



1
00:00:48,098 --> 00:00:48,565

[■■■■]

2
00:00:48,565 --> 00:00:51,801

>> WE HAVE TAKEN TREMENDOUS

3
00:00:51,801 --> 00:00:52,102

STEPS.

4
00:00:52,102 --> 00:00:55,705

WE HAVE ACHIEVED THE BREATH

5
00:00:55,705 --> 00:00:58,575

TAKING, THE EARTH SHAKING, THE

6
00:00:58,575 --> 00:01:00,009

GROUND BREAKING, AND LEFT THE

7
00:01:00,009 --> 00:01:03,012

MARK IN THE HEAVENS.

8
00:01:03,012 --> 00:01:05,215

OUR SUCCESSES BUILD ONE UPON

9
00:01:05,215 --> 00:01:07,484

ANOTHER AND AMPLIFY WHAT IS

10
00:01:07,484 --> 00:01:07,984

POSSIBLE.

11
00:01:07,984 --> 00:01:10,253

IT'S TIME WE TAKE THE NEXT GREAT

12
00:01:10,253 --> 00:01:10,754

LEAP.

13
00:01:10,754 --> 00:01:12,655

WE'RE BUILDING THE NEXT CHAPTER

14

00:01:12,655 --> 00:01:14,390
OF AMERICAN EXPLORATION,

15

00:01:14,390 --> 00:01:18,161
RETURNING TO THE MOON TO STAY SO

16

00:01:18,161 --> 00:01:21,030
WE CAN GO BEYOND, TO MARS, TO

17

00:01:21,030 --> 00:01:22,866
EXPAND WHAT'S POSSIBLE AND

18

00:01:22,866 --> 00:01:26,302
FURTHER OUR UNDERSTANDING.

19

00:01:26,302 --> 00:01:28,605
THE ARCHITECTURE FOR THESE

20

00:01:28,605 --> 00:01:31,674
MISSIONS IS ALREADY TAKING

21

00:01:31,674 --> 00:01:31,975
SHAPE.

22

00:01:31,975 --> 00:01:37,781
WE WILL GO WITH NEW SYSTEMS,

23

00:01:37,781 --> 00:01:44,154
BOLD DESIGN, AND A SUSTAINABLE

24

00:01:44,154 --> 00:01:44,487
MISSION.

25

00:01:44,487 --> 00:01:46,356
YOU CAN SEE IT, TOUCH IT, TASTE

26
00:01:46,356 --> 00:01:46,623
IT.

27
00:01:46,623 --> 00:01:49,759
WE ARE PRESSING OUR PIONEER

28
00:01:49,759 --> 00:01:52,061
SPIRIT INTO EVERY COMPONENT,

29
00:01:52,061 --> 00:01:54,898
DESIGNING OUR RESOLVE INTO EVERY

30
00:01:54,898 --> 00:01:58,434
LINE OF CODE, SECURING OUR

31
00:01:58,434 --> 00:02:02,438
SUCCESS WITH EVERY WELCOMED

32
00:02:02,438 --> 00:02:02,839
PARTNERSHIP.

33
00:02:02,839 --> 00:02:06,142
THIS IS NOT HYPOTHETICAL, THIS

34
00:02:06,142 --> 00:02:08,144
IS ABOUT SCIENCE AND FEEDING

35
00:02:08,144 --> 00:02:09,712
FORWARD THE ADVANCE OF THE HUMAN

36
00:02:09,712 --> 00:02:13,750
SPIRIT BECAUSE WE ARE THE

37
00:02:13,750 --> 00:02:16,352
PIONEERS, THE STAR SAILORS, THE

38
00:02:16,352 --> 00:02:18,655

THINKERS, THE VISIONARIES, THE

39

00:02:18,655 --> 00:02:18,955

DOERS.

40

00:02:18,955 --> 00:02:20,723

AND BECAUSE WE STAND ON THE

41

00:02:20,723 --> 00:02:23,226

SHOULDERS OF GIANTS TO GO

42

00:02:23,226 --> 00:02:25,028

FARTHER THAN HUMANITY HAS EVER

43

00:02:25,028 --> 00:02:28,932

BEEN, WE WILL ADD OUR NAMES TO

44

00:02:28,932 --> 00:02:33,069

THE ROLLS OF THE GREATEST

45

00:02:33,069 --> 00:02:34,571

ADVENTURERS IN HISTORY, EVERY

46

00:02:34,571 --> 00:02:39,159

DAY, EVERY MISSION, WE ADVANCE

47

00:02:39,159 --> 00:02:40,743

THIS CALL.

48

00:02:40,743 --> 00:02:41,578

WE ARE NASA.

49

00:02:41,578 --> 00:02:47,167

AND AFTER 60 YEARS, WE'RE JUST

50

00:02:47,167 --> 00:04:21,177

GETTING STARTED.

51

00:04:21,177 --> 00:04:21,978

[Applause]

52

00:04:21,978 --> 00:04:23,263

>> ALL RIGHT.

53

00:04:23,263 --> 00:04:27,216

MAN, THOSE VIDEOS ARE A TOUGH

54

00:04:27,216 --> 00:04:28,084

ACT TO FOLLOW.

55

00:04:28,084 --> 00:04:28,918

THEY ARE OUTSTANDING.

56

00:04:28,918 --> 00:04:30,520

WELL, GOOD AFTERNOON AND WELCOME

57

00:04:30,520 --> 00:04:33,022

TO THE KENNEDY SPACE CENTER AND

58

00:04:33,022 --> 00:04:37,760

THE DAWN OF A NEW ERA IN THE

59

00:04:37,760 --> 00:04:41,230

EXPLORATION OF THE SPACE CENTER

60

00:04:41,230 --> 00:04:42,365

AND MARS.

61

00:04:42,365 --> 00:04:45,735

I AM PLEASED TO WELCOME YOU ALL,

62

00:04:45,735 --> 00:04:48,671

DISTINGUISHED GUESTS, NASA'S

63

00:04:48,671 --> 00:04:49,839

VALUED EMPLOYEES WATCHING FROM

64

00:04:49,839 --> 00:04:52,008

ACROSS THE NATION, AND OUR

65

00:04:52,008 --> 00:04:53,943

GUESTS HERE AND BROAD.

66

00:04:53,943 --> 00:04:56,980

IT WAS 50 YEARS AGO THIS JULY

67

00:04:56,980 --> 00:04:59,615

THAT KSC WAS THE LAUNCH SITE FOR

68

00:04:59,615 --> 00:05:02,719

THAT HISTORIC APOLLO 11 MISSION,

69

00:05:02,719 --> 00:05:03,486

WHEN PRESIDENT KENNEDY STOOD

70

00:05:03,486 --> 00:05:04,921

BEFORE A JOINT SESSION OF

71

00:05:04,921 --> 00:05:08,424

CONGRESS, AND HE ANNOUNCED HIS

72

00:05:08,424 --> 00:05:10,226

AMBITIOUS GOAL OF SENDING HUMANS

73

00:05:10,226 --> 00:05:12,428

TO THE MOON AND RETURNING THEM

74

00:05:12,428 --> 00:05:12,762

SAFELY.

75

00:05:12,762 --> 00:05:15,198

WE STILL HAD TO FIGURE OUT HOW

76

00:05:15,198 --> 00:05:16,332

TO MAKE THAT WORK.

77

00:05:16,332 --> 00:05:18,167

WE QUICKLY RAMPED UP OPERATIONS

78

00:05:18,167 --> 00:05:19,268

HERE AT KSC.

79

00:05:19,268 --> 00:05:21,838

WE HAD THE MERCURY 7 CREW HERE.

80

00:05:21,838 --> 00:05:26,676

WE HOSTED THEM, WE WORKED HARD

81

00:05:26,676 --> 00:05:28,811

ON THE GEMINI, WORKING ON

82

00:05:28,811 --> 00:05:30,546

EVERYTHING WE NEEDED TO TO GET

83

00:05:30,546 --> 00:05:32,682

THE FIRST HUMANS ON THE MOON TO

84

00:05:32,682 --> 00:05:35,118

MAKE THE FIRST STEPS ON THE

85

00:05:35,118 --> 00:05:39,188

LUNAR SURFACE 50 YEARS AGO.

86

00:05:39,188 --> 00:05:41,924

WE'LL BE TAKING SIMILAR STEPS AS

87

00:05:41,924 --> 00:05:46,529

WE BUILD A SUSTAINABLE

88

00:05:46,529 --> 00:05:46,963

ARCHITECTURE.

89

00:05:46,963 --> 00:05:47,930
THE KENNEDY SPACE CENTER IS UP

90

00:05:47,930 --> 00:05:51,434
TO THE CHALLENGE AND WE CAN'T

91

00:05:51,434 --> 00:05:52,352
WAIT TO SEE ROCKETS ON THOSE

92

00:05:52,352 --> 00:05:54,070
LAUNCH PADS TAKING HUMANS BACK

93

00:05:54,070 --> 00:05:56,272
TO THE MOON AND EVENTUALLY ONTO

94

00:05:56,272 --> 00:05:57,974
MARS.

95

00:05:57,974 --> 00:06:02,945
IT'S MY PLEASURE TO INTRODUCE

96

00:06:02,945 --> 00:06:03,446
TIM BRIDENSTINE.

97

00:06:03,446 --> 00:06:05,982
TIM CAME ON BOARD ABOUT THE TIME

98

00:06:05,982 --> 00:06:06,983
THE PRESIDENT SIGNED SPACE

99

00:06:06,983 --> 00:06:08,317
POLICY DIRECTIVE ONE THAT

100

00:06:08,317 --> 00:06:10,186
DIRECTED US TO SEND HUMANS TO

101
00:06:10,186 --> 00:06:13,923
THE MOON FOR LONG-TERM

102
00:06:13,923 --> 00:06:17,727
EXPLORATION AND UTILIZATION,

103
00:06:17,727 --> 00:06:19,429
FOLLOWED BY MISSIONS TO MARS.

104
00:06:19,429 --> 00:06:21,798
HIS PASSION FOR FLIGHT AND SPACE

105
00:06:21,798 --> 00:06:23,733
EXPLORATION SERVED HIM WELL ON

106
00:06:23,733 --> 00:06:25,935
THE ARMED FORCES COMMITTEE AND

107
00:06:25,935 --> 00:06:30,106
THE TECHNOLOGY SPACE AND SCIENCE

108
00:06:30,106 --> 00:06:31,140
COMMITTEE IN CONGRESS.

109
00:06:31,140 --> 00:06:32,608
AND TODAY, THAT PASSION IS

110
00:06:32,608 --> 00:06:34,310
INSPIRING THE NASA WORKFORCE AND

111
00:06:34,310 --> 00:06:36,546
THE PUBLIC ON A NEW MISSION OF

112
00:06:36,546 --> 00:06:36,946
EXPLORATION.

113
00:06:36,946 --> 00:06:40,149

PLEASE WELCOME OUR 13th

114

00:06:40,149 --> 00:06:56,416

ADMINISTRATOR, JIM BRIDENSTINE.

115

00:06:56,416 --> 00:06:56,766

[Applause]

116

00:06:56,766 --> 00:07:03,272

>> WELL, BOB, THANK YOU FOR THAT

117

00:07:03,272 --> 00:07:04,073

INTRODUCTION AND THANK YOU ALL

118

00:07:04,073 --> 00:07:05,741

FOR BEING HERE ON A DAY THAT WE

119

00:07:05,741 --> 00:07:06,709

THINK IS EXCITING.

120

00:07:06,709 --> 00:07:08,428

TODAY, WE ARE ROLLING OUT THE

121

00:07:08,428 --> 00:07:09,879

PRESIDENT'S BUDGET REQUEST FOR

122

00:07:09,879 --> 00:07:12,115

NASA, AND I'M VERY HAPPY TO TELL

123

00:07:12,115 --> 00:07:14,317

YOU THAT NASA'S BUDGET REQUEST

124

00:07:14,317 --> 00:07:15,351

FROM THE PRESIDENT OF THE UNITED

125

00:07:15,351 --> 00:07:19,822

STATES IS STRONG, AND WE HAVE

126
00:07:19,822 --> 00:07:23,059
STRONG BIPARTISAN SUPPORT IN

127
00:07:23,059 --> 00:07:30,500
BOTH CHAMBERS OF CONGRESS.

128
00:07:30,500 --> 00:07:30,867
[Applause]

129
00:07:30,867 --> 00:07:32,452
>> I'M GOING TO SPEND A FEW

130
00:07:32,452 --> 00:07:34,003
MINUTES TALKING ABOUT A MISSION

131
00:07:34,003 --> 00:07:36,672
THAT I THINK IS A LOT OF FUN,

132
00:07:36,672 --> 00:07:45,465
VERY EXCITING, AND

133
00:07:45,465 --> 00:07:46,616
TRANSFORMATIVE, AS A MATTER OF

134
00:07:46,616 --> 00:07:48,484
FACT, OF THE WAY WE FLY IN THE

135
00:07:48,484 --> 00:07:49,585
UNITED STATES OF AMERICA.

136
00:07:49,585 --> 00:07:55,057
WE HAVE BEEN FLYING THROUGH THE

137
00:07:55,057 --> 00:07:58,594
ATMOSPHERE AT .6 MACH FOR 50

138
00:07:58,594 --> 00:08:01,097

YEARS, AND I THINK IT'S TIME WE

139

00:08:01,097 --> 00:08:01,831

CHANGE THAT.

140

00:08:01,831 --> 00:08:05,301

THE X-59 AND THE AIR FORCE

141

00:08:05,301 --> 00:08:09,505

MISSION DIRECTORATE IS FUNDED AT

142

00:08:09,505 --> 00:08:10,039

A VERY STRONG LEVEL.

143

00:08:10,039 --> 00:08:13,376

I WANT TO TALK FOR A SECOND

144

00:08:13,376 --> 00:08:13,943

ABOUT WHAT THIS MEANS.

145

00:08:13,943 --> 00:08:19,048

LAST YEAR, WE SAW OVER GALVESTON

146

00:08:19,048 --> 00:08:24,053

WHAT A SONIC BOOM WILL DO TO

147

00:08:24,053 --> 00:08:26,155

COMMUNITIES, FROM AN ANNOYANCE

148

00:08:26,155 --> 00:08:27,623

PERSPECTIVE AND FROM AN

149

00:08:27,623 --> 00:08:28,624

INFRASTRUCTURE PERSPECTIVE.

150

00:08:28,624 --> 00:08:30,459

WHEN WE SAW THAT, WE WERE ABLE

151
00:08:30,459 --> 00:08:32,295
TO MAKE DETERMINATIONS AS TO

152
00:08:32,295 --> 00:08:33,563
WHAT THE LEVEL OF TOLERANCE

153
00:08:33,563 --> 00:08:35,765
WOULD BE FOR A SONIC BOOM.

154
00:08:35,765 --> 00:08:38,467
IT HAS BEEN BANNED BY A LONG

155
00:08:38,467 --> 00:08:40,736
TIME BY THE F.A.A. TO FLY OVER

156
00:08:40,736 --> 00:08:43,539
THE UNITED STATES AS SUPER SONIC

157
00:08:43,539 --> 00:08:44,640
AIR SPEEDS BECAUSE OF THE

158
00:08:44,640 --> 00:08:49,245
PROBLEMS WITH DISTURBANCE TO

159
00:08:49,245 --> 00:08:49,712
INFRASTRUCTURE.

160
00:08:49,712 --> 00:08:53,115
WE AS NASA HAVE BEEN WORKING FOR

161
00:08:53,115 --> 00:08:53,849
A LONG TIME TO MAKE THAT HAPPEN.

162
00:08:53,849 --> 00:08:56,018
IN THIS PARTICULAR CASE, WE ARE

163
00:08:56,018 --> 00:08:59,322

ASSESSING WHAT IS THE TOLERANCE

164

00:08:59,322 --> 00:09:00,890

FOR A LOW BOOM, AND WE'RE

165

00:09:00,890 --> 00:09:01,557

IMAGING IT.

166

00:09:01,557 --> 00:09:03,726

IN FACT JUST THE OTHER DAY, WE

167

00:09:03,726 --> 00:09:06,796

HAD A BEECHCRAFT 200 FLY WITH A

168

00:09:06,796 --> 00:09:11,300

BRAND-NEW CAMERA AND LOOK AT TWO

169

00:09:11,300 --> 00:09:13,569

T-38s FLYING BELOW IT AT SUPER

170

00:09:13,569 --> 00:09:15,438

SONIC SPEEDS AND LOOKING AT THAT

171

00:09:15,438 --> 00:09:17,273

PRESSURE WAVE.

172

00:09:17,273 --> 00:09:20,343

NOT JUST AT THE BOW BUT AT ALL

173

00:09:20,343 --> 00:09:22,912

THOSE DIFFERENT PARTS OF THE

174

00:09:22,912 --> 00:09:25,047

T-38s BUT WHEN THEY COMBINE.

175

00:09:25,047 --> 00:09:26,616

BECAUSE WHEN THOSE PRESSURE

176

00:09:26,616 --> 00:09:29,185

COMBINES, THAT'S WHEN WE GET THE

177

00:09:29,185 --> 00:09:32,989

SUPER SONIC BOOM AND THAT'S WHAT

178

00:09:32,989 --> 00:09:33,756

CAN BE TROUBLING FOR

179

00:09:33,756 --> 00:09:35,925

INFRASTRUCTURE.

180

00:09:35,925 --> 00:09:36,626

SO WHAT WE'RE GOING TO DO IS

181

00:09:36,626 --> 00:09:39,362

TAKE WHAT WE LEARNED FROM THESE

182

00:09:39,362 --> 00:09:41,030

EXPERIMENTS AND TAKE THE X-59

183

00:09:41,030 --> 00:09:42,932

THAT'S GOING TO BE FLOWN IN THE

184

00:09:42,932 --> 00:09:45,301

YEAR 2021 SO FOR THE FIRST TIME

185

00:09:45,301 --> 00:09:47,036

WE CAN GET REGULATIONS ON THE

186

00:09:47,036 --> 00:09:50,406

BOOKS IN THE UNITED STATES OF

187

00:09:50,406 --> 00:09:52,208

AMERICA THAT SAY YOU CAN FLY

188

00:09:52,208 --> 00:09:53,509

SUPER SONIC.

189

00:09:53,509 --> 00:09:58,748

THE X-59 IS GOING TO FLY AT MACH

190

00:09:58,748 --> 00:10:00,349

1.4 AT 55,000 FEET.

191

00:10:00,349 --> 00:10:02,885

WE'RE GOING TO BE ABLE TO GO

192

00:10:02,885 --> 00:10:05,688

FROM ONE SIDE OF THE UNITED

193

00:10:05,688 --> 00:10:06,656

STATES TO THE OTHER SIDE OF THE

194

00:10:06,656 --> 00:10:08,324

UNITED STATES IN A COUPLE OF

195

00:10:08,324 --> 00:10:10,393

HOURS INSTEAD OF FIVE OR SIX

196

00:10:10,393 --> 00:10:13,396

HOURS, DEPENDING ON THE WINDS.

197

00:10:13,396 --> 00:10:14,797

THIS IS TRANSFORMATIVE TO BE

198

00:10:14,797 --> 00:10:16,332

ABLE TO GET TO ONE SIDE OF THE

199

00:10:16,332 --> 00:10:19,769

COUNTRY FROM THE OTHER AND

200

00:10:19,769 --> 00:10:21,804

TRAVEL IN THE COUNTRY.

201
00:10:21,804 --> 00:10:27,710
JUST THAT MISSION IS THE X-57

202
00:10:27,710 --> 00:10:30,179
MAXWELL, THE FIRST ALL ELECTRIC

203
00:10:30,179 --> 00:10:31,981
TRANSPORT AIRCRAFT CAPABLE OF

204
00:10:31,981 --> 00:10:33,649
CARRYING PASSENGERS AND CARGO,

205
00:10:33,649 --> 00:10:34,250
ALL ELECTRIC.

206
00:10:34,250 --> 00:10:35,251
WHAT DOES THAT MEAN?

207
00:10:35,251 --> 00:10:40,056
THAT MEANS WE CAN DRIVE DOWN THE

208
00:10:40,056 --> 00:10:42,224
COST OF TRANSPORTING PEOPLE AND

209
00:10:42,224 --> 00:10:44,293
CARGO FROM ONE PLACE TO ANOTHER

210
00:10:44,293 --> 00:10:46,729
BY UP TO AND EVEN IN SOME CASES

211
00:10:46,729 --> 00:10:48,264
OVER 60%.

212
00:10:48,264 --> 00:10:49,765
WELL, IF WE CAN DRIVE DOWN THE

213
00:10:49,765 --> 00:10:51,267

COST BY THAT AMOUNT, THAT MEANS

214

00:10:51,267 --> 00:10:53,069

WE'RE GOING TO HAVE POTENTIALLY

215

00:10:53,069 --> 00:10:56,472

COMMERCIAL FLIGHTS GOING TO MORE

216

00:10:56,472 --> 00:10:57,940

DESTINATIONS THAN EVER BEFORE.

217

00:10:57,940 --> 00:10:59,342

WE'RE GOING TO BE ABLE TO SERVE

218

00:10:59,342 --> 00:11:00,943

COMMUNITIES WITH AIR TRAVEL THAT

219

00:11:00,943 --> 00:11:01,977

HISTORICALLY HAVE NOT BEEN

220

00:11:01,977 --> 00:11:02,912

SERVED WITH AIR TRAVEL.

221

00:11:02,912 --> 00:11:05,281

I WANT TO BE CLEAR, WE ARE NOT

222

00:11:05,281 --> 00:11:06,482

THERE YET.

223

00:11:06,482 --> 00:11:11,020

BUT THE X-57 MAXWELL IS THE TOOL

224

00:11:11,020 --> 00:11:12,421

BY WHICH WE WILL BE ABLE TO

225

00:11:12,421 --> 00:11:14,090

ACCOMPLISH THESE OBJECTIVES, AND

226

00:11:14,090 --> 00:11:16,459

DRIVING DOWN COST AND INCREASING

227

00:11:16,459 --> 00:11:17,526

ACCESS TO AIR TRAVEL IS THE WAY

228

00:11:17,526 --> 00:11:19,228

THAT WE'RE GOING TO BE ABLE TO

229

00:11:19,228 --> 00:11:20,680

INCREASE THE STANDARD OF LIVING

230

00:11:20,680 --> 00:11:22,098

FOR EVERY AMERICAN, AND THAT'S

231

00:11:22,098 --> 00:11:24,266

REALLY WHAT NASA IS ALL ABOUT,

232

00:11:24,266 --> 00:11:25,334

ELEVATING THE HUMAN CONDITION,

233

00:11:25,334 --> 00:11:31,073

AND THE X-57 IS A TOOL TO

234

00:11:31,073 --> 00:11:32,508

ACCOMPLISH THAT.

235

00:11:32,508 --> 00:11:34,944

ONE OTHER VERY EXCITING MISSION

236

00:11:34,944 --> 00:11:36,512

WITHIN THE AIR FORCE RESEARCH

237

00:11:36,512 --> 00:11:38,514

DIRECTORATE THAT I'M REALLY KIND

238

00:11:38,514 --> 00:11:40,449

OF INTRIGUED BY IS URBAN AIR

239

00:11:40,449 --> 00:11:40,816

MOBILITY.

240

00:11:40,816 --> 00:11:44,220

THE IDEA THAT YOU CAN FLY ON AN

241

00:11:44,220 --> 00:11:49,592

UNMANNED, I SHOULD SAY, UNCREWED

242

00:11:49,592 --> 00:11:52,361

CRAFT, NO PILOT, LET'S SAY THAT,

243

00:11:52,361 --> 00:11:54,163

FROM ONE SIDE OF THE CITY TO

244

00:11:54,163 --> 00:11:55,664

ANOTHER SIDE OF THE CITY JUST

245

00:11:55,664 --> 00:11:57,199

LIKE YOU WOULD DRIVE A CAR.

246

00:11:57,199 --> 00:11:59,902

NOW, AGAIN, WE'RE NOT THERE YET,

247

00:11:59,902 --> 00:12:04,073

BUT IN ORDER TO ACHIEVE THAT, WE

248

00:12:04,073 --> 00:12:07,042

FIRST START WITH CARGO, AND

249

00:12:07,042 --> 00:12:08,811

THERE IS INDUSTRY IN THE UNITED

250

00:12:08,811 --> 00:12:10,880

STATES RIGHT NOW VERY EXCITED

251
00:12:10,880 --> 00:12:12,732
ABOUT THAT EVENTUALITY.

252
00:12:12,732 --> 00:12:13,349
WHY?

253
00:12:13,349 --> 00:12:15,351
BECAUSE IT WILL HELP THEM GET

254
00:12:15,351 --> 00:12:17,186
PACKAGES TO YOUR DOORSTEP FASTER

255
00:12:17,186 --> 00:12:18,821
AND MORE EFFICIENTLY THAN EVER

256
00:12:18,821 --> 00:12:19,155
BEFORE.

257
00:12:19,155 --> 00:12:20,456
ONCE WE DO THAT, THERE IS NO

258
00:12:20,456 --> 00:12:22,258
LIMIT TO WHAT WE CAN DO WITH

259
00:12:22,258 --> 00:12:23,259
HUMANS IN THE FUTURE.

260
00:12:23,259 --> 00:12:26,762
BUT TO DO THAT, WE HAVE TO

261
00:12:26,762 --> 00:12:29,165
INTEGRATE UNMANNED SYSTEMS INTO

262
00:12:29,165 --> 00:12:30,266
THE NATIONAL AIR SPACE SYSTEM.

263
00:12:30,266 --> 00:12:31,567

THAT'S NOT AN EASY FEAT.

264

00:12:31,567 --> 00:12:33,302

WHEN YOU'RE TALKING ABOUT DOING

265

00:12:33,302 --> 00:12:36,238

THAT IN URBAN ENVIRONMENTS,

266

00:12:36,238 --> 00:12:37,139

THERE'S A WHOLE LEVEL OF SAFETY

267

00:12:37,139 --> 00:12:38,307

THAT HAS TO COME INTO PLAY.

268

00:12:38,307 --> 00:12:42,678

WHAT WE'RE DOING IS WORKING ON

269

00:12:42,678 --> 00:12:43,512

THOSE VERY CHALLENGING PROBLEMS

270

00:12:43,512 --> 00:12:45,181

SO THAT ONE DAY, WE'RE GOING TO

271

00:12:45,181 --> 00:12:47,216

BE ABLE TO DELIVER PACKAGES TO

272

00:12:47,216 --> 00:12:51,387

YOUR DOORSTEP IN A VEHICLE THAT

273

00:12:51,387 --> 00:12:53,322

FLIES IN THE SKY OVER POPULATED

274

00:12:53,322 --> 00:12:54,723

CENTERS MORE EFFICIENTLY AND

275

00:12:54,723 --> 00:12:57,259

EVEN FLY HUMANS FROM ONE SIDE OF

276

00:12:57,259 --> 00:12:58,461

THE CITY TO THE OTHER.

277

00:12:58,461 --> 00:13:01,163

SO THESE ARE ALL VERY EXCITED

278

00:13:01,163 --> 00:13:04,400

THINGS WITHIN THE AERONAUTICS

279

00:13:04,400 --> 00:13:05,468

MISSION DIRECTORATE, AND I

280

00:13:05,468 --> 00:13:07,236

WANTED TO MAKE SURE I STARTED

281

00:13:07,236 --> 00:13:10,840

THE SPEECH TODAY TALKING ABOUT

282

00:13:10,840 --> 00:13:11,607

THAT PART OF THE BUDGET BECAUSE

283

00:13:11,607 --> 00:13:13,142

AS A NAVY PILOT, I LIKE THE IDEA

284

00:13:13,142 --> 00:13:14,910

OF EVERYBODY BEING ABLE TO FLY

285

00:13:14,910 --> 00:13:16,445

SUPER SONIC AND OF COURSE

286

00:13:16,445 --> 00:13:18,214

EVERYBODY BEING ABLE TO FLY IN

287

00:13:18,214 --> 00:13:19,448

GENERAL AND EVENTUALLY EVERYBODY

288

00:13:19,448 --> 00:13:21,183

BEING ABLE TO FLY FROM ONE SIDE

289

00:13:21,183 --> 00:13:22,117

OF THE CITY TO ANOTHER SIDE OF

290

00:13:22,117 --> 00:13:22,651

THE CITY.

291

00:13:22,651 --> 00:13:26,722

SO LET'S TAKE IT UP A NOTCH FROM

292

00:13:26,722 --> 00:13:29,592

AERONAUTICS TO SPACE.

293

00:13:29,592 --> 00:13:32,094

WE HAVE SEEN WHAT HAPPENS WHEN

294

00:13:32,094 --> 00:13:36,899

WE AS NASA IN LOW-EARTH ORBIT,

295

00:13:36,899 --> 00:13:39,768

WE BECOME ONE CUSTOMER OF MANY

296

00:13:39,768 --> 00:13:41,637

CUSTOMERS IN A ROBUST COMMERCIAL

297

00:13:41,637 --> 00:13:44,974

MARKETPLACE IN LOW-EARTH ORBIT.

298

00:13:44,974 --> 00:13:49,211

WE JUST SAW A SPACEX CREW DRAGON

299

00:13:49,211 --> 00:13:53,449

DOCK WITH THE INTERNATIONAL

300

00:13:53,449 --> 00:13:55,351

SPACE STATION DELIVER FROM

301
00:13:55,351 --> 00:13:58,053
CARGO, A LITTLE EARTH HUMANOID,

302
00:13:58,053 --> 00:13:59,989
ULTIMATELY DO A LOT OF TESTS,

303
00:13:59,989 --> 00:14:02,124
UNDOCK, FLY HOME, AND LAND

304
00:14:02,124 --> 00:14:02,458
SAFELY.

305
00:14:02,458 --> 00:14:04,693
THAT IS A FIRST STEP IN A MUCH

306
00:14:04,693 --> 00:14:06,595
LONGER MISSION FOR NASA TO

307
00:14:06,595 --> 00:14:09,632
BECOME ONE CUSTOMER OF MANY

308
00:14:09,632 --> 00:14:11,534
CUSTOMERS IN LOW-EARTH ORBIT IN

309
00:14:11,534 --> 00:14:13,035
A ROBUST COMMERCIAL MARKETPLACE.

310
00:14:13,035 --> 00:14:14,336
AND AT THE SAME TIME, HAVING

311
00:14:14,336 --> 00:14:16,372
NUMEROUS PROVIDERS THAT ARE

312
00:14:16,372 --> 00:14:19,041
COMPETING ON COST AND

313
00:14:19,041 --> 00:14:19,441

INNOVATION.

314

00:14:19,441 --> 00:14:20,409

WHY IS THAT SO IMPORTANT?

315

00:14:20,409 --> 00:14:22,177

BECAUSE WE NEED TO DRIVE DOWN

316

00:14:22,177 --> 00:14:24,013

COSTS, WE NEED TO INCREASE

317

00:14:24,013 --> 00:14:25,748

ACCESS, WE NEED TO MAKE SPACE

318

00:14:25,748 --> 00:14:27,116

FLIGHT MORE AVAILABLE TO MORE

319

00:14:27,116 --> 00:14:27,449

PEOPLE.

320

00:14:27,449 --> 00:14:29,018

THAT INCLUDES COMMERCIAL

321

00:14:29,018 --> 00:14:29,451

ACTIVITIES.

322

00:14:29,451 --> 00:14:30,519

WE'RE TALKING ABOUT

323

00:14:30,519 --> 00:14:32,087

MANUFACTURING, WE'RE TALKING

324

00:14:32,087 --> 00:14:33,722

ABOUT TOURISM, WE'RE TALKING

325

00:14:33,722 --> 00:14:37,593

ABOUT PHARMACEUTICALS, MAYBE

326

00:14:37,593 --> 00:14:37,993

FIBEROPTICS.

327

00:14:37,993 --> 00:14:40,362

WE NEED TO DEVELOP THAT VERY

328

00:14:40,362 --> 00:14:42,064

ROBUST COMMERCIAL MARKETPLACE IN

329

00:14:42,064 --> 00:14:42,998

LOW-EARTH ORBIT.

330

00:14:42,998 --> 00:14:44,600

IT STARTS WITH CARGO.

331

00:14:44,600 --> 00:14:48,470

IT IS NOW STARTING TO GET TO THE

332

00:14:48,470 --> 00:14:50,439

POINT WHERE WE'RE GOING TO BE

333

00:14:50,439 --> 00:14:51,607

LAUNCHING CREW.

334

00:14:51,607 --> 00:14:53,409

BY THE WAY, WE'RE GOING TO DO

335

00:14:53,409 --> 00:15:01,116

THAT IN 2019.

336

00:15:01,116 --> 00:15:02,284

[Applause]

337

00:15:02,284 --> 00:15:04,620

>> AND EVENTUALLY, WE'RE GOING

338

00:15:04,620 --> 00:15:09,758

TO GET TO A DAY WHERE LOW-EARTH

339

00:15:09,758 --> 00:15:11,961

ORBIT IN HABITATION WILL BE

340

00:15:11,961 --> 00:15:12,361

GENERALIZED.

341

00:15:12,361 --> 00:15:14,163

IN OTHER WORDS, NASA WILL BE A

342

00:15:14,163 --> 00:15:15,864

CUSTOMER FOR MANY CUSTOMERS,

343

00:15:15,864 --> 00:15:18,467

COMPETING ON COST AND

344

00:15:18,467 --> 00:15:21,103

INNOVATION, NOT JUST FOR

345

00:15:21,103 --> 00:15:23,072

RESUPPLY, NOT JUST FOR CREW, BUT

346

00:15:23,072 --> 00:15:26,442

FOR SCIENCE, HABITATION,

347

00:15:26,442 --> 00:15:28,544

CAPABILITY, AND LOW-EARTH ORBIT.

348

00:15:28,544 --> 00:15:29,511

LET'S TALK ABOUT THAT.

349

00:15:29,511 --> 00:15:32,181

WHY DOES NASA WANT TO

350

00:15:32,181 --> 00:15:33,849

COMMERCIALIZE LOW-EARTH ORBIT.

351

00:15:33,849 --> 00:15:35,718

IT IS IN OUR INTERESTS TO TAKE

352

00:15:35,718 --> 00:15:38,520

ADVANTAGE OF MARKETPLACES WHERE

353

00:15:38,520 --> 00:15:39,722

THEY EXIST BECAUSE COST GOES

354

00:15:39,722 --> 00:15:41,941

DOWN, AND THEN WE CAN USE THE

355

00:15:41,941 --> 00:15:44,760

AMERICAN TAX DOLLARS, THE

356

00:15:44,760 --> 00:15:46,895

RESOURCES WE ARE GIVEN BY THE

357

00:15:46,895 --> 00:15:48,464

AMERICAN TAXPAYER TO GO FURTHER

358

00:15:48,464 --> 00:15:49,798

THAN WE'VE EVER DONE BEFORE.

359

00:15:49,798 --> 00:15:51,033

THAT'S WHAT WE DO.

360

00:15:51,033 --> 00:15:53,102

THE PRESIDENT HAS GIVEN US SPACE

361

00:15:53,102 --> 00:15:54,470

POLICY DIRECTIVE ONE WHICH SAYS

362

00:15:54,470 --> 00:15:56,038

GO BACK TO THE MOON, AND WE'RE

363

00:15:56,038 --> 00:15:58,507

GOING TO DO THAT IN SHORT ORDER,

364

00:15:58,507 --> 00:16:00,509

MAYBE EVEN IN 2019, BUT AT LEAST

365

00:16:00,509 --> 00:16:02,845

BY 2020 WITH COMMERCIAL LUNAR

366

00:16:02,845 --> 00:16:03,879

PAY LOAD SERVICES THAT ARE GOING

367

00:16:03,879 --> 00:16:06,115

TO BE FUNDED THROUGH THE SCIENCE

368

00:16:06,115 --> 00:16:07,716

MISSION DIRECTORATE, AND ALL OF

369

00:16:07,716 --> 00:16:08,984

THIS IS GOING TO BE POSSIBLE

370

00:16:08,984 --> 00:16:12,121

BECAUSE WE'RE LOOKING AT GOING

371

00:16:12,121 --> 00:16:12,421

FAST.

372

00:16:12,421 --> 00:16:15,424

THERE'S TWO THINGS WHEN WE TALK

373

00:16:15,424 --> 00:16:17,760

ABOUT COMMERCIAL LUNAR PAY LOAD

374

00:16:17,760 --> 00:16:18,827

SERVICES THAT ARE IMPORTANT.

375

00:16:18,827 --> 00:16:20,996

NUMBER ONE, IT'S COMMERCIAL.

376

00:16:20,996 --> 00:16:22,364

WE WANT COMPETITION ON BOTH COST

377

00:16:22,364 --> 00:16:24,133

AND INNOVATION.

378

00:16:24,133 --> 00:16:26,101

AND NUMBER TWO, IT'S GOING TO BE

379

00:16:26,101 --> 00:16:26,402

FAST.

380

00:16:26,402 --> 00:16:28,737

NASA IS NOT GOING TO BE THE LONG

381

00:16:28,737 --> 00:16:29,672

POLE IN THE TENT.

382

00:16:29,672 --> 00:16:31,740

NASA -- WE'VE ALREADY PROVIDED

383

00:16:31,740 --> 00:16:33,008

TEN DIFFERENT PAY LOADS THAT ARE

384

00:16:33,008 --> 00:16:34,376

READY TO GO TO THE MOON.

385

00:16:34,376 --> 00:16:36,078

AND VERY SOON, WE'RE GOING TO BE

386

00:16:36,078 --> 00:16:37,613

ISSUING CONTRACTS TO COMPANIES

387

00:16:37,613 --> 00:16:41,517

TO DELIVER THOSE PAY LOADS.

388

00:16:41,517 --> 00:16:42,184

WE'RE TALKING ABOUT SMALL

389

00:16:42,184 --> 00:16:45,454

SCIENTIFIC INSTRUMENTS TO THE

390

00:16:45,454 --> 00:16:46,622

SURFACE OF THE MOON.

391

00:16:46,622 --> 00:16:50,759

NOW IT'S NOT TALK ABOUT

392

00:16:50,759 --> 00:16:52,795

DELIVERING SCIENTIFIC

393

00:16:52,795 --> 00:16:53,929

INSTRUMENTS TO THE SURFACE OF

394

00:16:53,929 --> 00:16:57,633

THE MOON, IT'S ABOUT HAVING A

395

00:16:57,633 --> 00:16:58,834

SUSTAINABLE PRESENCE ON AND

396

00:16:58,834 --> 00:16:59,802

AROUND THE MOON.

397

00:16:59,802 --> 00:17:01,437

IN ORDER TO ACHIEVE THAT

398

00:17:01,437 --> 00:17:02,938

DIRECTIVE, WE NEED A PERMANENT

399

00:17:02,938 --> 00:17:04,840

COMMAND AND SERVICE MODULE IN

400

00:17:04,840 --> 00:17:06,508

ORBIT AROUND THE MOON.

401
00:17:06,508 --> 00:17:08,544
WE CALL IT GATEWAY, AND THAT'S

402
00:17:08,544 --> 00:17:10,512
FULLY FUNDED IN THIS PRESIDENT'S

403
00:17:10,512 --> 00:17:21,623
BUDGET REQUEST.

404
00:17:21,623 --> 00:17:22,091
[Applause]

405
00:17:22,091 --> 00:17:24,893
>> I HEAR PEOPLE SOMETIMES SAY

406
00:17:24,893 --> 00:17:27,196
WELL, YOU KNOW, GATEWAY IS NOT A

407
00:17:27,196 --> 00:17:27,763
SPACE STATION.

408
00:17:27,763 --> 00:17:32,901
IT IS NOT, IT IS A COMMAND AND A

409
00:17:32,901 --> 00:17:34,470
SURFACE MODULE, BUT IT WILL HAVE

410
00:17:34,470 --> 00:17:35,671
THE OPPORTUNITY TO HAVE CREW.

411
00:17:35,671 --> 00:17:37,439
THE OTHER THING THAT'S IMPORTANT

412
00:17:37,439 --> 00:17:40,375
ABOUT GATEWAY IS IT'S GOING TO

413
00:17:40,375 --> 00:17:45,547

UTILIZE SOLAR ELECTRIC

414

00:17:45,547 --> 00:17:47,850

PROPULLTION TO BE MANEUVERABLE.

415

00:17:47,850 --> 00:17:50,919

WHEN WE GO BACK TO APOLLO, WE

416

00:17:50,919 --> 00:17:54,089

LANDED THREE ASTRONAUTS ON THE

417

00:17:54,089 --> 00:17:58,193

SURFACE OF THE MOON, 1961 TO

418

00:17:58,193 --> 00:17:58,494

1972.

419

00:17:58,494 --> 00:18:00,696

BECAUSE OF THAT, WE NEVER WENT

420

00:18:00,696 --> 00:18:01,797

TO THE POLES.

421

00:18:01,797 --> 00:18:05,084

WELL, THERE'S A LOT OF VALUABLE

422

00:18:05,084 --> 00:18:06,235

MATERIAL AT THE POLES, NAMELY,

423

00:18:06,235 --> 00:18:06,702

WATER ICE.

424

00:18:06,702 --> 00:18:09,204

WE DISCOVERED IT IN 2009 IN

425

00:18:09,204 --> 00:18:11,273

MASSIVE QUANTITIES, HUNDREDS OF

426

00:18:11,273 --> 00:18:14,409

MILLIONS OF TONS OF WATER ICE AT

427

00:18:14,409 --> 00:18:15,577

THE POLES OF THE MOON.

428

00:18:15,577 --> 00:18:16,779

WELL WHAT GATEWAY REPRESENTS IS

429

00:18:16,779 --> 00:18:18,113

NOT JUST AN OPPORTUNITY TO GO TO

430

00:18:18,113 --> 00:18:20,415

THE MOON OVER AND OVER AGAIN IN

431

00:18:20,415 --> 00:18:22,217

A SUSTAINABLE ARCHITECTURE, BUT

432

00:18:22,217 --> 00:18:23,552

IT REPRESENTS AN OPPORTUNITY TO

433

00:18:23,552 --> 00:18:25,621

GO TO MORE PARTS OF THE MOON

434

00:18:25,621 --> 00:18:26,421

THAN EVER BEFORE.

435

00:18:26,421 --> 00:18:29,391

OUR GOAL IS NOT JUST TO LAND IN

436

00:18:29,391 --> 00:18:31,794

ONE SPOT OF THE MOON AND LEARN A

437

00:18:31,794 --> 00:18:33,295

WHOLE LOT ABOUT ALL OF THE

438

00:18:33,295 --> 00:18:40,736

THINGS THAT ARE HAPPENING IN ONE

439

00:18:40,736 --> 00:18:42,171

KILOMETER AROUND THAT ONE SPOT.

440

00:18:42,171 --> 00:18:43,739

WE'RE INTERESTED IN LEARNING

441

00:18:43,739 --> 00:18:45,240

ABOUT THE WHOLE MOON.

442

00:18:45,240 --> 00:18:48,210

GATEWAY IS GOING TO ALLOW US

443

00:18:48,210 --> 00:18:53,916

WITH THIS REUSABLE SERVICE

444

00:18:53,916 --> 00:18:59,988

MODULE, WITH THAT COMMAND

445

00:18:59,988 --> 00:19:01,223

SERVICE, IT'S ALSO GOING TO GO

446

00:19:01,223 --> 00:19:03,425

TO THE POLES OF THE MOON, IT CAN

447

00:19:03,425 --> 00:19:09,164

GO TO THE SOUTH, L-1 AND L-1,

448

00:19:09,164 --> 00:19:12,367

GIVER ROVERS AND HUMANS MORE

449

00:19:12,367 --> 00:19:13,836

ACCESS TO THE MOON THAN EVER

450

00:19:13,836 --> 00:19:14,169

BEFORE.

451
00:19:14,169 --> 00:19:15,904
WE DON'T WANT TO MISS ANYTHING.

452
00:19:15,904 --> 00:19:18,157
THERE'S A LOT TO LEARN, AND THIS

453
00:19:18,157 --> 00:19:19,308
IS ABOUT SUSTAINABILITY.

454
00:19:19,308 --> 00:19:20,876
WHEN WE TALK ABOUT

455
00:19:20,876 --> 00:19:22,010
SUSTAINABILITY, WHAT DOES THAT

456
00:19:22,010 --> 00:19:22,311
MEAN?

457
00:19:22,311 --> 00:19:24,179
THAT MEANS WE'RE ABLE TO LAUNCH

458
00:19:24,179 --> 00:19:26,181
MASS PAY LOADS OFF THE SURFACE

459
00:19:26,181 --> 00:19:26,782
OF THE EARTH.

460
00:19:26,782 --> 00:19:34,790
WE NEED THE SLS, AND WE NEED THE

461
00:19:34,790 --> 00:19:36,692
ORION SERVICE MODULE.

462
00:19:36,692 --> 00:19:39,328
WHEN THE PRESIDENT SAYS GO TO

463
00:19:39,328 --> 00:19:43,699

THE MOON, AND HE SAYS GO

464

00:19:43,699 --> 00:19:44,433

SUSTAINABLY, IN OTHER WORDS,

465

00:19:44,433 --> 00:19:46,268

WHEN YOU GO THIS TIME, YOU NEED

466

00:19:46,268 --> 00:19:46,969

TO STAY.

467

00:19:46,969 --> 00:19:48,303

WHEN THE PRESIDENT SAYS THAT,

468

00:19:48,303 --> 00:19:49,404

WHAT DOES IT MEAN?

469

00:19:49,404 --> 00:19:52,441

IT MEANS WE NEED REUSABLE.

470

00:19:52,441 --> 00:19:53,942

WE'VE SEEN WHAT HAPPENED IN LOW

471

00:19:53,942 --> 00:19:56,378

EARTH ORBITS, WHEN WE HAVE LOW

472

00:19:56,378 --> 00:19:59,882

USE ROCKETS.

473

00:19:59,882 --> 00:20:06,221

THE PRODUCTIBILITY GOES UP, AND

474

00:20:06,221 --> 00:20:10,209

THE COST GOES DOWN.

475

00:20:10,209 --> 00:20:12,794

EVERYTHING NEEDS TO BE REUSABLE

476
00:20:12,794 --> 00:20:14,563
BUILT INTO THE ARCHITECTURE, AND

477
00:20:14,563 --> 00:20:16,531
THAT'S REALLY WHAT SPACE POLICY

478
00:20:16,531 --> 00:20:18,400
DIRECTIVE ONE IS ALL ABOUT, A

479
00:20:18,400 --> 00:20:19,868
SUSTAINABLE RETURN TO THE MOON.

480
00:20:19,868 --> 00:20:22,638
BUT I HAVE HEARD CRITICISM THAT

481
00:20:22,638 --> 00:20:23,939
MAYBE WHEN WITH YOU TALK ABOUT

482
00:20:23,939 --> 00:20:26,508
SUSTAIN -- WE TALK ABOUT

483
00:20:26,508 --> 00:20:29,077
SUSTAINABLE AND REUSABLE, WHY DO

484
00:20:29,077 --> 00:20:34,249
WE BUILD SLS AND ORION?

485
00:20:34,249 --> 00:20:36,318
IT'S GOING TO HAVE A LOT OF

486
00:20:36,318 --> 00:20:39,388
COMPONENTS THAT ARE REUSABLE.

487
00:20:39,388 --> 00:20:43,525
WE'RE WORKING WITH OUR PARTNERS

488
00:20:43,525 --> 00:20:46,595

AT LOCKHEED MARTIN.

489

00:20:46,595 --> 00:20:48,931

WE COULD BE REUSING THE PRESSURE

490

00:20:48,931 --> 00:20:51,033

VESSEL OF ORION IN THE NEAR

491

00:20:51,033 --> 00:20:51,867

FUTURE.

492

00:20:51,867 --> 00:20:56,371

THAT'S GOING TO HELP US BUILD

493

00:20:56,371 --> 00:20:58,257

REUSABILITY AND SUSTAINABILITY

494

00:20:58,257 --> 00:20:58,740

INTO THE PROJECT.

495

00:20:58,740 --> 00:21:00,676

WHEN IT COMES TO SLS, AND ON

496

00:21:00,676 --> 00:21:02,477

THIS POINT, I WANT TO BE CRYSTAL

497

00:21:02,477 --> 00:21:03,412

CLEAR.

498

00:21:03,412 --> 00:21:07,816

SLS IS NOT REUSABLE, BUT IT IS A

499

00:21:07,816 --> 00:21:08,917

CRITICAL PIECE OF THE

500

00:21:08,917 --> 00:21:11,386

ARCHITECTURE THAT ENABLES US TO

501
00:21:11,386 --> 00:21:12,854
DELIVERY USABILITY TO THE MOON.

502
00:21:12,854 --> 00:21:14,589
WE'RE TALKING ABOUT LAUNCHING

503
00:21:14,589 --> 00:21:16,959
GATEWAY AND ORION AND THE

504
00:21:16,959 --> 00:21:18,060
EUROPEAN SERVICE MODULE.

505
00:21:18,060 --> 00:21:19,928
ALL OF THESE THINGS ARE PART OF

506
00:21:19,928 --> 00:21:21,496
A REUSABLE ARCHITECTURE.

507
00:21:21,496 --> 00:21:22,764
WE'RE TALKING ABOUT A ROCKET

508
00:21:22,764 --> 00:21:25,233
THAT'S BIGGER THAN ANY ROCKET

509
00:21:25,233 --> 00:21:28,003
THAT'S EVER BEEN BUILT IN HUMAN

510
00:21:28,003 --> 00:21:31,707
HISTORY, WITH A PAY LOAD FAIRING

511
00:21:31,707 --> 00:21:35,410
CAPABLE OF CARRYING VOLUMES THAT

512
00:21:35,410 --> 00:21:40,916
WE'VE EVER SEEN BEFORE, TALLEN

513
00:21:40,916 --> 00:21:47,990

ER -- TALLER THAN THE STATUE OF

514

00:21:47,990 --> 00:21:48,957

LIBERTY.

515

00:21:48,957 --> 00:21:53,161

THIS IS A TRANSFORMATIONAL

516

00:21:53,161 --> 00:21:56,398

STRATEGIC CAPABILITY FOR THE

517

00:21:56,398 --> 00:22:01,570

UNITED STATES OF AMERICA.

518

00:22:01,570 --> 00:22:02,321

THE INTERNATIONAL SPACE STATION

519

00:22:02,321 --> 00:22:04,106

COMMERCIAL CREW COMMERCIAL

520

00:22:04,106 --> 00:22:06,208

RESUPPLY AND COMMERCIAL SUPPLY

521

00:22:06,208 --> 00:22:10,979

FOR REHABILITATION, ALL OF THIS IS

522

00:22:10,979 --> 00:22:11,713

VERY STRONG IN THE PRESIDENT'S

523

00:22:11,713 --> 00:22:13,081

BUDGET REQUEST, AND WE ARE

524

00:22:13,081 --> 00:22:16,651

THRILLED THAT HE IS BACKING IT

525

00:22:16,651 --> 00:22:22,391

UP NOT JUST WITH SPACE

526
00:22:22,391 --> 00:22:24,860
DIRECTORATIVE ONE, BUT WITH THE

527
00:22:24,860 --> 00:22:27,295
BUDGET, HE'S GOING TO BUILD UP

528
00:22:27,295 --> 00:22:30,532
SUSTAINABLE RETURN TO THE MOON.

529
00:22:30,532 --> 00:22:30,899
[Applause]

530
00:22:30,899 --> 00:22:32,200
>> ONE OTHER VERY EXCITING THING

531
00:22:32,200 --> 00:22:34,036
I NEED TO MAKE SURE EVERYBODY IS

532
00:22:34,036 --> 00:22:38,540
AWARE OF WHEN WE TALK ABOUT OUR

533
00:22:38,540 --> 00:22:39,608
MOON ACTIVITIES.

534
00:22:39,608 --> 00:22:42,244
FOR THE FIRST TIME IN OVER TEN

535
00:22:42,244 --> 00:22:46,748
YEARS, WE HAVE MONEY IN THIS

536
00:22:46,748 --> 00:22:48,316
BUDGET FOR A RETURN TO THE MOON

537
00:22:48,316 --> 00:22:50,118
WITH HUMANS.

538
00:22:50,118 --> 00:22:56,658

I'M TALKING ABOUT HUMAN RATED

539

00:22:56,658 --> 00:22:57,392

LANDERS COMPATIBLE WITH GATEWAY

540

00:22:57,392 --> 00:22:58,093

THAT CAN GO BACK AND FORTH TO

541

00:22:58,093 --> 00:22:58,760

THE SURFACE OF THE MOON.

542

00:22:58,760 --> 00:22:59,561

WE ARE FUNDING HUMAN RATED

543

00:22:59,561 --> 00:23:01,630

LANDERS TO GO TO THE MOON FOR

544

00:23:01,630 --> 00:23:16,478

THE FIRST TIME IN OVER TEN

545

00:23:16,478 --> 00:23:16,778

YEARS.

546

00:23:16,778 --> 00:23:17,145

[Applause]

547

00:23:17,145 --> 00:23:17,512

>> OKAY.

548

00:23:17,512 --> 00:23:19,247

SO WE HAVE A REALLY SPECIAL

549

00:23:19,247 --> 00:23:19,948

OPPORTUNITY.

550

00:23:19,948 --> 00:23:20,916

I'D LIKE TO LET EVERYBODY KNOW

551
00:23:20,916 --> 00:23:23,618
THAT WE'RE GOING TO GO LIVE FROM

552
00:23:23,618 --> 00:23:25,120
THE JOHNSON SPACE CENTER WHERE

553
00:23:25,120 --> 00:23:30,025
WE'RE GOING TO MEET ASTRONAUT

554
00:23:30,025 --> 00:23:32,227
KAREN NYEBERG.

555
00:23:32,227 --> 00:23:35,330
SHE'S GOING TO TAKE US ON A TOUR

556
00:23:35,330 --> 00:23:41,236
OF A MOCKUP THAT ASTRONAUTS WILL

557
00:23:41,236 --> 00:23:42,304
USE TO GO TO THE MOON.

558
00:23:42,304 --> 00:23:44,840
>> I'M HERE AT THE JOHNSON SPACE

559
00:23:44,840 --> 00:23:46,007
CENTER INSIDE A TEST VERSION OF

560
00:23:46,007 --> 00:23:48,810
THE ORION CAPSULE.

561
00:23:48,810 --> 00:23:52,280
OVER AT KSC YOU OF COURSE ARE

562
00:23:52,280 --> 00:23:54,116
SEEING THE REAL HARDWARE, WHAT

563
00:23:54,116 --> 00:23:56,051

WE'RE GOING TO USE TO FLY CREWS

564

00:23:56,051 --> 00:23:59,621

TO SPACE, TO THE VICINITY OF THE

565

00:23:59,621 --> 00:24:01,523

MOON.

566

00:24:01,523 --> 00:24:06,228

THIS IS ACTUALLY A VOLUMETRIC

567

00:24:06,228 --> 00:24:08,063

MOCKUP, THE SAME SIZE WHAT YOU

568

00:24:08,063 --> 00:24:11,299

WOULD EXPECT THE ORION IS.

569

00:24:11,299 --> 00:24:13,401

YOU REALLY GET A SENSE WHEN

570

00:24:13,401 --> 00:24:15,103

YOU'RE SITTING IN HERE, WHEN YOU

571

00:24:15,103 --> 00:24:16,455

GET INSIDE, WHAT IT'S GOING TO

572

00:24:16,455 --> 00:24:18,206

BE LIKE FOR THE CREW WHEN WE

573

00:24:18,206 --> 00:24:20,375

ACTUALLY START TAKING IT TO THE

574

00:24:20,375 --> 00:24:23,111

VICINITY OF THE MOON.

575

00:24:23,111 --> 00:24:23,812

I'M SITTING HERE NEXT TO THE

576
00:24:23,812 --> 00:24:24,312
COMMANDER SEAT.

577
00:24:24,312 --> 00:24:25,413
THE COMMANDER WOULD BE SITTING

578
00:24:25,413 --> 00:24:27,716
HERE TO MY LEFT, AND IN FRONT OF

579
00:24:27,716 --> 00:24:30,919
US ARE THE DISPLAYS.

580
00:24:30,919 --> 00:24:32,087
WE HAVE THREE SCREENS WE CAN

581
00:24:32,087 --> 00:24:34,022
SWITCH, DEPENDING ON WHAT PHASE

582
00:24:34,022 --> 00:24:35,357
OF FLIGHT WE'RE IN.

583
00:24:35,357 --> 00:24:39,161
HERE WE MONITOR ALL OF OUR

584
00:24:39,161 --> 00:24:42,864
SYSTEMS, COMMUNICATIONS, PROP,

585
00:24:42,864 --> 00:24:43,365
ELECTRICAL SYSTEM.

586
00:24:43,365 --> 00:24:50,672
WE CAN MONITOR OUR POSITION IN

587
00:24:50,672 --> 00:24:52,607
SPACE AND OUR TRAJECTORIES.

588
00:24:52,607 --> 00:24:56,311

HERE IS A WINDOW, WHICH I THINK

589

00:24:56,311 --> 00:24:58,547

IS A KEY COMPONENT FOR ANYTHING

590

00:24:58,547 --> 00:24:59,814

THAT'S GOING TO CARRY PEOPLE,

591

00:24:59,814 --> 00:25:02,717

AND I'M SURE THIS IS GOING TO

592

00:25:02,717 --> 00:25:04,019

PROVIDE A GREAT VIEW OF THE MOON

593

00:25:04,019 --> 00:25:05,453

FOR PEOPLE THAT ARE GETTING

594

00:25:05,453 --> 00:25:06,221

NEAR.

595

00:25:06,221 --> 00:25:10,025

IT'S A GREAT TIME FOR NASA NOW.

596

00:25:10,025 --> 00:25:12,694

NOT ONLY ARE WE BUILDING ORION

597

00:25:12,694 --> 00:25:15,363

AND SLS, BUT WE'RE CONTINUING TO

598

00:25:15,363 --> 00:25:17,365

LIVE ON BOARD THE INTERNATIONAL

599

00:25:17,365 --> 00:25:18,166

SPACE STATION FOR INVESTIGATORS

600

00:25:18,166 --> 00:25:19,568

ALL OVER THE WORLD.

601
00:25:19,568 --> 00:25:21,203
WE'RE ALSO DEMONSTRATING SOME

602
00:25:21,203 --> 00:25:22,237
HARDWARE ON THE SPACE STATION

603
00:25:22,237 --> 00:25:24,873
AND OF COURSE FOSTERING THE

604
00:25:24,873 --> 00:25:25,607
COMMERCIAL PARTICIPATION IN

605
00:25:25,607 --> 00:25:26,875
SPACE TRAVEL.

606
00:25:26,875 --> 00:25:28,176
AND AT THE SAME TIME GETTING

607
00:25:28,176 --> 00:25:30,579
READY IN THE DEVELOPMENT OF

608
00:25:30,579 --> 00:25:31,947
GATEWAY AND THE LUNAR LANDERS

609
00:25:31,947 --> 00:25:36,251
AND ALL OF THE SCIENCE PAY LOADS

610
00:25:36,251 --> 00:25:36,985
THAT ARE REQUIRED TO ESTABLISH

611
00:25:36,985 --> 00:25:37,719
THAT -- THAT PRESENCE THERE.

612
00:25:37,719 --> 00:25:39,354
IT'S REALLY, REALLY EXCITING FOR

613
00:25:39,354 --> 00:25:40,555

ALL OF US.

614

00:25:40,555 --> 00:25:43,992

I HAVE WITH ME HERE -- TO SHOW

615

00:25:43,992 --> 00:25:47,362

THIS IS A LUNAR SAMPLE THAT WAS

616

00:25:47,362 --> 00:25:49,831

ACTUALLY BROUGHT BACK FROM ONE

617

00:25:49,831 --> 00:25:52,367

OF THE APOLLO MISSIONS, AND THIS

618

00:25:52,367 --> 00:25:53,969

ONE ACTUALLY FLEW ON A SPACE

619

00:25:53,969 --> 00:25:55,170

SHUTTLE TO THE SPACE STATION.

620

00:25:55,170 --> 00:25:58,106

WE'RE REALLY EXCITED AS CREW TO

621

00:25:58,106 --> 00:25:59,908

BRING BACK SAMPLES LIKE THIS FOR

622

00:25:59,908 --> 00:26:01,076

SCIENTISTS TO STUDY AGAIN.

623

00:26:01,076 --> 00:26:04,579

AND EVENTUALLY, SAMPLES FROM

624

00:26:04,579 --> 00:26:04,879

MARS.

625

00:26:04,879 --> 00:26:08,316

BACK TO YOU, ADMINISTRATOR

626
00:26:08,316 --> 00:26:08,717
BRIDENSTINE.

627
00:26:08,717 --> 00:26:10,118
>> WELL, KAREN, THANK YOU FOR

628
00:26:10,118 --> 00:26:11,753
THAT BRIEF AND THAT UPDATE.

629
00:26:11,753 --> 00:26:13,588
CAN YOU SHARE WITH US AS AN

630
00:26:13,588 --> 00:26:15,323
ASTRONAUT, AND I KNOW YOU'RE

631
00:26:15,323 --> 00:26:18,226
WORKING WITH THE ASTRONAUT CORPS

632
00:26:18,226 --> 00:26:24,132
ALL THE TIME, WITH ALL OF THESE

633
00:26:24,132 --> 00:26:24,799
DEVELOPMENTS UNDERWAY AND

634
00:26:24,799 --> 00:26:26,801
TESTING -- OF COURSE WE'VE GOT

635
00:26:26,801 --> 00:26:28,737
THE DRAGON, THE STAR LINER, AND

636
00:26:28,737 --> 00:26:35,644
NOW WE'VE GOT ORION, DO THE

637
00:26:35,644 --> 00:26:39,247
ASTRONAUTS FLY -- FIGHT OVER

638
00:26:39,247 --> 00:26:40,982

WHO'S GOING TO FLY WHICH

639

00:26:40,982 --> 00:26:41,349

VEHICLE?

640

00:26:41,349 --> 00:26:43,785

>> I THINK EVERYBODY HAS IN

641

00:26:43,785 --> 00:26:46,855

THEIR MIND THAT THEY WANT TO FLY

642

00:26:46,855 --> 00:26:47,222

SOMETHING.

643

00:26:47,222 --> 00:26:50,759

I THINK WE'RE IN A UNIQUE

644

00:26:50,759 --> 00:26:51,893

POSITION THAT WE CAN SUPPLY

645

00:26:51,893 --> 00:26:53,028

SOMETHING, AND I THINK EVERYONE

646

00:26:53,028 --> 00:26:55,297

IS JUST HAPPY TO GET A FLIGHT

647

00:26:55,297 --> 00:26:55,697

ASSIGNMENT.

648

00:26:55,697 --> 00:26:56,831

>> WELL, KAREN, THANK YOU FOR

649

00:26:56,831 --> 00:26:57,299

THAT.

650

00:26:57,299 --> 00:26:59,334

I'M GOING TO TALK JUST FOR A

651
00:26:59,334 --> 00:27:00,619
SECOND ABOUT THAT LUNAR SAMPLE

652
00:27:00,619 --> 00:27:02,237
THAT YOU HAVE IN YOUR HAND.

653
00:27:02,237 --> 00:27:04,172
WE HAVE A SPECIAL ANNOUNCEMENT

654
00:27:04,172 --> 00:27:05,073
TODAY.

655
00:27:05,073 --> 00:27:07,575
WE HAVE THREE LUNAR SAMPLES THAT

656
00:27:07,575 --> 00:27:09,311
HAVE COME BACK FROM THE MOON

657
00:27:09,311 --> 00:27:11,546
THAT HAVE NEVER BEEN OPENED.

658
00:27:11,546 --> 00:27:13,048
WE'RE GOING BACK TO OUR MISSIONS

659
00:27:13,048 --> 00:27:16,351
FROM 1969 TO 1972, THREE MISSION

660
00:27:16,351 --> 00:27:17,686
SAMPLES THAT HAVE NEVER BEEN

661
00:27:17,686 --> 00:27:18,119
OPENED.

662
00:27:18,119 --> 00:27:19,888
AND IN THIS PARTICULAR BUDGET

663
00:27:19,888 --> 00:27:22,857

AND THIS PARTICULAR YEAR, WE ARE

664

00:27:22,857 --> 00:27:24,426

VERY MUCH LOOKING FORWARD TO

665

00:27:24,426 --> 00:27:27,028

CONTRACTING WITH NINE DIFFERENT

666

00:27:27,028 --> 00:27:27,929

COMPANIES TO HAVE THE

667

00:27:27,929 --> 00:27:29,397

OPPORTUNITY TO USE THE

668

00:27:29,397 --> 00:27:31,700

TECHNOLOGY WE HAVE TODAY TO

669

00:27:31,700 --> 00:27:34,302

STUDY THOSE VERY PRISTINE

670

00:27:34,302 --> 00:27:35,603

SIMPLES THAT HAVE NEVER BEEN

671

00:27:35,603 --> 00:27:35,937

OPENED.

672

00:27:35,937 --> 00:27:38,707

NOW I WANT TO BE CLEAR.

673

00:27:38,707 --> 00:27:40,342

HERE'S A CRITICALLY IMPORTANT

674

00:27:40,342 --> 00:27:41,476

PIECE OF KNOWLEDGE THAT WE NEED

675

00:27:41,476 --> 00:27:42,143

TO UNDER.

676
00:27:42,143 --> 00:27:44,012
WHEN THE PREVIOUS GENERATIONS

677
00:27:44,012 --> 00:27:46,014
DID APOLLO, THEY KNEW THAT THE

678
00:27:46,014 --> 00:27:48,216
TECHNOLOGY THAT THEY HAD IN THAT

679
00:27:48,216 --> 00:27:49,884
DAY WAS NOT THE TECHNOLOGY THAT

680
00:27:49,884 --> 00:27:52,487
WE WOULD HAVE IN THIS DAY, SO

681
00:27:52,487 --> 00:27:53,955
THEY MADE A DETERMINATION THAT

682
00:27:53,955 --> 00:27:57,092
THEY WERE GOING TO PRESERVE

683
00:27:57,092 --> 00:27:58,259
SAMPLES BECAUSE THEY KNEW THERE

684
00:27:58,259 --> 00:27:59,794
WOULD BE A DAY WHEN BETTER

685
00:27:59,794 --> 00:28:01,296
TECHNOLOGY WOULD BE ABLE TO

686
00:28:01,296 --> 00:28:03,865
BETTER ASSESS ALL OF THE

687
00:28:03,865 --> 00:28:05,066
DIFFERENT -- THE HISTORY OF THE

688
00:28:05,066 --> 00:28:06,768

MOON FROM ULTIMATELY THE

689

00:28:06,768 --> 00:28:07,802

TECHNOLOGY THAT WE HAVE TODAY.

690

00:28:07,802 --> 00:28:10,305

SO TODAY, WE HAVE THIS VERY

691

00:28:10,305 --> 00:28:12,574

SPECIAL ANNOUNCEMENT THAT WE

692

00:28:12,574 --> 00:28:14,876

HAVE NINE TEAMS THAT WILL BE

693

00:28:14,876 --> 00:28:16,444

EXAMINING NINE UNOPENED SAMPLES

694

00:28:16,444 --> 00:28:17,746

THAT HAVE COME BACK FROM THE

695

00:28:17,746 --> 00:28:20,415

MOON, AND WE FEEL LIKE WE CAN DO

696

00:28:20,415 --> 00:28:21,649

THAT BECAUSE THERE ARE MORE

697

00:28:21,649 --> 00:28:23,551

LUNAR SAMPLES ON THE HORIZON

698

00:28:23,551 --> 00:28:26,621

WHERE WE'RE GOING TO BE ABLE TO

699

00:28:26,621 --> 00:28:28,056

LEARN MORE ABOUT WE'VE EVER

700

00:28:28,056 --> 00:28:29,124

LEARNED ABOUT THE MOON BEFORE.

701
00:28:29,124 --> 00:28:31,726
SO I'D LIKE TO THANK, IF IT'S

702
00:28:31,726 --> 00:28:34,462
OKAY, THE APOLLO GENERATION FOR

703
00:28:34,462 --> 00:28:44,773
PRESERVING THESE SAMPLES --

704
00:28:44,773 --> 00:28:45,140
[Applause]

705
00:28:45,140 --> 00:28:46,841
>> -- SO THAT OUR GENERATION

706
00:28:46,841 --> 00:28:50,278
COULD HAVE THIS OPPORTUNITY.

707
00:28:50,278 --> 00:28:51,179
KAREN, THANK YOU FOR YOUR

708
00:28:51,179 --> 00:28:53,181
GREAT -- GREAT FEEDBACK ON

709
00:28:53,181 --> 00:28:55,316
WHAT'S HAPPENING THERE AT THE

710
00:28:55,316 --> 00:28:56,050
JOHNSON SPACE CENTER.

711
00:28:56,050 --> 00:28:57,986
I WANT TO TALK FOR A SECOND --

712
00:28:57,986 --> 00:29:06,628
OH, YES, PLEASE.

713
00:29:06,628 --> 00:29:06,995

[Applause]

714

00:29:06,995 --> 00:29:08,747

>> I WANT TO TALK FOR A SECOND

715

00:29:08,747 --> 00:29:11,266

ABOUT THE GATEWAY.

716

00:29:11,266 --> 00:29:13,752

ONE OF THE VALUABLE CAPABILITIES

717

00:29:13,752 --> 00:29:15,637

THAT THE GATEWAY IS GOING TO

718

00:29:15,637 --> 00:29:21,576

BRING IS A PLUS UP IN SOLAR

719

00:29:21,576 --> 00:29:23,445

ELECTRIC PROPULLTION.

720

00:29:23,445 --> 00:29:26,648

NOW, THE GATEWAY IS NOT AN

721

00:29:26,648 --> 00:29:27,515

ELECTRIC SPACE STATION.

722

00:29:27,515 --> 00:29:28,716

WE WANT IT TO BE MANEUVER AROUND

723

00:29:28,716 --> 00:29:31,953

TO GO TO ALL PARTS OF THE MOON.

724

00:29:31,953 --> 00:29:32,654

AND IN ORDER TO DO THAT, CAN

725

00:29:32,654 --> 00:29:34,956

CAN'T GROW TOO BIG.

726
00:29:34,956 --> 00:29:40,128
THE MASS CAN'T BE TOO BIG, SO WE

727
00:29:40,128 --> 00:29:43,782
CAN USE SOLAR PROPULSION, TO BE

728
00:29:43,782 --> 00:29:46,568
ABLE TO GO AGAIN TO THE POLES,

729
00:29:46,568 --> 00:29:47,936
BOTH THE NORTH AND THE SOUTH

730
00:29:47,936 --> 00:29:50,205
POLE OF THE MOON.

731
00:29:50,205 --> 00:29:54,075
COULD WE BRING UP A PICTURE OF

732
00:29:54,075 --> 00:29:55,510
THE GATEWAY?

733
00:29:55,510 --> 00:29:57,412
SO WHEN WE THINK ABOUT THE

734
00:29:57,412 --> 00:29:59,180
GATEWAY, I JUST WANT TO SHOW

735
00:29:59,180 --> 00:30:02,717
YOU -- THIS IS KIND OF AN

736
00:30:02,717 --> 00:30:03,852
ASPIRATIONAL VISION OF THE

737
00:30:03,852 --> 00:30:04,686
GATEWAY.

738
00:30:04,686 --> 00:30:06,120

THIS IS NOT WHAT IT IS TODAY,

739

00:30:06,120 --> 00:30:07,388

THIS IS ASPIRATIONAL.

740

00:30:07,388 --> 00:30:08,923

I CAN TELL YOU JUST THIS

741

00:30:08,923 --> 00:30:10,525

MORNING, I GOT OFF THE PHONE

742

00:30:10,525 --> 00:30:12,927

WITH ALL OF OUR PARTNERS ON THE

743

00:30:12,927 --> 00:30:14,929

I.S.S. AND OTHERS, AND THEY ARE

744

00:30:14,929 --> 00:30:16,965

VERY EXCITED ABOUT PARTNERING

745

00:30:16,965 --> 00:30:20,935

WITH US ONGOING TO THE MOON.

746

00:30:20,935 --> 00:30:24,072

COUPLE OF MONTHS AGO, WE

747

00:30:24,072 --> 00:30:26,140

ANNOUNCED THAT CANADA IS

748

00:30:26,140 --> 00:30:28,710

PARTNERING WITH US ON THE CREW

749

00:30:28,710 --> 00:30:31,913

THAT'S GOING TO THE MOON ON THE

750

00:30:31,913 --> 00:30:32,714

GATEWAY.

751
00:30:32,714 --> 00:30:34,749
NOW, THAT'S NOT GOING TO BE

752
00:30:34,749 --> 00:30:37,519
MANNED 24-7, SO ROBOTICS IS

753
00:30:37,519 --> 00:30:39,587
GOING TO BE A BIG PIECE OF IT.

754
00:30:39,587 --> 00:30:44,192
OF COURSE CANADA COMING ON FOR

755
00:30:44,192 --> 00:30:46,895
THE GATEWAY, WE'RE VERY EXCITED,

756
00:30:46,895 --> 00:30:48,463
AND WE HAVE OTHER AGENCIES

757
00:30:48,463 --> 00:30:50,398
AROUND THE WORLD EXCITED ABOUT

758
00:30:50,398 --> 00:30:52,000
PARTNERING WITH GATEWAY.

759
00:30:52,000 --> 00:30:53,535
HERE'S WHY IT'S IMPORTANT.

760
00:30:53,535 --> 00:30:55,003
NASA IS VERY UNIQUE IN ALL OF

761
00:30:55,003 --> 00:30:55,937
THE FEDERAL GOVERNMENT.

762
00:30:55,937 --> 00:30:57,405
WE'RE ABLE TO HAVE PARTNERSHIPS

763
00:30:57,405 --> 00:30:58,973

WITH COUNTRIES THAT IN SOME

764

00:30:58,973 --> 00:31:00,308

CASES WE WOULDN'T NORMALLY BE

765

00:31:00,308 --> 00:31:01,276

ABLE TO PARTNER WITH.

766

00:31:01,276 --> 00:31:05,864

YOU CAN SEE ON THIS ROSCOSMOS.

767

00:31:05,864 --> 00:31:07,415

THE RELATIONSHIP WITH UNITED

768

00:31:07,415 --> 00:31:14,188

STATES AND RUSSIA IS STRAINED

769

00:31:14,188 --> 00:31:15,874

TERRESTRIALLY.

770

00:31:15,874 --> 00:31:19,661

BUT SINCE THE HEIGHT OF THE COLD

771

00:31:19,661 --> 00:31:22,797

WAR, WE'VE PARTNERED WITH

772

00:31:22,797 --> 00:31:23,131

RUSSIA.

773

00:31:23,131 --> 00:31:30,572

THE SOYUZ PROGRAM, THE MIR

774

00:31:30,572 --> 00:31:34,809

SHUTTLE PROGRAM, AND THE

775

00:31:34,809 --> 00:31:35,476

INTERNATIONAL SPACE STATION.

776

00:31:35,476 --> 00:31:37,912

BUT IT'S NOT JUST WITH THEM,

777

00:31:37,912 --> 00:31:40,181

IT'S THE EUROPEAN SPACE AGENCY,

778

00:31:40,181 --> 00:31:41,950

IT'S THE JAPANESE SPACE AGENCY.

779

00:31:41,950 --> 00:31:45,320

WHEN WE THINK ABOUT THE GATEWAY,

780

00:31:45,320 --> 00:31:48,056

IT'S NOT THE END STATE, IT'S A

781

00:31:48,056 --> 00:31:48,389

PIECE.

782

00:31:48,389 --> 00:31:51,192

THE END STATE IS ALL OF THE

783

00:31:51,192 --> 00:31:51,492

ABOVE.

784

00:31:51,492 --> 00:31:59,300

ACCESS TO SPACE, NOT JUST LOW

785

00:31:59,300 --> 00:31:59,918

EARTH, BUT DEEP SPACE.

786

00:31:59,918 --> 00:32:01,302

THE GATEWAY.

787

00:32:01,302 --> 00:32:07,075

WHICH IS THIS COMMAND AND

788

00:32:07,075 --> 00:32:08,009

REUSABLE VEHICLE THAT CAN GO TO

789

00:32:08,009 --> 00:32:11,079

THE MOON, THAT CAN TAKE HUMANS

790

00:32:11,079 --> 00:32:12,847

BACK AND FORTH TO THE SURFACE OF

791

00:32:12,847 --> 00:32:15,316

THE MOON REUSABLELY, BUT ALSO

792

00:32:15,316 --> 00:32:17,251

LANDERS AND ROVERS.

793

00:32:17,251 --> 00:32:18,753

WHEN WE THINK ABOUT THIS

794

00:32:18,753 --> 00:32:21,155

ARCHITECTURE IN THE FUTURE, WE

795

00:32:21,155 --> 00:32:22,457

DON'T WANT TO CONSTRAIN

796

00:32:22,457 --> 00:32:23,958

OURSELVES TO THE TRADITIONAL

797

00:32:23,958 --> 00:32:24,943

INTERNATIONAL SPACE STATION

798

00:32:24,943 --> 00:32:26,127

PARTNERS, THEY ARE GOING TO BE

799

00:32:26,127 --> 00:32:28,429

WITH US, AND WE ARE THRILLED TO

800

00:32:28,429 --> 00:32:29,948

HAVE THEIR SUPPORT.

801
00:32:29,948 --> 00:32:31,232
BUT THERE ARE MORE SPACE

802
00:32:31,232 --> 00:32:32,867
AGENCIES ALL-AROUND THE WORLD

803
00:32:32,867 --> 00:32:33,968
THAN EVER BEFORE IN HUMAN

804
00:32:33,968 --> 00:32:34,302
HISTORY.

805
00:32:34,302 --> 00:32:35,303
AND OF COURSE AS WE ARE NOW

806
00:32:35,303 --> 00:32:37,572
STARTING TO SEE IN A MORE ROBUST

807
00:32:37,572 --> 00:32:39,607
WAY, WE HAVE COMMERCIAL PARTNERS

808
00:32:39,607 --> 00:32:41,175
THAT ARE BRINGING CAPABILITY TO

809
00:32:41,175 --> 00:32:42,243
US, AS WELL.

810
00:32:42,243 --> 00:32:43,578
SO THIS IS JUST A SNAPSHOT OF

811
00:32:43,578 --> 00:32:44,679
THE FUTURE.

812
00:32:44,679 --> 00:32:45,913
IT'S NOT WHERE IT IS RIGHT NOW,

813
00:32:45,913 --> 00:32:47,882

BUT I BELIEVE IN THE FUTURE,

814

00:32:47,882 --> 00:32:49,450

IT'LL LOOK SOMETHING LIKE THIS.

815

00:32:49,450 --> 00:32:50,351

AND IN ORDER TO TALK MORE ABOUT

816

00:32:50,351 --> 00:32:56,624

THE GATEWAY, I'D LIKE TO GO TO

817

00:32:56,624 --> 00:32:59,494

THE GLENN RESEARCH CENTER, WE WE

818

00:32:59,494 --> 00:33:02,930

HAVE DEB WATERS AND DAVE

819

00:33:02,930 --> 00:33:03,297

JACOBSON.

820

00:33:03,297 --> 00:33:09,237

DAVE IS THE CHIEF OF ELECTRIC

821

00:33:09,237 --> 00:33:10,571

PROPULSION OPERATIONS, AND DEB

822

00:33:10,571 --> 00:33:12,991

IS A MANAGER THERE AT GLENN.

823

00:33:12,991 --> 00:33:14,475

I'D LIKE YOU TO SHARE WITH US

824

00:33:14,475 --> 00:33:16,210

FOR A FEW MINUTES WITH WHAT'S

825

00:33:16,210 --> 00:33:19,881

HAPPENING WITH SOLAR ELECTRIC

826
00:33:19,881 --> 00:33:20,281
PROPULSION.

827
00:33:20,281 --> 00:33:20,748
>> HI.

828
00:33:20,748 --> 00:33:23,718
I'M STANDING HERE IN THE HIGH

829
00:33:23,718 --> 00:33:27,655
BAY OF THE SOLAR AND ELECTRIC

830
00:33:27,655 --> 00:33:29,857
PROPULSION LABORATORY WHERE

831
00:33:29,857 --> 00:33:30,758
WE'RE DEVELOPING PECULIAR NOLG

832
00:33:30,758 --> 00:33:32,493
THAT WILL TAKE US TO THE MOON.

833
00:33:32,493 --> 00:33:35,530
WE'VE BEEN CONDUCTING RESEARCH,

834
00:33:35,530 --> 00:33:36,731
DEVELOPMENT, AND EXPERIMENTAL

835
00:33:36,731 --> 00:33:38,633
TESTING IN OUR FACILITIES FOR

836
00:33:38,633 --> 00:33:39,534
OVER 60 YEARS.

837
00:33:39,534 --> 00:33:41,335
RIGHT NOW, WE'RE GETTING READY

838
00:33:41,335 --> 00:33:43,771

TO TEST A TYPE OF SYSTEM THAT

839

00:33:43,771 --> 00:33:48,109

WILL TAKE US FORWARD WITH THE

840

00:33:48,109 --> 00:33:49,811

GATEWAY, THE NEW SPACE CRAFT

841

00:33:49,811 --> 00:33:52,613

THAT WILL BE IN ORBIT AROUND THE

842

00:33:52,613 --> 00:33:52,914

MOON.

843

00:33:52,914 --> 00:33:55,783

MY COLLEAGUE DAVE HERE IS AN

844

00:33:55,783 --> 00:33:58,453

EXPERT IN ELECTRIC PROPULSION.

845

00:33:58,453 --> 00:34:03,041

>> A TEAM HERE AT GLENN'S

846

00:34:03,041 --> 00:34:06,494

RESEARCH CENTER IS WORKING WITH

847

00:34:06,494 --> 00:34:09,564

PARTNERS AT THE JET PROPULSION

848

00:34:09,564 --> 00:34:09,964

LABORATORY.

849

00:34:09,964 --> 00:34:10,998

THE INTENDED APPLICATION FOR

850

00:34:10,998 --> 00:34:12,266

THIS TECHNOLOGY IS THE GATEWAY

851
00:34:12,266 --> 00:34:13,634
THAT DEB AND OTHERS HAVE

852
00:34:13,634 --> 00:34:14,602
REFERRED TO TODAY.

853
00:34:14,602 --> 00:34:17,238
THE GATEWAY WILL ENABLE CREW TO

854
00:34:17,238 --> 00:34:19,173
LIVE AND WORK IN DEEP SPACE FOR

855
00:34:19,173 --> 00:34:22,110
MONTHS AT A TIME AND SERVE AS AN

856
00:34:22,110 --> 00:34:23,444
OUTPOST FOR HUMAN MISSIONS TO

857
00:34:23,444 --> 00:34:25,813
THE LUNAR SERVICE.

858
00:34:25,813 --> 00:34:31,185
THE POWER AND PROPULSION WILL BE

859
00:34:31,185 --> 00:34:33,387
THE FIRST PART OF THE GATEWAY.

860
00:34:33,387 --> 00:34:35,656
GATEWAY WILL UTILIZE SOLAR

861
00:34:35,656 --> 00:34:40,928
ELECTRIC PROPULSION TO MAINTAIN

862
00:34:40,928 --> 00:34:43,631
ITS POSITION AND MAINTAIN

863
00:34:43,631 --> 00:34:54,942

BETWEEN LUNAR ORBITS.

864

00:34:54,942 --> 00:35:02,316

A HALL THRUSTER IONIZES IN AND

865

00:35:02,316 --> 00:35:05,553

OUT -- THE POWER PROCESSES UNIT

866

00:35:05,553 --> 00:35:07,522

TAKES POWER FROM THE SOLAR ARRAY

867

00:35:07,522 --> 00:35:09,190

AND IT CONVERTS IT TO THE

868

00:35:09,190 --> 00:35:11,159

CURRENTS AND VOTAGES NECESSARY

869

00:35:11,159 --> 00:35:15,129

TO OPERATE THE THRUSTER.

870

00:35:15,129 --> 00:35:24,438

TODAY WE'RE PREPARING TO TEST A

871

00:35:24,438 --> 00:35:25,506

PROPULSION THAT IS VERY

872

00:35:25,506 --> 00:35:26,941

IMPORTANT FOR GATEWAY.

873

00:35:26,941 --> 00:35:28,409

LET'S GO INSIDE THE VACUUM

874

00:35:28,409 --> 00:35:30,128

CHAMBER NOW WITH DEB.

875

00:35:30,128 --> 00:35:33,214

>> RIGHT NOW, WE'RE INSIDE THE

876

00:35:33,214 --> 00:35:33,481

F-6.

877

00:35:33,481 --> 00:35:36,050

THIS IS ACTUALLY THE LARGEST

878

00:35:36,050 --> 00:35:38,352

CHAMBER AT LEWIS FIELD VACUUM

879

00:35:38,352 --> 00:35:40,988

CHAMBER AT LEWIS FIELD.

880

00:35:40,988 --> 00:35:45,726

BEHIND ME IS A THRUSTER.

881

00:35:45,726 --> 00:35:48,095

AROUND IT IS A THERMAL SHROUD.

882

00:35:48,095 --> 00:35:51,149

WE'RE GOING TO BE WORKING ON THE

883

00:35:51,149 --> 00:35:53,301

VARIOUS PROBES BEFORE THE FLIGHT

884

00:35:53,301 --> 00:35:54,669

MODEL COMES SOMETIME IN MAY.

885

00:35:54,669 --> 00:35:58,840

BEFORE WE CAN RUN THE THRUSTER,

886

00:35:58,840 --> 00:36:04,378

WE HAVE TO BUTTON UP OUR

887

00:36:04,378 --> 00:36:06,164

FACILITY AND VACUUM OUT THE AIR.

888

00:36:06,164 --> 00:36:07,882

THE CHAMBER WALLS CAN BE

889

00:36:07,882 --> 00:36:11,419

ACTUALLY CHILLED DOWN TO -320°

890

00:36:11,419 --> 00:36:14,055

FAHRENHEIT, AND YOU CAN SEE THAT

891

00:36:14,055 --> 00:36:16,657

THE CHAMBER'S ACTUALLY LINED IN

892

00:36:16,657 --> 00:36:17,024

GRAPHITE.

893

00:36:17,024 --> 00:36:18,893

THE REASON FOR THAT IS IT'S AN

894

00:36:18,893 --> 00:36:23,965

ELECTRIC PROPULSION CHAMBER.

895

00:36:23,965 --> 00:36:26,300

THE GRAPHITE MINIMIZES THE

896

00:36:26,300 --> 00:36:28,002

DAMAGE DONE TO THE CHAMBER AS

897

00:36:28,002 --> 00:36:30,338

WELL AS THAT CHAMBER MATERIAL

898

00:36:30,338 --> 00:36:33,975

COMING BACK AND LANDING ON THE

899

00:36:33,975 --> 00:36:38,512

THRUSTER ITSELF, SO IT MINIMIZES

900

00:36:38,512 --> 00:36:41,749

THE DAMAGE DONE.

901
00:36:41,749 --> 00:36:43,201
IN ORDER TO CREATE A SPACE

902
00:36:43,201 --> 00:36:44,585
ENVIRONMENT SUCH AS THIS, WE TRY

903
00:36:44,585 --> 00:36:48,222
TO DO ALL THE THINGS TO THE

904
00:36:48,222 --> 00:36:49,457
FACILITY TO CREATE THE

905
00:36:49,457 --> 00:36:50,725
ENVIRONMENT THAT YOU WOULD SEE

906
00:36:50,725 --> 00:36:53,060
ON THE MOON, MARS, AND BEYOND.

907
00:36:53,060 --> 00:36:56,397
THIS IS JUST ONE OF 26 SPACE

908
00:36:56,397 --> 00:36:57,999
FACILITY CHAMBERS WE HAVE HERE

909
00:36:57,999 --> 00:37:03,137
AT GLENN.

910
00:37:03,137 --> 00:37:04,672
WE'RE VERY FORTUNATE WE GET TO

911
00:37:04,672 --> 00:37:06,340
TEST THESE DIFFERENT TYPES OF

912
00:37:06,340 --> 00:37:08,843
POWER AND PROPULSION SYSTEMS AS

913
00:37:08,843 --> 00:37:10,177

WE'RE GETTING READY TO FLY.

914

00:37:10,177 --> 00:37:11,712

IT'LL BE GREAT TO BE ABLE TO SEE

915

00:37:11,712 --> 00:37:13,881

THIS RUNNING NEXT WEEK, RIGHT,

916

00:37:13,881 --> 00:37:14,181

DAVE?

917

00:37:14,181 --> 00:37:14,649

>> THAT'S RIGHT.

918

00:37:14,649 --> 00:37:17,151

AT NASA, WE LIKE TO SAY THAT

919

00:37:17,151 --> 00:37:18,619

TECHNOLOGY DRIVES EXPLORATION.

920

00:37:18,619 --> 00:37:20,788

HERE AT THE GLENN RESEARCH

921

00:37:20,788 --> 00:37:23,658

CENTER, WE'RE VERY EXCITED THAT

922

00:37:23,658 --> 00:37:25,760

PROPULSION IS A PART OF OUR DEEP

923

00:37:25,760 --> 00:37:27,361

SPACE EXPLORATION MISSIONS.

924

00:37:27,361 --> 00:37:29,697

WE LOOK FORWARD TO APPLYING OUR

925

00:37:29,697 --> 00:37:31,599

EXPERTISE TO HUMAN AND ROBOTIC

926
00:37:31,599 --> 00:37:32,934
MISSIONS TO THE MOON AND BEYOND.

927
00:37:32,934 --> 00:37:36,971
>> WITH BACK TO YOU,

928
00:37:36,971 --> 00:37:37,738
ADMINISTRATOR BRIDENSTINE.

929
00:37:37,738 --> 00:37:41,509
>> NICE WORK, DAVE AND DEB.

930
00:37:41,509 --> 00:37:42,276
YOU'RE GETTING APPLAUSE, IF YOU

931
00:37:42,276 --> 00:37:44,445
CAN'T HEAR IT.

932
00:37:44,445 --> 00:37:44,812
[Applause]

933
00:37:44,812 --> 00:37:46,747
>> I GOT A QUESTION FOR YOU,

934
00:37:46,747 --> 00:37:48,149
GUYS, JUST REAL QUICK BEFORE YOU

935
00:37:48,149 --> 00:37:49,016
LEAVE.

936
00:37:49,016 --> 00:37:52,219
WHAT'S THE NEXT MILESTONE IN

937
00:37:52,219 --> 00:37:54,272
THIS PROPULSION DEVELOPMENT?

938
00:37:54,272 --> 00:37:54,622

>> SURE.

939

00:37:54,622 --> 00:37:56,791

SO THE HARDWARE I SHOWED YOU

940

00:37:56,791 --> 00:37:58,059

EARLIER WAS DESIGNED AND BUILD

941

00:37:58,059 --> 00:38:03,064

BY THE GLENN AND J.P.L. TEAM.

942

00:38:03,064 --> 00:38:05,199

IN 2016, WE SELECTED AN INDUSTRY

943

00:38:05,199 --> 00:38:08,669

PARTNER WHO IS FINISHING THE

944

00:38:08,669 --> 00:38:09,403

DEVELOPMENT OF THE SYSTEM AND

945

00:38:09,403 --> 00:38:10,738

ALSO QUALIFICATION FOR GATEWAY.

946

00:38:10,738 --> 00:38:12,673

IN THE MAY TIME FRAME, I THINK

947

00:38:12,673 --> 00:38:17,378

DEB MIGHT HAVE REFERRED TO THAT

948

00:38:17,378 --> 00:38:19,380

HARDWARE, WE'LL BE RECEIVING THE

949

00:38:19,380 --> 00:38:20,982

FIRST TECHNOLOGY UNITS AND WE'LL

950

00:38:20,982 --> 00:38:24,118

BE CONDUCTING THE FIRST TESTING

951
00:38:24,118 --> 00:38:25,786
ALL IN SUPPORT OF THE GATEWAY.

952
00:38:25,786 --> 00:38:26,654
>> AWESOME.

953
00:38:26,654 --> 00:38:27,521
LAST QUESTION.

954
00:38:27,521 --> 00:38:30,124
WHEN WE THINK ABOUT THE NEXT

955
00:38:30,124 --> 00:38:33,311
HUMAN OUTPOST IN SPACE, IN ORBIT

956
00:38:33,311 --> 00:38:36,530
AROUND THE MOON, IT'S STARTING

957
00:38:36,530 --> 00:38:39,600
IN CLEVELAND.

958
00:38:39,600 --> 00:38:42,570
HOW DO THE FOLKS IN CLEVELAND

959
00:38:42,570 --> 00:38:44,138
FEEL AT BEING AT THE FOREFRONT

960
00:38:44,138 --> 00:38:44,739
OF THIS OPPORTUNITY.

961
00:38:44,739 --> 00:38:48,009
>> I THINK I'LL SPEAK FOR THE

962
00:38:48,009 --> 00:38:50,077
ENTIRE TEAM AT THE GLENN

963
00:38:50,077 --> 00:38:52,413

RESEARCH CENTER.

964

00:38:52,413 --> 00:38:53,147

FOLKS HAVE WORKED IN THIS AREA

965

00:38:53,147 --> 00:38:54,749

LITERALLY FOR DECADES.

966

00:38:54,749 --> 00:38:56,517

THIS CHAMBER WAS PUT HERE IN

967

00:38:56,517 --> 00:38:58,052

1961, SO YEAH, WE'RE BEYOND

968

00:38:58,052 --> 00:38:59,587

EXCITED TO BRING THAT EXPERTISE

969

00:38:59,587 --> 00:39:01,155

TO BEAR FOR SUCH AN IMPORTANT

970

00:39:01,155 --> 00:39:01,722

THING FOR NASA.

971

00:39:01,722 --> 00:39:03,357

>> WELL, DAVE AND DEB, THANK YOU

972

00:39:03,357 --> 00:39:04,992

FOR YOUR GREAT WORK.

973

00:39:04,992 --> 00:39:06,460

MAKE SURE EVERYBODY THERE KNOWS

974

00:39:06,460 --> 00:39:07,995

HOW GRATEFUL WE ARE, AND WE LOOK

975

00:39:07,995 --> 00:39:13,351

FORWARD TO MAKING THIS A WINNING

976
00:39:13,351 --> 00:39:14,101
ACHIEVEMENT, AND THANK YOU FOR

977
00:39:14,101 --> 00:39:14,602
YOUR GOOD WORK.

978
00:39:14,602 --> 00:39:27,715
>> THANKS FOR THE OPPORTUNITY.

979
00:39:27,715 --> 00:39:29,016
[Applause]

980
00:39:29,016 --> 00:39:30,117
.

981
00:39:30,117 --> 00:39:34,555
>> SO WE'VE TALKED A LOT ABOUT

982
00:39:34,555 --> 00:39:39,260
THE MOON, TO GO TO THE MOON,

983
00:39:39,260 --> 00:39:40,661
SUSTAINABLY, WITH INTERNATIONAL

984
00:39:40,661 --> 00:39:42,463
PARTNERS AND COMMERCIAL

985
00:39:42,463 --> 00:39:46,100
PARTNERS, TO UTILIZE THE

986
00:39:46,100 --> 00:39:47,001
RESOURCES OF THE MOON, IN OTHER

987
00:39:47,001 --> 00:39:48,936
WORDS, THE HUNDREDS OF MILLIONS

988
00:39:48,936 --> 00:39:51,205

OF TONS OF WATER ICE THAT WE'RE

989

00:39:51,205 --> 00:39:52,907

ALREADY DISCOVERED.

990

00:39:52,907 --> 00:39:55,476

WATER ICE IS AIR DEBRIS, IT'S

991

00:39:55,476 --> 00:39:56,977

WATER TO DRINK.

992

00:39:56,977 --> 00:39:58,479

IT IS IN FACT PROPULSION, AND

993

00:39:58,479 --> 00:39:59,847

IT'S AVAILABLE IN HUNDREDS OF

994

00:39:59,847 --> 00:40:01,715

MILLIONS OF TONS ON THE SURFACE

995

00:40:01,715 --> 00:40:04,318

OF THE MOON.

996

00:40:04,318 --> 00:40:05,086

BUT IT'S ABOUT MORE THAN JUST

997

00:40:05,086 --> 00:40:07,154

THOSE THINGS.

998

00:40:07,154 --> 00:40:10,091

THE LAST PART OF HIS FIRST SPACE

999

00:40:10,091 --> 00:40:15,029

POLICY DIRECTIVE SAYS TO TAPE

1000

00:40:15,029 --> 00:40:19,733

THESE -- TAKE THESE CAPABILITIES

1001
00:40:19,733 --> 00:40:21,302
FOR AN EVENTUAL MISSION TO MARS.

1002
00:40:21,302 --> 00:40:25,423
SO WHAT WE'RE TRYING TO DO IS

1003
00:40:25,423 --> 00:40:26,574
REDUCE RISK, MAKE SURE WHAT

1004
00:40:26,574 --> 00:40:29,176
WE'RE DOING IS NOT A DEAD END

1005
00:40:29,176 --> 00:40:31,078
AND IN FACT HAS CAPABILITIES OF

1006
00:40:31,078 --> 00:40:33,681
BEING UTILIZED ON ANOTHER WORLD,

1007
00:40:33,681 --> 00:40:36,183
THAT OTHER WORLD BEING MARS.

1008
00:40:36,183 --> 00:40:37,718
LET'S TALK FOR A SECOND ABOUT

1009
00:40:37,718 --> 00:40:38,018
MARS.

1010
00:40:38,018 --> 00:40:39,787
BY THE WAY, WHEN WE'RE TALKING

1011
00:40:39,787 --> 00:40:43,624
ABOUT MARS, LET'S TALK ABOUT THE

1012
00:40:43,624 --> 00:40:46,894
SCIENCE MISSION DIRECTORATE, THE

1013
00:40:46,894 --> 00:40:48,229

PLANETARY MISSION OF THE SCIENCE

1014

00:40:48,229 --> 00:40:49,630

MISSION DIRECTORATE.

1015

00:40:49,630 --> 00:40:54,368

HERE'S WHAT WE KNOW ABOUT MARS.

1016

00:40:54,368 --> 00:40:56,337

BECAUSE OF THE SCIENCE MISSION

1017

00:40:56,337 --> 00:40:59,206

DIRECTORATE, WE NOW KNOW IT WAS

1018

00:40:59,206 --> 00:41:00,307

COVERED WITH WATER.

1019

00:41:00,307 --> 00:41:05,312

AND IN FACT, THERE WAS FLOWING

1020

00:41:05,312 --> 00:41:08,182

WATER ON MARS BECAUSE OF THE

1021

00:41:08,182 --> 00:41:10,918

MAVEN ORBITER, WE ULTIMATELY

1022

00:41:10,918 --> 00:41:12,286

UNDERSTAND WHAT HAPPENED TO THAT

1023

00:41:12,286 --> 00:41:13,420

ATMOSPHERE ON MARS.

1024

00:41:13,420 --> 00:41:15,189

WHEN YOU TALK ABOUT AN OCEAN,

1025

00:41:15,189 --> 00:41:19,827

THAT MEANS YES THERE WAS AN

1026
00:41:19,827 --> 00:41:21,662
OCEAN, AND THERE WAS A THICK

1027
00:41:21,662 --> 00:41:28,302
ATMOSPHERE, AND THERE IS A

1028
00:41:28,302 --> 00:41:32,239
MAGNETOSPHERE PROTECTING MARS

1029
00:41:32,239 --> 00:41:43,217
FROM THAT DEEP AT MOSS AT --

1030
00:41:43,217 --> 00:41:43,817
ATMOSPHERE AND SPACE.

1031
00:41:43,817 --> 00:41:46,353
ALL OF THIS SUGGESTS THAT AT ONE

1032
00:41:46,353 --> 00:41:48,289
TIME, IT WAS HABITABLE, AND

1033
00:41:48,289 --> 00:41:51,125
HERE'S WHAT WE KNOW NOW BECAUSE

1034
00:41:51,125 --> 00:41:55,696
OF THE CURIOSITY ROVER.

1035
00:41:55,696 --> 00:41:58,699
WE KNOW THERE ARE COMPLEX

1036
00:41:58,699 --> 00:42:00,768
ORGANIC MATTER ON THE SURFACE OF

1037
00:42:00,768 --> 00:42:01,068
MARS.

1038
00:42:01,068 --> 00:42:02,970

AND THAT WAS JUST IN THE LAST

1039

00:42:02,970 --> 00:42:03,270

YEAR.

1040

00:42:03,270 --> 00:42:10,211

WE KNOW NOW THE METHANE CLOCKS

1041

00:42:10,211 --> 00:42:13,214

OF MARS ARE COMMENSURATE WITH

1042

00:42:13,214 --> 00:42:18,252

THE SEASONS OF MARS.

1043

00:42:18,252 --> 00:42:20,821

THEY ARE THE BUILDING BLOCKS OF

1044

00:42:20,821 --> 00:42:21,355

LIFE.

1045

00:42:21,355 --> 00:42:22,790

THE PROBABILITY THAT WE MIGHT

1046

00:42:22,790 --> 00:42:24,892

FIND LIFE ON ANOTHER WORLD HAS

1047

00:42:24,892 --> 00:42:25,793

GONE UP.

1048

00:42:25,793 --> 00:42:29,129

WHEN THE METHANE CYCLES WITH

1049

00:42:29,129 --> 00:42:33,634

COMMENSURATE WITH THE SEASONS,

1050

00:42:33,634 --> 00:42:36,554

IT DOESN'T GUARANTEE THERE'S

1051
00:42:36,554 --> 00:42:38,005
LIFE, BUT THERE'S A POSSIBILITY

1052
00:42:38,005 --> 00:42:38,872
OF LIFE.

1053
00:42:38,872 --> 00:42:39,673
I'M NOT TALKING22 ABOUT2222222222

1054
00:42:39,673 --> 00:42:41,275
BUN22222 Y222222 ROBERT22222

1055
00:42:41,275 --> 00:42:46,680
S222222222222222222222222WS --

1056
00:42:46,680 --> 00:42:53,120
BUNNY RABBITS, BUT I'M -- I'M

1057
00:42:53,120 --> 00:42:55,522
TALKING ABOUT LIFE.

1058
00:42:55,522 --> 00:42:57,091
ABOUT OUR ABILITY TO POTENTIALLY

1059
00:42:57,091 --> 00:42:59,627
REACH OUT AND FIND LIFE ON

1060
00:42:59,627 --> 00:43:03,530
ANOTHER WORLD.

1061
00:43:03,530 --> 00:43:03,897
[Applause]

1062
00:43:03,897 --> 00:43:05,666
>> SO HOW DO WE DO THAT?

1063
00:43:05,666 --> 00:43:07,735

THIS BUDGET FULLY FUNDS MARS

1064

00:43:07,735 --> 00:43:08,035

2020.

1065

00:43:08,035 --> 00:43:14,074

THIS IS AN AMAZING CAPABILITY.

1066

00:43:14,074 --> 00:43:15,809

FOR THE FIRST TIME, WE ARE GOING

1067

00:43:15,809 --> 00:43:18,946

TO CATCH SAMPLES OF MARS FOR AN

1068

00:43:18,946 --> 00:43:19,480

EVENTUAL RETURN.

1069

00:43:19,480 --> 00:43:21,248

WE ARE ALSO GOING TO FIGURE OUT

1070

00:43:21,248 --> 00:43:24,251

HOW DO WE USE THE CARBON DIOXIDE

1071

00:43:24,251 --> 00:43:25,986

OF MARS TO PRODUCE OXYGEN THAT

1072

00:43:25,986 --> 00:43:27,688

EVENTUALLY HUMANS WILL BE ABLE

1073

00:43:27,688 --> 00:43:28,389

TO BREATHE?

1074

00:43:28,389 --> 00:43:29,890

AND EVEN MORE EXCITING, WE ARE

1075

00:43:29,890 --> 00:43:32,393

GOING TO, FOR THE FIRST TIME,

1076

00:43:32,393 --> 00:43:33,994

FLY A HELICOPTER ON ANOTHER

1077

00:43:33,994 --> 00:43:43,621

WORLD WITH THE MARS HELICOPTER.

1078

00:43:43,621 --> 00:43:43,971

[Applause]

1079

00:43:43,971 --> 00:43:46,006

>> MARS 2020 IS FULLY FUNDED IN

1080

00:43:46,006 --> 00:43:47,708

THIS BUDGET REQUEST, BUT EVEN

1081

00:43:47,708 --> 00:43:49,376

MORE, A MARS SAMPLE RETURN IS

1082

00:43:49,376 --> 00:43:51,178

ALSO FUNDED IN THIS BUDGET

1083

00:43:51,178 --> 00:43:52,579

REQUEST, WHICH WE ARE VERY

1084

00:43:52,579 --> 00:43:58,485

EXCITED ABOUT.

1085

00:43:58,485 --> 00:43:58,852

[Applause]

1086

00:43:58,852 --> 00:44:03,424

>> THE MOON IS THE PROVING

1087

00:44:03,424 --> 00:44:03,757

GROUND.

1088

00:44:03,757 --> 00:44:07,194

MARS IS THE HORIZON GOAL, AND IT

1089

00:44:07,194 --> 00:44:09,830

REQUIRES AN ALL-OF-THE-ABOVE

1090

00:44:09,830 --> 00:44:11,298

APPROACH.

1091

00:44:11,298 --> 00:44:13,300

I'M GOING TO ANCHOR ON THE

1092

00:44:13,300 --> 00:44:15,035

SCIENCE MISSION DIRECTORATE JUST

1093

00:44:15,035 --> 00:44:16,370

FOR A MINUTE BECAUSE I NEED TO

1094

00:44:16,370 --> 00:44:20,307

GIVE A LOT OF CREDIT TO A LOT OF

1095

00:44:20,307 --> 00:44:20,658

PEOPLE.

1096

00:44:20,658 --> 00:44:24,611

WHEN I WAS HOME FOR CHRISTMAS,

1097

00:44:24,611 --> 00:44:30,317

OSIRIS REX ENTERED ORBIT AROUND

1098

00:44:30,317 --> 00:44:32,920

BENU, AND WE'RE GOING TO HAVE

1099

00:44:32,920 --> 00:44:36,957

THIS DO A SAMPLE FROM BENU, AN

1100

00:44:36,957 --> 00:44:37,858

ASTEROID IN DEEP SPACE.

1101

00:44:37,858 --> 00:44:43,931

AND JUST A FEW DAYS LATER, WE

1102

00:44:43,931 --> 00:44:47,368

FLEW 4 BILLION MILES AWAY FROM

1103

00:44:47,368 --> 00:44:50,871

EARTH ON THE OTHER SIDE OF EARTH

1104

00:44:50,871 --> 00:44:54,975

IN THE KUYPER BELT.

1105

00:44:54,975 --> 00:44:56,210

AND OF COURSE BEFORE WE DID THIS

1106

00:44:56,210 --> 00:44:58,579

FLY BY, WE HAD NO IDEA WHAT THIS

1107

00:44:58,579 --> 00:45:02,583

OBJECT WOULD LOOK LIKE, BUT NOW,

1108

00:45:02,583 --> 00:45:05,319

WE KNOW, AND WE'RE GETTING

1109

00:45:05,319 --> 00:45:10,557

VALUABLE SCIENTIFIC INFORMATION.

1110

00:45:10,557 --> 00:45:12,793

THE PRIORITY IN THIS BUDGET IS

1111

00:45:12,793 --> 00:45:15,963

FUNDED VERY, VERY WELL, AND

1112

00:45:15,963 --> 00:45:17,297

MAKES US HEALTHY.

1113

00:45:17,297 --> 00:45:19,867

IF WE'RE GOING TO FLY HUMANS TO

1114

00:45:19,867 --> 00:45:23,270

MARS, WHAT OTHER PARTS OF THE

1115

00:45:23,270 --> 00:45:24,037

SCIENCE MISSION DIRECTORATE DO

1116

00:45:24,037 --> 00:45:27,141

WE NEED TO FUND AND UNDERSTAND?

1117

00:45:27,141 --> 00:45:30,377

WELL, IF WE'RE GOING TO TAKE

1118

00:45:30,377 --> 00:45:32,913

HUMANS THROUGH MARS, WE'RE GOING

1119

00:45:32,913 --> 00:45:34,681

TO HAVE TO TAKE THEM THROUGH

1120

00:45:34,681 --> 00:45:35,582

DEEP SPACE.

1121

00:45:35,582 --> 00:45:37,985

WE NEED TO BETTER UNDERSTAND HOW

1122

00:45:37,985 --> 00:45:39,553

THE SUN PUTS RADIATION INTO

1123

00:45:39,553 --> 00:45:39,853

SPACE.

1124

00:45:39,853 --> 00:45:45,359

WE NEED TO BE ABLE TO, IN FACT,

1125

00:45:45,359 --> 00:45:47,795

PREDICT SOLAR FLAIRS AND CORONA

1126
00:45:47,795 --> 00:45:49,296
MASS EJECTIONS.

1127
00:45:49,296 --> 00:45:50,631
BECAUSE IF WE'RE NOT ABLE TO

1128
00:45:50,631 --> 00:45:53,167
PREDICT THAT AND OUR ASTRONAUTS

1129
00:45:53,167 --> 00:45:54,435
END UP IN THE MIDDLE OF

1130
00:45:54,435 --> 00:45:57,337
SOMETHING LIKE THAT, IT COULD BE

1131
00:45:57,337 --> 00:45:58,505
VERY DAMAGING TO THEIR HEALTH.

1132
00:45:58,505 --> 00:46:00,941
PARKER SOLAR PROBE IS FULLY

1133
00:46:00,941 --> 00:46:02,409
FUNDED AND WE ARE FOLLOWING THE

1134
00:46:02,409 --> 00:46:09,767
ADVICE OF THE DECADO -- AND

1135
00:46:09,767 --> 00:46:11,452
ULTIMATELY BE ABLE TO PREDICT SO

1136
00:46:11,452 --> 00:46:13,787
WE CAN PROVIDE PROTECTION FOR

1137
00:46:13,787 --> 00:46:15,956
HUMANS HERE ON EARTH, NOT JUST

1138
00:46:15,956 --> 00:46:16,723

ON MARS.

1139

00:46:16,723 --> 00:46:18,425

TO BE CLEAR, I WANT TO BE CLEAR

1140

00:46:18,425 --> 00:46:21,161

ON THIS, IF WE HAVE A CORONA

1141

00:46:21,161 --> 00:46:27,167

MASS EJECTION LIKE A CARINGTON

1142

00:46:27,167 --> 00:46:28,936

EVENT IN THE 1800'S, IT COULD BE

1143

00:46:28,936 --> 00:46:31,104

VERY DAMAGING FOR HUMAN KIND.

1144

00:46:31,104 --> 00:46:32,339

IMAGINE NOT HAVING THE POWER

1145

00:46:32,339 --> 00:46:35,275

GRID OR HAVING YOUR CELL TOWERS

1146

00:46:35,275 --> 00:46:37,010

WORK, THAT COULD BE EXISTENTIAL,

1147

00:46:37,010 --> 00:46:40,948

SO WE NEED TO BE VERY GOOD AT

1148

00:46:40,948 --> 00:46:42,282

PREDICTING WHEN THESE KINDS OF

1149

00:46:42,282 --> 00:46:43,917

EVENTS WILL OCCUR.

1150

00:46:43,917 --> 00:46:45,486

WE ARE FUNDING THOSE MISSIONS

1151
00:46:45,486 --> 00:46:47,321
WITH THE PARKER SOLAR PROBE AND

1152
00:46:47,321 --> 00:46:48,989
OTHERS, AND THAT TAKES US OUT

1153
00:46:48,989 --> 00:46:51,859
FROM THE SUN TO THE EARTH.

1154
00:46:51,859 --> 00:46:53,327
THE PRESIDENT HAS NOW SIGNED NO

1155
00:46:53,327 --> 00:46:55,295
LAW THE HIGHEST EARTH SCIENCE

1156
00:46:55,295 --> 00:46:59,199
BUDGET IN THE HISTORY OF THE

1157
00:46:59,199 --> 00:47:01,535
UNITED STATES EVERY YEAR THAT HE

1158
00:47:01,535 --> 00:47:05,939
HAS BEEN THE PRESIDENT OF THE

1159
00:47:05,939 --> 00:47:08,208
UNITED STATES.

1160
00:47:08,208 --> 00:47:08,609
[Applause]

1161
00:47:08,609 --> 00:47:13,347
>> AND THIS BUDGET REQUEST IS

1162
00:47:13,347 --> 00:47:15,048
HIGHER THAN FIVE OF THE BUDGETS

1163
00:47:15,048 --> 00:47:18,018

THAT CAME OUT OF THE PREVIOUS

1164

00:47:18,018 --> 00:47:18,485

ADMINISTRATION.

1165

00:47:18,485 --> 00:47:20,287

WHEN I CAME TO NASA, I COMMITTED

1166

00:47:20,287 --> 00:47:22,756

TO CONGRESS, AND I COMMIT TO YOU

1167

00:47:22,756 --> 00:47:25,292

NOW THAT THE EARTH SCIENCE

1168

00:47:25,292 --> 00:47:26,727

DIVISION OF THE SCIENCE MISSION

1169

00:47:26,727 --> 00:47:30,264

DIRECTORATE WOULD BE STRONG,

1170

00:47:30,264 --> 00:47:31,231

THAT WE WOULD MOVE FORWARD, NO

1171

00:47:31,231 --> 00:47:32,733

KIDDING, WITH THE SURVEYS THAT

1172

00:47:32,733 --> 00:47:33,867

COME FROM THE NATIONAL ACADEMY

1173

00:47:33,867 --> 00:47:36,436

OF SCIENCES IN ALL OF THEIR

1174

00:47:36,436 --> 00:47:38,405

AGENDA ITEMS STARTING WITH

1175

00:47:38,405 --> 00:47:39,306

UNDERSTANDING THE INTERACTION

1176

00:47:39,306 --> 00:47:42,242

WITH THE WATER CYCLE AND THE

1177

00:47:42,242 --> 00:47:44,311

ENERGY CYCLE, ULTIMATELY BEING

1178

00:47:44,311 --> 00:47:47,080

ABLE TO PREDICT WEATHER AND AIR

1179

00:47:47,080 --> 00:47:49,082

QUALITY, UNDERSTANDING NATURAL

1180

00:47:49,082 --> 00:47:50,868

DISASTERS AND HOW THEY OCCUR.

1181

00:47:50,868 --> 00:47:54,621

WHEN WE THINK ABOUT ECO SYSTEM

1182

00:47:54,621 --> 00:47:58,425

CHANGE, WHICH, FRIENDS, IT IS

1183

00:47:58,425 --> 00:47:58,792

CHANGING.

1184

00:47:58,792 --> 00:48:00,093

CARBON DIOXIDE IS IN THE

1185

00:48:00,093 --> 00:48:02,062

ATMOSPHERE IN LEVELS WE HAVE

1186

00:48:02,062 --> 00:48:02,880

NEVER SEEN BEFORE.

1187

00:48:02,880 --> 00:48:04,364

WE ARE RESPONSIBLE FOR THAT.

1188

00:48:04,364 --> 00:48:07,100

IT IS A GREENHOUSE GAS.

1189

00:48:07,100 --> 00:48:09,570

NASA HAS AN OBLIGATION TO

1190

00:48:09,570 --> 00:48:13,340

CONTINUE STUDYING THESE.

1191

00:48:13,340 --> 00:48:15,609

WHAT WE DO WHEN WE STUDY THE

1192

00:48:15,609 --> 00:48:19,046

PLANET, IS WE SENSE THE EARTH IN

1193

00:48:19,046 --> 00:48:23,450

EVERY PART OF THE

1194

00:48:23,450 --> 00:48:25,118

ELECTROMAGNETIC SPECTRUM, AND WE

1195

00:48:25,118 --> 00:48:27,955

SHARE IT FOR FREE.

1196

00:48:27,955 --> 00:48:29,790

WE STUDY THE EARTH, AND AS I

1197

00:48:29,790 --> 00:48:31,425

COMMITTED FROM THE BEGINNING, WE

1198

00:48:31,425 --> 00:48:33,760

ARE STUDYING THE EARTH WITH AS

1199

00:48:33,760 --> 00:48:36,096

STRONG A BUDGET AS WE HAVE SEEN,

1200

00:48:36,096 --> 00:48:37,798

REALLY, IN A VERY LONG TIME

1201
00:48:37,798 --> 00:48:39,666
RIGHT NOW, AND THIS BUDGET

1202
00:48:39,666 --> 00:48:41,168
REQUEST FOR EARTH SCIENCE IS

1203
00:48:41,168 --> 00:48:51,111
VERY STRONG, AS WELL.

1204
00:48:51,111 --> 00:48:51,478
[Applause]

1205
00:48:51,478 --> 00:48:54,181
>> LET'S TALK ABOUT ASTROPHYSICS

1206
00:48:54,181 --> 00:48:55,282
FOR A WHILE.

1207
00:48:55,282 --> 00:48:58,685
TALK ABOUT SOME EXCITING

1208
00:48:58,685 --> 00:48:59,119
DISCOVERIES.

1209
00:48:59,119 --> 00:49:02,189
YOU KNOW, WHAT'S AMAZING IS

1210
00:49:02,189 --> 00:49:04,758
WE'RE LEARNING MORE ABOUT NOT

1211
00:49:04,758 --> 00:49:07,127
JUST OUR SOLAR SYSTEM, NOT JUST

1212
00:49:07,127 --> 00:49:09,796
ABOUT OUR GALAXY, BUT IN FACT

1213
00:49:09,796 --> 00:49:14,368

ABOUT THE ENTIRE UNIVERSE ALL

1214

00:49:14,368 --> 00:49:20,040

THE TIME NOWAA.

1215

00:49:20,040 --> 00:49:25,846

AAA -- THE BEGINNING OF THE

1216

00:49:25,846 --> 00:49:28,515

UNIVERSITY, WHAT WE CALL COSMIC

1217

00:49:28,515 --> 00:49:29,967

DAWN, TO SEE THE FIRST LIGHT

1218

00:49:29,967 --> 00:49:30,851

FROM THE UNIVERSITY.

1219

00:49:30,851 --> 00:49:38,358

LIGHT FROM STARS, FROM GALAXIES,

1220

00:49:38,358 --> 00:49:39,026

TO EVEN ASSESS THE EARLIEST

1221

00:49:39,026 --> 00:49:46,633

BLACK HOLES, AND FRIENDS, WE'RE

1222

00:49:46,633 --> 00:49:50,170

STARTING TO UNDERSTAND PHYSICS,

1223

00:49:50,170 --> 00:49:53,073

ASTROPHYSICS IN A WAY THAT WAS

1224

00:49:53,073 --> 00:49:53,740

PREVIOUSLY ONLY THEORY.

1225

00:49:53,740 --> 00:49:56,943

IN A WAY, WE'RE PROVING OUT THE

1226
00:49:56,943 --> 00:49:59,613
THEORY OF RELATIVITY, EINSTEIN,

1227
00:49:59,613 --> 00:50:01,348
WE'RE SEEING IT FOR THE FIRST

1228
00:50:01,348 --> 00:50:01,648
TIME.

1229
00:50:01,648 --> 00:50:03,884
WHAT WE KNOW ABOUT THESE

1230
00:50:03,884 --> 00:50:08,055
MISSIONS, WE TALK ABOUT HUBBLE

1231
00:50:08,055 --> 00:50:15,429
AND SHONDRA AND KIBLER, WE KNOW

1232
00:50:15,429 --> 00:50:17,631
THAT IT'S EXPANDING AT AN EVER

1233
00:50:17,631 --> 00:50:19,266
INCREASING RATE, AND IT IS

1234
00:50:19,266 --> 00:50:20,133
ACCELERATING, AND THE QUESTION

1235
00:50:20,133 --> 00:50:21,401
IS WHY.

1236
00:50:21,401 --> 00:50:24,805
AND WE TALK ABOUT THINGS LIKE

1237
00:50:24,805 --> 00:50:26,873
DARK MATTER, WHICH WE NOW KNOW

1238
00:50:26,873 --> 00:50:28,508

IS MOST OF THE MATTER IN THE

1239

00:50:28,508 --> 00:50:29,076

UNIVERSE.

1240

00:50:29,076 --> 00:50:30,510

WE CAN'T INTERACT WITH IT.

1241

00:50:30,510 --> 00:50:32,345

WE CAN'T SEE IT, BUT WE KNOW

1242

00:50:32,345 --> 00:50:37,484

IT'S THERE BECAUSE WE CAN SEE

1243

00:50:37,484 --> 00:50:42,222

ITS GRAVITATIONAL EFFECTS.

1244

00:50:42,222 --> 00:50:46,626

THE UNIVERSE IS ACCELERATING

1245

00:50:46,626 --> 00:50:49,046

FASTER AND FASTER AWAY FROM THIS

1246

00:50:49,046 --> 00:50:52,532

POINT, AND SO WE USE WORDS LIKE

1247

00:50:52,532 --> 00:50:55,836

DARK ENERGY IS CAUSING THIS TO

1248

00:50:55,836 --> 00:50:56,369

HAPPEN.

1249

00:50:56,369 --> 00:50:57,504

WELL, IN ORDER TO LEARN MORE

1250

00:50:57,504 --> 00:50:58,572

ABOUT THIS KIND OF ACTIVITY, WE

1251
00:50:58,572 --> 00:51:01,074
NEED TO BE ABLE TO SEE TO THE

1252
00:51:01,074 --> 00:51:02,059
VERY BEGINNINGS.

1253
00:51:02,059 --> 00:51:04,644
WE NEED TO BE ABLE TO SEE THAT

1254
00:51:04,644 --> 00:51:06,747
COSMIC DAWN, THE FIRST LIGHT IN

1255
00:51:06,747 --> 00:51:07,314
THE UNIVERSE.

1256
00:51:07,314 --> 00:51:09,149
AND I WILL TELL YOU, IT HAS BEEN

1257
00:51:09,149 --> 00:51:11,184
A CHALLENGE FOR ME AS YOUR NASA

1258
00:51:11,184 --> 00:51:14,721
ADMINISTRATOR TO GO TO THE HILL

1259
00:51:14,721 --> 00:51:15,789
AND TALK ABOUT THE JAMES WEBB

1260
00:51:15,789 --> 00:51:17,023
SPACE TELESCOPE.

1261
00:51:17,023 --> 00:51:18,291
SOME OF YOU MIGHT HAVE SEEN

1262
00:51:18,291 --> 00:51:19,960
THOSE HEARINGS, AND THEY'RE NOT

1263
00:51:19,960 --> 00:51:20,227

FUN.

1264

00:51:20,227 --> 00:51:24,331

BUT I WILL ALSO TELL YOU THIS:

1265

00:51:24,331 --> 00:51:25,132

THIS ADMINISTRATION IS COMMITTED

1266

00:51:25,132 --> 00:51:27,601

TO THE JAMES WEBB SPACE

1267

00:51:27,601 --> 00:51:30,637

TELESCOPE, AND WE HAVE

1268

00:51:30,637 --> 00:51:32,706

BIPARTISAN SUPPORT FOR THE JAMES

1269

00:51:32,706 --> 00:51:37,210

WEBB SPACE TELESCOPE, AND IT

1270

00:51:37,210 --> 00:51:39,846

IS -- OUR NUMBER ONE AGENDA FOR

1271

00:51:39,846 --> 00:51:41,948

JAMES WEBB IS SUCCESS.

1272

00:51:41,948 --> 00:51:43,283

AT THIS POINT, THIS MISSION IS

1273

00:51:43,283 --> 00:51:44,718

SO IMPORTANT TO THE UNITED

1274

00:51:44,718 --> 00:51:46,486

STATES OF AMERICA, AND HERE'S

1275

00:51:46,486 --> 00:51:48,054

WHY: WE'RE TALKING ABOUT

1276
00:51:48,054 --> 00:51:49,923
ESTABLISHING AMERICA AS THE LEAD

1277
00:51:49,923 --> 00:51:53,627
IN PHYSICS FOR THE NEXT 30

1278
00:51:53,627 --> 00:51:53,927
YEARS.

1279
00:51:53,927 --> 00:51:57,364
WHEN JAMES WEBB SPACE TELESCOPE

1280
00:51:57,364 --> 00:51:59,132
IS LAUNCHED AND WE'RE ABLE TO

1281
00:51:59,132 --> 00:52:01,301
SEE COSMIC DAWN THAT ESTABLISHES

1282
00:52:01,301 --> 00:52:03,336
THE UNITED STATES AS THE LEADER

1283
00:52:03,336 --> 00:52:06,039
OF PHYSICS FOR THE NEXT 30

1284
00:52:06,039 --> 00:52:07,941
YEARS, BUT IT GOES BEYOND THAT.

1285
00:52:07,941 --> 00:52:09,309
SURE, WE WANT TO LEAD, BUT WE

1286
00:52:09,309 --> 00:52:10,177
ALSO WANT TO DISCOVER.

1287
00:52:10,177 --> 00:52:12,145
WE HAVE MODELS AND IDEAS ABOUT

1288
00:52:12,145 --> 00:52:15,415

REALLY WHAT THE UNIVERSE LOOKED

1289

00:52:15,415 --> 00:52:16,149

LIKE IN THOSE DAYS, BUT WE'RE

1290

00:52:16,149 --> 00:52:17,884

GOING TO KNOW, AND I CAN TELL

1291

00:52:17,884 --> 00:52:18,618

YOU THIS.

1292

00:52:18,618 --> 00:52:20,887

HERE'S WHAT WE ALREADY NOW, THE

1293

00:52:20,887 --> 00:52:22,923

MODELS -- KNOW, THE MODELS

1294

00:52:22,923 --> 00:52:23,423

AREN'T RIGHT.

1295

00:52:23,423 --> 00:52:24,825

SO THIS IS AN EXCITING TIME.

1296

00:52:24,825 --> 00:52:27,727

THE OTHER THING THAT'S

1297

00:52:27,727 --> 00:52:30,497

IMPORTANT, WE WANT TO BE ABLE TO

1298

00:52:30,497 --> 00:52:32,098

LOOK AT OTHER STARS, AND NOT

1299

00:52:32,098 --> 00:52:33,900

ONLY LOOK AT THOSE STARS BUT

1300

00:52:33,900 --> 00:52:35,302

LOOK AT OTHER PLANETS AROUND

1301
00:52:35,302 --> 00:52:38,071
THOSE STARS AND CHARACTERIZE

1302
00:52:38,071 --> 00:52:40,974
THOSE PLANETS AS TO THEIR

1303
00:52:40,974 --> 00:52:41,408
HABITABILITY.

1304
00:52:41,408 --> 00:52:43,944
COULD THOSE PLANETS BE ABLE TO

1305
00:52:43,944 --> 00:52:44,511
HOST LIFE?

1306
00:52:44,511 --> 00:52:46,513
AND JAMES WEBB IS GOING TO GIVE

1307
00:52:46,513 --> 00:52:48,181
US AN OPPORTUNITY TO LOOK AT THE

1308
00:52:48,181 --> 00:52:50,784
LIGHT AS IT, YOU KNOW, TRANSFERS

1309
00:52:50,784 --> 00:52:53,186
THROUGH THAT ATMOSPHERE.

1310
00:52:53,186 --> 00:52:55,956
CERTAIN PART -- CERTAIN PARTS OF

1311
00:52:55,956 --> 00:52:57,657
THE SPECTRUM ARE NOT GOING TO

1312
00:52:57,657 --> 00:52:58,959
MAKE IT THROUGH, AND WE'RE GOING

1313
00:52:58,959 --> 00:53:01,194

TO BE ABLE TO DETERMINE THE

1314

00:53:01,194 --> 00:53:02,762

ATMOSPHERES OF PLANETS AROUND

1315

00:53:02,762 --> 00:53:04,865

OTHER STARS AND MAKE ASSESSMENTS

1316

00:53:04,865 --> 00:53:06,199

TO CHARACTERIZE, IF YOU WILL,

1317

00:53:06,199 --> 00:53:08,568

THE ATMOSPHERES OF THOSE

1318

00:53:08,568 --> 00:53:08,935

PLANETS.

1319

00:53:08,935 --> 00:53:11,371

JAMES WEBB IS GOING TO BE AN

1320

00:53:11,371 --> 00:53:13,940

AMAZING CAPABILITY FOR THE UNITED

1321

00:53:13,940 --> 00:53:19,446

STATES OF AMERICA.

1322

00:53:19,446 --> 00:53:21,414

AS WE'RE ON ASTROPHYSICS, I ALSO

1323

00:53:21,414 --> 00:53:22,782

WANT TO MAKE ONE LAST STATEMENT

1324

00:53:22,782 --> 00:53:23,984

THAT I THINK IS IMPORTANT.

1325

00:53:23,984 --> 00:53:25,952

WE TALKED ABOUT THE GATEWAY AND

1326
00:53:25,952 --> 00:53:27,921
HOW IT'S GOING TO GIVE US ACCESS

1327
00:53:27,921 --> 00:53:34,060
TO THE SURFACE OF THE MOON.

1328
00:53:34,060 --> 00:53:37,631
WE WANT ROBOTS AND LANDERS AND

1329
00:53:37,631 --> 00:53:37,964
ROVERS.

1330
00:53:37,964 --> 00:53:41,167
THE GATEWAY IS NOT JUST ABOUT

1331
00:53:41,167 --> 00:53:42,102
GETTING TO THE MOON, IT'S NOT

1332
00:53:42,102 --> 00:53:45,839
ABOUT STUDYING THE MOON FROM THE

1333
00:53:45,839 --> 00:53:47,173
ORBIT OF THE MOON, IT GIVES US

1334
00:53:47,173 --> 00:53:48,942
AN OPPORTUNITY TO STUDY DEEP

1335
00:53:48,942 --> 00:53:50,610
SPACE FROM A HUMAN TENDED SPACE

1336
00:53:50,610 --> 00:53:53,613
STATION WHICH GIVES US A

1337
00:53:53,613 --> 00:53:55,682
CAPABILITY HERETOFORE WE'VE

1338
00:53:55,682 --> 00:53:56,283

NEVER SEEN.

1339

00:53:56,283 --> 00:53:58,418

ON THE FAR SIDE OF THE MOON,

1340

00:53:58,418 --> 00:54:00,237

IT'S VERY QUIET.

1341

00:54:00,237 --> 00:54:00,487

WHY?

1342

00:54:00,487 --> 00:54:05,358

BECAUSE ALL OF THE

1343

00:54:05,358 --> 00:54:06,393

ELECTROMAGNETIC RADIATION WE

1344

00:54:06,393 --> 00:54:08,128

CREATE, IT'S QUIET ON THE FAR

1345

00:54:08,128 --> 00:54:12,132

SIDE OF THE MOON, SO WE CAN

1346

00:54:12,132 --> 00:54:17,804

CREATE THINGS IN THE

1347

00:54:17,804 --> 00:54:19,606

ELECTROMAGNETIC SPECTRUM THAT WE

1348

00:54:19,606 --> 00:54:21,708

CAN'T CURRENTLY IMAGE DEEP SPACE

1349

00:54:21,708 --> 00:54:22,375

WITH.

1350

00:54:22,375 --> 00:54:25,011

WE CAN DO ASTROPHYSICS FROM THE

1351
00:54:25,011 --> 00:54:27,280
SURFACE OF THE MOON WITH VERY

1352
00:54:27,280 --> 00:54:28,548
THIN WIRE ANTENNAS.

1353
00:54:28,548 --> 00:54:30,016
NOW THAT'S MAYBE NOT IN THIS

1354
00:54:30,016 --> 00:54:31,618
BUDGET REQUEST, BUT THE GATEWAY

1355
00:54:31,618 --> 00:54:34,287
OPENS THE DOOR TO ALL OF THESE

1356
00:54:34,287 --> 00:54:35,722
CAPABILITIES IN THE FUTURE.

1357
00:54:35,722 --> 00:54:38,692
SO IN CLOSING, I WANT EVERYBODY

1358
00:54:38,692 --> 00:54:42,395
TO KNOW THAT NASA'S BUDGET

1359
00:54:42,395 --> 00:54:44,798
REQUEST IS VERY GOOD, AND WE

1360
00:54:44,798 --> 00:54:49,502
HAVE BIPARTISAN SUPPORT , WHICH

1361
00:54:49,502 --> 00:54:51,705
I HAVE BEEN COMMITTED TO FROM

1362
00:54:51,705 --> 00:54:53,440
THE BEGINNING FOR NASA, NOT JUST

1363
00:54:53,440 --> 00:54:56,743

IN THE HOUSE BUT IN THE SENATE,

1364

00:54:56,743 --> 00:54:59,312

AND WE'RE GOING TO BE ABLE TO

1365

00:54:59,312 --> 00:55:01,848

ACCOMPLISH SOMETHING WE'VE NEVER

1366

00:55:01,848 --> 00:55:08,221

BEEN ABLE TO ACCOMPLISH BEFORE

1367

00:55:08,221 --> 00:55:10,457

WITH BIPARTISAN SUPPORT.

1368

00:55:10,457 --> 00:55:11,725

WHAT DOES THAT MEAN FOR US?

1369

00:55:11,725 --> 00:55:14,094

I JUST TALKED ABOUT HELIO

1370

00:55:14,094 --> 00:55:14,928

PHYSICS AND HOW IMPORTANT IT

1371

00:55:14,928 --> 00:55:19,399

IS -- IF WE'RE GOING TO SEND

1372

00:55:19,399 --> 00:55:22,936

ASTRONAUTS TO MARS, HOW

1373

00:55:22,936 --> 00:55:25,872

IMPORTANT IT IS TO THE LIVES OF

1374

00:55:25,872 --> 00:55:29,376

THE ASTRONAUTS?

1375

00:55:29,376 --> 00:55:31,144

HELIO PHYSICS IS A CRITICAL

1376

00:55:31,144 --> 00:55:34,080

PIECE OF OUR MOON TO MARS

1377

00:55:34,080 --> 00:55:34,414

PROGRAM.

1378

00:55:34,414 --> 00:55:35,882

I WAS IN THE HOTEL THIS MORNING,

1379

00:55:35,882 --> 00:55:37,951

AND I WAS TALKING TO A LADY THAT

1380

00:55:37,951 --> 00:55:40,220

HAD THE OPPORTUNITY TO VISIT THE

1381

00:55:40,220 --> 00:55:42,455

KENNEDY SPACE CENTER, AND SHE

1382

00:55:42,455 --> 00:55:44,858

SAID ONE OF THE THINGS THAT ARE

1383

00:55:44,858 --> 00:55:47,344

MOST STRIKING -- THAT WAS MOST

1384

00:55:47,344 --> 00:55:50,230

STRIKING TO HER, SHE RAN INTO

1385

00:55:50,230 --> 00:55:51,064

SOMEBODY AT THE KENNEDY SPACE

1386

00:55:51,064 --> 00:55:53,733

CENTER AND ASKED HIM WHAT HE

1387

00:55:53,733 --> 00:55:55,935

DID, AND HE SAID WELL, I'M

1388

00:55:55,935 --> 00:55:57,904

HELPING US GO TO THE MOON AND

1389

00:55:57,904 --> 00:55:58,872

ONTO MARS.

1390

00:55:58,872 --> 00:56:00,473

AND THAT WAS HIS ANSWER.

1391

00:56:00,473 --> 00:56:02,359

AND SHE SAID OKAY, WHAT DO YOU

1392

00:56:02,359 --> 00:56:02,609

DO?

1393

00:56:02,609 --> 00:56:05,111

AND HE SAID I'M A CUSTODIAN.

1394

00:56:05,111 --> 00:56:08,281

FRIENDS, THESE OBJECTIVES ARE AN

1395

00:56:08,281 --> 00:56:13,620

ALL OF NASA APPROACH.

1396

00:56:13,620 --> 00:56:17,457

EVERY SENSOR THAT WE OPERATE IS

1397

00:56:17,457 --> 00:56:19,059

CRITICAL TO THIS MISSION,

1398

00:56:19,059 --> 00:56:22,328

CRITICAL TO ACHIEVING THESE

1399

00:56:22,328 --> 00:56:23,863

GOALS, INCLUDING THE

1400

00:56:23,863 --> 00:56:25,899

DIRECTORATE.

1401

00:56:25,899 --> 00:56:26,633

WE TALK ABOUT INFRASTRUCTURE,

1402

00:56:26,633 --> 00:56:29,335

AND IN SOME CASES,

1403

00:56:29,335 --> 00:56:31,304

INFRASTRUCTURE OFTEN BECOMES A

1404

00:56:31,304 --> 00:56:31,704

TARGET.

1405

00:56:31,704 --> 00:56:32,839

BUT FRIENDS WE CAN'T ACCOMPLISH

1406

00:56:32,839 --> 00:56:35,041

ANY OF THIS WITHOUT THE

1407

00:56:35,041 --> 00:56:39,546

INFRASTRUCTURE, AS WELL, SO THE

1408

00:56:39,546 --> 00:56:42,399

DIRECTORATE IS ALSO A CAPABILITY

1409

00:56:42,399 --> 00:56:43,149

FOR OUR SHARED ACHIEVEMENT IN

1410

00:56:43,149 --> 00:56:44,250

HEADING TO THE MOON AND ONTO

1411

00:56:44,250 --> 00:56:44,551

MARS.

1412

00:56:44,551 --> 00:56:48,121

SO I JUST WANT TO SHARE ONE LAST

1413

00:56:48,121 --> 00:56:50,723

THING -- FOR ALL THE PEOPLE

1414

00:56:50,723 --> 00:56:51,357

WATCHING, I SEE SOME T.V.

1415

00:56:51,357 --> 00:56:52,759

CAMERAS AND MAYBE SOME SOCIAL

1416

00:56:52,759 --> 00:56:54,194

MEDIA, I WANT TO ENCOURAGE

1417

00:56:54,194 --> 00:57:04,437

EVERYBODY TO VISIT

1418

00:57:04,437 --> 00:57:04,971

NASA.GOV/MOONTOMARS.

1419

00:57:04,971 --> 00:57:06,940

I WANT YOU TO GO TO THE WEBSITE,

1420

00:57:06,940 --> 00:57:08,641

AND I WANT YOU TO LEARN.

1421

00:57:08,641 --> 00:57:10,610

FOR THE NASA EMPLOYEES HERE, I

1422

00:57:10,610 --> 00:57:13,379

WANT YOU TO LEARN HOW YOU CAN

1423

00:57:13,379 --> 00:57:15,148

COMMUNICATE ALL OF THESE GREAT

1424

00:57:15,148 --> 00:57:18,384

THINGS THAT WE ARE TRYING TO

1425

00:57:18,384 --> 00:57:20,186

ACHIEVE TO THE PUBLIC.

1426
00:57:20,186 --> 00:57:22,155
ENGAGE ON SOCIAL MEDIA.

1427
00:57:22,155 --> 00:57:26,759
I WANT YOU TO ENGAGE ON SOCIAL

1428
00:57:26,759 --> 00:57:27,060
MEDIA.

1429
00:57:27,060 --> 00:57:27,894
IF YOU HAVE TWITTER OR FACEBOOK

1430
00:57:27,894 --> 00:57:29,762
OR TALK TO YOUR FRIENDS, MAKE

1431
00:57:29,762 --> 00:57:32,499
SURE YOU LET THEM KNOW WHAT WE

1432
00:57:32,499 --> 00:57:34,167
ARE DOING AND WHY BECAUSE THIS

1433
00:57:34,167 --> 00:57:37,770
IS TRANSFORMATIONAL, AND IT'S

1434
00:57:37,770 --> 00:57:39,706
ONLY GOING TO HAPPEN IF ALL OF

1435
00:57:39,706 --> 00:57:40,773
AMERICA BUYS IN.

1436
00:57:40,773 --> 00:57:44,644
THE OTHER DAY, I WENT TO THE

1437
00:57:44,644 --> 00:57:47,280
WORLD AG EXPO, AND EVERYBODY WAS

1438
00:57:47,280 --> 00:57:48,748

LIKE WHY IS THE DIRECTOR OF NASA

1439

00:57:48,748 --> 00:57:51,484

GOING TO THE WORLD AG EXPO?

1440

00:57:51,484 --> 00:57:52,719

I'LL TELL YOU WHY.

1441

00:57:52,719 --> 00:57:55,054

BECAUSE WE NEED EVERYBODY TO

1442

00:57:55,054 --> 00:58:02,028

KNOW HOW WE CHANGED THE WORLD

1443

00:58:02,028 --> 00:58:02,428

CONDITION.

1444

00:58:02,428 --> 00:58:04,264

WHO NEEDS THAT?

1445

00:58:04,264 --> 00:58:05,431

FARMERS SOMETIMES NEED THAT.

1446

00:58:05,431 --> 00:58:07,400

WE HAVE AN AGREEMENT WITH THE

1447

00:58:07,400 --> 00:58:08,535

COOPERATIVE EXTENSION OF THE

1448

00:58:08,535 --> 00:58:10,770

UNIVERSITY OF CALIFORNIA WHERE

1449

00:58:10,770 --> 00:58:11,404

WE'RE TAKING THAT GREAT

1450

00:58:11,404 --> 00:58:12,238

INFORMATION AND SHARING IT WITH

1451
00:58:12,238 --> 00:58:14,307
THEM TO THE POINT WHERE THEY ARE

1452
00:58:14,307 --> 00:58:16,709
ABLE TO INCREASE CROP YIELDS

1453
00:58:16,709 --> 00:58:19,145
WHILE REDUCING THEIR WATER USAGE

1454
00:58:19,145 --> 00:58:22,682
BY 25% -- AND BY THE WAY, IN THE

1455
00:58:22,682 --> 00:58:24,350
DESERT OF CALIFORNIA, THAT IS A

1456
00:58:24,350 --> 00:58:25,018
BIG DEAL.

1457
00:58:25,018 --> 00:58:25,852
AND AT THE SAME TIME BECAUSE

1458
00:58:25,852 --> 00:58:27,754
THEY'RE NOT WATERING SO MUCH,

1459
00:58:27,754 --> 00:58:31,291
PRESERVING 50% OF THE NITRATES

1460
00:58:31,291 --> 00:58:33,826
THAT NORMALLY WOULD HAVE ERODED

1461
00:58:33,826 --> 00:58:36,729
INTO THE WATER SUPPLY.

1462
00:58:36,729 --> 00:58:37,530
THOSE HELP THE PLANTS GROW, BUT

1463
00:58:37,530 --> 00:58:39,132

WHEN THEY'RE IN THE WATER

1464

00:58:39,132 --> 00:58:40,300

SUPPLY, THEY'RE VERY BAD TO

1465

00:58:40,300 --> 00:58:41,935

HUMANS AND IT COSTS A LOT OF

1466

00:58:41,935 --> 00:58:43,236

MONEY TO GET THEM OUT OF THE

1467

00:58:43,236 --> 00:58:44,571

WATER SUPPLY.

1468

00:58:44,571 --> 00:58:50,143

SO WE'RE INCREASING YIELDS, AND

1469

00:58:50,143 --> 00:58:51,244

THEY'RE IN THE SOIL WHERE THEY

1470

00:58:51,244 --> 00:58:54,480

OUGHT TO BE, AND WE'RE ABLE TO

1471

00:58:54,480 --> 00:58:56,783

ACHIEVE THIS BECAUSE THE SCIENCE

1472

00:58:56,783 --> 00:58:58,384

MISSION DIRECTORATE IS PROVIDING

1473

00:58:58,384 --> 00:59:02,355

THIS TO THE UNIVERSITY OF STATE

1474

00:59:02,355 --> 00:59:05,592

OF CALIFORNIA -- UNIVERSITY OF

1475

00:59:05,592 --> 00:59:08,561

CALIFORNIA ON A SMALL SCALE.

1476
00:59:08,561 --> 00:59:12,298
WE WERE ABLE TO PROVIDE THIS TO

1477
00:59:12,298 --> 00:59:12,632
UGANDA.

1478
00:59:12,632 --> 00:59:14,801
THEY WERE ABLE TO USE NASA

1479
00:59:14,801 --> 00:59:16,703
TECHNOLOGY TO DETECT A DROUGHT

1480
00:59:16,703 --> 00:59:22,141
THAT WAS ON THE WHO ARE SIGH --

1481
00:59:22,141 --> 00:59:22,475
HORIZON.

1482
00:59:22,475 --> 00:59:24,110
BECAUSE OF THAT, INSTEAD OF

1483
00:59:24,110 --> 00:59:26,179
SPENDING TENS OF MILLIONS OF

1484
00:59:26,179 --> 00:59:28,248
DOLLARS DOING DISASTER RELIEF,

1485
00:59:28,248 --> 00:59:30,316
WE SPENT A COUPLE OF MILLION

1486
00:59:30,316 --> 00:59:31,818
MITIGATING THE DISASTER BEFORE

1487
00:59:31,818 --> 00:59:33,853
IT HAPPENED, SAVING LIVES,

1488
00:59:33,853 --> 00:59:34,621

SAVING MONEY.

1489

00:59:34,621 --> 00:59:36,990

BUT FRIENDS, IT'S NOT JUST ABOUT

1490

00:59:36,990 --> 00:59:39,826

CROPS, ALTHOUGH CROPS ARE A

1491

00:59:39,826 --> 00:59:40,893

CRITICAL PIECE.

1492

00:59:40,893 --> 00:59:43,863

THE WAY WE COMMUNICATE, DISH

1493

00:59:43,863 --> 00:59:46,866

NETWORK, INTERNET BROAD BAND

1494

00:59:46,866 --> 00:59:49,869

FROM SPACE, SATELLITE RADIO,

1495

00:59:49,869 --> 00:59:51,804

COMMUNICATIONS BORN FROM THIS

1496

00:59:51,804 --> 00:59:54,440

LITTLE AGENCY WE CALL NASA,

1497

00:59:54,440 --> 00:59:55,308

SPACE-BASED COMMUNICATIONS.

1498

00:59:55,308 --> 00:59:58,311

WE TALK ABOUT HOW WE NAVIGATE

1499

00:59:58,311 --> 01:00:02,649

WITH GPS, HOW WE PRODUCE FOOD,

1500

01:00:02,649 --> 01:00:04,550

ENERGY, GEOCARBON AND OTHER

1501
01:00:04,550 --> 01:00:07,053
EARTH SCIENCE EMISSIONS, MAKING

1502
01:00:07,053 --> 01:00:08,421
SURE THAT AS WE PRODUCE ENERGY,

1503
01:00:08,421 --> 01:00:10,189
WE'RE NOT POLLUTING THE

1504
01:00:10,189 --> 01:00:10,607
ATMOSPHERE.

1505
01:00:10,607 --> 01:00:13,226
BY THE WAY, THE ENERGY COMPANIES

1506
01:00:13,226 --> 01:00:14,394
LOVE THAT BECAUSE THEN, THEY

1507
01:00:14,394 --> 01:00:16,329
DON'T GET FINED, WHICH IS A GOOD

1508
01:00:16,329 --> 01:00:16,896
THING.

1509
01:00:16,896 --> 01:00:19,999
THE WAY WE DO WEATHER

1510
01:00:19,999 --> 01:00:20,933
PREDICTIONS AND UNDERSTAND THE

1511
01:00:20,933 --> 01:00:25,204
CLIMATE, THE WAY WE DO DISASTER

1512
01:00:25,204 --> 01:00:26,272
RELIEF AND NATIONAL SECURITY,

1513
01:00:26,272 --> 01:00:29,108

THE WAY WE DO BANKING -- ALL OF

1514

01:00:29,108 --> 01:00:32,512

THE BANKING TRANSACTIONS IN THE

1515

01:00:32,512 --> 01:00:33,212

UNITED STATES OF AMERICA ARE

1516

01:00:33,212 --> 01:00:37,016

DEPENDENT ON A TIMING SIGNAL

1517

01:00:37,016 --> 01:00:38,384

FROM GPS.

1518

01:00:38,384 --> 01:00:40,887

THE WAY WE REGULATE FLOWS OF

1519

01:00:40,887 --> 01:00:43,389

ELECTRICITY ON THE POWER GRID,

1520

01:00:43,389 --> 01:00:45,858

DEPENDENT ON A TIMING SIGNAL

1521

01:00:45,858 --> 01:00:47,060

FROM GPS.

1522

01:00:47,060 --> 01:00:51,064

WHEN WE THINK ABOUT HOW WE HAVE

1523

01:00:51,064 --> 01:00:52,832

ELEVATED THE HUMAN CONDITION,

1524

01:00:52,832 --> 01:00:54,801

THIS LITTLE AGENCY THAT

1525

01:00:54,801 --> 01:00:57,770

CONSTITUTES ONE HALF -- LESS

1526

01:00:57,770 --> 01:00:59,539

THAN ONE HALF OF ONE PERCENT OF

1527

01:00:59,539 --> 01:01:03,209

THE FEDERAL BUDGET, THIS LITTLE

1528

01:01:03,209 --> 01:01:03,943

AGENCY HAS ELEVATED THE HUMAN

1529

01:01:03,943 --> 01:01:04,711

CONDITION IN WAYS THAT MOST

1530

01:01:04,711 --> 01:01:05,662

PEOPLE DON'T EVEN KNOW.

1531

01:01:05,662 --> 01:01:07,413

IT'S ON US TO LET THEM KNOW.

1532

01:01:07,413 --> 01:01:20,960

IT'S ON US AS THE NASA

1533

01:01:20,960 --> 01:01:22,128

EMPLOYEES, THE NASA CONTRACTORS,

1534

01:01:22,128 --> 01:01:22,829

AS WELL, TO LET THEM KNOW NOT

1535

01:01:22,829 --> 01:01:23,563

JUST FOR THE UNITED STATES BUT

1536

01:01:23,563 --> 01:01:24,130

FOR THE ENTIRE WORLD.

1537

01:01:24,130 --> 01:01:24,897

THIS IS AN AMAZING AGENCY, AND

1538

01:01:24,897 --> 01:01:27,934

I'VE GOT TO TELL YOU, I AM

1539

01:01:27,934 --> 01:01:30,937

OVERWHELMINGLY HUMBLLED WHEN I

1540

01:01:30,937 --> 01:01:32,305

GET UP EVERY DAY AND I HAVE THE

1541

01:01:32,305 --> 01:01:35,074

OPPORTUNITY TO INTERACT WITH THE

1542

01:01:35,074 --> 01:01:37,076

AMAZINGLY TALENTED PEOPLE THAT

1543

01:01:37,076 --> 01:01:37,777

WORK HERE.

1544

01:01:37,777 --> 01:01:38,878

KNOW THIS.

1545

01:01:38,878 --> 01:01:41,347

NASA IS GOING TO GET A HEALTHY

1546

01:01:41,347 --> 01:01:41,881

BUDGET.

1547

01:01:41,881 --> 01:01:43,816

THE ADMINISTRATION IS SUPPORTING

1548

01:01:43,816 --> 01:01:44,217

IT.

1549

01:01:44,217 --> 01:01:46,185

WE'VE GOT BIPARTISAN SUPPORT IN

1550

01:01:46,185 --> 01:01:47,754

THE HOUSE AND THE SENATE.

1551

01:01:47,754 --> 01:01:50,790

WHAT WE'VE GOT TO DO IS MAKE

1552

01:01:50,790 --> 01:01:53,192

SURE WE COMMUNICATE IT TO THE

1553

01:01:53,192 --> 01:01:54,711

WORLD.

1554

01:01:54,711 --> 01:02:03,936

AGAIN, NASA.GOV/MOONTOMARS.

1555

01:02:03,936 --> 01:02:04,721

THANK YOU SO MUCH.

1556

01:02:04,721 --> 01:02:06,773

IT'S GREAT BEING HERE AT THE