
SPACEX
CRS-1
NASA
NASA

1
00:00:17,016 --> 00:00:18,351
>> GOOD AFTERNOON, AND WELCOME

2
00:00:18,351 --> 00:00:20,320
TO NASA'S KENNEDY SPACE CENTER

3
00:00:20,320 --> 00:00:21,788
FOR THE PRE-LAUNCH NEWS

4
00:00:21,788 --> 00:00:24,958
CONFERENCE FOR THE SPACEX TO THE

5
00:00:24,958 --> 00:00:27,227
INTERNATIONAL SPACE STATION.

6
00:00:27,227 --> 00:00:29,229
I'M JOSHUA FENTON AND I'M JOINED

7
00:00:29,229 --> 00:00:31,631
BY DAN HARTMAN, DEPUTY MANAGER

8
00:00:31,631 --> 00:00:33,466
INTERNATIONAL SPACE STATION

9
00:00:33,466 --> 00:00:35,835
PROGRAM.

10
00:00:35,835 --> 00:00:39,005
HANS, VICE PRESIDENT OF BUILD

11
00:00:39,005 --> 00:00:41,608
AND FLIGHT RELIABILITY FOR

12
00:00:41,608 --> 00:00:44,277
SPACEX, AND PETE HASBROOK,

13
00:00:44,277 --> 00:00:45,345

SCIENTIST INTERNATIONAL SPACE

14
00:00:45,345 --> 00:00:45,845
STATION PROGRAM.

15
00:00:45,845 --> 00:00:47,447
WE'LL BEGIN WITH OPENING

16
00:00:47,447 --> 00:00:48,281
COMMENTS FROM OUR PRESENTERS,

17
00:00:48,281 --> 00:00:50,083
AND THEY'LL BE' TO TURN IT OVER

18
00:00:50,083 --> 00:00:51,351
TO YOU FOR QUESTIONS.

19
00:00:51,351 --> 00:00:53,019
DAN, TAKE IT AWAY.

20
00:00:53,019 --> 00:00:54,354
>> THANK YOU, JOSH.

21
00:00:54,354 --> 00:00:55,989
GOOD AFTERNOON, EVERYBODY, IT'S

22
00:00:55,989 --> 00:00:58,425
GREAT TO BE WITH YOU AS WE

23
00:00:58,425 --> 00:01:03,062
PREPARE FOR THE SPACEX CRS 12

24
00:01:03,062 --> 00:01:03,530
MISSION.

25
00:01:03,530 --> 00:01:06,599
WE HAVE LOADED THE DRAGON WITH

26
00:01:06,599 --> 00:01:10,069
6400 POUNDS OF CARGO, AND THAT

27
00:01:10,069 --> 00:01:11,438
IS HEADED TO OUR RESEARCH

28
00:01:11,438 --> 00:01:13,506
COMMUNITY AND OUR CONTINUED

29
00:01:13,506 --> 00:01:14,908
EXPANSION OF THE RESEARCH ON

30
00:01:14,908 --> 00:01:16,109
BOARD OF THE INTERNATIONAL SPACE

31
00:01:16,109 --> 00:01:16,609
STATION.

32
00:01:16,609 --> 00:01:18,711
SO WITH THE INTERNAL AND

33
00:01:18,711 --> 00:01:20,313
EXTERNAL PAYLOADS WE HAVE GOING

34
00:01:20,313 --> 00:01:22,115
UP, IT SETS OFF A NEW BAR FOR

35
00:01:22,115 --> 00:01:23,783
THE AMOUNT OF RESEARCH THAT

36
00:01:23,783 --> 00:01:26,152
WE'VE BEEN ABLE TO GET ONTO THE

37
00:01:26,152 --> 00:01:27,821
FLIGHT.

38
00:01:27,821 --> 00:01:29,355

PRIMARILY DRIVEN BECAUSE OF THE

39
00:01:29,355 --> 00:01:30,924
CONSUMER LEVELS ARE IN GOOD

40
00:01:30,924 --> 00:01:34,127
SHAPE.

41
00:01:34,127 --> 00:01:36,696
AND SO YOU KNOW, WHEN WE CAN, WE

42
00:01:36,696 --> 00:01:38,965
TRY TO DEDICATE AS MUCH AS WE

43
00:01:38,965 --> 00:01:41,534
CAN TO THE RESEARCH COMMUNITY,

44
00:01:41,534 --> 00:01:43,236
AND WE'VE BEEN ABLE TO PULL THAT

45
00:01:43,236 --> 00:01:46,105
OFF IN THIS MISSION.

46
00:01:46,105 --> 00:01:47,841
WE'VE BEEN PREPARING ALL OF THE

47
00:01:47,841 --> 00:01:50,310
RESEARCH AND THE LATE LOAD

48
00:01:50,310 --> 00:01:51,411
CATEGORIES FOR THE INTERNATIONAL

49
00:01:51,411 --> 00:01:51,945
SPACE STATION.

50
00:01:51,945 --> 00:01:53,847
I THINK WE'RE JUST ABOUT GETTING

51
00:01:53,847 --> 00:01:55,915
READY TO LOAD ALL OF OUR

52
00:01:55,915 --> 00:01:58,485
LATE-LOAD CARGO INTO DRAGON OUT

53
00:01:58,485 --> 00:01:59,118
TO PAD.

54
00:01:59,118 --> 00:02:00,854
THAT CAPABILITY IS JUST NOW

55
00:02:00,854 --> 00:02:02,455
STARTING, OR THAT TASK IS JUST

56
00:02:02,455 --> 00:02:03,089
NOW STARTING.

57
00:02:03,089 --> 00:02:05,391
THAT WILL ALL BE IN SUPPORT OF

58
00:02:05,391 --> 00:02:06,726
OVER 300 INVESTIGATIONS WE PLAN

59
00:02:06,726 --> 00:02:08,294
TO CONDUCT ON THE INTERNATIONAL

60
00:02:08,294 --> 00:02:10,029
SPACE STATION OVER THE NEXT SIX

61
00:02:10,029 --> 00:02:11,297
MONTHS.

62
00:02:11,297 --> 00:02:13,600
85 OF THOSE BRAND, SO VERY, VERY

63
00:02:13,600 --> 00:02:15,301

EXCITING TIMES FOR OUR RESEARCH

64
00:02:15,301 --> 00:02:15,869
COMMUNITY.

65
00:02:15,869 --> 00:02:18,471
YOU KNOW, WITH THE EXTENSION OF

66
00:02:18,471 --> 00:02:20,573
PEGGY THAT GAVE US AN EXTRA CREW

67
00:02:20,573 --> 00:02:24,777
OF FOUR CREW MEMBERS ON THE US

68
00:02:24,777 --> 00:02:25,545
SIDE.

69
00:02:25,545 --> 00:02:27,514
AND THE CREW TIME HAS NOT BEEN A

70
00:02:27,514 --> 00:02:29,916
LIMITER IN THE AMOUNT OF

71
00:02:29,916 --> 00:02:31,584
RESEARCH WE CAN GET ON THE SPACE

72
00:02:31,584 --> 00:02:32,118
STATION.

73
00:02:32,118 --> 00:02:33,920
AS WE LOOKED A THE CREW SIDE

74
00:02:33,920 --> 00:02:36,689
WE'RE HOPING THAT CREW TIME

75
00:02:36,689 --> 00:02:38,091
CONSTRAINT THAT WE'VE ALWAYS

76
00:02:38,091 --> 00:02:39,425
BEEN LIVING WITH FOR THE PAST

77
00:02:39,425 --> 00:02:42,161
COUPLE OF YEARS OR SO, WILLEN

78
00:02:42,161 --> 00:02:43,897
MINIMIZED OR COMPLETELY

79
00:02:43,897 --> 00:02:44,531
ELIMINATED.

80
00:02:44,531 --> 00:02:45,732
WE'RE LOOKING FORWARD TO THAT.

81
00:02:45,732 --> 00:02:47,300
ONE THING WITH THE LAUNCH

82
00:02:47,300 --> 00:02:48,768
TOMORROW, THIS IS GOING TO BE

83
00:02:48,768 --> 00:02:49,435
ONE ATTEMPT.

84
00:02:49,435 --> 00:02:53,106
WE COULD NOT--WE HAVE SOME OTHER

85
00:02:53,106 --> 00:02:56,142
ACTIVITIES GOING ON THE SPACE

86
00:02:56,142 --> 00:02:56,709
STATION.

87
00:02:56,709 --> 00:02:57,911
THE RUSSIANS HAVE AN EVA ON THE

88
00:02:57,911 --> 00:02:58,645

17TH.

89
00:02:58,645 --> 00:03:00,280
IF WE DON'T GET OFF TOMORROW AND

90
00:03:00,280 --> 00:03:02,615
THEN LAUNCHED ON TUESDAY, OUR

91
00:03:02,615 --> 00:03:03,883
BERTHING DAY WITH BE THE SAME

92
00:03:03,883 --> 00:03:06,386
DAY AS THEIR EVA.

93
00:03:06,386 --> 00:03:08,621
AND SO WE WORKED IT OUT WITH THE

94
00:03:08,621 --> 00:03:10,023
RUSSIANS THAT WE'RE GOING TO

95
00:03:10,023 --> 00:03:11,658
DECONFLICT THAT.

96
00:03:11,658 --> 00:03:14,594
WE WOULD HOP OVER THAT NEXT--THE

97
00:03:14,594 --> 00:03:15,762
TUESDAY LAUNCH OPPORTUNITY.

98
00:03:15,762 --> 00:03:18,331
THEN THERE IS SOME ACTIVITY HERE

99
00:03:18,331 --> 00:03:21,234
WITH THE TEDRIS LAUNCH.

100
00:03:21,234 --> 00:03:22,769
AND THAT NEXT OPPORTUNITY WILL

101
00:03:22,769 --> 00:03:26,339
BE AROUND THE 19TH, 20TH TIME

102
00:03:26,339 --> 00:03:26,739
PERIOD.

103
00:03:26,739 --> 00:03:28,641
WE'LL HAVE TO WORK THAT OUT WITH

104
00:03:28,641 --> 00:03:30,176
ALL OF THE PARTIES INVOLVED.

105
00:03:30,176 --> 00:03:31,544
THAT'S KIND OF WHAT IT'S LOOKING

106
00:03:31,544 --> 00:03:32,645
LIKE RIGHT NOW.

107
00:03:32,645 --> 00:03:34,314
AND SO WE'LL HAVE MUCH MORE TO

108
00:03:34,314 --> 00:03:36,583
SAY ON THAT.

109
00:03:36,583 --> 00:03:39,118
HOPEFULLY WE'LL FIND THAT THE

110
00:03:39,118 --> 00:03:40,787
WEATHER COOPERATES TOMORROW, AND

111
00:03:40,787 --> 00:03:42,522
WE'LL GET OFF THE GROUND AND BE

112
00:03:42,522 --> 00:03:44,524
ON OUR WAY WITH NO CONFLICT.

113
00:03:44,524 --> 00:03:45,592

THAT'S PLAN ONE.

114
00:03:45,592 --> 00:03:48,528
OUR CREW IS TRAINED AND READY TO

115
00:03:48,528 --> 00:03:49,429
GO ON BOARD.

116
00:03:49,429 --> 00:03:52,732
JACK FISCHER PRIME ON THE ISS

117
00:03:52,732 --> 00:03:53,800
ARM CAPTURE.

118
00:03:53,800 --> 00:03:55,301
THAT WILL OCCUR ON WEDNESDAY

119
00:03:55,301 --> 00:03:57,270
MORNING BRIGHT AND EARLY.

120
00:03:57,270 --> 00:04:01,441
AND THEN AS TYPICAL, WE MOVE

121
00:04:01,441 --> 00:04:03,242
THAT LATER.

122
00:04:03,242 --> 00:04:06,412
OUR PLANNED PATCH OPENING WILL

123
00:04:06,412 --> 00:04:08,047
OCCUR THE VERY NEXT DAY.

124
00:04:08,047 --> 00:04:09,983
ALTHOUGH I THINK THE CREW IS

125
00:04:09,983 --> 00:04:11,918
AWARE THAT THERE ARE FROZEN

126
00:04:11,918 --> 00:04:13,119
TREATS ON THIS PARTICULAR

127
00:04:13,119 --> 00:04:13,553
MISSION.

128
00:04:13,553 --> 00:04:15,054
I WOULDN'T BE SURPRISED IF THEY

129
00:04:15,054 --> 00:04:17,056
WORK LONG IN THE DAY AND TRY TO

130
00:04:17,056 --> 00:04:22,829
ENJOY SOME WELL-DESERVED FROZEN

131
00:04:22,829 --> 00:04:24,197
ICE CREAM FOOD, FROZEN BARS THAT

132
00:04:24,197 --> 00:04:25,798
WE HAVE ON THE MISSION FOR THEM.

133
00:04:25,798 --> 00:04:28,301
WE'LL SEE HOW THAT PLAYS OUT.

134
00:04:28,301 --> 00:04:31,671
BUT WITH THAT CREW I CAN IMAGINE

135
00:04:31,671 --> 00:04:33,840
THEY WILL BE READY TO DO THAT.

136
00:04:33,840 --> 00:04:36,175
THE CREAM PAYLOAD IS IN THE

137
00:04:36,175 --> 00:04:37,243
TRUNK AND READY TO GO.

138
00:04:37,243 --> 00:04:38,578

IN THE FIRST COUPLE OF WEEKS OF

139
00:04:38,578 --> 00:04:39,879
THE MISSION WE'LL PULL THAT OUT

140
00:04:39,879 --> 00:04:41,114
WITH THE BIG ARM.

141
00:04:41,114 --> 00:04:45,051
THEN WE HAND THAT OFF TO THE

142
00:04:45,051 --> 00:04:48,621
JAPANESE SYSTEM, THE GEM ARM,

143
00:04:48,621 --> 00:04:51,290
AND THEN THEY'LL INSTALL THAT ON

144
00:04:51,290 --> 00:04:52,525
THE FACILITY.

145
00:04:52,525 --> 00:04:53,993
THAT'S WHERE CREAM WILL LIVE FOR

146
00:04:53,993 --> 00:04:55,428
THE NEXT SEVERAL YEARS AND

147
00:04:55,428 --> 00:04:57,964
CONDUCT THE RESEARCH IT PLANS TO

148
00:04:57,964 --> 00:04:58,531
DO.

149
00:04:58,531 --> 00:04:59,599
MISSION DURATION IS A LITTLE BIT

150
00:04:59,599 --> 00:05:01,300
OVER 30 DAYS, AND PRETTY MUCH

151
00:05:01,300 --> 00:05:04,070
NOWADAYS WE'VE LED THE RESEARCH

152
00:05:04,070 --> 00:05:06,305
SIDE DRIVE OUR MISSION DURATION.

153
00:05:06,305 --> 00:05:07,974
WE NEED MORE CONSTRAINTS WITH

154
00:05:07,974 --> 00:05:10,610
THE DRAGON, AND THIS WILL BE A

155
00:05:10,610 --> 00:05:12,412
LITTLE OVER A 30-DAY MISSION TO

156
00:05:12,412 --> 00:05:13,813
GET ALL THE RESEARCH DONE AND

157
00:05:13,813 --> 00:05:14,881
RETURNED HOME.

158
00:05:14,881 --> 00:05:18,551
OUR RETURN CARGO IS ALSO ALMOST

159
00:05:18,551 --> 00:05:19,519
EXTENSIVELY RESEARCH.

160
00:05:19,519 --> 00:05:20,920
SO WE'RE VERY, VERY PROUD OF

161
00:05:20,920 --> 00:05:21,487
THAT.

162
00:05:21,487 --> 00:05:24,691
WE'VE WORKED IT OUT WITH SPACEX,

163
00:05:24,691 --> 00:05:26,759

WHEN DRAG SPLASHES DOWN, WE'LL

164
00:05:26,759 --> 00:05:28,561
GET THE DRAGON BACK TO THE PORT,

165
00:05:28,561 --> 00:05:30,196
AND WE'RE TURNING OVER SOME

166
00:05:30,196 --> 00:05:31,931
PORTION OF OUR EARLY-RETURN

167
00:05:31,931 --> 00:05:33,232
CARGO TO THE RESEARCH COMMUNITY

168
00:05:33,232 --> 00:05:34,534
RIGHT THERE AT PORT SO THEY CAN

169
00:05:34,534 --> 00:05:37,103
TAKE IT AND START THEIR

170
00:05:37,103 --> 00:05:37,837
IMMEDIATE ANALYSIS OF THE

171
00:05:37,837 --> 00:05:40,673
RESULTS THAT THEY HAVE FOUND.

172
00:05:40,673 --> 00:05:42,475
SO OVER ALL WE'RE LOOKING

173
00:05:42,475 --> 00:05:45,678
FORWARD TO A GREAT MISSION,

174
00:05:45,678 --> 00:05:47,914
AGAIN, WITH A QUICK HAND OVER TO

175
00:05:47,914 --> 00:05:49,248
THE RESEARCH COMMUNITY.

176
00:05:49,248 --> 00:05:52,485
WE'RE WORKING ON ONE ISSUE ON

177
00:05:52,485 --> 00:05:53,720
BOARD THE INTERNATIONAL SPACE

178
00:05:53,720 --> 00:05:54,387
STATION.

179
00:05:54,387 --> 00:05:55,822
IT DOES NOT IMPACT THE FLIGHT,

180
00:05:55,822 --> 00:05:58,291
BUT IT WILL HELP US TURN UP OUR

181
00:05:58,291 --> 00:05:58,858
GAME.

182
00:05:58,858 --> 00:06:02,895
WE HAVE ANTENNAS, AND WE HAVE AN

183
00:06:02,895 --> 00:06:05,798
RPC, THE POWER--THE ANTENNA AND

184
00:06:05,798 --> 00:06:07,467
EQUIPMENT ITSELF ARE JUST FINE.

185
00:06:07,467 --> 00:06:09,268
WE HAVE A POWER CONTROL MODULE

186
00:06:09,268 --> 00:06:14,907
THAT HAS BEEN FINICKY OVER THE

187
00:06:14,907 --> 00:06:16,509
PAST COUPLE OF WEEKS.

188
00:06:16,509 --> 00:06:18,945

IT WILL STAY OPEN AFTER WE TRY

189
00:06:18,945 --> 00:06:20,346
TO CLOSE IT SEVERAL TIMES.

190
00:06:20,346 --> 00:06:22,148
IT WILL STAY CLOSED FOR FOUR OR

191
00:06:22,148 --> 00:06:24,016
FIVE DAYS AND THEN IT POPPED

192
00:06:24,016 --> 00:06:24,917
OPEN LAST NIGHT.

193
00:06:24,917 --> 00:06:27,920
WE DO LIKE TO HAVE TWO STREAMS

194
00:06:27,920 --> 00:06:28,654
GOING INTO THE MISSION.

195
00:06:28,654 --> 00:06:31,824
WE HAVE THAT WITH THE KU BAND

196
00:06:31,824 --> 00:06:33,192
CAPABILITY AS WELL.

197
00:06:33,192 --> 00:06:35,261
SO FROM A REDUNDANCY ASPECT

198
00:06:35,261 --> 00:06:36,496
WE'RE JUST FINE FOR THIS

199
00:06:36,496 --> 00:06:37,730
MISSION, BUT IT IS SOMETHING

200
00:06:37,730 --> 00:06:43,269
THAT WE'LL LIKELY GET THE FPDM

201
00:06:43,269 --> 00:06:47,306
OUT AND GET THE LOCATION ON THE

202
00:06:47,306 --> 00:06:48,674
TRUSS, SWAP THAT POWER MODULE

203
00:06:48,674 --> 00:06:50,309
OUT AND BE ON OUR WAY.

204
00:06:50,309 --> 00:06:52,178
WE PLAN TO DO THAT ROBOTICALLY,

205
00:06:52,178 --> 00:06:54,547
AND WE'LL HAVE TO FIGURE OUT A

206
00:06:54,547 --> 00:06:55,815
TIME TO GO DO THAT.

207
00:06:55,815 --> 00:06:58,151
LOOKING AHEAD AS FAR AS OTHER

208
00:06:58,151 --> 00:07:03,656
MAJOR ACTIVITIES, THE RUSSIANS

209
00:07:03,656 --> 00:07:06,159
PLAN TO RETRIEVE SOME RESEARCH

210
00:07:06,159 --> 00:07:07,960
ON THEIR SEGMENT AS WELL AS

211
00:07:07,960 --> 00:07:10,229
DEPLOYING FIVE SATELLITES WHILE

212
00:07:10,229 --> 00:07:12,365
THEY'RE OUT ON EVA.

213
00:07:12,365 --> 00:07:14,700

THEY'LL BE ABLE TO STUDY THOSE

214
00:07:14,700 --> 00:07:16,769
ADRIFT OVER BOARD, AND AS PART

215
00:07:16,769 --> 00:07:18,538
OF THEIR EXPERIMENT, AND LIKE I

216
00:07:18,538 --> 00:07:19,906
SAID THEY'RE GOING TO BE

217
00:07:19,906 --> 00:07:21,007
BRINGING IN OTHER RESEARCH FROM

218
00:07:21,007 --> 00:07:22,341
THE MISSION.

219
00:07:22,341 --> 00:07:25,144
PEGGY AND JACK, THE RETURN IS

220
00:07:25,144 --> 00:07:27,346
STILL PLANNED FOR SEPTEMBER 2ND.

221
00:07:27,346 --> 00:07:30,216
WE LOOK FORWARD TO GETTING THEM

222
00:07:30,216 --> 00:07:30,817
BACK.

223
00:07:30,817 --> 00:07:32,418
THE 52 S LAUNCH WITH MARK, JOE,

224
00:07:32,418 --> 00:07:33,419
AND ALEXANDER.

225
00:07:33,419 --> 00:07:35,221
EVERYTHING IS PROGRESSING WELL

226
00:07:35,221 --> 00:07:36,189
FOR THAT LAUNCH.

227
00:07:36,189 --> 00:07:37,990
AGAIN, WE'LL DIP DOWN TO A CREW

228
00:07:37,990 --> 00:07:39,625
OF THREE FOR A WHILE AND THEN

229
00:07:39,625 --> 00:07:45,798
RIGHT BACK UP TO FOUR U.S. CREW

230
00:07:45,798 --> 00:07:46,499
MEMBERS.

231
00:07:46,499 --> 00:07:48,167
SO AGAIN, THAT WILL REALLY HELP

232
00:07:48,167 --> 00:07:50,403
US OUT FROM THE RESEARCH GOING

233
00:07:50,403 --> 00:07:51,070
FORWARD.

234
00:07:51,070 --> 00:07:53,206
HAVING A CREW MEMBER WITH A FULL

235
00:07:53,206 --> 00:07:55,107
CREW ON BOARD THE INTERNATIONAL

236
00:07:55,107 --> 00:07:56,475
SPACE STATION.

237
00:07:56,475 --> 00:07:58,244
AND THEN WE HAVE PROGRESS LAUNCH

238
00:07:58,244 --> 00:08:00,346

ON OCTOBER 12TH.

239
00:08:00,346 --> 00:08:03,015
THE ORBITAL MISSION OF THE

240
00:08:03,015 --> 00:08:06,285
FLIGHT THAT WILL OCCUR ON

241
00:08:06,285 --> 00:08:07,453
NOVEMBER 10TH WE'RE PREPARING

242
00:08:07,453 --> 00:08:09,989
THE CARGO FOR THAT MISSION NOW.

243
00:08:09,989 --> 00:08:12,024
AND THE OTHER THING RECENTLY WE

244
00:08:12,024 --> 00:08:15,127
DECIDED TO PERFORM A TRIPLE EVA,

245
00:08:15,127 --> 00:08:17,496
AND SO THAT WILL OCCUR PROBABLY

246
00:08:17,496 --> 00:08:20,199
IN THE LATE OCTOBER, EARLY

247
00:08:20,199 --> 00:08:20,766
NOVEMBER.

248
00:08:20,766 --> 00:08:23,502
THE CONTENT OF THOSE EVAs ARE

249
00:08:23,502 --> 00:08:25,137
STILL BEING FINALIZED, BUT THE

250
00:08:25,137 --> 00:08:26,606
MAIN THING WE PLAN TO DO IS

251
00:08:26,606 --> 00:08:32,445
CHANGE OUT ON THE LATCHING END,

252
00:08:32,445 --> 00:08:35,014
WHICH IS WHERE IT'S THE BASINED.

253
00:08:35,014 --> 00:08:38,784
WE'LL SWAP IN ONE OF THOSE WITH

254
00:08:38,784 --> 00:08:43,289
ONE THAT IS SITTING OUT.

255
00:08:43,289 --> 00:08:46,692
SO WE PLAN TO SWAP THOSE TWO

256
00:08:46,692 --> 00:08:47,793
LATCHING DEFECTORS OUT.

257
00:08:47,793 --> 00:08:50,930
AND THEN BE BACK INTO A HEALTHY

258
00:08:50,930 --> 00:08:51,731
CONDITION.

259
00:08:51,731 --> 00:08:53,199
WHAT WE'RE SEE SOMETHING A

260
00:08:53,199 --> 00:08:55,067
LITTLE REFRAIN ON THE SNARE

261
00:08:55,067 --> 00:08:56,802
WIRES ASSOCIATED WITH THE

262
00:08:56,802 --> 00:08:59,338
LAUNCHING END DEFECTOR WHEN IT

263
00:08:59,338 --> 00:09:01,073

GRAPPLES OVER THE GRAPPLE PEN.

264
00:09:01,073 --> 00:09:02,575
WE HAVE PLENTY OF MARGIN AND

265
00:09:02,575 --> 00:09:03,910
PLENTY OF CAPABILITY LEFT.

266
00:09:03,910 --> 00:09:05,745
WE JUST WANT TO GET OUT AHEAD OF

267
00:09:05,745 --> 00:09:08,414
IT IN CASE WE SEE SOME INCREASED

268
00:09:08,414 --> 00:09:10,416
WEAR ON IT.

269
00:09:10,416 --> 00:09:11,484
AGAIN, IT'S SOMETHING THAT WE

270
00:09:11,484 --> 00:09:12,585
WANT TO TACKLE.

271
00:09:12,585 --> 00:09:15,688
AGAIN, WE HAVE THE CREW TIME AND

272
00:09:15,688 --> 00:09:18,824
THAT TIME PERIOD CREW WILL ALSO

273
00:09:18,824 --> 00:09:21,594
BE CHANGED WITH LIGHTS AND

274
00:09:21,594 --> 00:09:22,862
CAMERAS ON BOARD THE

275
00:09:22,862 --> 00:09:24,530
INTERNATIONAL SPACE STATION IN

276
00:09:24,530 --> 00:09:25,998
PREP FOR THE COMMERCIAL CREW

277
00:09:25,998 --> 00:09:27,433
VEHICLES THAT WILL BE ARRIVING.

278
00:09:27,433 --> 00:09:29,635
WE WANT TO GET THOSE IN GOOD

279
00:09:29,635 --> 00:09:30,536
SHAPE AS WELL.

280
00:09:30,536 --> 00:09:32,605
WE'LL BE CONDUCTING THOSE IN THE

281
00:09:32,605 --> 00:09:34,540
LATE OCTOBER TIME PERIOD.

282
00:09:34,540 --> 00:09:36,776
OTHER THAN THAT, THE ISS IS

283
00:09:36,776 --> 00:09:38,844
READY FOR THE CRS 12 MISSION.

284
00:09:38,844 --> 00:09:40,346
I THINK WE'LL KEEP OUR EYES ON

285
00:09:40,346 --> 00:09:41,781
THE WEATHER, NOT ONLY FOR

286
00:09:41,781 --> 00:09:43,816
TOMORROW BUT FOR THE LATE LOADS

287
00:09:43,816 --> 00:09:46,152
AND PAD ACTIVITIES AS SPACEX HAS

288
00:09:46,152 --> 00:09:47,620

TO DO TODAY.

289
00:09:47,620 --> 00:09:50,089
WE'RE READY TO RECEIVE DRAGON

290
00:09:50,089 --> 00:09:52,725
AND I'LL TURN IT OVER TO HANS

291
00:09:52,725 --> 00:09:54,760
FOR THE SPACEX STATUS ON THE

292
00:09:54,760 --> 00:09:55,494
VEHICLE.

293
00:09:55,494 --> 00:09:56,195
>> THANK YOU, DAN.

294
00:09:56,195 --> 00:09:58,965
SO SPACEX IS READY TO GO, TOO.

295
00:09:58,965 --> 00:10:06,372
WE HAD A VERY GOOD TRY ON

296
00:10:06,372 --> 00:10:08,007
THURSDAY, AND ALL THE DATA WAS

297
00:10:08,007 --> 00:10:08,507
GOOD.

298
00:10:08,507 --> 00:10:09,909
SO WE'RE PROCEEDING AT THIS

299
00:10:09,909 --> 00:10:11,177
POINT IN TIME.

300
00:10:11,177 --> 00:10:16,182
WE'RE TARGETING A LAUNCH AT

301
00:10:16,182 --> 00:10:18,284
12:31 AND 37 SECONDS, THAT MIGHT

302
00:10:18,284 --> 00:10:19,785
SHIFT A COUPLE OF SECONDS, IN

303
00:10:19,785 --> 00:10:21,654
CASE YOU ASK.

304
00:10:21,654 --> 00:10:25,791
AND THEN WE'RE GOOD TO GO ON THE

305
00:10:25,791 --> 00:10:29,362
12TH CARGO MISSION FROM THIS

306
00:10:29,362 --> 00:10:32,031
LAUNCH SITE TO THE ISS.

307
00:10:32,031 --> 00:10:35,501
SO FIRST STAGE WILL TURN TO THE

308
00:10:35,501 --> 00:10:37,870
LANDING ZONE.

309
00:10:37,870 --> 00:10:40,639
LIKE THE LAST CS LAUNCH, IT'S

310
00:10:40,639 --> 00:10:42,742
SIMILAR.

311
00:10:42,742 --> 00:10:46,045
AND I HAVE SOME INTERESTING

312
00:10:46,045 --> 00:10:47,246
STATISTICS ON OUR LAUNCHES

313
00:10:47,246 --> 00:10:48,414

THERE.

314
00:10:48,414 --> 00:10:52,551
SO FAR WE HAVE ACTUALLY COMPETED

315
00:10:52,551 --> 00:10:54,220
37 MISSIONS SUCCESSFULLY OVER

316
00:10:54,220 --> 00:10:59,492
ALL, AND WE LANDED 13

317
00:10:59,492 --> 00:11:01,394
FIRST-STAGE BOOSTERS AT THIS

318
00:11:01,394 --> 00:11:01,861
TIME.

319
00:11:01,861 --> 00:11:04,730
EIGHT AT SEA, AND FIVE AT THE

320
00:11:04,730 --> 00:11:09,969
LANDING ZONE HERE IN

321
00:11:09,969 --> 00:11:10,803
CAPE CANAVERAL.

322
00:11:10,803 --> 00:11:11,570
WE HAVE A LOT OF SUCCESSFUL

323
00:11:11,570 --> 00:11:16,609
LANDINGS IN THE MEANTIME.

324
00:11:16,609 --> 00:11:23,115
WE STILL WILL ATTEMPT MANEUVER,

325
00:11:23,115 --> 00:11:26,886
MANEUVER--AUDACIOUS IS THE RIGHT

326
00:11:26,886 --> 00:11:27,887
WORD, MAYBE.

327
00:11:27,887 --> 00:11:32,825
YOU KNOW HOW LOOKS FOR THOSE

328
00:11:32,825 --> 00:11:33,893
FIRST-STAGE LANDINGS.

329
00:11:33,893 --> 00:11:35,327
THERE ARE A NUMBER OF FIRST

330
00:11:35,327 --> 00:11:37,096
STAGES THAT WE'RE REUSING MORE

331
00:11:37,096 --> 00:11:45,571
AND MORE.

332
00:11:45,571 --> 00:11:48,007
THE TRAJECTORY ON EVERYTHING IS

333
00:11:48,007 --> 00:11:51,644
VERY SIMILAR.

334
00:11:51,644 --> 00:11:53,579
I DON'T THINK YOU'LL SEE

335
00:11:53,579 --> 00:11:55,247
ANYTHING DIFFERENT.

336
00:11:55,247 --> 00:11:57,850
ONE DEPLOY DRAGON, IT WILL BE

337
00:11:57,850 --> 00:11:59,318
PHASING WITH THE INTERNATIONAL

338
00:11:59,318 --> 00:12:04,690

SPACE STATION, AND THE GRAPPLING

339
00:12:04,690 --> 00:12:08,494
IS GOING TO HAPPEN ON MONDAY

340
00:12:08,494 --> 00:12:10,763
MORNING IN THE EARLY MORNING

341
00:12:10,763 --> 00:12:11,764
HOURS HERE.

342
00:12:11,764 --> 00:12:14,600
AND EVEN EARLIER THAN THE

343
00:12:14,600 --> 00:12:31,951
PACIFIC TIME.

344
00:12:31,951 --> 00:12:33,686
LAUNCHING ON MONDAY MORNING AND

345
00:12:33,686 --> 00:12:36,222
MONDAY AFTERNOON AND THEN

346
00:12:36,222 --> 00:12:41,093
WEDNESDAY MORNING.

347
00:12:41,093 --> 00:12:42,828
AND THEN DRAGON IS GOING TO BE

348
00:12:42,828 --> 00:12:45,164
THERE FOR ROUGHLY A MONTH.

349
00:12:45,164 --> 00:12:46,799
THAT'S THE TIME FRAME THAT CAN

350
00:12:46,799 --> 00:12:49,435
SHIFT AROUND A LITTLE BIT, AND

351
00:12:49,435 --> 00:12:54,273
IT WILL RETURN TO THE PACIFIC.

352
00:12:54,273 --> 00:12:56,408
WHILE THERE WE'LL GRAB IT AND

353
00:12:56,408 --> 00:12:59,145
BRING IT HOME TO THE BOARD.

354
00:12:59,145 --> 00:13:00,446
THAT'S FUNNY BECAUSE THAT WILL

355
00:13:00,446 --> 00:13:03,282
BE A LITTLE BIT MORE THAN A MILE

356
00:13:03,282 --> 00:13:04,884
AWAY FROM MY HOUSE WHEN THE

357
00:13:04,884 --> 00:13:05,985
UNLOADING HAPPENS.

358
00:13:05,985 --> 00:13:10,990
I CAN ALMOST SEE IT.

359
00:13:10,990 --> 00:13:13,492
AND THAT WILL BE HOPEFULLY

360
00:13:13,492 --> 00:13:14,360
ANOTHER SUCCESSFUL MISSION.

361
00:13:14,360 --> 00:13:16,362
I WOULD LIKE TO THANK A COUPLE

362
00:13:16,362 --> 00:13:20,299
OF TEAMS AND FOLKS HERE AND

363
00:13:20,299 --> 00:13:22,568

PARTICULARLY THE SPACEX DRAGON

364
00:13:22,568 --> 00:13:25,538
TEAM AND SPACEX FALCON LINE

365
00:13:25,538 --> 00:13:26,172
TEAM.

366
00:13:26,172 --> 00:13:28,474
THEY'VE GOTTEN THE DRAGON READY

367
00:13:28,474 --> 00:13:30,142
AND THE LAUNCH PAD READY.

368
00:13:30,142 --> 00:13:31,477
THAT'S ALWAYS AWESOME WHEN IT

369
00:13:31,477 --> 00:13:32,478
COMES TOGETHER.

370
00:13:32,478 --> 00:13:34,180
AND THE DAYS BEFORE LAUNCH.

371
00:13:34,180 --> 00:13:38,484
THEN I WANT TO THANK THE

372
00:13:38,484 --> 00:13:40,986
45TH SPACE FOR THEIR SUPPORT.

373
00:13:40,986 --> 00:13:44,089
AND ESPECIALLY THE SUPPORT ON

374
00:13:44,089 --> 00:13:45,157
THE MONDAY LAUNCH.

375
00:13:45,157 --> 00:13:46,592
AND WORKING IN THE LAST COUPLE

376
00:13:46,592 --> 00:13:47,193
OF DAYS, TOO.

377
00:13:47,193 --> 00:13:48,427
I REALLY APPRECIATE THAT, THANK

378
00:13:48,427 --> 00:13:49,228
YOU VERY MUCH.

379
00:13:49,228 --> 00:13:51,030
AND THEN OF COURSE, NASA, FOR

380
00:13:51,030 --> 00:13:52,431
BEING OUR CUSTOMER AND TRUSTING

381
00:13:52,431 --> 00:13:56,769
US WITH THEIR CARGO TO TAKE TO

382
00:13:56,769 --> 00:13:58,170
THE INTERNATIONAL SPACE STATION.

383
00:13:58,170 --> 00:13:58,737
THANK YOU VERY MUCH.

384
00:13:58,737 --> 00:14:01,006
>> THANK YOU, HANS.

385
00:14:01,006 --> 00:14:01,874
>> OKAY, HELLO.

386
00:14:01,874 --> 00:14:03,108
THANK YOU FOR COMING TODAY.

387
00:14:03,108 --> 00:14:04,410
BOTH HERE IN PERSON AND THE

388
00:14:04,410 --> 00:14:05,945

PEOPLE WHO ARE WATCHING US ON

389
00:14:05,945 --> 00:14:07,613
NASA TV AND SOCIAL MEDIA.

390
00:14:07,613 --> 00:14:10,316
WE'RE VERY GLAD TO GO HERE TODAY

391
00:14:10,316 --> 00:14:11,984
TO AT THE TIME YOU ABOUT THE

392
00:14:11,984 --> 00:14:13,385
IMPORTANT SCIENCE THAT THE

393
00:14:13,385 --> 00:14:15,187
DRAGON IS BRINGING TO THE ISS AS

394
00:14:15,187 --> 00:14:16,655
WELL AS THE WORK WE'RE DOING ON

395
00:14:16,655 --> 00:14:17,790
THE ISS.

396
00:14:17,790 --> 00:14:20,492
THE SPACEX, THE DRAGON BRINGS US

397
00:14:20,492 --> 00:14:23,095
A VARIETY OF PAYLOADS BOTH IN

398
00:14:23,095 --> 00:14:25,864
PRESSURIZED MODULE AND

399
00:14:25,864 --> 00:14:29,969
UNPRESSURIZED, AS WELL AS ALMOST

400
00:14:29,969 --> 00:14:34,573
AS IMPORTANTLY, BRINGING THE

401
00:14:34,573 --> 00:14:35,841
SCIENCE PROJECTS HOME.

402
00:14:35,841 --> 00:14:37,209
WE HAVE 800 POUNDS OF RESEARCH

403
00:14:37,209 --> 00:14:39,511
HARDWARE GOING UP.

404
00:14:39,511 --> 00:14:43,315
THAT DOES INCLUDE THE EXTERNAL

405
00:14:43,315 --> 00:14:44,049
PAYLOADS, AND THEY WERE

406
00:14:44,049 --> 00:14:45,784
RETURNING, IS 1200 KILOGRAMS OR

407
00:14:45,784 --> 00:14:48,721
CLOSE TO 2600 POUNDS.

408
00:14:48,721 --> 00:14:49,955
OVER TWO TONS OF RESEARCH

409
00:14:49,955 --> 00:14:52,591
HARDWARE COMING UP, AND ALMOST A

410
00:14:52,591 --> 00:14:53,759
TON COMING HOME.

411
00:14:53,759 --> 00:14:55,728
SO THE SPACE STATION IS AN

412
00:14:55,728 --> 00:14:57,763
INTERNATIONAL LABORATORY IN

413
00:14:57,763 --> 00:14:58,197

SPACE.

414
00:14:58,197 --> 00:14:59,265
IT'S MULTI DISCIPLINARY.

415
00:14:59,265 --> 00:15:00,532
AND MUCH DIFFERENT THAN A LOT OF

416
00:15:00,532 --> 00:15:01,900
LABS YOU WOULD FIND HERE ON THE

417
00:15:01,900 --> 00:15:03,802
GROUND, WHICH ARE FOCUSED ON ONE

418
00:15:03,802 --> 00:15:07,273
TYPE OF RESEARCH OR MAYBE VERY

419
00:15:07,273 --> 00:15:10,276
ONE SPECIFIC TYPE OF RESEARCH.

420
00:15:10,276 --> 00:15:12,378
WE'RE MULTI DISCIPLINARIES.

421
00:15:12,378 --> 00:15:17,316
WE CATEGORIZE OURSELVES IN SIX

422
00:15:17,316 --> 00:15:17,750
CATEGORIES.

423
00:15:17,750 --> 00:15:20,552
WE HAVE BIOLOGY, EARTH AND SPACE

424
00:15:20,552 --> 00:15:21,186
SCIENCE.

425
00:15:21,186 --> 00:15:22,254
TECHNOLOGY DEMONSTRATION AS WELL

426
00:15:22,254 --> 00:15:24,056
AS EDUCATION AND OUTREACH.

427
00:15:24,056 --> 00:15:25,858
AND AT ANY ONE TIME DURING THE

428
00:15:25,858 --> 00:15:26,759
COURSE OF THE YEAR WE HAVE

429
00:15:26,759 --> 00:15:28,060
HUNDREDS OF EXPERIMENTS GOING

430
00:15:28,060 --> 00:15:28,627
ON.

431
00:15:28,627 --> 00:15:31,230
RIGHT NOW I WOULD PUT THAT

432
00:15:31,230 --> 00:15:32,398
NUMBER SOMEWHERE AROUND 250.

433
00:15:32,398 --> 00:15:34,166
THE CREW DOESN'T OPERATE IN ALL

434
00:15:34,166 --> 00:15:34,800
THOSE.

435
00:15:34,800 --> 00:15:36,735
A LOT OF THOSE ARE BEING

436
00:15:36,735 --> 00:15:39,738
OPERATED AUTONOMOUSLY FROM THE

437
00:15:39,738 --> 00:15:41,206
GROUND, AND IN A LOT OF CASES

438
00:15:41,206 --> 00:15:42,474

THE CREW ARE THE SUBJECTS, IN

439
00:15:42,474 --> 00:15:43,909
THE CASE OF HUMAN RESEARCH.

440
00:15:43,909 --> 00:15:46,245
TO DATE WITH THE ISS PROGRAM AND

441
00:15:46,245 --> 00:15:49,415
THE 16 OR SO, 17 YEARS WE'VE

442
00:15:49,415 --> 00:15:55,054
BEEN PERMANENTLY OCCUPIED WE'VE

443
00:15:55,054 --> 00:15:56,989
HAD 1700 EXPERIMENTS INCLUDING

444
00:15:56,989 --> 00:15:58,290
THE SHUTTLE MISSIONS THAT

445
00:15:58,290 --> 00:15:59,391
BROUGHT SCIENCE TO US.

446
00:15:59,391 --> 00:16:02,061
WE'VE HAD OVER 3300 DIFFERENT

447
00:16:02,061 --> 00:16:03,295
SCIENTISTS FROM AROUND THE WORLD

448
00:16:03,295 --> 00:16:04,897
PARTICIPATE, AND WE'RE SOMEWHERE

449
00:16:04,897 --> 00:16:06,198
AROUND 100 COUNTRIES THAT HAVE

450
00:16:06,198 --> 00:16:07,199
PARTICIPATED NOW.

451
00:16:07,199 --> 00:16:09,068
AND OUR GOALS WITH ISS RESEARCH

452
00:16:09,068 --> 00:16:11,503
ARE TO ADVANCE THE KNOWLEDGE OF

453
00:16:11,503 --> 00:16:12,871
THE NATURAL LIFE, THE NATURAL

454
00:16:12,871 --> 00:16:15,140
WORLD AROUND US TO ENABLE FUTURE

455
00:16:15,140 --> 00:16:16,408
SPACE EXPLORATION.

456
00:16:16,408 --> 00:16:18,977
WE'RE NOW EXPANDING THE

457
00:16:18,977 --> 00:16:20,946
COMMERCIAL MARKET IN ORBIT.OT

458
00:16:20,946 --> 00:16:22,648
NOT JUST COMMERCIAL COMPANIES

459
00:16:22,648 --> 00:16:23,982
LAUNCHING TO US, BUT PROVIDING

460
00:16:23,982 --> 00:16:26,051
HARDWARE AND PARTNERING WITH OUR

461
00:16:26,051 --> 00:16:27,586
SCIENTISTS, AND WE'RE WORKING TO

462
00:16:27,586 --> 00:16:29,388
IMPROVE OUR LIFE HERE ON EARTH.

463
00:16:29,388 --> 00:16:32,458

IF YOU--I'M NOT GOING TO TALK

464
00:16:32,458 --> 00:16:33,826
TOO MUCH ABOUT THE SCIENCE

465
00:16:33,826 --> 00:16:36,829
TODAY, AND I HOPE YOU COME BACKG

466
00:16:36,829 --> 00:16:38,864
3:30 EASTERN TIME. US,

467
00:16:38,864 --> 00:16:40,833
WE HAVE SCIENTISTS COMING TO

468
00:16:40,833 --> 00:16:43,235
TALK TO US FROM THE NASA SIDESI.

469
00:16:43,235 --> 00:16:44,570
AND THE LABORATORY SIDE.

470
00:16:44,570 --> 00:16:48,073
FIRST UP, YOU'LL SEE TWO

471
00:16:48,073 --> 00:16:50,676
SCIENTISTS FROM THE MICHAEL J.

472
00:16:50,676 --> 00:16:55,447
FOX FOUNDATION TALKING ABOUT

473
00:16:55,447 --> 00:16:57,082
PARKINSON'S DISEASE AND THEY'RE

474
00:16:57,082 --> 00:16:59,551
TALKING ABOUT A CRYSTAL

475
00:16:59,551 --> 00:17:02,321
RESPONSIBLE FOR PARKINSON'S

476
00:17:02,321 --> 00:17:03,021
DISEASE.

477
00:17:03,021 --> 00:17:05,023
AND THEY'RE HOPING TO GET A GOOD

478
00:17:05,023 --> 00:17:06,158
UNDERSTANDING OF THE STRUCTURE R

479
00:17:06,158 --> 00:17:07,760
OF THE CRYSTAL SO THEY CAN

480
00:17:07,760 --> 00:17:10,162
UNDERSTAND THE PATHOLOGY OF THE

481
00:17:10,162 --> 00:17:11,597
PARKINSON'S DISEASE AS WELL AS

482
00:17:11,597 --> 00:17:13,365
POTENTIALLY DEVELOP THERAPIES

483
00:17:13,365 --> 00:17:14,400
FOR TREATING IT.

484
00:17:14,400 --> 00:17:16,168
WE HAVE ANOTHER SCIENTIST WHO

485
00:17:16,168 --> 00:17:19,505
WILL BE TALKING ABOUT GROWING

486
00:17:19,505 --> 00:17:24,943
LUNG TISSUE IN SPACE BY STEERING

487
00:17:24,943 --> 00:17:26,278
CELLS TO GO INTO LUNG TISSUE.E.

488
00:17:26,278 --> 00:17:31,049

THEY HOPE TO GROW BIO-ENGINEERED

489
00:17:31,049 --> 00:17:32,251
TISSUES TO HELP US REPLACETIS

490
00:17:32,251 --> 00:17:34,219
ORGANS ON THE GROUND ANDD A

491
00:17:34,219 --> 00:17:36,488
REPAIRING DAMAGED ORGANS.

492
00:17:36,488 --> 00:17:38,390
DAN MENTIONED THE CREAM ORG

493
00:17:38,390 --> 00:17:39,091
EXPERIMENT.

494
00:17:39,091 --> 00:17:42,327
WE CALL THIS THE ISS CREAM OR

495
00:17:42,327 --> 00:17:46,231
ICE CREAM COSMIC RAYS IS WHAT IS

496
00:17:46,231 --> 00:17:46,965
MEASURES.F T

497
00:17:46,965 --> 00:17:49,568
IT GOES OUTSIDE OF THE SPACE COC

498
00:17:49,568 --> 00:17:55,674
STATION AND IT WILL BE LAUNCHEDB

499
00:17:55,674 --> 00:17:57,776
EXTERNALLY IN THE TRUNK OF THE

500
00:17:57,776 --> 00:17:59,278
DRAGON AND INSTALLED ON THEIDE

501
00:17:59,278 --> 00:18:00,579
OUTSIDE OF THE SPACE STATION. G

502
00:18:00,579 --> 00:18:01,947
THIS IS A GOOD EXAMPLE OF USING

503
00:18:04,383 --> 00:18:02,147
ISS

504
00:18:04,383 --> 00:18:06,251
ALREADY IN SPACE AND GIVES

505
00:18:06,251 --> 00:18:07,186
SERVICES.

506
00:18:07,186 --> 00:18:07,920
THE CREAM EXPERIMENT HAS BEEN

507
00:18:07,920 --> 00:18:09,655
LAUNCHED SEVERAL TIMESIMNC OD SH

508
00:18:09,655 --> 00:18:11,323
ALTITUDE BALLOONS AND HAS BEENS.

509
00:18:11,323 --> 00:18:12,458
SUCCESSFUL THERE.

510
00:18:12,458 --> 00:18:13,859
THEY'RE ADAPTING THE INSTRUMENT

511
00:18:13,859 --> 00:18:15,527
TO PUT IT ON THE OUTSIDE OF THEI

512
00:18:15,527 --> 00:18:16,795
SPACE STATION. T

513
00:18:16,795 --> 00:18:19,832

WE PROVIDE POWER, DATA AND OTHE.

514
00:18:19,832 --> 00:18:21,767
SERVICES AS WELL AS A PLATFORM

515
00:18:21,767 --> 00:18:24,970
IN SPACE.

516
00:18:24,970 --> 00:18:29,775
NEXT WE'LL LOOK AT RODENTS ON

517
00:18:29,775 --> 00:18:32,578
ISS FOR 30 DAYS AND THEN BROUGHB

518
00:18:32,578 --> 00:18:35,080
HOME LIVE AND HOW THEY DEVELOPEL

519
00:18:35,080 --> 00:18:36,782
IN SPACE. S

520
00:18:36,782 --> 00:18:40,185
RODENTS ARE MODEL ORGANISMS FOR

521
00:18:40,185 --> 00:18:40,886
US. F

522
00:18:40,886 --> 00:18:44,056
THEIR LIFE SPAN IS FASTER ON

523
00:18:44,056 --> 00:18:48,994
SPACE, AND WE'LL LOOK AT VISUAL

524
00:18:48,994 --> 00:18:53,298
IMPAIRMENT, THE FLUID SHIFT ANDN

525
00:18:53,298 --> 00:18:56,502
CRANIAL PRESSURE AS WELL AS BONE

526
00:18:56,502 --> 00:18:59,505
STRUCTURE, HIPS, KNEES, AND BONA

527
00:18:59,505 --> 00:19:00,105
JOINTS.

528
00:19:00,105 --> 00:19:02,641
YOU'LL HEAR ABOUT A MICRO

529
00:19:02,641 --> 00:19:04,042
SATELLITE, A DEMONSTRATION USING

530
00:19:04,042 --> 00:19:06,044
SATELLITE IN LOW ORBIT THAT IS

531
00:19:06,044 --> 00:19:08,647
ABLE TO BE COMMANDED ANDO

532
00:19:08,647 --> 00:19:09,882
REQUESTING IMAGERY FOR SOMEONE

533
00:19:09,882 --> 00:19:11,283
WHO IS ON THE GROUND. R

534
00:19:11,283 --> 00:19:13,385
AND THAT COMMUNICATION PATH DOES

535
00:19:13,385 --> 00:19:21,693
NOT NEED TO GO THROUGH THEOO E

536
00:19:21,693 --> 00:19:22,327
SATELLITE.

537
00:19:22,327 --> 00:19:23,762
THAT WILL HAVE GOOD APPLICATIONS

538
00:19:23,762 --> 00:19:24,963

ON THE GROUND FOR US.

539
00:19:24,963 --> 00:19:27,199
A FUN ONE THAT YOU'LL HEAR ABOUG

540
00:19:27,199 --> 00:19:30,202
IS FROM A GROUP OF BOY SCOUTS

541
00:19:30,202 --> 00:19:34,573
PARTNERING WITHRTNERING WITH NA,

542
00:19:34,573 --> 00:19:37,376
LOOKING AT CELL MUTATION AND HOW

543
00:19:37,376 --> 00:19:39,378
MICRO GRAVITY INCREASES THE RATE

544
00:19:39,378 --> 00:19:40,178
OF MUTATION.

545
00:19:40,178 --> 00:19:44,483
THERE IS GOOD STUFF COMING TO US

546
00:19:44,483 --> 00:19:48,086
FROM THE SPACEX DRAGON LAUNCH

547
00:19:48,086 --> 00:19:48,954
TOMORROW.

548
00:19:48,954 --> 00:19:52,658
THEY MENTIONED PEGGY WHITSON,

549
00:19:52,658 --> 00:19:56,061
HER STAY WAS EXTENDED BECAUSE OF

550
00:19:56,061 --> 00:19:57,362
HER AVAILABILITY ON THE SEAT.

551
00:19:57,362 --> 00:19:58,997
HER EXTENSION HAS BROUGHT US

552
00:19:58,997 --> 00:20:00,699
FOUR CREW MEMBERS THAN WE WERE

553
00:20:00,699 --> 00:20:02,601
EXPECTING, BUT WHAT THAT DOES IS

554
00:20:02,601 --> 00:20:05,337
THAT DOUBLES THE NUMBER OF CREW

555
00:20:05,337 --> 00:20:07,406
TIME THAT WE CAN GET FROM THE

556
00:20:07,406 --> 00:20:09,541
CREW TO DEVOTE TO SCIENCE.

557
00:20:09,541 --> 00:20:13,845
WE ALREADY HAD THE MEDICAL,

558
00:20:13,845 --> 00:20:15,480
MAINTENANCE COVERED, SO ALL THAT

559
00:20:15,480 --> 00:20:17,683
TIME GOES OUR WAY, IT GOES TO

560
00:20:17,683 --> 00:20:18,617
SCIENCE.

561
00:20:18,617 --> 00:20:22,821
WITH THE LAUNCH OF SOYUS IN

562
00:20:22,821 --> 00:20:24,690
ACCEPT, THAT WILL CONTINUE

563
00:20:24,690 --> 00:20:26,825

HAVING FOUR US CREW MEMBERS.

564
00:20:26,825 --> 00:20:28,293
THAT ARRANGEMENT GOES THROUGH

565
00:20:28,293 --> 00:20:29,962
NEXT SUMMER, AND WE'RE LOOKING

566
00:20:29,962 --> 00:20:31,396
AHEAD TO THE TIME WHEN THE

567
00:20:31,396 --> 00:20:33,565
COMMERCIAL CREW PROGRAMS WILL BE

568
00:20:33,565 --> 00:20:34,800
BRINGING U.S. CREW MEMBERS FOR

569
00:20:34,800 --> 00:20:35,434
US.

570
00:20:35,434 --> 00:20:36,768
SO PART OF THE MESSAGE THERE IS

571
00:20:36,768 --> 00:20:38,470
WE HAVE PLENTY OF TIME TO DO THE

572
00:20:38,470 --> 00:20:40,005
THINGS THAT WE WANT TO DO ON

573
00:20:40,005 --> 00:20:40,439
STATION.

574
00:20:40,439 --> 00:20:43,475
IF YOU'RE A SCIENTIST WE WANT TO

575
00:20:43,475 --> 00:20:45,310
HEAR FROM YOU BECAUSE IT'S A

576
00:20:45,310 --> 00:20:47,879
GOOD TIME TO COME BACK AND WORK

577
00:20:47,879 --> 00:20:48,680
WITH US.

578
00:20:48,680 --> 00:20:50,148
THERE ARE OTHER THINGS GOING ON

579
00:20:50,148 --> 00:20:51,350
WITH NASA AS WELL.

580
00:20:51,350 --> 00:20:52,751
YOU HEARD THAT THERE IS AN

581
00:20:52,751 --> 00:20:54,086
ECLIPSE HAPPENING A WEEK FROM

582
00:20:54,086 --> 00:20:54,720
MONDAY.

583
00:20:54,720 --> 00:20:57,322
THE ISS CREW WILL SEE THAT

584
00:20:57,322 --> 00:20:58,390
ECLIPSE AS WELL.

585
00:20:58,390 --> 00:21:00,292
THEY'LL SEE IT FROM THREE

586
00:21:00,292 --> 00:21:01,493
CONSECUTIVE ORBITS.

587
00:21:01,493 --> 00:21:03,028
THE FIRST ORBIT THEY'LL BE

588
00:21:03,028 --> 00:21:04,496

FLYING OVER THE PACIFIC

589
00:21:04,496 --> 00:21:04,997
NORTHWEST.

590
00:21:04,997 --> 00:21:06,498
THE SHADOW WILL NOT BE ON THE

591
00:21:06,498 --> 00:21:09,368
GROUND YET, BUT THEY'LL SEE A

592
00:21:09,368 --> 00:21:11,370
SPANISH ECLIPSE AS THIS GO.

593
00:21:11,370 --> 00:21:13,872
THE SECOND ORBIT, THEY'LL BE

594
00:21:13,872 --> 00:21:15,240
GOING OVER CANADA AND THEY'LL BE

595
00:21:15,240 --> 00:21:16,908
ABLE TO SEE THE SHADOW ON THE

596
00:21:16,908 --> 00:21:18,310
GROUND SOMEWHERE AROUND KENTUCKY

597
00:21:18,310 --> 00:21:19,177
AND TENNESSEE.

598
00:21:19,177 --> 00:21:22,814
AND THEN ON THE THIRD ORBIT

599
00:21:22,814 --> 00:21:24,483
THEY'LL SEE MOST OF THE ECLIPSE

600
00:21:24,483 --> 00:21:26,652
OF THEIR THREE PASSES, THAT WILL

601
00:21:26,652 --> 00:21:28,920
BE 85% THAT THEY'LL BE ABLE TO

602
00:21:28,920 --> 00:21:29,521
SEE.

603
00:21:29,521 --> 00:21:31,890
THE CREW WILL HAVE SPECIAL

604
00:21:31,890 --> 00:21:33,091
FILTERS AND SPECIAL CAMERAS TO

605
00:21:33,091 --> 00:21:34,292
LOOK AT THE ECLIPSE.

606
00:21:34,292 --> 00:21:36,128
IF YOU'RE GOING TO LOOK AT THE

607
00:21:36,128 --> 00:21:37,429
ECLIPSE YOU SHOULD HAVE THOSE

608
00:21:37,429 --> 00:21:38,830
THINGS, TOO.

609
00:21:38,830 --> 00:21:43,301
THERE ARE TOOLS FOR VIEWING THE

610
00:21:43,301 --> 00:21:48,774
ECLIPSE.

611
00:21:48,774 --> 00:21:52,878
WE'RE HOPING FOR CLEAR SKIES AS

612
00:21:52,878 --> 00:21:58,784
WELL.

613
00:21:58,784 --> 00:22:00,585

9:33 LOOK WEST FOR SOMETHING

614
00:22:00,585 --> 00:22:02,020
THAT LOOKS LIKE AN APRIL OVER

615
00:22:02,020 --> 00:22:03,422
THE HORIZON.

616
00:22:03,422 --> 00:22:05,457
IT WILL GO STRAIGHT OVER HEAD

617
00:22:05,457 --> 00:22:08,560
AND THEN DISAPPEAR IN THE ISS

618
00:22:08,560 --> 00:22:10,162
SUNSET 200 MILES ABOVE US.

619
00:22:10,162 --> 00:22:12,564
BACK TO THE PURPOSE, THE

620
00:22:12,564 --> 00:22:14,599
BRIEFING OF SPACEX DRAGON.

621
00:22:14,599 --> 00:22:17,602
WE'RE EXCITED ABOUT THE SCIENCE

622
00:22:17,602 --> 00:22:19,538
IT'S BRINGING AND THAT IT WILL

623
00:22:19,538 --> 00:22:21,239
BRING HOME FOR US AND WE'RE

624
00:22:21,239 --> 00:22:23,375
EXCITED ABOUT WHAT IS GOING ON,

625
00:22:23,375 --> 00:22:25,310
ON THE ISS AS WELL.

626
00:22:25,310 --> 00:22:27,112
>> WE HAVE THE WEATHER UPDATE

627
00:22:27,112 --> 00:22:31,450
FOR YOU.

628
00:22:31,450 --> 00:22:34,586
WINDS EXPECTED TO BE 10 MPH.

629
00:22:34,586 --> 00:22:35,587
TEMPERATURES 85 DEGREES.

630
00:22:35,587 --> 00:22:36,988
THE ONLY CONCERNS FOR LAUNCH

631
00:22:36,988 --> 00:22:41,393
TOMORROW ARE THE CUMULUS CLOUDS

632
00:22:41,393 --> 00:22:43,595
AND PRECIPITATION.

633
00:22:43,595 --> 00:22:46,665
WE'RE 70% GO FOR TOMORROW'S

634
00:22:46,665 --> 00:22:47,899
LAUNCH.

635
00:22:47,899 --> 00:22:50,102
WE'LL TAKE YOUR QUESTIONS, IF

636
00:22:50,102 --> 00:22:51,503
YOU WOULD PLEASE RAISE YOUR

637
00:22:51,503 --> 00:22:52,671
HAND, STATE YOUR NAME AND

638
00:22:52,671 --> 00:22:54,673

AFFILIATION AND TO WHOM YOU'RE

639
00:22:54,673 --> 00:22:56,141
DIRECTING YOUR QUESTION.

640
00:22:56,141 --> 00:22:57,709
WE'LL START IN THE FRONT WITH

641
00:22:57,709 --> 00:22:58,510
MARSHA.

642
00:22:58,510 --> 00:23:12,190
>> I THINK FOR YOU, DAN.

643
00:23:12,190 --> 00:23:14,259
PEGGY WHITSON'S STAY IN SPACE,

644
00:23:14,259 --> 00:23:15,961
HOW MUCH DOES THAT PUSH YOUR

645
00:23:15,961 --> 00:23:19,331
TIME IN SPACE, AND IS THE

646
00:23:19,331 --> 00:23:20,599
ONE-YEAR CREW STILL IN THE

647
00:23:20,599 --> 00:23:21,333
PICTURE?

648
00:23:21,333 --> 00:23:28,073
HOW DOES THAT ALL WORK?

649
00:23:28,073 --> 00:23:29,508
>> FROM AGREEMENT WITH OUR

650
00:23:29,508 --> 00:23:31,076
RUSSIAN COLLEAGUES, SO THOSE

651
00:23:31,076 --> 00:23:32,744
DISCUSSIONS ARE ONGOING.

652
00:23:32,744 --> 00:23:37,816
WE DON'T HAVE AGREEMENT.

653
00:23:37,816 --> 00:23:41,086
AND AS FAR AS PEGGY, YOU KNOW, I

654
00:23:41,086 --> 00:23:42,854
DON'T KNOW IF WE REALLY SET UP

655
00:23:42,854 --> 00:23:44,422
AN ADVANCE THE ONE-YEAR

656
00:23:44,422 --> 00:23:46,458
PROTOCOLS THAT WE'RE LOOKING TO

657
00:23:46,458 --> 00:23:47,125
DO.

658
00:23:47,125 --> 00:23:48,693
THE TEAMS HAVE BEEN ABLE TO

659
00:23:48,693 --> 00:23:50,829
ADAPT TO THOSE AS WE HAVE GONE

660
00:23:50,829 --> 00:23:52,564
FROM SIX MONTHS TO NINE MONTHS,

661
00:23:52,564 --> 00:23:55,367
AND MORE DATA POINTS ON THINGS

662
00:23:55,367 --> 00:23:58,970
LIKE BONE DENSITY AND ALL KINDS

663
00:23:58,970 --> 00:24:00,505

OF BIOLOGICAL SAMPLES BEING

664
00:24:00,505 --> 00:24:04,042
TAKEN THAT THE RESEARCH TEAMS,

665
00:24:04,042 --> 00:24:05,410
HUMAN RESEARCH TEAMS ON THE

666
00:24:05,410 --> 00:24:07,512
GROUND WILL BE ABLE TO ANALYZE

667
00:24:07,512 --> 00:24:08,814
WHEN SHE GETS BACK.

668
00:24:08,814 --> 00:24:09,848
PETE, ANYTHING ELSE?

669
00:24:09,848 --> 00:24:10,649
>> SURE.

670
00:24:10,649 --> 00:24:13,018
THIS IS A GOOD WINDFALL FOR US.

671
00:24:13,018 --> 00:24:16,087
PEGGY WAS ALREADY A SUSPECT IN

672
00:24:16,087 --> 00:24:17,222
THE FLUID SHIFT EXPERIMENT,

673
00:24:17,222 --> 00:24:19,424
WHICH WAS ONE OF THE KEY

674
00:24:19,424 --> 00:24:21,293
EXPERIMENTS THAT SCOTT KELLY AND

675
00:24:21,293 --> 00:24:22,093
KYLE DID.

676
00:24:22,093 --> 00:24:24,095
NOW WITH HER DURATION INCREASED,

677
00:24:24,095 --> 00:24:25,397
SHE'S ON THE SAME SKILL THAT

678
00:24:25,397 --> 00:24:25,997
THEY WERE.

679
00:24:25,997 --> 00:24:29,401
NOT QUITE AS LONG BUT WE'RE

680
00:24:29,401 --> 00:24:30,368
CONTINUING HER FLUID SHIFT

681
00:24:30,368 --> 00:24:30,969
SESSIONS.

682
00:24:30,969 --> 00:24:32,938
SHE'S ALSO CONTINUING SOME OF

683
00:24:32,938 --> 00:24:34,406
THE OTHER SCIENCE THAT APPLIED

684
00:24:34,406 --> 00:24:37,409
TO THE ONE-YEAR MISSION.

685
00:24:37,409 --> 00:24:41,313
BEHAVIOR, FOOD SURVEYS, ALL OF

686
00:24:41,313 --> 00:24:43,715
HER BIOMEDICAL DATA THAT

687
00:24:43,715 --> 00:24:44,883
BIOMEDICAL RESEARCH CAN BE

688
00:24:44,883 --> 00:24:45,817

APPLIED AS WELL.

689
00:24:45,817 --> 00:24:47,719
>> DO YOU HAVE TO HAVE A RUSSIAN

690
00:24:47,719 --> 00:24:48,854
PARTNER WITH THIS?

691
00:24:48,854 --> 00:24:51,122
COULD YOU SEND UP AN AMERICAN OR

692
00:24:51,122 --> 00:24:52,991
TWO AMERICANS OR AN EUROPEAN?

693
00:24:52,991 --> 00:24:56,294
WHY DO YOU NEED TO HAVE THE

694
00:24:56,294 --> 00:24:58,096
RUSSIANS SIGN OFF ON THIS?

695
00:24:58,096 --> 00:24:59,297
>> CERTAINLY DURING THE PERIOD

696
00:24:59,297 --> 00:25:01,867
OF SOYU THAT WOULD BE THE CASE.

697
00:25:01,867 --> 00:25:16,314
THAT'S HOW FAR WE'VE LOOKED.

698
00:25:16,314 --> 00:25:21,219
I DON'T KNOW IF WE HAVE DO IT

699
00:25:21,219 --> 00:25:22,888
SOLELY ON OUR SIDE.

700
00:25:22,888 --> 00:25:25,090
I WOULD SAY YES, BUT THERE IS

701
00:25:25,090 --> 00:25:27,025
NOTHING THAT WOULD PRECLUDE US

702
00:25:27,025 --> 00:25:30,295
FROM THAT REGARD.

703
00:25:30,295 --> 00:25:32,631
>> A QUESTION FOR HANS AND ONE

704
00:25:32,631 --> 00:25:33,565
FOR DAN.

705
00:25:33,565 --> 00:25:35,000
WITH ONE DAY IN THE WINDOW TO

706
00:25:35,000 --> 00:25:36,468
STAND DOWN FOR A WEEK, CAN YOU

707
00:25:36,468 --> 00:25:38,470
TALK ABOUT WHAT THE TEAMS DID TO

708
00:25:38,470 --> 00:25:40,839
FIX THE COMPUTER ISSUE THAT

709
00:25:40,839 --> 00:25:44,576
STOPPED THE COUNT DOWN OF NINE

710
00:25:44,576 --> 00:25:46,077
SECONDS, TWICE.

711
00:25:46,077 --> 00:25:49,080
FOR DAN, IS IT THE SCIENCE

712
00:25:49,080 --> 00:25:50,615
EXPERIMENT FOR DRAGON OR THE

713
00:25:50,615 --> 00:25:57,088

NEED TO CATALOG THE FLIGHTS, AND

714
00:25:57,088 --> 00:26:02,594
WHY CAN'T DRAGON LAUNCH AND

715
00:26:02,594 --> 00:26:15,874
LOITER BEHIND THEIST. BEHIND IS.

716
00:26:15,874 --> 00:26:17,375
>> THOSE COMPUTERS ARE GROUND

717
00:26:17,375 --> 00:26:20,111
COMPUTERS AND THEY WORK WITH

718
00:26:20,111 --> 00:26:21,079
CHECKS FOR VALUES.

719
00:26:21,079 --> 00:26:23,214
THOSE ARE THINGS THAT ARE EASY

720
00:26:23,214 --> 00:26:26,418
TO FIX.

721
00:26:26,418 --> 00:26:30,522
AND HAVE BEEN FIXED RIGHT AWAY

722
00:26:30,522 --> 00:26:32,724
AND TEST AGAIN.

723
00:26:32,724 --> 00:26:34,159
I DON'T ANTICIPATE THAT TO BE A

724
00:26:34,159 --> 00:26:34,793
PROBLEM.

725
00:26:34,793 --> 00:26:36,728
ALTHOUGH I SHOULDN'T REALLY SAY

726
00:26:36,728 --> 00:26:37,295
THIS.

727
00:26:37,295 --> 00:26:41,900
KNOCK ON WOOD.

728
00:26:41,900 --> 00:26:50,608
I THINK ITS 30%.

729
00:26:50,608 --> 00:26:52,277
BUT THOSE CHANGE, AND EVEN IF

730
00:26:52,277 --> 00:26:55,013
YOU STOP IN THAT 30% IT'S NOT

731
00:26:55,013 --> 00:26:55,480
GOOD.

732
00:26:55,480 --> 00:26:56,815
HAVING SAID THAT, I THINK

733
00:26:56,815 --> 00:26:58,016
EVERYTHING ELSE LOOKS PRETTY

734
00:26:58,016 --> 00:27:19,404
GOOD.

735
00:27:19,404 --> 00:27:27,812
I'M OPTIMISTIC ABOUT THIS

736
00:27:27,812 --> 00:27:28,380
LAUNCH.

737
00:27:28,380 --> 00:27:30,315
AND WE'LL SEE HOW IT GOES.

738
00:27:30,315 --> 00:27:32,250

>> IF WE COULDN'T GET OFF

739
00:27:32,250 --> 00:27:33,551
TOMORROW, WE WOULD GO TO

740
00:27:33,551 --> 00:27:34,319
TUESDAY.

741
00:27:34,319 --> 00:27:36,121
AND THAT WOULD LINE IT UP ON THE

742
00:27:36,121 --> 00:27:37,255
RUSSIAN DAY.

743
00:27:37,255 --> 00:27:38,289
THAT'S THE OTHER QUESTION THAT

744
00:27:38,289 --> 00:27:40,992
WE PURSUED WITH OUR RUSSIAN

745
00:27:40,992 --> 00:27:41,593
COLLEAGUES.

746
00:27:41,593 --> 00:27:43,762
THEN THE RUSSIANS ON THAT DEPLOY

747
00:27:43,762 --> 00:27:46,297
FIVE SATELLITES, AND WE DO

748
00:27:46,297 --> 00:27:47,432
REQUIRE GOOD TRACKING ON THOSE

749
00:27:47,432 --> 00:27:51,469
SO WE KNOW WHERE TO FLY DRAGON

750
00:27:51,469 --> 00:27:55,473
AND HELP SPACEX FLY DRAGON TO

751
00:27:55,473 --> 00:27:56,708
THE ISS.

752
00:27:56,708 --> 00:27:58,777
THAT'S A BIG DEAL TO US.

753
00:27:58,777 --> 00:28:00,045
COULD WE LOITER?

754
00:28:00,045 --> 00:28:03,081
YES, AT THE EXPENSE OF LOSING

755
00:28:03,081 --> 00:28:03,782
RESEARCH.

756
00:28:03,782 --> 00:28:06,151
BECAUSE THERE ARE SAMPLES OF X

757
00:28:06,151 --> 00:28:10,388
AMOUNT OF HOURS BEFORE THEY'RE

758
00:28:10,388 --> 00:28:11,556
OFF-LOADED AND BROUGHT ON THE

759
00:28:11,556 --> 00:28:12,023
STATION.

760
00:28:12,023 --> 00:28:14,359
WE LOOK AT THOSE AS WELL.

761
00:28:14,359 --> 00:28:16,795
THE LOITER DIDN'T CLOSE ON SOME

762
00:28:16,795 --> 00:28:19,664
OF THE RESEARCH PERIMETERS THAT

763
00:28:19,664 --> 00:28:20,432

WE HAD.

764
00:28:20,432 --> 00:28:21,800
THEN YOU GET PAST THAT.

765
00:28:21,800 --> 00:28:25,203
YOU HAVE TEDRIS ON THE 18TH WITH

766
00:28:25,203 --> 00:28:27,305
A BACK-UP DAY ON THE 19TH.

767
00:28:27,305 --> 00:28:30,909
WHEN WE LOOK AT IT, AND AT LEAST

768
00:28:30,909 --> 00:28:32,777
FROM A COMPATIBILITY WITH THE

769
00:28:32,777 --> 00:28:33,511
STALKINGS THAT SEEMS TO PLAY

770
00:28:33,511 --> 00:28:34,112
OKAY.

771
00:28:34,112 --> 00:28:36,614
WHETHER WE CAN GET RAIN, SPACEX

772
00:28:36,614 --> 00:28:38,983
THERE ARE A LOT OF THINGS TO DO

773
00:28:38,983 --> 00:28:39,784
THERE.

774
00:28:39,784 --> 00:28:42,954
WE LOOK AT THOSE, AND THEY WERE

775
00:28:42,954 --> 00:28:50,962
EXCEPTIBLE DAYS.

776
00:28:50,962 --> 00:28:52,497
>> HAVE YOU STARTED PROCESSING

777
00:28:52,497 --> 00:28:54,332
THAT AND LEARNING ANYTHING FROM

778
00:28:54,332 --> 00:28:54,966
THAT.

779
00:28:54,966 --> 00:28:56,868
WOULD THERE EVER BE A TIME THAT

780
00:28:56,868 --> 00:28:59,938
YOU WOULD SEND THE SHIP OUT EVEN

781
00:28:59,938 --> 00:29:05,310
THOUGH YOU'RE LANDING ONLINE.

782
00:29:05,310 --> 00:29:06,911
>> I THINK THERE WAS THE ONE

783
00:29:06,911 --> 00:29:08,480
CASE THAT YOU JUST DESCRIBED.

784
00:29:08,480 --> 00:29:11,182
WE LEARNED A LOT OVER THE LAST

785
00:29:11,182 --> 00:29:14,819
LENDING TEST, I WOULD SAY.

786
00:29:14,819 --> 00:29:28,299
AND WE WORKED ON THAT, TOO.

787
00:29:28,299 --> 00:29:30,135
I THINK WE STILL HAVE TO LEARN A

788
00:29:30,135 --> 00:29:32,604

LITTLE BIT TO ACTUALLY LAND

789
00:29:32,604 --> 00:29:33,204
THEM.

790
00:29:33,204 --> 00:29:34,806
AND WE COVER AND WE USE THEM AT

791
00:29:34,806 --> 00:29:38,143
THIS POINT IN TIME.

792
00:29:38,143 --> 00:29:43,448
BUT IT'S SOMETHING THAT WE WOULD

793
00:29:43,448 --> 00:29:45,884
OVER THE HAST COUPLE OF MONTHS.

794
00:29:45,884 --> 00:29:49,053
NOT ON THIS ONE.

795
00:29:49,053 --> 00:29:50,522
OBVIOUSLY, THIS DOESN'T HAVE A

796
00:29:50,522 --> 00:29:51,322
FAIRING.

797
00:29:51,322 --> 00:29:52,657
THE NEXT FAIRING MISSION IS THE

798
00:29:52,657 --> 00:29:55,093
ONE AFTER THAT, A AND I THINK IT

799
00:29:55,093 --> 00:30:06,171
HAS AN ATTEMPT.

800
00:30:06,171 --> 00:30:07,772
>> TWO QUESTIONS.

801
00:30:07,772 --> 00:30:09,174
ONE ABOUT CREAM, IF YOU CAN

802
00:30:09,174 --> 00:30:10,008
ANSWER IT.

803
00:30:10,008 --> 00:30:14,512
WHY IS IT ON THE JIM AND NOT ON

804
00:30:14,512 --> 00:30:18,216
THE TRUSS.

805
00:30:18,216 --> 00:30:23,087
AND CAN YOU GIVE US THE FIRST

806
00:30:23,087 --> 00:30:24,789
FLIGHT--WHEN MIGHT WE SEE A

807
00:30:24,789 --> 00:30:27,792
FIRST FLIGHT FROM PAD 40?

808
00:30:27,792 --> 00:30:30,295
>> I CAN TAKE A SHOT AT CREAM.

809
00:30:30,295 --> 00:30:32,430
FROM A SCIENCE ASPECT YOU MIGHT

810
00:30:32,430 --> 00:30:33,865
WANT TO CHIME IN AS WELL.

811
00:30:33,865 --> 00:30:37,669
BUT THE JAB KNEES FACILITY HAS

812
00:30:37,669 --> 00:30:39,804
AN ACCOMMODATION AS A COOLING

813
00:30:39,804 --> 00:30:41,139

BOOTH.

814
00:30:41,139 --> 00:30:44,542
AND THE SITES WE HAVE ON THE

815
00:30:44,542 --> 00:30:46,211
TRUSS SEGMENTS DON'T HAVE THAT,

816
00:30:46,211 --> 00:30:48,479
THE COLUMBUS EXTERNAL SITES

817
00:30:48,479 --> 00:30:50,281
DON'T HAVE THAT, SO THERE IS AN

818
00:30:50,281 --> 00:30:52,350
UNIQUE CAPABILITY ON EIGHT OF

819
00:30:52,350 --> 00:30:58,990
THE TEN FACILITY SITES WHERE IT

820
00:30:58,990 --> 00:31:04,862
PASSES FLUID TO ACT AS A COOLING

821
00:31:04,862 --> 00:31:05,496
AGENT.

822
00:31:05,496 --> 00:31:06,864
WHERE YOU GET THE TEMPERATURES

823
00:31:06,864 --> 00:31:21,746
UP.

824
00:31:21,746 --> 00:31:23,481
THE CREAM PAYLOAD IS TIED IN TO

825
00:31:23,481 --> 00:31:26,818
OUR MAIN RADIATOR SYSTEM TO GIVE

826
00:31:26,818 --> 00:31:29,954
THEM THEIR CAPABILITY TO GIVE

827
00:31:29,954 --> 00:31:31,889
PAYLOADS TO GET THE POWER AND

828
00:31:31,889 --> 00:31:33,791
FROM THE RESEARCH SIDE I'M NOT

829
00:31:33,791 --> 00:31:42,200
QUITE SURE.

830
00:31:42,200 --> 00:31:44,135
>> CREAM NEEDS A WIDE SKY.

831
00:31:44,135 --> 00:31:46,604
THE GEM DOES A PRETTY GOOD JOB.

832
00:31:46,604 --> 00:31:51,542
THE ISS CREAM, AS OPPOSED TO

833
00:31:51,542 --> 00:31:55,613
BALLOON CREAM, THE SITE ON THE

834
00:31:55,613 --> 00:31:57,215
GEM THAT IT'S GOING DO HAS A

835
00:31:57,215 --> 00:32:00,051
DECENT VIEW, AND ALSO ONE OF THE

836
00:32:00,051 --> 00:32:02,620
FEW THAT CAN ACCOMMODATE THAT

837
00:32:02,620 --> 00:32:03,621
BIG OF A PAYLOAD.

838
00:32:03,621 --> 00:32:05,356

THAT HEAVY AND THAT LARGE.

839
00:32:05,356 --> 00:32:06,557
>> DO YOU MIND REPEATING THE

840
00:32:06,557 --> 00:32:07,191
QUESTION?

841
00:32:07,191 --> 00:32:11,496
>> CAN YOU GIVE US AN UPDATE ON

842
00:32:11,496 --> 00:32:14,832
PAD 39 A FOR FALCON AND REMOVING

843
00:32:14,832 --> 00:32:17,168
THE ISS AND PAD 40 GETTING THAT

844
00:32:17,168 --> 00:32:19,637
READY FOR THE FIRST FLIGHT OF

845
00:32:19,637 --> 00:32:21,572
FALCON FROM THERE, AND WHICH

846
00:32:21,572 --> 00:32:22,840
FLIGHT IT MIGHT BE?

847
00:32:22,840 --> 00:32:29,180
>> SO I SHOULD HAVE DRIVEN BY 40

848
00:32:29,180 --> 00:32:30,048
THIS TIME.

849
00:32:30,048 --> 00:32:30,715
I DIDN'T.

850
00:32:30,715 --> 00:32:32,550
WE'RE MAKING GOOD PROGRESS BY

851
00:32:32,550 --> 00:32:33,051
40.

852
00:32:33,051 --> 00:32:35,320
IT HAS TO BE SCHEDULED SUCH

853
00:32:35,320 --> 00:32:37,522
THERE IS NO DELAY FROM ONE PAD

854
00:32:37,522 --> 00:32:39,123
TO THE OTHER, OBVIOUSLY.

855
00:32:39,123 --> 00:32:41,426
AND THEN AS YOU POINTED OUT WE

856
00:32:41,426 --> 00:32:45,997
NEED TO ADD A COUPLE OF

857
00:32:45,997 --> 00:32:48,232
ADDITIONS THAT YOU ALREADY HAVE

858
00:32:48,232 --> 00:32:50,435
TO GET FALCON HEAVY READY.

859
00:32:50,435 --> 00:32:52,937
IN TERMS OF TIME FRAME, IT WILL

860
00:32:52,937 --> 00:32:55,106
BE FALL THAT YOU'LL SEE THIS

861
00:32:55,106 --> 00:33:00,044
HAPPEN, AND I--I DON'T THINK

862
00:33:00,044 --> 00:33:04,015
IT'S THE NEXT--IT MIGHT BE THE

863
00:33:04,015 --> 00:33:11,556

FIRST ONE FROM--I'M NOT SURE

864
00:33:11,556 --> 00:33:12,357
WHICH ONE.

865
00:33:12,357 --> 00:33:15,326
BUT IT HAS TO HAPPEN FROM FALL,

866
00:33:15,326 --> 00:33:17,695
OCTOBER, NOVEMBER TO GET READY

867
00:33:17,695 --> 00:33:20,765
FOR FALCON HEAVY AT THE SAME

868
00:33:20,765 --> 00:33:29,207
TIME.

869
00:33:29,207 --> 00:33:31,676
>> FOR HANS ARE YOU JUST AS

870
00:33:31,676 --> 00:33:37,081
GLAMMY ABOUT THE FALCON HEAVY AS

871
00:33:37,081 --> 00:33:43,154
ELON WAS?

872
00:33:43,154 --> 00:33:44,889
WHAT ARE THE CHALLENGES OF

873
00:33:44,889 --> 00:33:58,536
MAKING THAT ROCKET WORK?

874
00:33:58,536 --> 00:34:01,139
>> IT'S A BAGGY ROCKET, AND THE

875
00:34:01,139 --> 00:34:02,306
ACTUAL BOOST SEPARATION, YOU

876
00:34:02,306 --> 00:34:04,575
KNOW, IT'S REALLY GOING TO GO UP

877
00:34:04,575 --> 00:34:09,414
LIKE THE MODEL.

878
00:34:09,414 --> 00:34:12,116
I DON'T THINK THAT GLOOMY,

879
00:34:12,116 --> 00:34:12,617
FRANKLY.

880
00:34:12,617 --> 00:34:16,254
WE HAVE A GOOD SHOT AT IT,

881
00:34:16,254 --> 00:34:17,121
OBVIOUSLY.

882
00:34:17,121 --> 00:34:18,222
STILL TO LET PEOPLE KNOW THAT

883
00:34:18,222 --> 00:34:23,294
THERE IS A DIFFERENCE BETWEEN

884
00:34:23,294 --> 00:34:25,430
THE OPERATION VEHICLE, A BIG

885
00:34:25,430 --> 00:34:26,664
MASSIVE ROCKET.

886
00:34:26,664 --> 00:34:29,767
IT'S TWO-THIRDS THE TRUST OF

887
00:34:29,767 --> 00:34:31,669
SOUTHERN 5, AND IT'S GOING TO BE

888
00:34:31,669 --> 00:34:34,238

THE BIGGEST OPERATIONAL ROCKET

889
00:34:34,238 --> 00:34:35,206
AT THAT POINT IN TIME.

890
00:34:35,206 --> 00:34:37,909
SO THERE ARE CERTAIN THINGS THAT

891
00:34:37,909 --> 00:34:42,513
ARE JUST UNKNOWN, UNCERTAIN, AND

892
00:34:42,513 --> 00:34:47,618
I THINK HE WANTS PEOPLE TO BE

893
00:34:47,618 --> 00:34:49,053
CAUTIOUS ON THIS PARTICULAR

894
00:34:51,055 --> 00:34:49,854
FLIGHT.

895
00:34:51,055 --> 00:34:52,957
AND IT'S OFFENSE THAT THE

896
00:34:52,957 --> 00:34:55,092
ENGINEERS OF SPACE EX-WILL

897
00:34:55,092 --> 00:34:56,828
DOUBLE UP AND MAKE SURE THAT

898
00:34:56,828 --> 00:35:05,636
THAT DOESN'T HAPPEN, IT'S

899
00:35:05,636 --> 00:35:07,205
COMPLACENCY AND MAKING SURE THAT

900
00:35:07,205 --> 00:35:17,415
EVERYTHING IS DONE.

901
00:35:17,415 --> 00:35:18,416
>> STEPHEN.

902
00:35:18,416 --> 00:35:19,684
CLARK FROM SPACE FLIGHT NOW.

903
00:35:19,684 --> 00:35:22,854
ONE FOR HANS AND ONE FOR DAN.

904
00:35:22,854 --> 00:35:26,591
ARE YOU GOING TO INTRODUCE THE

905
00:35:26,591 --> 00:35:30,761
TITANIUM FINS FROM A FEW MONTHS

906
00:35:30,761 --> 00:35:31,329
BACK.

907
00:35:31,329 --> 00:35:35,967
AND FOR DAN, THE SPECIFIC DATE

908
00:35:35,967 --> 00:35:37,168
FOR SPLASH DOWN.

909
00:35:37,168 --> 00:35:42,373
IS THERE A DATE SET?

910
00:35:42,373 --> 00:35:43,007
THANKS.

911
00:35:43,007 --> 00:35:46,177
>> EVERY TEST, CERTAIN MATERIALS

912
00:35:46,177 --> 00:35:47,378
OF SOMETHING LIKE THAT, AND

913
00:35:47,378 --> 00:35:49,013

THERE IS A GOOD CHANCE THAT THIS

914
00:35:49,013 --> 00:35:50,147
IS ON THERE, TOO.

915
00:35:50,147 --> 00:35:51,516
I DON'T KNOW EXACTLY THE DETAILS

916
00:35:51,516 --> 00:35:57,355
ON THAT, THERE IS NOTHING

917
00:35:57,355 --> 00:36:01,859
MASSIVELY DIFFERENT ON THIS THAN

918
00:36:01,859 --> 00:36:03,261
FROM THE OTHER ONES.

919
00:36:03,261 --> 00:36:04,795
FROM THAT PERSPECTIVE, I DON'T

920
00:36:04,795 --> 00:36:10,501
HAVE THIS IN MY HEAD RIGHT NOW.

921
00:36:10,501 --> 00:36:11,802
>> MISSION DURATION, THE LAST I

922
00:36:11,802 --> 00:36:16,040
HEARD WAS 35 DAYS.

923
00:36:16,040 --> 00:36:17,375
SO WE CAN'T DO THAT.

924
00:36:17,375 --> 00:36:20,511
I DON'T KNOW WHAT THAT

925
00:36:20,511 --> 00:36:21,379
TRANSLATES INTO SEPTEMBER, 35

926
00:36:21,379 --> 00:36:24,582
DAYS PLUS LAUNCH IS WHERE WE'LL

927
00:36:24,582 --> 00:36:25,216
BE.

928
00:36:25,216 --> 00:36:29,754
>> FOR HANS, I NOTICED THE ISS,

929
00:36:29,754 --> 00:36:31,255
YOU'VE REALLY TAKEN THE ISS

930
00:36:31,255 --> 00:36:31,889
APART.

931
00:36:31,889 --> 00:36:33,524
WHAT IS THE SCHEDULE FOR THAT?

932
00:36:33,524 --> 00:36:34,825
WHEN DO YOU EXPECT THAT TO BE

933
00:36:34,825 --> 00:36:35,860
COMPLETELY DOWN?

934
00:36:35,860 --> 00:36:38,129
>> I WANT TO SAY THAT IT'S

935
00:36:38,129 --> 00:36:42,900
DRIVEN OF--THERE IS NOT A

936
00:36:42,900 --> 00:36:43,634
SCHEDULE.

937
00:36:43,634 --> 00:36:45,036
WE'LL TAKE IT CAREFULLY DOWN.

938
00:36:45,036 --> 00:36:46,470

WE HAVE TO CLOSE THE AREA WHEN

939
00:36:46,470 --> 00:36:48,739
WE WORK ON IT, AND WHILE WE'RE

940
00:36:48,739 --> 00:36:51,309
LAUNCHING THAT MAY NOT ALWAYS BE

941
00:36:51,309 --> 00:36:52,076
POSSIBLE.

942
00:36:52,076 --> 00:36:52,843
I DON'T THINK IT'S A TOP

943
00:36:52,843 --> 00:36:53,544
PRIORITY.

944
00:36:53,544 --> 00:36:55,313
AND EVERYTHING THAT WE TAKE DOWN

945
00:36:55,313 --> 00:36:57,615
GOES TO NASA, SO IT'S NOT

946
00:36:57,615 --> 00:36:59,717
SOMETHING THAT WE SELL FOR SCRAP

947
00:36:59,717 --> 00:37:00,651
OR ANYTHING.

948
00:37:00,651 --> 00:37:02,687
IT GOES BACK TO NASA.

949
00:37:02,687 --> 00:37:05,489
>> AND JUST LOOKED OUR FLIGHT

950
00:37:05,489 --> 00:37:05,957
PLAN.

951
00:37:05,957 --> 00:37:07,959
THERE IS A SPECIFIC DAY ON

952
00:37:07,959 --> 00:37:08,659
THERE.

953
00:37:08,659 --> 00:37:11,495
WHEN WE LAUNCH, WE'LL RETURN ON

954
00:37:11,495 --> 00:37:12,763
9/17.

955
00:37:12,763 --> 00:37:15,132
>> WE'LL TAKE ONE FROM THE FRONT

956
00:37:15,132 --> 00:37:17,034
OF THE ROOM AND THEN TO THE

957
00:37:17,034 --> 00:37:21,138
PHONE BRING.

958
00:37:21,138 --> 00:37:23,608
>> I HAVE SOME QUESTIONS ABOUT

959
00:37:23,608 --> 00:37:26,644
THE CSR 11 DRAGON.

960
00:37:26,644 --> 00:37:29,113
DID IT REALLY COST TO REFURBISH

961
00:37:29,113 --> 00:37:30,748
IT AS COMPARED TO BUILDING A

962
00:37:30,748 --> 00:37:32,783
BRAND NEW ONE?

963
00:37:32,783 --> 00:37:36,420

AND HOW ARE YOU MOVING FORWARD

964
00:37:36,420 --> 00:37:37,922
REFURBISHING OTHER DRAGONNINGS,

965
00:37:37,922 --> 00:37:39,857
AND WHEN IS THE FINAL FLIGHT OF

966
00:37:39,857 --> 00:37:44,061
THE FACTORY-FRESH V 1 DRAGGEN.

967
00:37:44,061 --> 00:37:47,098
>> THE CSR 11, IT DOESN'T COST

968
00:37:47,098 --> 00:37:49,133
AS MUCH TO REFURBISH AS TO BUILD

969
00:37:49,133 --> 00:37:49,967
IT NEW.

970
00:37:49,967 --> 00:37:52,169
THAT MUCH IS CLEAR.

971
00:37:52,169 --> 00:37:54,472
OTHERWISE, THAT WOULD BE VERY

972
00:37:54,472 --> 00:37:55,106
WRONG.

973
00:37:55,106 --> 00:37:59,977
AND YOU KNOW, THE TO REFURNISH

974
00:37:59,977 --> 00:38:01,879
IT IS MORE EXPENSIVE BECAUSE YOU

975
00:38:01,879 --> 00:38:04,148
NEED TO LOOK AT STUFF, MAKE A

976
00:38:04,148 --> 00:38:05,983
DECISION AND FIND OUT WHICH ARE

977
00:38:05,983 --> 00:38:07,451
CRITICAL COMPONENTS AND WHICH

978
00:38:07,451 --> 00:38:10,054
ARE CRITICAL FOR REFURBISHMENT,

979
00:38:10,054 --> 00:38:13,257
AND COMPONENTS THAT ARE NOT A

980
00:38:13,257 --> 00:38:16,360
TEST PRICE.

981
00:38:16,360 --> 00:38:19,230
SO OBVIOUSLY WE EXPECT THE

982
00:38:19,230 --> 00:38:20,598
REFURBISHMENT COST TO COME DOWN

983
00:38:20,598 --> 00:38:25,770
OVER TIME, AND TO BE A LOT MORE

984
00:38:25,770 --> 00:38:27,004
ADVANTAGEOUS THAN THIS

985
00:38:27,004 --> 00:38:29,840
PARTICULAR FIRST ONE, TOO, YEAH?

986
00:38:29,840 --> 00:38:31,575
AND THEN REGARDING THE FUTURE

987
00:38:31,575 --> 00:38:33,310
DRAGS, THIS IS SOMETHING THAT WE

988
00:38:33,310 --> 00:38:34,745

TALK ABOUT WITH NASA RIGHT NOW.

989
00:38:34,745 --> 00:38:36,013
I DON'T THINK WE'VE SETTLED ON

990
00:38:36,013 --> 00:38:38,249
EVERYTHING HERE.

991
00:38:38,249 --> 00:38:40,117
AND SO OVER THE NEXT COUPLE OF

992
00:38:40,117 --> 00:38:41,452
WEEKS, MONTHS, THAT'S SOMETHING

993
00:38:41,452 --> 00:38:42,987
THAT WE'LL DETERMINE.

994
00:38:42,987 --> 00:38:47,658
ON THE SPACEX SIDE IT WOULD BE

995
00:38:47,658 --> 00:38:49,694
GREAT TO DISASSEMBLE THE LAST

996
00:38:49,694 --> 00:38:53,497
NEW DRAGON 1, AND THEN FROM THEN

997
00:38:53,497 --> 00:38:55,132
ON WE REDUCE THEM.

998
00:38:55,132 --> 00:38:56,934
THEY HAVE BEEN BUILT AND

999
00:38:56,934 --> 00:38:58,235
DESIGNED OVER THE YEARS.

1000
00:38:58,235 --> 00:38:59,837
THERE IS NO QUESTION ABOUT THAT.

1001
00:38:59,837 --> 00:39:04,408
AND THAT IS SOMETHING THAT WE

1002
00:39:04,408 --> 00:39:05,776
ALWAYS STRIVE FOR TO USE PARTS

1003
00:39:05,776 --> 00:39:16,287
AGAIN, AND GET MORE OPERATIONAL.

1004
00:39:16,287 --> 00:39:17,521
>> WE HAVE MARK?

1005
00:39:17,521 --> 00:39:20,091
>> YES, HELLO, GOOD AFTERNOON.

1006
00:39:20,091 --> 00:39:22,359
MARK, AEROSPACE NEWS MEDIA.

1007
00:39:22,359 --> 00:39:25,930
ONCE AGAIN THANK YOU FOR YOUR

1008
00:39:25,930 --> 00:39:26,864
INFORMATIVE BRIEFING THIS

1009
00:39:26,864 --> 00:39:27,465
AFTERNOON.

1010
00:39:27,465 --> 00:39:30,735
A TWO-PART QUESTION FOR HANS.

1011
00:39:30,735 --> 00:39:32,903
HANS, CAN YOU TELL ME ON ANY

1012
00:39:32,903 --> 00:39:38,743
MISSION WHAT IS THE MAXIMUM

1013
00:39:38,743 --> 00:39:39,477

PAYLOAD CAPACITY IN POUNDS IN

1014
00:39:39,477 --> 00:39:42,513
TERMS OF WEIGHT FOR THE DRAGON

1015
00:39:42,513 --> 00:39:46,217
CAPSULE, AND BASED ON THIS CRS

1016
00:39:46,217 --> 00:39:50,087
12 MISSION WITH THE IMPORTANT

1017
00:39:50,087 --> 00:39:55,926
PAYLOAD WITH RESEARCH TO ISS

1018
00:39:55,926 --> 00:39:57,094
WHAT IS THE MAXIMUM WEIGHT OF

1019
00:39:57,094 --> 00:39:57,695
THIS MISSION?

1020
00:39:57,695 --> 00:39:58,295
THANK YOU.

1021
00:39:58,295 --> 00:40:00,197
>> THIS IS OFF THE TOP OF MY

1022
00:40:00,197 --> 00:40:02,333
HEAD AND NOT NECESSARILY

1023
00:40:02,333 --> 00:40:02,833
ACCURATE.

1024
00:40:02,833 --> 00:40:04,034
BUT I THINK I SAW A NUMBER

1025
00:40:04,034 --> 00:40:06,570
YESTERDAY THAT IS

1026
00:40:06,570 --> 00:40:08,572
10,600-KILOGRAMS FOR THE ENTIRE

1027
00:40:08,572 --> 00:40:09,206
DRAGON.

1028
00:40:09,206 --> 00:40:11,776
AND IN TERMS OF IF THIS IS A

1029
00:40:11,776 --> 00:40:13,577
HEAVY DRAGON OR NOT, I DON'T

1030
00:40:13,577 --> 00:40:16,647
THINK IT'S A HEAVY DRAGON.

1031
00:40:16,647 --> 00:40:17,848
IN FACT, WHAT I WOULD SAY IS

1032
00:40:17,848 --> 00:40:19,817
THAT THIS ONE--IT IS ONE OF OUR

1033
00:40:19,817 --> 00:40:22,620
HEAVIER ONES, BUT WE'RE ALSO

1034
00:40:22,620 --> 00:40:28,559
INTERNAL TO THE DRAGON

1035
00:40:28,559 --> 00:40:29,527
VOLUME-METICLY.

1036
00:40:29,527 --> 00:40:31,328
WE'LL FLY WHAT WE NEED TO FLY.

1037
00:40:31,328 --> 00:40:34,865
AND WE VOLUMED OUT BEFORE WE

1038
00:40:34,865 --> 00:40:36,867

MASSED OUT IN TOTAL CAPABILITY.

1039
00:40:36,867 --> 00:40:39,703
THAT'S EXACTLY WHAT WE WANT TO

1040
00:40:39,703 --> 00:40:40,571
FLY.

1041
00:40:40,571 --> 00:40:41,539
SOMETIMES MASS ISN'T THE METRIC

1042
00:40:41,539 --> 00:40:42,673
TO USE.

1043
00:40:42,673 --> 00:40:44,008
THAT'S MY POINT.

1044
00:40:44,008 --> 00:40:50,748
>> THANK YOU.

1045
00:40:50,748 --> 00:40:52,550
>> JULIE HAYS IN WACO TEXAS,

1046
00:40:52,550 --> 00:40:55,186
ABOUT 10 MILES DOWN THE ROAD

1047
00:40:55,186 --> 00:40:56,854
FROM THE McGREGOR TESTING

1048
00:40:56,854 --> 00:40:57,354
FACILITY.

1049
00:40:57,354 --> 00:40:59,557
DAN AND HANS, THIS IS FOR BOTH

1050
00:40:59,557 --> 00:41:00,424
OF YOU.

1051
00:41:00,424 --> 00:41:02,026
IF YOU COULD TELL US ABOUT THE

1052
00:41:02,026 --> 00:41:03,661
RELATIONSHIP BETWEEN NASA AND

1053
00:41:03,661 --> 00:41:06,263
SPACEX, HOW THAT IS, AND HOW

1054
00:41:06,263 --> 00:41:09,934
CRITICAL IS THE FACILITY LIKE

1055
00:41:09,934 --> 00:41:13,070
McGREGOR TO ACCOMPLISHING YOUR

1056
00:41:13,070 --> 00:41:13,671
GOALS.

1057
00:41:13,671 --> 00:41:15,406
>> THE RELATIONSHIP HAS GROWN

1058
00:41:15,406 --> 00:41:19,577
IMMENSELY WITH RESPECT AND

1059
00:41:19,577 --> 00:41:20,978
SHARING OF INFORMATION AND

1060
00:41:20,978 --> 00:41:23,447
KNOWLEDGE AND IT GOES BOTH WAYS.

1061
00:41:23,447 --> 00:41:24,548
DOING BUSINESS WITH SPACEX HAS

1062
00:41:24,548 --> 00:41:26,283
FORCED US TO COME BACK AND LOOK

1063
00:41:26,283 --> 00:41:28,419

AT OUR PROCESSES.

1064
00:41:28,419 --> 00:41:30,287
AND IT'S SOMEWHAT TURNING OVER

1065
00:41:30,287 --> 00:41:33,023
THE KEYS TO A COMMERCIAL

1066
00:41:33,023 --> 00:41:35,226
INDUSTRY TO TAKE OVER--NOT TAKE

1067
00:41:35,226 --> 00:41:37,061
OVER, BUT TO MATURE AND THE

1068
00:41:37,061 --> 00:41:40,865
ABILITY TO PERFORM COMMERCIAL

1069
00:41:40,865 --> 00:41:43,067
MARKETS AND WHAT WE'RE

1070
00:41:43,067 --> 00:41:43,667
ABSORBING.

1071
00:41:43,667 --> 00:41:47,504
OUR GOAL WILL BE TO GET OUT OF

1072
00:41:47,504 --> 00:41:50,574
EARTH ORBIT AND GET ON OUR WAY

1073
00:41:50,574 --> 00:41:51,141
TO MARS.

1074
00:41:51,141 --> 00:41:52,343
WE WANT TO LEAVE MIND THE

1075
00:41:52,343 --> 00:41:53,911
KNOWLEDGE WE'VE GAINED FOR ALL

1076
00:41:53,911 --> 00:41:56,080
THESE YEARS TO THE SPACEXs OF

1077
00:41:56,080 --> 00:42:00,951
THE YEARS, TO THE OTHER

1078
00:42:00,951 --> 00:42:02,686
COMPANIES SO THEY CAN PICK UP

1079
00:42:02,686 --> 00:42:06,223
AND SEE IN THE NEXT FIVE OR TEN

1080
00:42:06,223 --> 00:42:09,627
YEARS MORE OF A VIBRANT

1081
00:42:09,627 --> 00:42:11,795
COMMERCIAL MARKET IN ORBIT WHICH

1082
00:42:11,795 --> 00:42:13,764
CAN BE SELF SUSTAINED.

1083
00:42:13,764 --> 00:42:17,167
YOU'LL HAVE COMMERCIAL LAUNCHES,

1084
00:42:17,167 --> 00:42:18,836
AND CREWS, AND THINKING PAST

1085
00:42:18,836 --> 00:42:20,771
WHEN THE ISS IS DONE.

1086
00:42:20,771 --> 00:42:22,606
YOU KNOW, WE WANT TO BE ABLE

1087
00:42:22,606 --> 00:42:24,174
TO--I THINK IT WOULD BE GOOD FOR

1088
00:42:24,174 --> 00:42:25,709

THE NATION, GOOD FOR THE WORLD

1089
00:42:25,709 --> 00:42:27,678
IF WE CARRIED ON WITH SOME OF

1090
00:42:27,678 --> 00:42:29,713
THE FUNDAMENTAL RESEARCH THAT

1091
00:42:29,713 --> 00:42:31,148
WE'VE DONE IN ORBIT.

1092
00:42:31,148 --> 00:42:34,184
WE'RE PLANNING TO LEAVE THAT IN

1093
00:42:34,184 --> 00:42:37,888
THE COMMERCIAL MARKETS TO DO

1094
00:42:37,888 --> 00:42:41,292
THAT.

1095
00:42:41,292 --> 00:42:43,594
>> TODAY SPACEX WORKS WELL AS A

1096
00:42:43,594 --> 00:42:44,328
TEAM.

1097
00:42:44,328 --> 00:42:45,562
AND THERE ARE THINGS THAT THEY

1098
00:42:45,562 --> 00:42:47,097
DO REALLY WELL, AND THERE ARE

1099
00:42:47,097 --> 00:42:50,601
THINGS THAT NASA DOES REALLY

1100
00:42:50,601 --> 00:42:56,106
WELL.

1101
00:42:56,106 --> 00:42:59,710
NASA HAS ENORMOUS RESOURCES TO

1102
00:42:59,710 --> 00:43:01,412
GETTING THINGS DONE.

1103
00:43:01,412 --> 00:43:12,356
AND THEN IN TURN WE REALLY ENJOY

1104
00:43:12,356 --> 00:43:18,062
LAUNCHING THE CARGOES.

1105
00:43:18,062 --> 00:43:20,297
AND RESPECT TO McGREGOR, IT IS

1106
00:43:20,297 --> 00:43:20,931
ESSENTIAL.

1107
00:43:20,931 --> 00:43:23,434
IT'S ONE OF OUR KEY IMPORTANT

1108
00:43:23,434 --> 00:43:25,069
FACILITIES, AS IMPORTANT AS THE

1109
00:43:25,069 --> 00:43:26,670
LAUNCH SITE.

1110
00:43:26,670 --> 00:43:28,272
WE TEST EVERY ENGINE THERE.

1111
00:43:28,272 --> 00:43:30,808
WE TEST THE ENGINE AT BASICALLY

1112
00:43:30,808 --> 00:43:32,176
THE ENVIRONMENT WHERE THEY'RE

1113
00:43:32,176 --> 00:43:33,277

GOING TO BE TESTED.

1114
00:43:33,277 --> 00:43:36,413
AND THEN WE SHOOK THE ENGINES

1115
00:43:36,413 --> 00:43:38,749
BACK, AND THEN SHIPPED THEM BACK

1116
00:43:38,749 --> 00:43:41,785
TO McGREGOR AND TEST THE

1117
00:43:41,785 --> 00:43:42,853
ENTIRE STAGE.

1118
00:43:42,853 --> 00:43:44,555
THAT'S NOT SOMETHING THAT

1119
00:43:44,555 --> 00:43:45,422
EVERYBODY DOES.

1120
00:43:45,422 --> 00:43:49,660
THAT HELPS US TO BECOME

1121
00:43:49,660 --> 00:43:50,094
RELIABLE.

1122
00:43:50,094 --> 00:43:52,763
THE McGREGOR CAST ALLOWS US TO

1123
00:43:52,763 --> 00:43:53,664
DO THIS.

1124
00:43:53,664 --> 00:43:54,898
IT IS NOT SOMETHING THAT YOU CAN

1125
00:43:54,898 --> 00:44:00,904
DO IN THE MIDDLE OF LOS ANGELES,

1126
00:44:00,904 --> 00:44:10,914
OBVIOUSLY.

1127
00:44:10,914 --> 00:44:12,316
I REMEMBER WHEN WE DECIDED THIS

1128
00:44:12,316 --> 00:44:14,685
WAS THE PLACE AND WHERE WE WOULD

1129
00:44:14,685 --> 00:44:16,520
BUILD OUR TEST SITE.

1130
00:44:16,520 --> 00:44:18,022
NOW THERE ARE HUNDREDS OF

1131
00:44:18,022 --> 00:44:21,492
EMPLOYEES, IT'S A PROFESSIONAL

1132
00:44:21,492 --> 00:44:23,961
AND BUILT-UP SITE, AND IT'S

1133
00:44:23,961 --> 00:44:31,135
ESSENTIAL FOR US AND FOR NASA,

1134
00:44:31,135 --> 00:44:31,769
TOO.

1135
00:44:31,769 --> 00:44:33,537
>> FOR DAN, ORIGINALLY WE HEARD

1136
00:44:33,537 --> 00:44:36,840
THE OCTOBER DATE FOR THE NEXT

1137
00:44:36,840 --> 00:44:37,408
LAUNCH.

1138
00:44:37,408 --> 00:44:38,509

CAN YOU TALK ABOUT WHAT THE

1139
00:44:38,509 --> 00:44:40,110
FUTURE IS FOR THE REST OF THE

1140
00:44:40,110 --> 00:44:42,046
YEAR FOR CARGO RESUPPLY

1141
00:44:42,046 --> 00:44:44,081
MISSIONS, AND IF HAVING FOUR

1142
00:44:44,081 --> 00:44:45,916
CREW MEMBERS IS EFFECTING THAT,

1143
00:44:45,916 --> 00:44:48,952
EITHER NEEDING MORE OR NO

1144
00:44:48,952 --> 00:44:56,593
DIFFERENCE AT ALL?

1145
00:44:56,593 --> 00:45:00,664
>> SO WE'RE HONING TO GET OFF IN

1146
00:45:00,664 --> 00:45:05,536
THE EARLY DECEMBER TIME PERIOD.

1147
00:45:05,536 --> 00:45:07,304
A COUPLE OF REASONS FOR THAT.

1148
00:45:07,304 --> 00:45:10,240
NUMBER ONE, WE WANT TO GET THE

1149
00:45:10,240 --> 00:45:11,675
EVA'S IN FRONT OF THAT.

1150
00:45:11,675 --> 00:45:13,811
YOU WANT TO DO THAT

1151
00:45:13,811 --> 00:45:15,379
CONSECUTIVELY TO MAKE THE BEST

1152
00:45:15,379 --> 00:45:19,349
USE OF THE CREW TIME AND THE

1153
00:45:19,349 --> 00:45:24,154
REFURBISHMENT YOU NEED TO DO.

1154
00:45:24,154 --> 00:45:26,190
ACTUALLY WE WERE A LITTLE LIGHT

1155
00:45:26,190 --> 00:45:28,692
ON THE MISSION, AND WE WERE ABLE

1156
00:45:28,692 --> 00:45:31,428
TO GET NEW CARGO THAT BENEATH ON

1157
00:45:31,428 --> 00:45:34,631
THE ORDER OF 400 KILOGRAMS.

1158
00:45:34,631 --> 00:45:36,133
SO SIGNIFICANT INCREASE IN THE

1159
00:45:36,133 --> 00:45:37,634
AMOUNT OF MASS WE CAN TAKE UP

1160
00:45:37,634 --> 00:45:39,503
FOR IT.

1161
00:45:39,503 --> 00:45:42,005
ALSO, KIND OF LIKE THAT DRAGON,

1162
00:45:42,005 --> 00:45:43,640
WE TRIED TO REALLY USE THE

1163
00:45:43,640 --> 00:45:45,642

DRAGON FOR RETURN OF SAMPLES.

1164
00:45:45,642 --> 00:45:49,346
AND YOU KNOW, FOR THE RESEARCH

1165
00:45:49,346 --> 00:45:50,747
COMMUNITY.

1166
00:45:50,747 --> 00:45:54,451
THE SICKNESS VEHICLE IS A

1167
00:45:54,451 --> 00:45:56,787
TREMENDOUS DISPOSAL CARGO

1168
00:45:56,787 --> 00:45:57,721
HAULER, TRASH IS ANOTHER WORD

1169
00:45:57,721 --> 00:45:58,122
FOR IT.

1170
00:45:58,122 --> 00:46:00,924
SO WE TRY TO FIGURE OUT WHERE TO

1171
00:46:00,924 --> 00:46:03,694
SPACE THOSE BASED ON THE SPACE

1172
00:46:03,694 --> 00:46:06,563
STATION AS WELL.

1173
00:46:06,563 --> 00:46:09,399
I THINK THE NEXT ORBITAL MISSION

1174
00:46:09,399 --> 00:46:12,436
IS IN THE MARCH LAUNCH PERIOD.

1175
00:46:12,436 --> 00:46:16,807
WE'RE THINKING OF TRASH

1176
00:46:16,807 --> 00:46:18,408
ACCUMULATION AND WHEN WE SHOULD

1177
00:46:18,408 --> 00:46:19,810
PUT THOSE IN PLACE.

1178
00:46:19,810 --> 00:46:21,311
IT'S ANOTHER FACTOR OF WHERE WE

1179
00:46:21,311 --> 00:46:25,048
COME TO PLACE THE LAUNCH AS WHEN

1180
00:46:25,048 --> 00:46:28,218
WE DO.

1181
00:46:28,218 --> 00:46:31,722
FROM A FOOD AND WATER SUPPLY,

1182
00:46:31,722 --> 00:46:35,526
OUR CONSUMABLES ARE IN VERY GOOD

1183
00:46:35,526 --> 00:46:36,026
SHAPE.

1184
00:46:36,026 --> 00:46:39,296
AND IT WILL HAVE NO IMPACT TO

1185
00:46:39,296 --> 00:46:42,166
OUR CREW.

1186
00:46:42,166 --> 00:46:44,801
>> MARSHA.

1187
00:46:44,801 --> 00:46:47,104
>> FIRST FOR HANS, WHAT DO YOU

1188
00:46:47,104 --> 00:46:50,707

SEE THE BIGGEST HURDLES FOR

1189
00:46:50,707 --> 00:46:52,509
MAKING THE LAUNCH DATE.

1190
00:46:52,509 --> 00:46:54,711
THEN I HAVE FOR DAN, THE ICE

1191
00:46:54,711 --> 00:46:56,880
CREAM BARS ARE GOING UP IN THE

1192
00:46:56,880 --> 00:46:57,514
FREEZER.

1193
00:46:57,514 --> 00:46:58,749
IS THERE SCIENCE GOING UP INSIDE

1194
00:46:58,749 --> 00:47:00,417
OF THAT, TOO OR IS IT GOING UP

1195
00:47:00,417 --> 00:47:07,724
EMPTY TO BRING STUFF BACK?

1196
00:47:07,724 --> 00:47:10,093
>> THE BIGGEST HURDLE, IF I KNEW

1197
00:47:10,093 --> 00:47:12,062
THE BIGGEST HURDLES NOW, WE

1198
00:47:12,062 --> 00:47:13,530
WOULD BE WORKING ON IT AND

1199
00:47:13,530 --> 00:47:15,132
THROWING RESOURCES AT IT.

1200
00:47:15,132 --> 00:47:16,967
AND OTHER HURDLES WOULD BECOME

1201
00:47:16,967 --> 00:47:19,636
THE BIGGEST HURDLE.

1202
00:47:19,636 --> 00:47:20,804
IT'S A BIG PROJECT.

1203
00:47:20,804 --> 00:47:22,839
I WOULD SAY THAT IT HAS TO BE

1204
00:47:22,839 --> 00:47:31,782
BOTH WORKING ON THE LC 40 SIDE.

1205
00:47:31,782 --> 00:47:34,218
THOSE ARE TWO BIG PROJECTS.

1206
00:47:34,218 --> 00:47:36,420
WE HAVE GOOD CHANCE TO MAKE

1207
00:47:36,420 --> 00:47:38,021
IMPROVEMENTS, AND WE HAVE A LOT

1208
00:47:38,021 --> 00:47:40,591
OF AUTOMATION, AND REDUNDANCY

1209
00:47:40,591 --> 00:47:46,396
THAT WE'VE HAD ON 39 A.

1210
00:47:46,396 --> 00:47:49,900
THAT'S DEFINITELY A MUCH BETTER

1211
00:47:49,900 --> 00:47:50,500
PAD THAN IT WAS BEFORE.

1212
00:47:50,500 --> 00:47:53,303
SO WE HAVE TO GET THIS UP AND

1213
00:47:53,303 --> 00:47:53,904

GOING.

1214
00:47:53,904 --> 00:47:55,339
AND LIKEWISE, THERE ARE

1215
00:47:55,339 --> 00:47:56,073
COMPLEXITIES.

1216
00:47:56,073 --> 00:47:57,241
BIG ROCKET.

1217
00:47:57,241 --> 00:48:01,111
THREE DIFFERENT ROCKETS TOGETHER

1218
00:48:01,111 --> 00:48:07,918
BASICALLY.

1219
00:48:07,918 --> 00:48:09,453
THEY CAN BE HARD TO PLAN.

1220
00:48:09,453 --> 00:48:11,355
WE PLAN THEM, OBVIOUSLY, AND

1221
00:48:11,355 --> 00:48:12,689
THEN THERE ARE CONCERNS THAT

1222
00:48:12,689 --> 00:48:14,258
NEED TO BE ADDRESSED, AND HOW IT

1223
00:48:14,258 --> 00:48:15,626
NEEDS TO BE TESTED.

1224
00:48:15,626 --> 00:48:17,694
THAT'S WHERE THE UNCERTAINTY

1225
00:48:17,694 --> 00:48:18,595
COMES IN.

1226
00:48:18,595 --> 00:48:22,232
OVER ALL, I CAN TELL YOU THAT IT

1227
00:48:22,232 --> 00:48:25,636
WORKED PRETTY WELL OVER THE LAST

1228
00:48:25,636 --> 00:48:28,472
FEW MONTHS.

1229
00:48:28,472 --> 00:48:30,474
I THINK WE HAVE A GOOD SHOT AT

1230
00:48:30,474 --> 00:48:31,041
IT.

1231
00:48:31,041 --> 00:48:32,576
>> AS FAR AS THE OTHER GOODS.

1232
00:48:32,576 --> 00:48:34,878
IT'S A PRETTY--I WAS GOING TO

1233
00:48:34,878 --> 00:48:36,213
SAY CHALLENGING JOB.

1234
00:48:36,213 --> 00:48:39,716
BUT WHEN YOU LOOK AT HOW MUCH

1235
00:48:39,716 --> 00:48:42,419
COLD RESEARCH IS GOING UP IN

1236
00:48:42,419 --> 00:48:45,489
FREEZERS OR COLD BAGS, AND THEN

1237
00:48:45,489 --> 00:48:47,691
THERE ARE TEMPERATURE VARIATIONS

1238
00:48:47,691 --> 00:48:48,625

AND DURATIONS?

1239
00:48:48,625 --> 00:48:51,295
THERE IS A PROCESS, AND YOU TRY

1240
00:48:51,295 --> 00:48:53,430
TO FIGURE OUT THE ASSETS THAT WE

1241
00:48:53,430 --> 00:48:55,699
FLY UP, WHICH ARE FREEZERS AND

1242
00:48:55,699 --> 00:49:00,504
COLD BAGS, HOW THEY BEST FIT AND

1243
00:49:00,504 --> 00:49:03,273
PACK-WISE, AND AT TIMES WE HAVE

1244
00:49:03,273 --> 00:49:06,476
EXCESS VOLUME, AND WE HAVE

1245
00:49:06,476 --> 00:49:08,912
FULFILLED ALL OF OUR

1246
00:49:08,912 --> 00:49:10,380
REQUIREMENTS AND WE HAD EXCESS

1247
00:49:10,380 --> 00:49:10,914
VOLUME.

1248
00:49:10,914 --> 00:49:14,084
IN THIS CASE WE HAD MORE THAN

1249
00:49:14,084 --> 00:49:15,285
USUAL ICE CREAM PRODUCTS GOING

1250
00:49:15,285 --> 00:49:16,853
UP IN OUR COLD BAGS.

1251
00:49:19,523 --> 00:49:18,322
THEY'LL BE HAPPY.

1252
00:49:19,523 --> 00:49:21,725
>> SO IT'S NOT SITTING ALONG

1253
00:49:21,725 --> 00:49:27,664
SIDE EXPERIMENT STUFF, TOO?

1254
00:49:27,664 --> 00:49:31,401
>> IF IT WOULD WE WOULD DO ALL

1255
00:49:31,401 --> 00:49:32,703
OF THE PROPER CONTAINMENT.

1256
00:49:32,703 --> 00:49:34,671
>> DID YOU SAY COLD PACKS OR IS

1257
00:49:34,671 --> 00:49:37,741
IT AN ACTUAL FREEZER?

1258
00:49:37,741 --> 00:49:41,845
>> WE HAVE COLD BAGS WHICH WE

1259
00:49:41,845 --> 00:49:45,248
PUT ICE BRICKS, FROZEN BRICKS

1260
00:49:45,248 --> 00:49:47,584
THAT KEEP THE TEMPERATURES IN

1261
00:49:47,584 --> 00:49:55,959
THE COLD BAG COLD.

1262
00:49:55,959 --> 00:49:58,061
>> WE'VE HAD A COUPLE OF OUR

1263
00:49:58,061 --> 00:50:01,031

FREEZERS FAIL, SO THESE MAY BE

1264
00:50:01,031 --> 00:50:02,232
SPARES THAT ARE GOING UP.

1265
00:50:02,232 --> 00:50:05,202
>> WE GO BACK TO THE SECOND ROW.

1266
00:50:05,202 --> 00:50:07,137
>> EXCUSE ME.

1267
00:50:07,137 --> 00:50:08,939
A COUPLE OF TIMES TODAY WE

1268
00:50:08,939 --> 00:50:10,874
MENTIONED THE IMPORTANCE OF LATE

1269
00:50:10,874 --> 00:50:12,542
LOAD TO THE SCIENTIFIC RESEARCH

1270
00:50:12,542 --> 00:50:13,310
MISSION.

1271
00:50:13,310 --> 00:50:15,912
I'M JUST CURIOUS, HANSF YOU CAN

1272
00:50:15,912 --> 00:50:18,281
TALK ABOUT THE OPERATIONAL

1273
00:50:18,281 --> 00:50:18,982
CHALLENGE OF DELIVERING THAT

1274
00:50:18,982 --> 00:50:21,351
CAPABILITY FOR NASA, AND MAYBE,

1275
00:50:21,351 --> 00:50:24,221
PETER, DAN, WHY THAT IS SO

1276
00:50:24,221 --> 00:50:25,689
IMPORTANT TO YOUR WORK?

1277
00:50:25,689 --> 00:50:31,128
>> DO YOU WANT TO GO FIRST?

1278
00:50:31,128 --> 00:50:32,796
>> OKAY, I'LL GO FIRST.

1279
00:50:32,796 --> 00:50:34,197
FROM THE ENGINEERING

1280
00:50:34,197 --> 00:50:36,533
PERSPECTIVE, IT IS BASICALLY A

1281
00:50:36,533 --> 00:50:47,577
CLEAN ROOM--WHAT'S IT CALLED?

1282
00:50:47,577 --> 00:50:49,846
WHERE YOU BASICALLY PASS THINGS

1283
00:50:49,846 --> 00:50:50,347
ON.

1284
00:50:50,347 --> 00:50:58,722
AND IF YOU LOAD THE PARTICULAR

1285
00:50:58,722 --> 00:51:02,459
TO LAUD ON TO DRAGON, AND THEN

1286
00:51:02,459 --> 00:51:03,827
YOUD INTO TO MOVE THINGS AROUND,

1287
00:51:03,827 --> 00:51:14,204
THAT'S THE MAIN ENGINEERING

1288
00:51:14,204 --> 00:51:14,938

CHALLENGE.

1289
00:51:14,938 --> 00:51:16,339
>> IF YOU'RE STUDYING A YEAST

1290
00:51:16,339 --> 00:51:18,775
YOU WANT TO PUT IT IN AS LATE AS

1291
00:51:18,775 --> 00:51:23,680
CLOSE TO LAUNCH AS YOU CAN.

1292
00:51:23,680 --> 00:51:26,583
WE TALKED ABOUT USING A COLD BAG

1293
00:51:26,583 --> 00:51:28,185
THAT MAY BE COOLER.

1294
00:51:28,185 --> 00:51:30,821
THAT'S GOT A LIFETIME UNTIL THE

1295
00:51:30,821 --> 00:51:32,088
PHASE CHANGES AND IT'S NOT

1296
00:51:32,088 --> 00:51:34,024
KEEPING IT COLD ANY MORE.

1297
00:51:34,024 --> 00:51:39,696
ANOTHER EXAMPLE IS THE ROOT

1298
00:51:39,696 --> 00:51:40,197
MISSION.

1299
00:51:40,197 --> 00:51:42,599
WE HAVE TO LOAD THEM LATE IN THE

1300
00:51:42,599 --> 00:51:43,300
FLOW.

1301
00:51:43,300 --> 00:51:44,434
THAT'S ANOTHER REASON WHY WE

1302
00:51:44,434 --> 00:51:47,170
WOULDN'T WANT TO HAVE LAUNCH AND

1303
00:51:47,170 --> 00:51:47,737
LOITERING.

1304
00:51:47,737 --> 00:51:48,972
BECAUSE THEY HAVE A CERTAIN

1305
00:51:48,972 --> 00:51:50,740
AMOUNT OF FOOD IN THOSE

1306
00:51:50,740 --> 00:51:51,575
TRANSPORTERS.

1307
00:51:51,575 --> 00:51:55,212
THEY'RE TRANSPORTED MORE

1308
00:51:55,212 --> 00:51:55,912
DENSELY.

1309
00:51:55,912 --> 00:51:57,247
YOU HAVE TO THINK ABOUT THE

1310
00:51:57,247 --> 00:51:59,382
EXPLORATION OF YOUR SCIENCE.

1311
00:51:59,382 --> 00:52:06,089
IF YOU HAVE THE PLANT GROWTH

1312
00:52:06,089 --> 00:52:09,693
EXPERIMENT IS IMPORTANT TO YOU,

1313
00:52:09,693 --> 00:52:11,995

BUT YET IT GROWS THREE TIMES

1314
00:52:11,995 --> 00:52:14,831
FASTER ON THE GROUND THAN IN

1315
00:52:14,831 --> 00:52:15,398
SPACE.

1316
00:52:15,398 --> 00:52:17,501
>> DO YOU HAVE A SENSE OF WHAT

1317
00:52:17,501 --> 00:52:28,445
THE TIME BEFORE LAUNCH WOULD BE?

1318
00:52:28,445 --> 00:52:30,747
>> IN TERMS OF TIMELINE?

1319
00:52:30,747 --> 00:52:31,214
I DON'T KNOW.

1320
00:52:31,214 --> 00:52:42,926
IT'S A TREMENDOUS CAPABILITY.

1321
00:52:42,926 --> 00:52:44,828
THAT'S WHERE WE DO ALL THE

1322
00:52:44,828 --> 00:52:46,630
PACKING, AND WE CARRY THOSE OUT

1323
00:52:46,630 --> 00:52:47,564
IN ADVANCE.

1324
00:52:47,564 --> 00:52:49,165
LITERALLY RIGHT UP TO THE PAD.

1325
00:52:49,165 --> 00:52:50,834
AND THEY HAVE AN AIR LOCK THAT

1326
00:52:50,834 --> 00:52:52,903
IS ACTUALLY, YOU KNOW, THE WATCH

1327
00:52:52,903 --> 00:52:55,872
IS OPEN TO THE DRAGON, AND THE

1328
00:52:55,872 --> 00:53:03,580
GUYS ARE JUST BAKLEY BOLTING,

1329
00:53:03,580 --> 00:53:06,082
HOOKING UP UMBILICALS.

1330
00:53:06,082 --> 00:53:08,718
EVERYTHING IS NICE, COOL AND

1331
00:53:08,718 --> 00:53:09,185
FRESH.

1332
00:53:09,185 --> 00:53:10,654
HOW THEY'VE CHOREOGRAPHED THAT

1333
00:53:10,654 --> 00:53:12,689
OVER TIME HAS BEEN PHENOMENAL.

1334
00:53:12,689 --> 00:53:16,092
I WOULD EVEN ASAY ON THE

1335
00:53:16,092 --> 00:53:17,093
RESURGEON AS WELL.

1336
00:53:17,093 --> 00:53:19,329
WHEN WE GET TO THE PARK IT

1337
00:53:19,329 --> 00:53:21,164
DOESN'T TAKE A LONG TIME FOR US

1338
00:53:21,164 --> 00:53:23,700

TO ACTUALLY GET IT OFF THE

1339
00:53:23,700 --> 00:53:26,703
DRAGON, AND INTO A PRINCIPLE

1340
00:53:26,703 --> 00:53:29,539
INVESTIGATORS' HANDS RIGHT THERE

1341
00:53:29,539 --> 00:53:30,273
AT THE FORT.

1342
00:53:30,273 --> 00:53:40,083
THE A GREAT APE ABILITY.

1343
00:53:40,083 --> 00:53:41,651
>> THANKS, STEPHEN CLARK, ONE

1344
00:53:41,651 --> 00:53:43,787
MORE FOR HANS.

1345
00:53:43,787 --> 00:53:46,790
ONCE YOU DO GET PAD 39 A

1346
00:53:46,790 --> 00:53:48,725
AVAILABLE TO GET STARTED ON THE

1347
00:53:48,725 --> 00:53:49,426
HEAVY.

1348
00:53:49,426 --> 00:53:51,061
WHAT DO YOU HAVE TO DO WITH THE

1349
00:53:51,061 --> 00:53:51,494
PAD?

1350
00:53:51,494 --> 00:53:53,430
YOU SAID THERE WERE A COUPLE OF

1351
00:53:53,430 --> 00:53:54,297
THINGS.

1352
00:53:54,297 --> 00:53:59,869
IS IT THE STRONG BACK?

1353
00:53:59,869 --> 00:54:01,304
>> ONE DIFFERENCE IS YOU HAVE

1354
00:54:01,304 --> 00:54:04,774
THREE HOLES ON THE LAUNCH MOUNT,

1355
00:54:04,774 --> 00:54:11,081
AND NOT JUST ONE.

1356
00:54:11,081 --> 00:54:14,184
THAT HAS TO BE FALCON HEAVY.

1357
00:54:14,184 --> 00:54:16,920
THE THINGS THAT ARE SLIGHTLY

1358
00:54:16,920 --> 00:54:18,521
ARRANGED, THEY HAVE TO BE

1359
00:54:18,521 --> 00:54:22,225
INTEGRATED, AND TESTED

1360
00:54:22,225 --> 00:54:28,298
FUNCTIONALLY OBVIOUSLY MORE

1361
00:54:28,298 --> 00:54:28,865
FLUID.

1362
00:54:28,865 --> 00:54:30,867
THEY HAVE BEEN BROKEN DOWN AND

1363
00:54:30,867 --> 00:54:32,435

ALL THE ELEMENTS ARE READY TO

1364
00:54:32,435 --> 00:54:32,869
GO.

1365
00:54:32,869 --> 00:54:35,305
IT'S A MATTER OF PUTTING IT

1366
00:54:35,305 --> 00:54:40,110
TOGETHER, AND TESTING THAT IT'S

1367
00:54:40,110 --> 00:54:41,511
FUNCTIONING PROPERLILY.

1368
00:54:41,511 --> 00:54:43,013
>> I BELIEVE YOU HAVE A QUESTION

1369
00:54:43,013 --> 00:54:47,951
ON THE THIRD ROW?

1370
00:54:47,951 --> 00:54:50,120
>> WE'LL COME BACK TO THE FIRST

1371
00:54:50,120 --> 00:54:50,654
ROW.

1372
00:54:50,654 --> 00:54:53,289
>> I WAS WONDERING MAYBE THE

1373
00:54:53,289 --> 00:54:55,158
QUESTION WAS ANSWERED, BUT IS

1374
00:54:55,158 --> 00:54:57,093
THERE ANYTHING USED ON THE

1375
00:54:57,093 --> 00:54:58,728
FALCONINE THAT IS GOING TO

1376
00:54:58,728 --> 00:55:21,618
LAUNCH TOMORROW?

1377
00:55:21,618 --> 00:55:23,319
>> ONCE 40 IS BACK UP AND

1378
00:55:23,319 --> 00:55:29,392
RUNNING, ARE YOU ABLE TO LAUNCH

1379
00:55:29,392 --> 00:55:31,861
39 A AND 40 OR ALL SHIFTING TO

1380
00:55:31,861 --> 00:55:33,163
39 A.

1381
00:55:33,163 --> 00:55:34,464
>> I HEAR I COULDN'T QUESTION.

1382
00:55:34,464 --> 00:55:35,198
IT'S AN EXCELLENT QUESTION, BUT

1383
00:55:35,198 --> 00:55:36,766
I DON'T THINK I HAVE AN ANSWER

1384
00:55:36,766 --> 00:55:37,767
FOR YOU TODAY.

1385
00:55:37,767 --> 00:55:38,968
IT'S SOMETHING THAT WE NEED TO

1386
00:55:38,968 --> 00:55:40,970
WORK OUT ON HOW WE SPLIT THE

1387
00:55:40,970 --> 00:55:43,573
MISSIONS AND WHERE WE GO FROM

1388
00:55:43,573 --> 00:55:44,140

WHAT PAD.

1389
00:55:44,140 --> 00:55:47,210
IT'S A REALLY GOOD QUESTION.

1390
00:55:47,210 --> 00:55:48,344
>> THANK YOU VERY MUCH FOR

1391
00:55:48,344 --> 00:55:49,612
JOINING US TODAY.

1392
00:55:49,612 --> 00:55:50,580
THAT'S ALL THE TIME THAT WE

1393
00:55:50,580 --> 00:55:51,281
HAVE.

1394
00:55:51,281 --> 00:55:53,049
THE LAUNCH IS SCHEDULED FOR

1395
00:55:53,049 --> 00:55:56,453
TOMORROW AT 12:30-1:00 P.M.

1396
00:55:56,453 --> 00:55:57,620
NASA TELEVISION COVERAGE WILL

1397
00:55:57,620 --> 00:55:58,688
BEGIN AT NOON.

1398
00:55:58,688 --> 00:56:00,490
UNTIL THEN YOU CAN FOLLOW MORE

1399
00:56:00,490 --> 00:56:09,532
ABOUT THE LAUNCH ON NASA.GOV