125

00:24:01,573 --> 00:24:03,708

TO DO MORE AND-AND BE THERE

1126
00:24:03,708 --> 00:24:05,510
FOR A VERY LONG PERIOD OF TIME.

1127
00:24:05,510 --> 00:24:06,244
>> MM-HMM.

1128
00:24:06,244 --> 00:24:07,078
>> SO THAT WE CAN LEARN,

1129
00:24:07,078 --> 00:24:07,913
SCIENTIFICALLY, MORE ABOUT

1130
00:24:07,913 --> 00:24:08,713
THE MOON THAN WE'VE EVER

1131
00:24:08,713 --> 00:24:09,514
KNOWN BEFORE.

1132
00:24:09,514 --> 00:24:11,049
LIKE I SAID, WE FIRST

1133
00:24:11,049 --> 00:24:13,118
DISCOVERED WATER ICE IN 2008.

1134
00:24:13,118 --> 00:24:15,387
UM, WHAT ELSE DO WE NOT KNOW

1135
00:24:15,387 --> 00:24:16,621
ABOUT THE SURFACE OF THE MOON?

1136
00:24:16,621 --> 00:24:17,389
AND I'M WILLING TO BET

1137
00:24:17,389 --> 00:24:19,057
THERE IS A LOT WE DON'T KNOW.

1138
00:24:19,057 --> 00:24:19,891

>> THAT'S RIGHT.

1139

00:24:19,891 --> 00:24:22,127

>> UH, AND THEN ULTIMATELY,

1140

00:24:22,127 --> 00:24:23,595

AGAIN, RETIRING THE RISK

1141

00:24:23,595 --> 00:24:25,397

ON A LOT OF THESE CAPABILITIES

1142

00:24:25,397 --> 00:24:26,998

AND TECHNOLOGIES, SO THAT

1143

00:24:26,998 --> 00:24:28,800

THAT GATEWAY CAN BE--

1144

00:24:28,800 --> 00:24:30,502

IN THE LONG RUN, THE SECOND

1145

00:24:30,502 --> 00:24:31,870

GATEWAY-- CAN BE OUR DEEP SPACE

1146

00:24:31,870 --> 00:24:34,339

TRANSPORT TO-TO GET US TO MARS.

1147

00:24:34,339 --> 00:24:35,473

AND WE WANT THIS ENTIRE

1148

00:24:35,473 --> 00:24:37,475

ARCHITECTURE TO BE REPLICABLE.

1149

00:24:37,475 --> 00:24:38,610

LIKE, WE WANNA BE ABLE TO

1150

00:24:38,610 --> 00:24:39,811

TAKE IT TO MARS.

1151
00:24:39,811 --> 00:24:40,545
>> MM-HMM.

1152
00:24:40,545 --> 00:24:41,279
>> AND, UH, THAT'S-THAT'S

1153
00:24:41,279 --> 00:24:42,013
THE OBJECTIVE.

1154
00:24:42,013 --> 00:24:42,914
NOW, I KNOW, YOU KNOW,

1155
00:24:42,914 --> 00:24:44,282
MARS AND-AND THE MOON ARE NOT

1156
00:24:44,282 --> 00:24:45,450
THE SAME.

1157
00:24:45,450 --> 00:24:46,484
MARS HAS AN ATMOSPHERE

1158
00:24:46,484 --> 00:24:48,086
WHICH MAKES ENTRY, DESCENT,

1159
00:24:48,086 --> 00:24:48,987
AND LANDING A LITTLE BIT

1160
00:24:48,987 --> 00:24:50,288
MORE CHALLENGING.

1161
00:24:50,288 --> 00:24:51,790
UM, BUT AT THE SAME TIME,

1162
00:24:51,790 --> 00:24:53,225
UH, AS MUCH OF IT THAT WE CAN

1163
00:24:53,225 --> 00:24:54,292

REPLICATE, WE WANNA BE ABLE

1164

00:24:54,292 --> 00:24:55,360

TO-TO REPLICATE.

1165

00:24:55,360 --> 00:24:56,194

>> FOR SURE.

1166

00:24:56,194 --> 00:24:56,995

ANOTHER THEME YOU'VE BEEN

1167

00:24:56,995 --> 00:24:58,330

TOUCHING ON IS-IS THIS IDEA OF

1168

00:24:58,330 --> 00:24:59,698

LEADERSHIP, THE IDEA OF-OF

1169

00:24:59,698 --> 00:25:01,366

AMERICANS, UH, LEADING

1170

00:25:01,366 --> 00:25:02,467

THIS-THIS EFFORT.

1171

00:25:02,467 --> 00:25:03,435

SO WHY IS THIS IMPORTANT

1172

00:25:03,435 --> 00:25:05,403

TO THIS-- TO THIS DIRECTIVE?

1173

00:25:05,403 --> 00:25:06,338

>> SO A LOT OF PEOPLE DON'T

1174

00:25:06,338 --> 00:25:08,006

REALIZE THE SOFT POWER

1175

00:25:08,006 --> 00:25:09,507

CAPABILITY OF NASA.

1176
00:25:09,507 --> 00:25:11,643
THIS IS REALLY, UM-- YOU KNOW,

1177
00:25:11,643 --> 00:25:13,044
EARLIER YOU ASKED,

1178
00:25:13,044 --> 00:25:13,745
"WHAT DO YOU DO AS

1179
00:25:13,745 --> 00:25:14,679
"THE NASA ADMINISTRATOR?"

1180
00:25:14,679 --> 00:25:16,915
WELL, UM, REALLY, ABOUT

1181
00:25:16,915 --> 00:25:17,849
A MONTH AGO, I WAS AT

1182
00:25:17,849 --> 00:25:18,917
THE FARNBOROUGH AIR SHOW

1183
00:25:18,917 --> 00:25:19,684
IN ENGLAND, MEETING WITH

1184
00:25:19,684 --> 00:25:20,886
THE HEADS OF SPACE AGENCIES

1185
00:25:20,886 --> 00:25:22,320
FROM AROUND THE WORLD.

1186
00:25:22,320 --> 00:25:24,389
UM, AND THE-THE IDEA--

1187
00:25:24,389 --> 00:25:25,724
YOU KNOW, I WAS GOING TO SELL

1188
00:25:25,724 --> 00:25:27,359

THIS NEW SPACE POLICY DIRECTIVE,

1189

00:25:27,359 --> 00:25:28,293

THAT WE'RE GOING TO THE MOON,

1190

00:25:28,293 --> 00:25:29,327

AND WE'RE GONNA DO

1191

00:25:29,327 --> 00:25:30,862

A SUSTAINABLE ARCHITECTURE

1192

00:25:30,862 --> 00:25:31,830

AT THE MOON, AND WE WANT

1193

00:25:31,830 --> 00:25:33,398

OUR COMMERCIAL AND INTERNATIONAL

1194

00:25:33,398 --> 00:25:34,299

PARTNERS TO JOIN US

1195

00:25:34,299 --> 00:25:35,400

IN THIS EFFORT.

1196

00:25:35,400 --> 00:25:36,334

UH, I THOUGHT I WAS GONNA

1197

00:25:36,334 --> 00:25:37,769

HAVE TO DO A HARD SALES PITCH.

1198

00:25:37,769 --> 00:25:39,337

AND THE REALITY IS, UH,

1199

00:25:39,337 --> 00:25:40,472

THEY'RE READY TO GO.

1200

00:25:40,472 --> 00:25:42,007

IT WAS REALLY EASY.

1201

00:25:42,007 --> 00:25:43,742

THEY'RE SAYING TO ME, UH,

1202

00:25:43,742 --> 00:25:45,010

"TELL US WHAT YOU NEED US

1203

00:25:45,010 --> 00:25:46,211

"TO DO, AND WE'LL GO SELL

1204

00:25:46,211 --> 00:25:47,145

"OUR GOVERNMENTS, BECAUSE

1205

00:25:47,145 --> 00:25:48,146

"WE'RE READY."

1206

00:25:48,146 --> 00:25:49,514

THEY'VE-- A LOT OF COUNTRIES

1207

00:25:49,514 --> 00:25:50,482

AROUND THE WORLD HAVE BEEN

1208

00:25:50,482 --> 00:25:51,983

WAITING TO GO TO THE MOON.

1209

00:25:51,983 --> 00:25:53,518

UM, AND THEY JUST NEEDED,

1210

00:25:53,518 --> 00:25:54,719

YOU KNOW, THE LEADER.

1211

00:25:54,719 --> 00:25:55,587

AND THAT'S WHO WE ARE.

1212

00:25:55,587 --> 00:25:56,554

WE LEAD.

1213

00:25:56,554 --> 00:25:57,555

YOU KNOW, THE OTHER THING THAT

1214

00:25:57,555 --> 00:25:58,456

I THINK IS IMPORTANT ABOUT

1215

00:25:58,456 --> 00:26:00,392

NASA-- WHEN RELATIONSHIPS

1216

00:26:00,392 --> 00:26:01,993

BREAK DOWN AROUND THE WORLD--

1217

00:26:01,993 --> 00:26:03,328

UM, AND OF COURSE, YOU CAN

1218

00:26:03,328 --> 00:26:04,763

PROBABLY TELL THAT WE'VE HAD

1219

00:26:04,763 --> 00:26:05,797

A STRAINED RELATIONSHIP

1220

00:26:05,797 --> 00:26:07,499

RECENTLY WITH RUSSIA.

1221

00:26:07,499 --> 00:26:08,300

WE'RE ABLE TO CONTINUE TO

1222

00:26:08,300 --> 00:26:09,768

COOPERATE ON

1223

00:26:13,371 --> 00:26:11,703

SPACE-RELATED ACTIVITIES,

1224

00:26:13,371 --> 00:26:14,673

WHICH HAS ENABLED US

1225

00:26:17,042 --> 00:26:15,407

TO DO MORE.

1226

00:26:17,042 --> 00:26:18,176

AND THAT'S REALLY AN--

1227

00:26:18,176 --> 00:26:20,845

A LINE OF COMMUNICATION, UM,

1228

00:26:20,845 --> 00:26:22,447

THAT WOULD NOT BE AVAILABLE

1229

00:26:22,447 --> 00:26:23,481

WITHOUT NASA.

1230

00:26:23,481 --> 00:26:26,184

SO NASA REPRESENTS, UH,

1231

00:26:26,184 --> 00:26:28,219

AN AMAZING OPPORTUNITY FOR

1232

00:26:28,219 --> 00:26:29,587

THE UNITED STATES OF AMERICA

1233

00:26:29,587 --> 00:26:30,555

TO LEAD.

1234

00:26:30,555 --> 00:26:31,957

IT REPRESENTS A SOFT POWER

1235

00:26:31,957 --> 00:26:34,125

CAPABILITY, AND, UM,

1236

00:26:34,125 --> 00:26:35,727

AND REALLY, AN-AN OPEN CHANNEL

1237

00:26:35,727 --> 00:26:36,761

OF COMMUNICATION WHEN

1238

00:26:36,761 --> 00:26:38,496

OTHER CHANNELS FAIL.

1239

00:26:38,496 --> 00:26:39,631

>> HMM.

1240

00:26:39,631 --> 00:26:40,398

>> SO--

1241

00:26:40,398 --> 00:26:41,333

>> SO I KNOW IT'S, UH--

1242

00:26:41,333 --> 00:26:42,133

KIND OF ALONG THESE LINES

1243

00:26:42,133 --> 00:26:43,368

OF AMERICAN LEADERSHIP.

1244

00:26:43,368 --> 00:26:44,302

AND-AND IT'S-- IT GOES BACK

1245

00:26:44,302 --> 00:26:45,437

TO THIS IDEA OF

1246

00:26:45,437 --> 00:26:46,338

COOPERATION, RIGHT?

1247

00:26:46,338 --> 00:26:46,972

IT'S SOMETHING THAT

1248

00:26:46,972 --> 00:26:47,806

WE'RE DOING RIGHT NOW.

1249

00:26:47,806 --> 00:26:48,640

AND MARK, YOU'RE VERY FAMILIAR

1250

00:26:48,640 --> 00:26:49,274

WITH IT, RIGHT?

1251
00:26:49,274 --> 00:26:50,008
YOU'VE WORKED IN

1252
00:26:50,008 --> 00:26:50,675
THE SPACE STATION PROGRAM

1253
00:26:50,675 --> 00:26:51,509
FOR A LONG TIME.

1254
00:26:51,509 --> 00:26:52,711
YOU, YOURSELF, WERE A LEADER

1255
00:26:52,711 --> 00:26:55,180
TO-TO ACTUALLY WORK WITH RUSSIA

1256
00:26:55,180 --> 00:26:56,514
AND MAKE THINGS HAPPEN.

1257
00:26:56,514 --> 00:26:57,682
SO DESCRIBE HOW--

1258
00:26:57,682 --> 00:26:58,383
IT'S-IT'S CALLED

1259
00:26:58,383 --> 00:26:59,751
AN INTERNATIONAL SPACE STATION.

1260
00:26:59,751 --> 00:27:00,919
IT'S CALLED THAT FOR A REASON.

1261
00:27:00,919 --> 00:27:02,220
IT'S BECAUSE IT'S ALL OF THESE

1262
00:27:02,220 --> 00:27:03,221
NATIONS, COMING TOGETHER

1263
00:27:03,221 --> 00:27:04,322

TO MAKE THIS THING,

1264

00:27:04,322 --> 00:27:05,790

THIS SINGLE IDEA, POSSIBLE.

1265

00:27:05,790 --> 00:27:06,624

SO HOW DOES THAT--

1266

00:27:06,624 --> 00:27:07,525

HOW DOES THAT WORK,

1267

00:27:07,525 --> 00:27:08,426

THIS INTERNATIONAL COOPERATION?

1268

00:27:08,426 --> 00:27:09,394

>> I THINK IT'S A GREAT

1269

00:27:09,394 --> 00:27:10,695

LEAD-IN OR TIE TO

1270

00:27:10,695 --> 00:27:11,730

YOUR PREVIOUS QUESTION, TOO.

1271

00:27:11,730 --> 00:27:13,098

BECAUSE REALLY, IT WAS

1272

00:27:13,098 --> 00:27:14,499

NASA, UNITED STATES, THAT

1273

00:27:14,499 --> 00:27:15,433

SAID, "HEY, WE WANNA DO

1274

00:27:15,433 --> 00:27:16,568

"THIS SPACE STATION."

1275

00:27:16,568 --> 00:27:17,335

>> HMM.

1276

00:27:17,335 --> 00:27:18,169

>> AND "HEY, WE WANNA DO THIS

1277

00:27:18,169 --> 00:27:19,571

"WITH OTHER FOLKS."

1278

00:27:19,571 --> 00:27:20,672

AND THEN THEY CAME ALONGSIDE

1279

00:27:20,672 --> 00:27:21,773

AND DID IT WITH US.

1280

00:27:21,773 --> 00:27:22,474

>> YEAH.

1281

00:27:22,474 --> 00:27:24,109

>> BUT TO DO THAT, SO TO LEAD,

1282

00:27:24,109 --> 00:27:25,477

YOU KNOW, TO BE A GOOD LEADER,

1283

00:27:25,477 --> 00:27:26,144

ONE, YOU HAVE TO HAVE

1284

00:27:26,144 --> 00:27:26,945

A VISION.

1285

00:27:26,945 --> 00:27:27,712

BUT TWO, YOU ALSO HAVE TO

1286

00:27:27,712 --> 00:27:28,780

LISTEN, RIGHT?

1287

00:27:28,780 --> 00:27:29,748

YOU HAVE TO UNDERSTAND

1288

00:27:29,748 --> 00:27:31,416

YOUR PARTNER'S COMMON GOALS.

1289

00:27:31,416 --> 00:27:32,717

AND SO UNIFYING AROUND COMMON

1290

00:27:32,717 --> 00:27:34,252

GOALS IS REALLY IMPORTANT.

1291

00:27:34,252 --> 00:27:35,053

AND THAT WAS A LOT OF

1292

00:27:35,053 --> 00:27:36,021

WHAT WE DID WITH THE RUSSIANS

1293

00:27:36,021 --> 00:27:37,389

IN THE EARLY STAGE, YOU KNOW.

1294

00:27:37,389 --> 00:27:38,957

YOU-YOU SET A POLICY, BUT THEN

1295

00:27:38,957 --> 00:27:40,258

YOU SIT DOWN ACROSS THE TABLE

1296

00:27:40,258 --> 00:27:41,793

AND TALK ABOUT WHAT DRIVES

1297

00:27:41,793 --> 00:27:42,961

THEM, RIGHT, WHAT'S LIKELY

1298

00:27:42,961 --> 00:27:44,863

TO ENABLE SUPPORT WITHIN

1299

00:27:44,863 --> 00:27:46,097

THEIR COUNTRY FOR THEM TO GET

1300

00:27:46,097 --> 00:27:47,198

THE FUNDING TO DO THE THINGS

1301
00:27:47,198 --> 00:27:48,967
THAT-THAT THEY NEED TO DO.

1302
00:27:48,967 --> 00:27:49,734
AND SO A LOT OF THAT IS

1303
00:27:49,734 --> 00:27:50,902
YOU-YOU FIND OUT

1304
00:27:50,902 --> 00:27:52,070
THAT'S WHAT MAKES THESE KIND

1305
00:27:52,070 --> 00:27:53,605
OF PARTNERSHIPS WORK.

1306
00:27:53,605 --> 00:27:55,006
UM, SO STATION'S THE--

1307
00:27:55,006 --> 00:27:57,042
A-A BIG EXAMPLE OF THAT--

1308
00:27:57,042 --> 00:27:57,909
NOT JUST THE RUSSIANS,

1309
00:27:57,909 --> 00:27:59,611
BUT OF COURSE, EUROPEANS,

1310
00:27:59,611 --> 00:28:01,346
THE JAPANESE, THE CANADIANS.

1311
00:28:01,346 --> 00:28:02,580
UM, AND ALL OF THEM HAVE

1312
00:28:02,580 --> 00:28:04,049
THEIR OWN THING, RIGHT?

1313
00:28:04,049 --> 00:28:05,116

THEY HAVE THEIR OWN THING

1314

00:28:05,116 --> 00:28:06,117

THAT THEY'RE INTERESTED IN,

1315

00:28:06,117 --> 00:28:06,985

THEIR OWN THING

1316

00:28:06,985 --> 00:28:07,852

THAT DRIVES THEM.

1317

00:28:07,852 --> 00:28:08,720

AND SO YOU'RE TRYING TO FIND

1318

00:28:08,720 --> 00:28:10,055

THE COMMON-- THAT STILL

1319

00:28:10,055 --> 00:28:11,556

MEETS, UH, NASA'S

1320

00:28:11,556 --> 00:28:12,957

AND THE UNITED STATES'S GOALS.

1321

00:28:12,957 --> 00:28:14,559

SO AS JIM SAID, WE'RE TAKIN'

1322

00:28:14,559 --> 00:28:16,094

THAT EXPERIENCE, THEN,

1323

00:28:16,094 --> 00:28:17,095

OUT TO THE MOON.

1324

00:28:17,095 --> 00:28:18,797

'CAUSE ORION HAS A EUROPEAN

1325

00:28:18,797 --> 00:28:19,697

COMPONENT, RIGHT?

1326
00:28:19,697 --> 00:28:20,899
THE EUROPEAN SERVICE MODULE

1327
00:28:20,899 --> 00:28:22,233
IS A BIG PIECE OF ORION.

1328
00:28:22,233 --> 00:28:23,001
>> RIGHT.

1329
00:28:23,001 --> 00:28:23,701
>> IT'S-- AND THAT'S

1330
00:28:23,701 --> 00:28:25,103
A STRATEGIC DECISION TO GO

1331
00:28:25,103 --> 00:28:26,604
PARTNER WITH THEM TO MAKE

1332
00:28:26,604 --> 00:28:27,939
THAT PIECE OF ORION.

1333
00:28:27,939 --> 00:28:29,007
SO WE-- IT'S THE BEGINNING

1334
00:28:29,007 --> 00:28:30,075
OF US LEADING NOW INTO

1335
00:28:30,075 --> 00:28:31,076
THE NEXT PHASE.

1336
00:28:31,076 --> 00:28:33,211
AND, UM, JIM SAID ALSO,

1337
00:28:33,211 --> 00:28:34,813
FOR THE GATEWAY, THERE'LL BE

1338
00:28:34,813 --> 00:28:36,314

INTERNATIONAL AND COMMERCIAL

1339

00:28:36,314 --> 00:28:37,615

PARTNERS AS PART OF THAT, TOO.

1340

00:28:37,615 --> 00:28:38,483

SO IT'S TAKIN' THAT

1341

00:28:38,483 --> 00:28:39,818

EXPERIENCE-- I THINK

1342

00:28:39,818 --> 00:28:41,119

WE'RE LEARNIN' BETTER HOW TO

1343

00:28:41,119 --> 00:28:42,687

PARTNER WITH COMMERCIAL FOLKS,

1344

00:28:42,687 --> 00:28:43,521

'CAUSE THEY HAVE THEIR OWN

1345

00:28:43,521 --> 00:28:44,722

THINGS THAT DRIVE THEM, RIGHT?

1346

00:28:44,722 --> 00:28:46,157

AND-AND HOW DO YOU FIND

1347

00:28:46,157 --> 00:28:49,194

COMMON-COMMON GOALS THAT-THAT

1348

00:28:49,194 --> 00:28:51,262

HELP THEM, HELP THEIR COMPANY,

1349

00:28:51,262 --> 00:28:52,330

UH, BUT STILL LINE UP WITH

1350

00:28:52,330 --> 00:28:54,399

WHAT WE WANT, UH, AS A NATION?

1351
00:28:54,399 --> 00:28:56,501
SO IT'S-IT'S-IT'S A SKILL THAT

1352
00:28:56,501 --> 00:28:57,569
NOT A LOT OF PEOPLE HAVE.

1353
00:28:57,569 --> 00:28:58,436
IT TAKES TIME TO LEARN

1354
00:28:58,436 --> 00:29:00,004
HOW TO DO IT, BUT IT'S, UM,

1355
00:29:00,004 --> 00:29:01,239
IT'S ALWAYS EXCITING,

1356
00:29:01,239 --> 00:29:02,207
AND IT'S A BIG PART, I THINK,

1357
00:29:02,207 --> 00:29:03,174
AS WHAT'S GONNA MAKE US

1358
00:29:03,174 --> 00:29:04,275
SUSTAINABLE, AS JIM SAID,

1359
00:29:04,275 --> 00:29:05,176
IN THE FUTURE.

1360
00:29:05,176 --> 00:29:06,144
>> AND ONE OF THE CHALLENGES

1361
00:29:06,144 --> 00:29:08,279
THAT YOU-YOU KIND OF TOUCHED ON

1362
00:29:08,279 --> 00:29:11,749
IS COMMERCIAL PARTNERS ARE-ARE

1363
00:29:11,749 --> 00:29:13,284

ONE TYPE OF PARTNERSHIP.

1364

00:29:13,284 --> 00:29:14,552

INTERNATIONAL PARTNERS ARE

1365

00:29:14,552 --> 00:29:16,187

ANOTHER TYPE OF PARTNERSHIP.

1366

00:29:16,187 --> 00:29:17,655

AND WE WANT TO ENABLE

1367

00:29:17,655 --> 00:29:19,390

COMMERCIAL TO JOIN US

1368

00:29:19,390 --> 00:29:21,092

AS WE DEVELOP OUR NEXT

1369

00:29:21,092 --> 00:29:23,261

GENERATION OF CAPABILITIES.

1370

00:29:23,261 --> 00:29:24,796

AND THEY WANT TO JOIN US.

1371

00:29:24,796 --> 00:29:25,797

THE-THE CHALLENGE IS

1372

00:29:25,797 --> 00:29:27,632

HOW-HOW DO YOU-- IF-IF YOU'RE

1373

00:29:27,632 --> 00:29:29,134

DEVELOPING THIS ARCHITECTURE

1374

00:29:29,134 --> 00:29:30,068

AND YOU WANT COMMERCIAL

1375

00:29:30,068 --> 00:29:31,469

PARTNERSHIPS IN IT, HOW DO YOU

1376
00:29:31,469 --> 00:29:32,737
THEN INCLUDE INTERNATIONAL

1377
00:29:32,737 --> 00:29:34,005
PARTNERS AS WELL?

1378
00:29:34,005 --> 00:29:35,607
AND SO THE IDEA WOULD BE,

1379
00:29:35,607 --> 00:29:36,441
WELL, WE BRING IN

1380
00:29:36,441 --> 00:29:37,542
OUR COMMERCIAL PARTNERS,

1381
00:29:37,542 --> 00:29:38,743
THEY BRING IN THEIR COMMERCIAL

1382
00:29:38,743 --> 00:29:39,777
PARTNERS, AND THEN WE PARTNER

1383
00:29:39,777 --> 00:29:41,012
AT THE AGENCY LEVEL

1384
00:29:41,012 --> 00:29:41,846
WITH ALL OF OUR COMMERCIAL

1385
00:29:41,846 --> 00:29:43,114
PARTNERS KIND OF

1386
00:29:43,114 --> 00:29:45,049
IN-IN-IN THE MIX.

1387
00:29:45,049 --> 00:29:46,417
WELL, THERE ARE SOME COUNTRIES

1388
00:29:46,417 --> 00:29:47,485

THAT DON'T HAVE

1389

00:29:47,485 --> 00:29:48,319

COMMERCIAL PARTNERS.

1390

00:29:48,319 --> 00:29:50,088

THEY DON'T HAVE COMMERCIAL

1391

00:29:50,088 --> 00:29:50,989

SPACE CAPABILITIES.

1392

00:29:50,989 --> 00:29:52,557

AND IN FACT, I'VE MET WITH,

1393

00:29:52,557 --> 00:29:54,359

UH, ONE COUNTRY IN PARTICULAR

1394

00:29:54,359 --> 00:29:56,728

WHO, YOU KNOW, TOLD ME

1395

00:29:56,728 --> 00:29:57,929

THAT-THAT THEY'RE NOT

1396

00:29:57,929 --> 00:29:59,464

INTERESTED IN COMMERCIAL,

1397

00:29:59,464 --> 00:30:01,099

AND-AND THAT, YOU KNOW,

1398

00:30:01,099 --> 00:30:02,000

THEY'RE NOT REAL THRILLED

1399

00:30:02,000 --> 00:30:03,268

ABOUT OUR COMMERCIALIZATION

1400

00:30:03,268 --> 00:30:03,935

OF SPACE.

1401

00:30:03,935 --> 00:30:04,702

AND I SAID, "WELL, TELL ME,

1402

00:30:04,702 --> 00:30:05,336

"WHY IS THAT?

1403

00:30:05,336 --> 00:30:06,070

"WE CAN DO MORE NOW

1404

00:30:06,070 --> 00:30:06,838

"THAN WE'VE EVER BEEN ABLE TO

1405

00:30:06,838 --> 00:30:07,505

"DO BEFORE.

1406

00:30:07,505 --> 00:30:08,573

"WHY IS THAT?"

1407

00:30:08,573 --> 00:30:09,474

AND THIS-THIS PARTICULAR

1408

00:30:09,474 --> 00:30:10,375

PERSON SAID, "WELL, WE DON'T

1409

00:30:10,375 --> 00:30:11,376

"HAVE PRIVATE CAPITAL

1410

00:30:11,376 --> 00:30:13,878

"IN OUR COUNTRY," UM, WHICH

1411

00:30:13,878 --> 00:30:15,180

KIND OF WAS EYE-OPENING FOR ME.

1412

00:30:15,180 --> 00:30:15,947

"WE DON'T-- WE DON'T HAVE

1413

00:30:15,947 --> 00:30:17,015

"PRIVATE CAPITAL."

1414

00:30:17,015 --> 00:30:18,983

UM, SO TO THE EXTENT

1415

00:30:18,983 --> 00:30:20,251

WE PARTNER WITH SOME COUNTRIES

1416

00:30:20,251 --> 00:30:21,819

THAT HAVE A DIFFERENT WAY OF

1417

00:30:21,819 --> 00:30:23,721

DOING GOVERNMENT AND BUSINESS,

1418

00:30:23,721 --> 00:30:25,123

UH, YOU KNOW, WE HAVE TO--

1419

00:30:25,123 --> 00:30:26,191

WE HAVE TO THINK CAREFULLY

1420

00:30:26,191 --> 00:30:28,493

ABOUT, UM, HOW TO-- HOW TO

1421

00:30:28,493 --> 00:30:30,228

INCLUDE THEM IN AN ERA WHEN

1422

00:30:30,228 --> 00:30:31,429

WE WANT COMMERCIALIZATION,

1423

00:30:31,429 --> 00:30:32,864

AND THEY'RE-THEY'RE NOT

1424

00:30:32,864 --> 00:30:33,898

THERE YET.

1425

00:30:33,898 --> 00:30:35,867

UM, AND IN SOME OF THESE CASES--

1426

00:30:35,867 --> 00:30:36,668

AND I'VE TALKED TO

1427

00:30:36,668 --> 00:30:37,402

SOME COUNTRIES-- THEY'RE

1428

00:30:37,402 --> 00:30:39,204

WORKING REALLY HARD TO DEVELOP

1429

00:30:39,204 --> 00:30:40,538

A COMMERCIAL CAPABILITY THAT

1430

00:30:40,538 --> 00:30:41,706

DOESN'T YET EXIST, WHICH IS

1431

00:30:41,706 --> 00:30:42,807

ALSO-- THAT'S GOOD TO SEE.

1432

00:30:42,807 --> 00:30:43,808

THAT'S-THAT'S AMERICAN

1433

00:30:43,808 --> 00:30:44,609

LEADERSHIP.

1434

00:30:44,609 --> 00:30:47,045

THAT'S NASA LEADERSHIP, UM,

1435

00:30:47,045 --> 00:30:48,012

THAT'S GONNA ENABLE US

1436

00:30:48,012 --> 00:30:49,414

AS HUMANITY TO DO MORE THAN

1437

00:30:49,414 --> 00:30:50,615

WE'VE EVER DONE BEFORE.

1438

00:30:50,615 --> 00:30:51,316

>> THAT'S WONDERFUL.

1439

00:30:51,316 --> 00:30:52,083

I FEEL LIKE THERE'S THIS SENSE

1440

00:30:52,083 --> 00:30:53,318

OF AMERICAN INSPIRATION,

1441

00:30:53,318 --> 00:30:54,586

AS WELL, BECAUSE WE'VE BEEN

1442

00:30:54,586 --> 00:30:56,120

WORKIN' WITH-WITH, UH,

1443

00:30:56,120 --> 00:30:57,455

COMPANIES NOW-- OR-OR

1444

00:30:57,455 --> 00:30:58,957

NATIONS-- FOR THE-- WITH

1445

00:30:58,957 --> 00:31:00,024

THE INTERNATIONAL SPACE STATION

1446

00:31:00,024 --> 00:31:01,292

FOR ALMOST

1447

00:31:01,292 --> 00:31:02,927

TWO DECADES NOW, RIGHT?

1448

00:31:02,927 --> 00:31:05,363

SO-SO IT'S-IT'S THIS CONSTANT

1449

00:31:05,363 --> 00:31:07,165

COOPERATION THAT KIND OF GETS

1450

00:31:07,165 --> 00:31:08,099

THE WHEELS TURNIN'

1451
00:31:08,099 --> 00:31:09,767
AND-AND-AND MAKES THINGS WORK.

1452
00:31:09,767 --> 00:31:11,803
BUT ARE YOU SEEING A CHANGE

1453
00:31:11,803 --> 00:31:12,670
IN THE LANDSCAPE?

1454
00:31:12,670 --> 00:31:13,438
ARE YOU SEEING THAT

1455
00:31:13,438 --> 00:31:14,405
IT'S GROWING, THAT

1456
00:31:14,405 --> 00:31:16,374
MORE COMPANIES, MORE INDUSTRY

1457
00:31:16,374 --> 00:31:19,143
ARE WANTING TO TAKE PART IN,

1458
00:31:19,143 --> 00:31:20,378
UH, SPACE EXPLORATION

1459
00:31:20,378 --> 00:31:22,247
AND EVEN COMMERCIAL SPACE?

1460
00:31:22,247 --> 00:31:23,081
>> MARK, YOU WANNA TAKE THAT?

1461
00:31:23,081 --> 00:31:23,815
>> YEAH, YEAH.

1462
00:31:23,815 --> 00:31:24,582
I THINK YOU CAN SEE IT

1463
00:31:24,582 --> 00:31:25,817

IN JUST THE VARIATION OF

1464

00:31:25,817 --> 00:31:27,485

THE COMPANIES THAT ARE WORKING

1465

00:31:27,485 --> 00:31:28,786

ON PAYLOADS AND OTHER THINGS

1466

00:31:28,786 --> 00:31:29,988

ON SPACE STATION, COMPANIES

1467

00:31:29,988 --> 00:31:31,923

THAT HAVE GROWN UP BASICALLY

1468

00:31:31,923 --> 00:31:33,891

REALLY, UH, PROVIDING

1469

00:31:33,891 --> 00:31:35,126

A CAPABILITY NOBODY THOUGHT OF

1470

00:31:35,126 --> 00:31:36,928

BEFORE, LIKE AN AIRLOCK

1471

00:31:36,928 --> 00:31:39,998

TO THEN USE TO FLY, UH,

1472

00:31:39,998 --> 00:31:40,865

SMALL SATELLITES--

1473

00:31:40,865 --> 00:31:41,733

CUBESATS--RIGHT?

1474

00:31:41,733 --> 00:31:42,533

SOMETHING THAT WE DIDN'T THINK

1475

00:31:42,533 --> 00:31:43,301

ABOUT A LOT, AND NOW

1476

00:31:43,301 --> 00:31:44,168

THE STATION, I THINK, IS

1477

00:31:44,168 --> 00:31:45,236

THE NUMBER ONE PLATFORM

1478

00:31:45,236 --> 00:31:46,738

FOR LAUNCHING THESE SATELLITES

1479

00:31:46,738 --> 00:31:47,939

INTO SPACE.

1480

00:31:47,939 --> 00:31:49,307

SO THINGS WE HADN'T THOUGHT OF

1481

00:31:49,307 --> 00:31:50,275

BEFORE, COMPANIES ARE

1482

00:31:50,275 --> 00:31:51,042

COMING UP WITH THAT.

1483

00:31:51,042 --> 00:31:52,443

AND SO THE KEY IS, UH,

1484

00:31:52,443 --> 00:31:53,478

AS WE'VE TALKED, JUST PROVIDING

1485

00:31:53,478 --> 00:31:55,013

A FRAMEWORK WHERE YOU CAN GET

1486

00:31:55,013 --> 00:31:56,080

THAT INNOVATION, RIGHT?

1487

00:31:56,080 --> 00:31:57,548

GETTING ENOUGH FRAMEWORK

1488

00:31:57,548 --> 00:31:58,583

THAT WE MAKE SURE, HEY,

1489

00:31:58,583 --> 00:31:59,817
STATION'S GONNA BE OKAY,

1490

00:31:59,817 --> 00:32:01,286
BUT THEN GIVING ENOUGH ROOM

1491

00:32:01,286 --> 00:32:02,387
SO THAT THEY CAN INNOVATE

1492

00:32:02,387 --> 00:32:03,921
AND FIND NICHEs THAT WE WOULD

1493

00:32:03,921 --> 00:32:05,323
NEVER HAVE THOUGHT OF BEFORE.

1494

00:32:05,323 --> 00:32:06,391
SO WE'RE SEEING THAT A LOT

1495

00:32:06,391 --> 00:32:07,125
ON SPACE STATION.

1496

00:32:07,125 --> 00:32:07,892
>> ALMOST A DIFFERENT WAY

1497

00:32:07,892 --> 00:32:08,626
OF DOING BUSINESS.

1498

00:32:08,626 --> 00:32:09,260
>> EXACTLY.

1499

00:32:09,260 --> 00:32:09,894
>> YEAH.

1500

00:32:09,894 --> 00:32:10,628
>> BUT THERE'S ALSO--

1501
00:32:10,628 --> 00:32:11,863
EVEN BEYOND NASA, WHEN YOU THINK

1502
00:32:11,863 --> 00:32:13,598
ABOUT, UM, WHAT'S HAPPENING

1503
00:32:13,598 --> 00:32:14,732
WITH COMMUNICATION

1504
00:32:14,732 --> 00:32:16,467
ARCHITECTURES, WHERE

1505
00:32:16,467 --> 00:32:17,869
IT USED TO BE IN ORDER TO DO

1506
00:32:17,869 --> 00:32:19,304
OVER THE HORIZON COMMUNICATION,

1507
00:32:19,304 --> 00:32:20,071
YOU HAD TO LAUNCH

1508
00:32:20,071 --> 00:32:21,806
TO GEOSTATIONARY ORBIT.

1509
00:32:21,806 --> 00:32:23,141
AND THE-THE SATELLITES WERE

1510
00:32:23,141 --> 00:32:25,209
\$500 MILLION, AND THEY WERE,

1511
00:32:25,209 --> 00:32:26,177
YOU KNOW, THE SIZE

1512
00:32:26,177 --> 00:32:27,912
OF-OF THIS TABLE HERE.

1513
00:32:27,912 --> 00:32:29,180

AND NOW WE'RE SEEING

1514

00:32:29,180 --> 00:32:30,682

CONSTELLATIONS OF THOUSANDS OF

1515

00:32:30,682 --> 00:32:31,849

SATELLITES BEING LAUNCHED

1516

00:32:31,849 --> 00:32:34,152

INTO LOW EARTH ORBIT, UM,

1517

00:32:34,152 --> 00:32:35,086

THAT ARE THE SIZE OF

1518

00:32:35,086 --> 00:32:36,487

A-A DISHWASHER.

1519

00:32:36,487 --> 00:32:38,656

UH, AND THAT'S GONNA ENABLE

1520

00:32:38,656 --> 00:32:40,758

LOW LATENCY, HIGH THROUGHPUT

1521

00:32:40,758 --> 00:32:41,826

COMMUNICATIONS.

1522

00:32:41,826 --> 00:32:43,828

IN OTHER WORDS, UM, IT WILL

1523

00:32:43,828 --> 00:32:45,596

MEET THE SAME STANDARD AS

1524

00:32:45,596 --> 00:32:47,332

CELL TOWER COMMUNICATIONS.

1525

00:32:47,332 --> 00:32:48,533

YOUR-YOUR CELL PHONE WILL

1526
00:32:48,533 --> 00:32:49,400
BE ABLE TO WORK

1527
00:32:49,400 --> 00:32:50,501
WHEREVER YOU ARE IN THE WORLD.

1528
00:32:50,501 --> 00:32:52,403
YOU COULD BE IN-IN RURAL ALASKA

1529
00:32:52,403 --> 00:32:53,504
OR YOU COULD BE IN THE MIDDLE

1530
00:32:53,504 --> 00:32:54,872
OF THE PACIFIC OCEAN,

1531
00:32:54,872 --> 00:32:56,541
AND YOUR CELL PHONE WILL WORK,

1532
00:32:56,541 --> 00:32:58,576
UH, FROM ANY OF THOSE LOCATIONS,

1533
00:32:58,576 --> 00:32:59,811
WHICH WILL CONNECT-- YOU KNOW,

1534
00:32:59,811 --> 00:33:01,112
THERE'S STILL TWO-THIRDS OF

1535
00:33:01,112 --> 00:33:03,047
THE WORLD THAT'S NOT CONNECTED.

1536
00:33:03,047 --> 00:33:04,949
UM, WELL, AT THAT POINT,

1537
00:33:04,949 --> 00:33:06,017
ANYBODY WHO HAS A CELL PHONE

1538
00:33:06,017 --> 00:33:07,085

IS NOW CONNECTED TO

1539

00:33:07,085 --> 00:33:08,419

THE REST OF THE WORLD.

1540

00:33:08,419 --> 00:33:09,487

SO THOSE CAPABILITIES ARE

1541

00:33:09,487 --> 00:33:10,988

BEING LAUNCHED, AND THERE'S

1542

00:33:10,988 --> 00:33:12,623

HALF A DOZEN DIFFERENT COMPANIES

1543

00:33:12,623 --> 00:33:14,525

THAT ARE LAUNCHING THOSE TYPES

1544

00:33:14,525 --> 00:33:16,594

OF CONSTELLATIONS INTO SPACE.

1545

00:33:16,594 --> 00:33:17,829

UH, AND EACH ONE OF THOSE

1546

00:33:17,829 --> 00:33:19,163

COMPANIES WILL BE ABLE TO

1547

00:33:19,163 --> 00:33:20,832

BENEFIT NASA, UM,

1548

00:33:20,832 --> 00:33:21,833

WHEN YOU THINK ABOUT

1549

00:33:21,833 --> 00:33:22,767

THE-THE COMMUNICATION

1550

00:33:22,767 --> 00:33:24,569

ARCHITECTURE THAT WE NEED

1551
00:33:24,569 --> 00:33:25,503
IN SPACE.

1552
00:33:25,503 --> 00:33:27,572
AND ULTIMATELY, THE TYPE OF

1553
00:33:27,572 --> 00:33:29,207
COMMUNICATION ARCHITECTURE

1554
00:33:29,207 --> 00:33:30,241
THAT WE'RE GONNA NEED

1555
00:33:30,241 --> 00:33:32,643
AROUND THE MOON, AND MAYBE

1556
00:33:32,643 --> 00:33:33,911
EVEN AT MARS.

1557
00:33:33,911 --> 00:33:36,047
SO THERE'S A LOT OF, UM,

1558
00:33:36,047 --> 00:33:37,415
A LOT OF COMMERCIAL CAPABILITY

1559
00:33:37,415 --> 00:33:38,383
BEING DEVELOPED RIGHT NOW

1560
00:33:38,383 --> 00:33:39,150
THAT'S GONNA BE

1561
00:33:39,150 --> 00:33:41,085
TREMENDOUSLY VALUABLE, UM,

1562
00:33:41,085 --> 00:33:43,488
FOR-FOR NASA.

1563
00:33:43,488 --> 00:33:44,489

>> RIGHT-- CAPABILITY,

1564

00:33:44,489 --> 00:33:46,290

OPPORTUNITY, EVERYTHING, REALLY.

1565

00:33:46,290 --> 00:33:47,992

UH, I KNOW-- SOMETHING ELSE

1566

00:33:47,992 --> 00:33:50,328

NEW IS WE'RE IN THIS TIME NOW

1567

00:33:50,328 --> 00:33:51,696

WHERE-WHERE THE ADMINISTRATION

1568

00:33:51,696 --> 00:33:53,431

IS SUGGESTING, UM,

1569

00:33:53,431 --> 00:33:54,665

A SPACE FORCE, RIGHT?

1570

00:33:54,665 --> 00:33:55,266

>> YEAH.

1571

00:33:55,266 --> 00:33:56,200

>> I ACTUALLY HAD MY MOM TEXT ME

1572

00:33:56,200 --> 00:33:57,135

AND SAY, "HOW DOES THIS

1573

00:33:57,135 --> 00:33:57,769

"AFFECT YOU?"

1574

00:33:57,769 --> 00:33:58,503

"DOES THAT MEAN NASA'S

1575

00:33:58,503 --> 00:33:59,103

"GOING AWAY?"

1576

00:33:59,103 --> 00:33:59,871

I FEEL LIKE THERE'S-THERE'S

1577

00:33:59,871 --> 00:34:01,205

SORT OF A DISCONNECT GOING ON

1578

00:34:01,205 --> 00:34:02,640

HERE, SO HOW-HOW-HOW DO YOU

1579

00:34:02,640 --> 00:34:04,308

DESCRIBE TO THOSE WHO ARE

1580

00:34:04,308 --> 00:34:05,977

CONFUSED, UH, SPACE FORCE

1581

00:34:05,977 --> 00:34:07,245

AND NASA?

1582

00:34:07,245 --> 00:34:08,012

>> GREAT QUESTION.

1583

00:34:08,012 --> 00:34:09,380

NASA DOES EXPLORATION

1584

00:34:09,380 --> 00:34:11,382

AND DISCOVERY AND SCIENCE.

1585

00:34:11,382 --> 00:34:12,784

WE DO NOT DO NATIONAL SECURITY

1586

00:34:12,784 --> 00:34:13,885

AND DEFENSE.

1587

00:34:13,885 --> 00:34:15,686

UH, OF COURSE, WE-WE DO HAVE

1588

00:34:15,686 --> 00:34:17,188

AN ABILITY TO DO INTERNATIONAL

1589

00:34:17,188 --> 00:34:19,290

RELATIONS AND SOFT POWER

1590

00:34:19,290 --> 00:34:20,324

LEADERSHIP, THOSE KIND OF

1591

00:34:20,324 --> 00:34:21,826

THINGS, BUT-BUT WE DON'T

1592

00:34:21,826 --> 00:34:22,994

GET INVOLVED IN THE HARD POWER

1593

00:34:22,994 --> 00:34:24,562

ACTIVITIES OF THE COUNTRY,

1594

00:34:24,562 --> 00:34:25,963

INTENTIONALLY.

1595

00:34:25,963 --> 00:34:27,565

YOU GO BACK TO 1958,

1596

00:34:27,565 --> 00:34:29,033

THE CREATION OF NASA.

1597

00:34:29,033 --> 00:34:31,135

EISENHOWER WAS ABSOLUTELY

1598

00:34:31,135 --> 00:34:32,870

ADAMANT THAT NASA NOT BE

1599

00:34:32,870 --> 00:34:34,372

PART OF THE NATIONAL

1600

00:34:34,372 --> 00:34:35,473

SECURITY APPARATUS.

1601
00:34:35,473 --> 00:34:36,240
>> MM-HMM.

1602
00:34:36,240 --> 00:34:37,208
>> SO THAT'S-THAT'S A GOOD THING

1603
00:34:37,208 --> 00:34:38,943
FOR OUR AGENCY.

1604
00:34:38,943 --> 00:34:41,179
UM, AT THE SAME TIME, UH,

1605
00:34:41,179 --> 00:34:42,980
THE SPACE FORCE-- WHEN YOU THINK

1606
00:34:42,980 --> 00:34:44,916
ABOUT WHAT IT IS, UM,

1607
00:34:44,916 --> 00:34:46,517
IT'S-IT'S REALLY, UH--

1608
00:34:46,517 --> 00:34:47,919
YOU LOOK AT AIR FORCE

1609
00:34:47,919 --> 00:34:49,353
SPACE COMMAND.

1610
00:34:49,353 --> 00:34:50,421
THEY'RE RESPONSIBLE FOR

1611
00:34:50,421 --> 00:34:52,356
ORGANIZING AND TRAINING

1612
00:34:52,356 --> 00:34:54,091
A CADRE OF PROFESSIONALS

1613
00:34:54,091 --> 00:34:55,860

THAT CAN DO SPACE SECURITY

1614

00:34:55,860 --> 00:34:57,328

ACTIVITIES, AND THEN

1615

00:34:57,328 --> 00:34:58,563

THE SPACE AND MISSILE SYSTEMS

1616

00:34:58,563 --> 00:34:59,664

CENTER, WHICH IS ANOTHER

1617

00:34:59,664 --> 00:35:01,432

AIR FORCE COMMAND, UM,

1618

00:35:01,432 --> 00:35:02,333

IS RESPONSIBLE FOR

1619

00:35:02,333 --> 00:35:03,701

ACQUIRING ASSETS FOR

1620

00:35:03,701 --> 00:35:06,671

SPACE DEFENSE, SPACE SECURITY.

1621

00:35:06,671 --> 00:35:08,339

SO YOU TAKE THOSE-THOSE

1622

00:35:08,339 --> 00:35:09,440

COMPONENTS, AIR FORCE

1623

00:35:09,440 --> 00:35:10,308

SPACE COMMAND AND

1624

00:35:10,308 --> 00:35:11,209

THE SPACE AND MISSILE SYSTEMS

1625

00:35:11,209 --> 00:35:12,877

CENTER, AND YOU TAKE THEM

1626
00:35:12,877 --> 00:35:14,345
OUT OF THE AIR FORCE

1627
00:35:14,345 --> 00:35:15,947
AND YOU-YOU PUT THEM UNDER

1628
00:35:15,947 --> 00:35:18,349
A NEW SECRETARY, A SECRETARY

1629
00:35:18,349 --> 00:35:19,951
OF THE SPACE FORCE,

1630
00:35:19,951 --> 00:35:21,118
AND YOU HAVE A REPRE--

1631
00:35:21,118 --> 00:35:22,053
HAVE THEM REPRESENTED

1632
00:35:22,053 --> 00:35:24,155
ON THE JOINT CHIEFS OF STAFF,

1633
00:35:24,155 --> 00:35:26,090
AND THAT, IN ESSENCE, BECOMES

1634
00:35:26,090 --> 00:35:27,992
YOUR ORGANIZE, TRAIN AND EQUIP

1635
00:35:27,992 --> 00:35:29,360
FUNCTION, WHICH IS

1636
00:35:29,360 --> 00:35:31,195
ALL THAT A MILITARY SERVICE IS.

1637
00:35:31,195 --> 00:35:32,063
A MILITARY SERVICES IS

1638
00:35:32,063 --> 00:35:33,297

RESPONSIBLE FOR ORGANIZING,

1639

00:35:33,297 --> 00:35:34,632

TRAINING AND EQUIPPING

1640

00:35:34,632 --> 00:35:36,367

A CADRE OF PROFESSIONALS

1641

00:35:36,367 --> 00:35:38,302

TO FIGHT IN A CERTAIN DOMAIN.

1642

00:35:38,302 --> 00:35:40,104

SO ALL OF THAT COULD BE--

1643

00:35:40,104 --> 00:35:41,572

IN FACT, YOU KNOW, THE-THE PLAN

1644

00:35:41,572 --> 00:35:43,074

IS THAT THAT'S-- YOU KNOW,

1645

00:35:43,074 --> 00:35:44,041

IT WOULD-- IT WOULD-- IT WOULD

1646

00:35:44,041 --> 00:35:44,909

COME, REALLY, OUT OF

1647

00:35:44,909 --> 00:35:46,043

THE AIR FORCE.

1648

00:35:46,043 --> 00:35:47,044

NOW, THE BENEFIT OF CREATING

1649

00:35:47,044 --> 00:35:48,079

A SEPARATE FORCE IS THEN

1650

00:35:48,079 --> 00:35:50,581

IT HAS A LINE ITEM THAT IS

1651
00:35:50,581 --> 00:35:53,084
EQUAL TO THAT OF THE AIR FORCE,

1652
00:35:53,084 --> 00:35:54,085
AND THE NAVY, AND THE ARMY,

1653
00:35:54,085 --> 00:35:56,120
AND THE MARINE CORPS, UM,

1654
00:35:56,120 --> 00:35:57,321
AND IT DOESN'T HAVE TO COMPETE

1655
00:35:57,321 --> 00:35:58,556
AGAINST THE AIR DOMAIN

1656
00:35:58,556 --> 00:36:00,157
FOR RESOURCES.

1657
00:36:00,157 --> 00:36:00,992
DON'T GET ME WRONG-- IT WILL

1658
00:36:00,992 --> 00:36:02,260
HAVE TO STILL COMPETE BECAUSE

1659
00:36:02,260 --> 00:36:03,261
AT THE END OF THE DAY,

1660
00:36:03,261 --> 00:36:04,562
THE-THE-THE BUDGET IS ONLY

1661
00:36:04,562 --> 00:36:05,730
SO BIG.

1662
00:36:05,730 --> 00:36:07,098
BUT IT WILL HAVE ITS-- IT WILL

1663
00:36:07,098 --> 00:36:08,299

HAVE THE ABILITY TO COMPETE

1664

00:36:08,299 --> 00:36:10,501

ON THE SAME LEVEL AS-AS

1665

00:36:10,501 --> 00:36:11,936

THE-THE AIR FORCE, THE NAVY,

1666

00:36:11,936 --> 00:36:13,004

AND THE ARMY.

1667

00:36:13,004 --> 00:36:14,672

SO ALL OF THAT, I THINK, UM,

1668

00:36:14,672 --> 00:36:15,473

IS-IS REALLY WHAT

1669

00:36:15,473 --> 00:36:16,841

THE SPACE FORCE IS ALL ABOUT.

1670

00:36:16,841 --> 00:36:18,342

UM, IF YOU LISTEN TO WHAT

1671

00:36:18,342 --> 00:36:19,610

THE VICE PRESIDENT ANNOUNCED

1672

00:36:19,610 --> 00:36:20,945

A NUMBER OF WEEKS AGO,

1673

00:36:20,945 --> 00:36:22,547

HE ALSO SAID THAT THEY WANNA

1674

00:36:22,547 --> 00:36:24,482

CREATE A NEW COMBATANT COMMAND.

1675

00:36:24,482 --> 00:36:25,550

SO THE MILITARY SERVICE

1676
00:36:25,550 --> 00:36:27,485
ORGANIZES, TRAINS AND EQUIPS

1677
00:36:27,485 --> 00:36:30,488
THE CADRE OF-OF PROFESSIONALS.

1678
00:36:30,488 --> 00:36:32,023
BUT ULTIMATELY, WAR FIGHTING IS

1679
00:36:32,023 --> 00:36:32,990
DONE BY WHAT'S CALLED

1680
00:36:32,990 --> 00:36:34,559
A-A COMBATANT COMMAND.

1681
00:36:34,559 --> 00:36:35,359
IN THIS CASE, IT WOULD BE

1682
00:36:35,359 --> 00:36:37,428
A FUNCTIONAL COMBATANT COMMAND.

1683
00:36:37,428 --> 00:36:39,063
PEOPLE ARE REALLY FAMILIAR WITH

1684
00:36:39,063 --> 00:36:40,598
WHAT A-A GEOGRAPHIC COMBATANT

1685
00:36:40,598 --> 00:36:41,432
COMMAND IS.

1686
00:36:41,432 --> 00:36:42,466
GEOGRAPHIC MEANING, LIKE,

1687
00:36:42,466 --> 00:36:43,467
WHERE IN THE WORLD IS IT.

1688
00:36:43,467 --> 00:36:45,002

SO CENTCOM IS-IS IN

1689

00:36:45,002 --> 00:36:45,903

THE MIDDLE EAST.

1690

00:36:45,903 --> 00:36:46,671

PEOPLE ARE FAMILIAR WITH

1691

00:36:46,671 --> 00:36:48,272

CENTCOM, OR EUROPEAN COMMAND,

1692

00:36:48,272 --> 00:36:49,607

AFRICAN COMMAND.

1693

00:36:49,607 --> 00:36:50,942

UH, THERE'S, UH,

1694

00:36:50,942 --> 00:36:52,276

THE PACIFIC COMMAND.

1695

00:36:52,276 --> 00:36:53,644

ALL OF THESE DIFFERENT, UH,

1696

00:36:53,644 --> 00:36:55,246

GEOGRAPHIC COMBATANT COMMANDS.

1697

00:36:55,246 --> 00:36:56,047

IN THIS CASE, IT WOULD BE

1698

00:36:56,047 --> 00:36:57,715

A FUNCTIONAL COMBATANT COMMAND

1699

00:36:57,715 --> 00:36:59,617

RESPONSIBLE FOR FIGHTING

1700

00:36:59,617 --> 00:37:00,851

AND WINNING WARS IN SPACE.

1701
00:37:00,851 --> 00:37:02,787
THE IDEA BEING, YOU KNOW,

1702
00:37:02,787 --> 00:37:04,889
NASA AND OUR COMMERCIAL PARTNERS

1703
00:37:04,889 --> 00:37:06,591
AND OTHER COMMERCIAL ENTITIES--

1704
00:37:06,591 --> 00:37:07,858
YOU KNOW, WE HAVE HUNDREDS OF

1705
00:37:07,858 --> 00:37:09,827
BILLIONS OF DOLLARS IN SPACE,

1706
00:37:09,827 --> 00:37:10,761
HUNDREDS OF BILLIONS.

1707
00:37:10,761 --> 00:37:11,729
PLUS, WE HAVE OUR ASTRONAUTS

1708
00:37:11,729 --> 00:37:12,563
IN SPACE.

1709
00:37:12,563 --> 00:37:13,798
AND SO THEY GENERALLY--

1710
00:37:13,798 --> 00:37:15,433
WE NEED SECURITY.

1711
00:37:15,433 --> 00:37:16,434
AND WHAT WE HAVE TO DO IS

1712
00:37:16,434 --> 00:37:17,635
WE HAVE TO MAKE SURE THAT

1713
00:37:17,635 --> 00:37:19,136

ANY POTENTIAL ADVERSARY THAT

1714

00:37:19,136 --> 00:37:21,305

WE MAY HAVE, ANY POTENTIAL

1715

00:37:21,305 --> 00:37:23,874

ADVERSARY LOOKS AT, UM,

1716

00:37:23,874 --> 00:37:26,077

THE SPACE DOMAIN AND THEY SEE

1717

00:37:26,077 --> 00:37:27,278

THAT THEY AREN'T GONNA GET

1718

00:37:27,278 --> 00:37:28,512

ANY KIND OF ADVANTAGE

1719

00:37:28,512 --> 00:37:29,647

BY DESTROYING IT.

1720

00:37:29,647 --> 00:37:30,715

THEY CANNOT WIN.

1721

00:37:30,715 --> 00:37:32,183

THERE IS NO ADVANTAGE.

1722

00:37:32,183 --> 00:37:33,517

AND IN FACT, IF THEY TRIED,

1723

00:37:33,517 --> 00:37:34,752

IT WOULDN'T WORK.

1724

00:37:34,752 --> 00:37:35,620

THAT'S THE GOAL.

1725

00:37:35,620 --> 00:37:37,054

AND IF-IF WE CAN DETER THEM

1726
00:37:37,054 --> 00:37:38,889
FROM TAKING THE WAR INTO SPACE,

1727
00:37:38,889 --> 00:37:40,324
THEN THE REST OF US,

1728
00:37:40,324 --> 00:37:41,792
ALL OF HUMANITY, CAN USE SPACE

1729
00:37:41,792 --> 00:37:43,361
FOR OUR PEACEFUL PURPOSES,

1730
00:37:43,361 --> 00:37:44,929
WHICH IS WHAT, ULTIMATELY,

1731
00:37:44,929 --> 00:37:45,896
WE'VE BEEN DOING NOW

1732
00:37:45,896 --> 00:37:48,833
SINCE NASA'S CREATION IN 1958.

1733
00:37:48,833 --> 00:37:51,302
SO, UH, AS A MEMBER OF CONGRESS,

1734
00:37:51,302 --> 00:37:52,303
WHEN I WAS IN CONGRESS,

1735
00:37:52,303 --> 00:37:54,305
I VOTED FOR THE SPACE FORCE

1736
00:37:54,305 --> 00:37:55,406
THREE TIMES, AND IT PASSED

1737
00:37:55,406 --> 00:37:56,273
THE FULL HOUSE OF

1738
00:37:56,273 --> 00:37:57,308

REPRESENTATIVES.

1739

00:37:57,308 --> 00:37:58,676
AND IT PASSED IN A STRONG,

1740

00:37:58,676 --> 00:37:59,644
BIPARTISAN WAY--

1741

00:37:59,644 --> 00:38:02,013
IT GOT 344 VOTES.

1742

00:38:02,013 --> 00:38:03,648
UM, AND-AND OF COURSE IT WENT

1743

00:38:03,648 --> 00:38:04,782
TO THE SENATE, AND IT DIDN'T

1744

00:38:04,782 --> 00:38:06,150
PASS THE SENATE.

1745

00:38:06,150 --> 00:38:08,619
UM, BUT THERE WAS STRONG

1746

00:38:08,619 --> 00:38:10,054
BIPARTISAN SUPPORT IN THE HOUSE.

1747

00:38:10,054 --> 00:38:11,188
THE PRESIDENT HAS SEEN

1748

00:38:11,188 --> 00:38:12,156
THE SAME INTELLIGENCE THAT

1749

00:38:12,156 --> 00:38:13,591
WE'VE SEEN IN THE CONGRESS,

1750

00:38:13,591 --> 00:38:14,959
AND HE TOOK IT UP A NOTCH

1751
00:38:14,959 --> 00:38:16,761
AND SAID, UH, WE-WE GOTTA

1752
00:38:16,761 --> 00:38:17,795
GET THIS DONE.

1753
00:38:17,795 --> 00:38:19,497
AND I-I THINK HE'S RIGHT.

1754
00:38:19,497 --> 00:38:20,364
>> AWESOME.

1755
00:38:20,364 --> 00:38:22,099
AND IN THE MEANTIME, NASA IS-IS

1756
00:38:22,099 --> 00:38:23,401
LEADING THIS COOPERATIVE

1757
00:38:23,401 --> 00:38:24,602
EXPLORATION GOAL, RIGHT?

1758
00:38:24,602 --> 00:38:25,436
>> THAT'S EXACTLY RIGHT.

1759
00:38:25,436 --> 00:38:26,303
>> AND SO IT'S PART OF OUR--

1760
00:38:26,303 --> 00:38:27,438
IT'S PART OF OUR VISION, IS-IS

1761
00:38:27,438 --> 00:38:28,172
REACH NEW HEIGHTS

1762
00:38:28,172 --> 00:38:29,607
AND REVEAL THE UNKNOWN.

1763
00:38:29,607 --> 00:38:30,708

SO AS WE'RE WRAPPING UP,

1764

00:38:30,708 --> 00:38:31,509

AND TO BE CONSCIOUS OF

1765

00:38:31,509 --> 00:38:34,145

YOUR TIME, THIS-THIS MEANING,

1766

00:38:34,145 --> 00:38:36,080

THIS, UH, REVEAL THE UNKNOWN,

1767

00:38:36,080 --> 00:38:37,281

UH, REACH NEW HEIGHTS--

1768

00:38:37,281 --> 00:38:38,616

WHAT DOES THIS MEAN TO YOU?

1769

00:38:38,616 --> 00:38:39,850

AND WE'LL CLOSE WITH THAT.

1770

00:38:39,850 --> 00:38:41,686

>> SO, IT-IT REALLY-- YOU KNOW,

1771

00:38:41,686 --> 00:38:43,454

WE ARE LEARNING NEW THINGS

1772

00:38:43,454 --> 00:38:44,188

EVERY DAY.

1773

00:38:44,188 --> 00:38:45,156

JUST SINCE I'VE BEEN THE NASA

1774

00:38:45,156 --> 00:38:46,190

ADMINISTRATOR, A LITTLE OVER

1775

00:38:46,190 --> 00:38:47,491

THREE MONTHS, WE-WE HAVE

1776
00:38:47,491 --> 00:38:49,226
DISCOVERED IN THESE LITTLE OVER

1777
00:38:49,226 --> 00:38:51,562
THREE MONTHS THAT MARS HAS

1778
00:38:51,562 --> 00:38:53,230
A METHANE CYCLE THAT IS

1779
00:38:53,230 --> 00:38:54,965
PERFECTLY IN TUNE OR KEEPS

1780
00:38:54,965 --> 00:38:56,701
PERFECTLY WITH THE SEASONS

1781
00:38:56,701 --> 00:38:59,036
OF MARS, WHICH DOESN'T

1782
00:38:59,036 --> 00:39:00,237
GUARANTEE THAT THERE'S LIFE,

1783
00:39:00,237 --> 00:39:01,539
BUT IT INCREASES THE PROBABILITY

1784
00:39:01,539 --> 00:39:02,707
THAT THERE'S LIFE.

1785
00:39:02,707 --> 00:39:03,674
ORGANIC COMPOUNDS HAVE BEEN

1786
00:39:03,674 --> 00:39:05,643
FOUND ON MARS, WHICH, AGAIN,

1787
00:39:05,643 --> 00:39:06,644
DOESN'T GUARANTEE LIFE,

1788
00:39:06,644 --> 00:39:07,945

BUT IT INCREASES THE PROBABILITY

1789

00:39:07,945 --> 00:39:09,447

OF LIFE ON MARS.

1790

00:39:09,447 --> 00:39:11,148

WE-WE'VE ALSO DISCOVERED NOW,

1791

00:39:11,148 --> 00:39:13,551

JUST MAYBE A COUPLE WEEKS AGO,

1792

00:39:13,551 --> 00:39:16,053

THERE'S LIQUID WATER

1793

00:39:16,053 --> 00:39:17,922

1.5 KILOMETERS UNDER THE SURFACE

1794

00:39:17,922 --> 00:39:19,356

OF MARS.

1795

00:39:19,356 --> 00:39:20,458

NOW, THAT DOESN'T, AGAIN,

1796

00:39:20,458 --> 00:39:22,026

GUARANTEE LIFE, BUT LIQUID WATER

1797

00:39:22,026 --> 00:39:23,761

IS A GOOD-- YOU-YOU NEED

1798

00:39:23,761 --> 00:39:25,162

LIQUID WATER FOR LIFE.

1799

00:39:25,162 --> 00:39:25,896

AND THE FACT THAT

1800

00:39:25,896 --> 00:39:27,198

IT'S 1.5 KILOMETERS UNDERGROUND

1801
00:39:27,198 --> 00:39:28,365
MEANS THAT IT'S GONNA BE

1802
00:39:28,365 --> 00:39:29,633
PROTECTED FROM THE RADIATION

1803
00:39:29,633 --> 00:39:31,669
ENVIRONMENT OF-OF DEEP SPACE.

1804
00:39:31,669 --> 00:39:32,436
>> MM-HMM.

1805
00:39:32,436 --> 00:39:33,437
>> WHICH-- ALL OF THIS,

1806
00:39:33,437 --> 00:39:34,805
YOU KNOW, ADDS UP TO SAY,

1807
00:39:34,805 --> 00:39:35,806
IS THERE LIFE ON MARS?

1808
00:39:35,806 --> 00:39:36,574
WE DON'T KNOW.

1809
00:39:36,574 --> 00:39:38,375
BUT WE NEED TO FIND OUT.

1810
00:39:38,375 --> 00:39:40,344
AND, UM, TO THE EXTENT THAT

1811
00:39:40,344 --> 00:39:41,645
SOMEBODY FINDS LIFE

1812
00:39:41,645 --> 00:39:42,847
ON A WORLD THAT'S NOT OUR OWN,

1813
00:39:42,847 --> 00:39:43,614

IT NEEDS TO BE

1814

00:39:43,614 --> 00:39:45,182

THE UNITED STATES OF AMERICA.

1815

00:39:45,182 --> 00:39:46,250

SO THAT'S WHAT WE'RE DOING.

1816

00:39:46,250 --> 00:39:47,551

WE'RE MAKING DISCOVERIES.

1817

00:39:47,551 --> 00:39:48,719

YOU KNOW, WE'RE GONNA LAUNCH,

1818

00:39:48,719 --> 00:39:50,588

UH, IN THE NEXT THREE YEARS,

1819

00:39:50,588 --> 00:39:52,423

THE JAMES WEBB SPACE TELESCOPE.

1820

00:39:52,423 --> 00:39:53,290

AND WE'RE GONNA SEE

1821

00:39:53,290 --> 00:39:57,061

BACK TO THE VERY DAWN OF TIME,

1822

00:39:57,061 --> 00:39:58,963

COSMIC DAWN, THE FIRST LIGHT

1823

00:39:58,963 --> 00:40:00,264

IN THE UNIVERSE.

1824

00:40:00,264 --> 00:40:02,500

WE HAVE IDEAS AND MODELS

1825

00:40:02,500 --> 00:40:04,068

AS TO WHAT THE UNIVERSE

1826
00:40:04,068 --> 00:40:05,469
LOOKED LIKE WHEN IT WAS

1827
00:40:05,469 --> 00:40:08,105
FIRST CREATED, BUT WE KNOW THAT

1828
00:40:08,105 --> 00:40:10,107
THOSE MODELS ARE ALL WRONG.

1829
00:40:10,107 --> 00:40:11,909
UM, WE NEED TO F-- AND SO

1830
00:40:11,909 --> 00:40:13,144
WE'RE GONNA SEE IT WITH-WITH

1831
00:40:13,144 --> 00:40:15,012
OUR OWN INSTRUMENTS.

1832
00:40:15,012 --> 00:40:16,247
UM, SO THE JAMES WEBB

1833
00:40:16,247 --> 00:40:17,414
SPACE TELESCOPE IS NOT JUST

1834
00:40:17,414 --> 00:40:18,949
GONNA LOOK ALL THE WAY BACK

1835
00:40:18,949 --> 00:40:20,184
TO THE VERY FIRST LIGHT

1836
00:40:20,184 --> 00:40:21,352
IN THE UNIVERSE-- IT'S ALSO

1837
00:40:21,352 --> 00:40:22,887
GONNA SEE BACK ALL THE WAY

1838
00:40:22,887 --> 00:40:24,588

OUT TO THE EDGE OF THE UNIVERSE,

1839

00:40:24,588 --> 00:40:25,623

WHERE WE HAVE GALAXIES

1840

00:40:25,623 --> 00:40:27,625

THAT ARE ACCELERATING, YOU KNOW,

1841

00:40:27,625 --> 00:40:28,926

YOU KNOW-- AS THE UNIVERSE

1842

00:40:28,926 --> 00:40:30,361

EXPANDS, IT'S EXPANDING

1843

00:40:30,361 --> 00:40:32,096

AT AN EVER-INCREASING RATE.

1844

00:40:32,096 --> 00:40:33,531

THE UNIVERSE IS ACCELERATING

1845

00:40:33,531 --> 00:40:35,633

AWAY FROM A POINT IN THE CENTER,

1846

00:40:35,633 --> 00:40:38,135

AND, UM, THAT EXPANSION

1847

00:40:38,135 --> 00:40:39,670

ULTIMATELY IS DEMONSTRATING

1848

00:40:39,670 --> 00:40:41,605

THAT THERE'S A FORCE AT WORK

1849

00:40:41,605 --> 00:40:43,274

HERE THAT WE DON'T UNDERSTAND.

1850

00:40:43,274 --> 00:40:44,275

WE TALK ABOUT THINGS LIKE

1851
00:40:44,275 --> 00:40:46,343
DARK ENERGY AND DARK MATTER--

1852
00:40:46,343 --> 00:40:47,511
THINGS THAT WE CAN'T DETECT,

1853
00:40:47,511 --> 00:40:49,113
WE CAN'T INTERACT WITH,

1854
00:40:49,113 --> 00:40:50,748
BUT WHAT WE DO KNOW, UM,

1855
00:40:50,748 --> 00:40:51,882
IS THAT, YOU KNOW, WE SEE

1856
00:40:51,882 --> 00:40:53,818
ITS GRAVITATIONAL EFFECTS.

1857
00:40:53,818 --> 00:40:56,020
UM, AND-AND WE SEE

1858
00:40:56,020 --> 00:40:57,721
THESE GALAXIES ACCELERATING

1859
00:40:57,721 --> 00:40:59,323
AT THE EDGE OF OUR UNIVERSE

1860
00:40:59,323 --> 00:41:00,491
TO THE SPEED OF LIGHT.

1861
00:41:00,491 --> 00:41:01,792
SO THEY JUST DISAPPEAR.

1862
00:41:01,792 --> 00:41:03,427
WELL, WE'RE GONNA BE ABLE TO

1863
00:41:03,427 --> 00:41:04,361

LOOK AT ALL THOSE.

1864

00:41:04,361 --> 00:41:05,129

WE'RE GONNA BE ABLE TO SEE

1865

00:41:05,129 --> 00:41:06,997

INSIDE OF OTHER GALAXIES.

1866

00:41:06,997 --> 00:41:08,766

UM, WE'RE GONNA BE ABLE TO SEE

1867

00:41:08,766 --> 00:41:09,900

WITHIN OUR OWN GALAXY--

1868

00:41:09,900 --> 00:41:11,135

WE'RE GONNA BE ABLE TO SEE

1869

00:41:11,135 --> 00:41:13,671

PLANETS AROUND OTHER STARS,

1870

00:41:13,671 --> 00:41:15,406

AND ULTIMATELY MAKE

1871

00:41:15,406 --> 00:41:16,907

DETERMINATIONS WHETHER OR NOT

1872

00:41:16,907 --> 00:41:20,377

THOSE PLANETS HAVE A HABITABLE

1873

00:41:20,377 --> 00:41:21,779

KIND OF ATMOSPHERE.

1874

00:41:21,779 --> 00:41:22,947

WE'RE GONNA BE ABLE TO DETERMINE

1875

00:41:22,947 --> 00:41:24,882

WHAT TYPE-- IF-IF THESE PLANETS

1876

00:41:24,882 --> 00:41:25,916

HAVE ATMOSPHERES,

1877

00:41:25,916 --> 00:41:27,184

WHAT THOSE ATMOSPHERES ARE

1878

00:41:27,184 --> 00:41:28,385

COMPOSED OF, AND IF THERE COULD

1879

00:41:28,385 --> 00:41:29,653

BE LIFE THERE.

1880

00:41:29,653 --> 00:41:32,156

UM, SO, LOOK-- NASA'S DOING

1881

00:41:32,156 --> 00:41:33,490

REALLY AMAZING THINGS.

1882

00:41:33,490 --> 00:41:35,159

AND, UM, EVERY DAY WE'RE MAKING

1883

00:41:35,159 --> 00:41:36,493

NEW DISCOVERIES.

1884

00:41:36,493 --> 00:41:38,062

AND THE-THE MORE CAPABILITY

1885

00:41:38,062 --> 00:41:39,096

THAT WE'RE PUTTING INTO SPACE

1886

00:41:39,096 --> 00:41:41,065

EVEN RIGHT NOW, THE--

1887

00:41:41,065 --> 00:41:41,932

WE'RE GONNA HAVE SO MANY

1888

00:41:41,932 --> 00:41:42,833

NEW DISCOVERIES, WE'RE NOT

1889

00:41:42,833 --> 00:41:44,501

GONNA BE ABLE TO COMMUNICATE

1890

00:41:44,501 --> 00:41:46,337

ALL OF 'EM FAST ENOUGH, UH,

1891

00:41:46,337 --> 00:41:47,271

WHICH IS A REALLY GOOD

1892

00:41:47,271 --> 00:41:48,272

PROBLEM TO HAVE.

1893

00:41:48,272 --> 00:41:48,939

>> YEAH.

1894

00:41:48,939 --> 00:41:50,174

>> SO WE'RE LEARNING MORE ABOUT,

1895

00:41:50,174 --> 00:41:52,409

UM, MORE ABOUT OUR UNIVERSE.

1896

00:41:52,409 --> 00:41:53,677

ARE WE ALONE IN THE WORLD?

1897

00:41:53,677 --> 00:41:54,879

AND, UH, THESE ARE-- THESE ARE

1898

00:41:54,879 --> 00:41:55,813

IMPORTANT QUESTIONS FOR US

1899

00:41:55,813 --> 00:41:56,714

TO ANSWER.

1900

00:41:56,714 --> 00:41:57,514

>> WONDERFUL.

1901
00:41:57,514 --> 00:41:58,549
MARK, ANY-ANY FINAL THOUGHTS

1902
00:41:58,549 --> 00:41:59,850
BEFORE WE WRAP UP?

1903
00:41:59,850 --> 00:42:01,151
>> I-I THINK THERE'S SOME OTHER

1904
00:42:01,151 --> 00:42:02,920
THINGS ABOUT NASA THAT, UH,

1905
00:42:02,920 --> 00:42:04,955
I KNOW CHANGED MY LIFE.

1906
00:42:04,955 --> 00:42:05,823
YOU KNOW, I REMEMBER THE FIRST

1907
00:42:05,823 --> 00:42:07,491
PICTURES FROM MERCURY AND GEMINI

1908
00:42:07,491 --> 00:42:09,026
ABOUT THE EARTH FROM SPACE,

1909
00:42:09,026 --> 00:42:09,994
WHICH CHANGED-- WHICH

1910
00:42:09,994 --> 00:42:10,995
NO ONE HAD SEEN BEFORE,

1911
00:42:10,995 --> 00:42:12,663
SO IT CHANGED OUR WHOLE IDEA.

1912
00:42:12,663 --> 00:42:14,198
AND THEN AS JIM IN AN EARLIER

1913
00:42:14,198 --> 00:42:15,199

SPEECH TODAY WAS TALKIN' ABOUT

1914

00:42:15,199 --> 00:42:17,401

APOLLO 8, AND I REMEMBER

1915

00:42:17,401 --> 00:42:18,569

SEEING THE EARTH COME UP

1916

00:42:18,569 --> 00:42:20,004

OVER THE LIMB OF THE MOON,

1917

00:42:20,004 --> 00:42:21,972

AND REMEMBERING WHAT THAT FELT

1918

00:42:21,972 --> 00:42:23,073

LIKE TO SEE OURSELVES

1919

00:42:23,073 --> 00:42:24,541

IN THE SOLAR SYSTEM

1920

00:42:24,541 --> 00:42:25,576

FROM A DISTANCE.

1921

00:42:25,576 --> 00:42:27,177

IT CHANGED EVERYBODY'S IDEA OF

1922

00:42:27,177 --> 00:42:28,078

KIND OF HOW IMPORTANT

1923

00:42:28,078 --> 00:42:29,280

THE EARTH WAS.

1924

00:42:29,280 --> 00:42:30,881

THOSE WERE-- REALLY CHANGED

1925

00:42:30,881 --> 00:42:31,882

OUR WHOLE PERCEPTION.

1926

00:42:31,882 --> 00:42:33,150

I REMEMBER WHEN, UH,

1927

00:42:33,150 --> 00:42:34,618

BOB CABANA AND SERGEI KRIKALEV

1928

00:42:34,618 --> 00:42:35,486

WENT TOGETHER THROUGH

1929

00:42:35,486 --> 00:42:36,987

THE-THE HATCH OF THE--

1930

00:42:36,987 --> 00:42:37,988

OF THE NODE THE FIRST TIME

1931

00:42:37,988 --> 00:42:38,923

ON SPACE STATION, RIGHT,

1932

00:42:38,923 --> 00:42:39,924

JOINING TOGETHER.

1933

00:42:39,924 --> 00:42:41,926

SO I THINK THOSE IMAGES, UH,

1934

00:42:41,926 --> 00:42:42,860

ALONG WITH THE DISCOVERIES,

1935

00:42:42,860 --> 00:42:44,094

THOSE IMAGES, I THINK,

1936

00:42:44,094 --> 00:42:44,995

CAN CHANGE THE WAY

1937

00:42:44,995 --> 00:42:46,063

WE SEE OURSELVES AND THE WORLD

1938

00:42:46,063 --> 00:42:46,864

AND CAN BE REALLY,

1939

00:42:46,864 --> 00:42:47,531
REALLY IMPORTANT.

1940

00:42:47,531 --> 00:42:48,332
AND I THINK WITH THIS NEW

1941

00:42:48,332 --> 00:42:49,333
EXPLORATION CAMPAIGN,

1942

00:42:49,333 --> 00:42:50,234
WE'RE GONNA SEE MANY MORE OF

1943

00:42:50,234 --> 00:42:50,968
THOSE THINGS.

1944

00:42:50,968 --> 00:42:51,602
>> THAT'S WONDERFUL.

1945

00:42:51,602 --> 00:42:52,937
THIS IS SUCH AN EXCITING TIME.

1946

00:42:52,937 --> 00:42:53,837
JIM AND MARK, THANK YOU

1947

00:42:53,837 --> 00:42:55,005
SO MUCH FOR COMING ON THE SHOW

1948

00:42:55,005 --> 00:42:55,873
AND-AND SHARING

1949

00:42:55,873 --> 00:42:57,207
THESE WONDERFUL INSIGHTS.

1950

00:42:57,207 --> 00:42:58,008
IT'S REALLY A PLEASURE

1951

00:42:58,008 --> 00:42:58,842

TO TALK TO YOU TODAY.

1952

00:42:58,842 --> 00:42:59,376

>> AWESOME.

1953

00:42:59,376 --> 00:43:00,244

THANK YOU SO MUCH, GARY.