
NASA

1
00:00:06,470 --> 00:00:04,390
hello and welcome back to mission

2
00:00:07,829 --> 00:00:06,480
control houston again we have a special

3
00:00:09,350 --> 00:00:07,839
guest today

4
00:00:11,990 --> 00:00:09,360
at the public affairs console that's

5
00:00:14,390 --> 00:00:12,000
scott stover the lead flight director

6
00:00:17,189 --> 00:00:14,400
for this expedition 30 increment or

7
00:00:18,870 --> 00:00:17,199
expedition welcome to uh our console

8
00:00:21,269 --> 00:00:18,880
scott well thank you very much always a

9
00:00:23,269 --> 00:00:21,279
good time to be in mission control and

10
00:00:25,589 --> 00:00:23,279
able to talk to folks around the world

11
00:00:27,349 --> 00:00:25,599
we always love being here too um say

12
00:00:29,509 --> 00:00:27,359
let's start our interview off with a

13
00:00:31,429 --> 00:00:29,519

little bit of background about you uh

14
00:00:33,430 --> 00:00:31,439
where you're from and what kind of

15
00:00:35,590 --> 00:00:33,440
education you have and

16
00:00:37,430 --> 00:00:35,600
what it took you to get to here

17
00:00:39,590 --> 00:00:37,440
sure i grew up in a small rural town in

18
00:00:42,069 --> 00:00:39,600
pennsylvania called lane masters uh it's

19
00:00:43,510 --> 00:00:42,079
about 45 minutes west of gettysburg for

20
00:00:44,630 --> 00:00:43,520
anybody who wants to try to find it on a

21
00:00:46,470 --> 00:00:44,640
map

22
00:00:48,790 --> 00:00:46,480
but with that i

23
00:00:51,110 --> 00:00:48,800
again the small rural town my father was

24
00:00:52,389 --> 00:00:51,120
a firefighter my mother a nurse i was an

25
00:00:54,709 --> 00:00:52,399
only child

26
00:00:56,310 --> 00:00:54,719
from there i went to penn state

27
00:00:59,510 --> 00:00:56,320
university and got a bachelor's degree

28
00:01:01,590 --> 00:00:59,520
in aerospace engineering uh and and from

29
00:01:04,469 --> 00:01:01,600
from there i you know i always wanted to

30
00:01:07,109 --> 00:01:04,479
work at nasa work in the the aerospace

31
00:01:08,469 --> 00:01:07,119
industry and work with astronauts and

32
00:01:10,310 --> 00:01:08,479
going into space so that's something i

33
00:01:12,630 --> 00:01:10,320
always went after

34
00:01:14,070 --> 00:01:12,640
as i said i i graduated uh from penn

35
00:01:15,910 --> 00:01:14,080
state with an aerospace engineering

36
00:01:17,990 --> 00:01:15,920
degree and i came to work for a

37
00:01:19,830 --> 00:01:18,000
contractor here in houston uh called

38
00:01:21,670 --> 00:01:19,840

united space alliance where a lot of the

39
00:01:24,149 --> 00:01:21,680
folks that work in operations work for

40
00:01:27,510 --> 00:01:24,159
that contractor i worked there for about

41
00:01:28,789 --> 00:01:27,520
five years and along with that i

42
00:01:30,870 --> 00:01:28,799
pursued a master's degree at the

43
00:01:32,789 --> 00:01:30,880
university of houston i got one of the

44
00:01:34,950 --> 00:01:32,799
very first masters of science in space

45
00:01:36,870 --> 00:01:34,960
architecture it's a a one-of-a-kind

46
00:01:37,830 --> 00:01:36,880
degree that right now the university of

47
00:01:41,030 --> 00:01:37,840
houston

48
00:01:42,870 --> 00:01:41,040
offers and i myself and a few my

49
00:01:45,429 --> 00:01:42,880
colleagues actually championed that

50
00:01:47,749 --> 00:01:45,439
degree and created it so we're able to

51
00:01:50,789 --> 00:01:47,759
get that degree underway

52
00:01:51,830 --> 00:01:50,799
so i graduated there and was able to

53
00:01:54,469 --> 00:01:51,840
then

54
00:01:56,069 --> 00:01:54,479
continue working for usa as a flight

55
00:01:57,109 --> 00:01:56,079
controller here in mission control

56
00:01:58,870 --> 00:01:57,119
houston

57
00:02:01,590 --> 00:01:58,880
working with the electrical power system

58
00:02:03,590 --> 00:02:01,600
of the international space station

59
00:02:05,670 --> 00:02:03,600
i worked there for a few years and was

60
00:02:07,270 --> 00:02:05,680
able to do what we call a badge swap

61
00:02:08,550 --> 00:02:07,280
come over to the actually working for

62
00:02:10,710 --> 00:02:08,560
nasa itself

63
00:02:12,229 --> 00:02:10,720

i continue doing the same exact job as a

64
00:02:14,869 --> 00:02:12,239
flight controller with the electrical

65
00:02:16,949 --> 00:02:14,879
power system of the space station uh a

66
00:02:18,390 --> 00:02:16,959
few years later i was able to

67
00:02:19,830 --> 00:02:18,400
become what we call the group lead over

68
00:02:22,309 --> 00:02:19,840
those flight controllers for the that

69
00:02:23,910 --> 00:02:22,319
person has more of the job of making

70
00:02:25,750 --> 00:02:23,920
sure that the right correct folks are

71
00:02:27,589 --> 00:02:25,760
being trained uh to be flight

72
00:02:29,190 --> 00:02:27,599
controllers uh work out the schedules

73
00:02:31,990 --> 00:02:29,200
who who's on console who's supporting

74
00:02:33,270 --> 00:02:32,000
our simulations uh and and who's uh

75
00:02:34,869 --> 00:02:33,280
assigned to work the big assembly

76
00:02:36,710 --> 00:02:34,879
missions that were going on at the time

77
00:02:39,110 --> 00:02:36,720
in those type things

78
00:02:41,030 --> 00:02:39,120
a few years later i applied and was

79
00:02:42,869 --> 00:02:41,040
accepted into the flight director office

80
00:02:44,630 --> 00:02:42,879
so i've been a flight director since

81
00:02:46,790 --> 00:02:44,640
2009

82
00:02:49,830 --> 00:02:46,800
and this is my first increment as a lead

83
00:02:51,030 --> 00:02:49,840
uh flight director i was able to work uh

84
00:02:52,790 --> 00:02:51,040
at least one of the shuttle missions i

85
00:02:54,630 --> 00:02:52,800
worked sts-132

86
00:02:57,509 --> 00:02:54,640
as a flight director uh and that was a

87
00:03:00,229 --> 00:02:57,519
very exciting time again uh watching the

88
00:03:02,070 --> 00:03:00,239

the end of the the shuttle program but

89
00:03:03,990 --> 00:03:02,080
uh finishing up the actual construction

90
00:03:06,149 --> 00:03:04,000
of the international space station was a

91
00:03:08,070 --> 00:03:06,159
great time to be a flight director and

92
00:03:10,309 --> 00:03:08,080
seeing all the work that was going into

93
00:03:12,149 --> 00:03:10,319
the the culmination of the the space

94
00:03:14,229 --> 00:03:12,159
shuttle program

95
00:03:16,470 --> 00:03:14,239
wow that's a really uh very interesting

96
00:03:19,430 --> 00:03:16,480
background scott thanks

97
00:03:21,190 --> 00:03:19,440
before we get into the details of what a

98
00:03:23,430 --> 00:03:21,200
lead flight director does can you give

99
00:03:24,550 --> 00:03:23,440
us a little bit of background on what a

100
00:03:26,869 --> 00:03:24,560
flight director does in the

101
00:03:28,470 --> 00:03:26,879
international space station control room

102
00:03:31,270 --> 00:03:28,480
especially during these days when

103
00:03:34,550 --> 00:03:31,280
assembly is virtually complete and we're

104
00:03:36,710 --> 00:03:34,560
in the operations mode uh

105
00:03:38,949 --> 00:03:36,720
really focusing on using this unique

106
00:03:41,190 --> 00:03:38,959
laboratory put in orbit sure of course

107
00:03:44,149 --> 00:03:41,200
the the flight director here in houston

108
00:03:46,869 --> 00:03:44,159
is uh the person in charge of everything

109
00:03:48,149 --> 00:03:46,879
so we manage the day in the day out

110
00:03:49,430 --> 00:03:48,159
operations of the space station of

111
00:03:53,030 --> 00:03:49,440
course we work with our international

112
00:03:54,149 --> 00:03:53,040
partners in moscow in scuba in munich uh

113
00:03:55,509 --> 00:03:54,159

the folks in

114
00:03:57,190 --> 00:03:55,519
montreal

115
00:03:59,509 --> 00:03:57,200
and uh

116
00:04:01,509 --> 00:03:59,519
we we also

117
00:04:03,589 --> 00:04:01,519
work with folks in pyc which is in

118
00:04:05,190 --> 00:04:03,599
huntsville alabama which manage our nasa

119
00:04:06,550 --> 00:04:05,200
payloads for us

120
00:04:09,750 --> 00:04:06,560
the

121
00:04:10,949 --> 00:04:09,760
of course everybody that sits in mission

122
00:04:12,630 --> 00:04:10,959
control houston or any of the other

123
00:04:14,229 --> 00:04:12,640
control centers is first of all the

124
00:04:15,670 --> 00:04:14,239
safety of the crew we monitor all the

125
00:04:17,430 --> 00:04:15,680
activities that are going on and the

126
00:04:20,789 --> 00:04:17,440
operations of the vehicle systems make

127
00:04:22,310 --> 00:04:20,799
sure the crew is safe and that the uh

128
00:04:23,749 --> 00:04:22,320
whatever operation we're doing that day

129
00:04:25,749 --> 00:04:23,759
is going to safe and continue the

130
00:04:28,790 --> 00:04:25,759
operation of the vehicle for you know

131
00:04:31,350 --> 00:04:28,800
the foreseeable future we manage the

132
00:04:33,030 --> 00:04:31,360
timeline and make sure that if

133
00:04:34,310 --> 00:04:33,040
items in the timeline are taking longer

134
00:04:36,710 --> 00:04:34,320
we actively

135
00:04:38,150 --> 00:04:36,720
prioritize the upcoming events is the

136
00:04:39,350 --> 00:04:38,160
activity that we're doing that is taking

137
00:04:41,110 --> 00:04:39,360
longer

138
00:04:42,390 --> 00:04:41,120

more important than an upcoming activity

139
00:04:43,590 --> 00:04:42,400
or do we want to

140
00:04:45,510 --> 00:04:43,600
find a stopping point what we're

141
00:04:48,150 --> 00:04:45,520
currently doing and proceed with another

142
00:04:50,550 --> 00:04:48,160
activity that we deem a higher priority

143
00:04:52,469 --> 00:04:50,560
um so again the main thing is we're

144
00:04:54,950 --> 00:04:52,479
managing the safety of the crew and the

145
00:04:56,790 --> 00:04:54,960
vehicle and following a timeline and

146
00:04:58,310 --> 00:04:56,800
laying out what needs to be done to keep

147
00:04:59,909 --> 00:04:58,320
the vehicle operating and of course do

148
00:05:01,350 --> 00:04:59,919
the all-important science which is what

149
00:05:03,670 --> 00:05:01,360
we're really trying to to get

150
00:05:05,909 --> 00:05:03,680
accomplished on board

151
00:05:07,270 --> 00:05:05,919
okay and then so

152
00:05:08,870 --> 00:05:07,280
that's the general flight director

153
00:05:09,990 --> 00:05:08,880
duties and that's anybody that sits in

154
00:05:11,189 --> 00:05:10,000
your chair

155
00:05:12,230 --> 00:05:11,199
for a

156
00:05:13,990 --> 00:05:12,240
shift that

157
00:05:16,070 --> 00:05:14,000
usually lasts about nine but on the

158
00:05:17,510 --> 00:05:16,080
weekends 12 hours

159
00:05:19,510 --> 00:05:17,520
what about for an increment or

160
00:05:22,310 --> 00:05:19,520
expedition lead how does that differ

161
00:05:24,950 --> 00:05:22,320
from the day-to-day flight director job

162
00:05:26,870 --> 00:05:24,960
yeah it's actually very different uh so

163
00:05:28,230 --> 00:05:26,880

i come in every morning and we have

164
00:05:30,710 --> 00:05:28,240
reporting meetings out to both my

165
00:05:32,070 --> 00:05:30,720
management also to program management uh

166
00:05:34,710 --> 00:05:32,080
reporting what what happened over the

167
00:05:36,230 --> 00:05:34,720
previous 24 hours and then looking ahead

168
00:05:38,710 --> 00:05:36,240
to what the plans are for the the

169
00:05:40,150 --> 00:05:38,720
upcoming days one once we're sure the

170
00:05:42,390 --> 00:05:40,160
management's happy of where we're at and

171
00:05:44,629 --> 00:05:42,400
where we're going my job is to focus

172
00:05:46,390 --> 00:05:44,639
usually at least one week maybe two or

173
00:05:48,150 --> 00:05:46,400
three weeks out in the future and plan

174
00:05:50,710 --> 00:05:48,160
those priorities that the program has

175
00:05:52,469 --> 00:05:50,720
given us out over those next three weeks

176
00:05:54,469 --> 00:05:52,479
verifying that we can't accomplish the

177
00:05:57,990 --> 00:05:54,479
priorities that the crew

178
00:05:59,749 --> 00:05:58,000
the program has given us to to do so i i

179
00:06:01,670 --> 00:05:59,759
spend most of my time thinking a few

180
00:06:02,870 --> 00:06:01,680
days in the future you'll see me in the

181
00:06:04,710 --> 00:06:02,880
hallway and i don't even know what day

182
00:06:07,110 --> 00:06:04,720
it is today because i'm thinking two or

183
00:06:08,550 --> 00:06:07,120
three weeks into the future um and it's

184
00:06:10,230 --> 00:06:08,560
the job the the flight director is on

185
00:06:11,830 --> 00:06:10,240
console right now to execute the plan

186
00:06:13,749 --> 00:06:11,840
that we've put together and and they'll

187
00:06:16,150 --> 00:06:13,759
tell me how things went today and if we

188
00:06:17,670 --> 00:06:16,160

need to replan anything so again i'm

189
00:06:20,070 --> 00:06:17,680
looking more into the future and what's

190
00:06:21,990 --> 00:06:20,080
going on in managing a team of flight

191
00:06:23,909 --> 00:06:22,000
controllers that aren't sitting in the

192
00:06:25,590 --> 00:06:23,919
flight control room but are helping me

193
00:06:28,309 --> 00:06:25,600
with that plan getting that plan pulled

194
00:06:29,830 --> 00:06:28,319
together and looking again long-term

195
00:06:31,670 --> 00:06:29,840
where we need to be

196
00:06:34,309 --> 00:06:31,680
throughout the six months of an

197
00:06:37,270 --> 00:06:34,319
increment or an expedition

198
00:06:38,950 --> 00:06:37,280
now a good example that is you were in

199
00:06:40,309 --> 00:06:38,960
the international space station mission

200
00:06:42,390 --> 00:06:40,319
management team this morning and i know

201
00:06:44,629 --> 00:06:42,400
because i heard you what can you tell us

202
00:06:46,070 --> 00:06:44,639
about what you briefed the program

203
00:06:49,110 --> 00:06:46,080
managers around the world about what

204
00:06:50,390 --> 00:06:49,120
we're doing on orbit today sure uh so

205
00:06:53,830 --> 00:06:50,400
this morning i went through the

206
00:06:55,510 --> 00:06:53,840
activities of yesterday uh in which uh

207
00:06:57,430 --> 00:06:55,520
luckily there were no problems from

208
00:06:59,029 --> 00:06:57,440
yesterday uh everything went well uh we

209
00:07:01,830 --> 00:06:59,039
performed overnight we performed some

210
00:07:03,990 --> 00:07:01,840
robotics operations to take images

211
00:07:06,950 --> 00:07:04,000
between modules to verify that we

212
00:07:08,469 --> 00:07:06,960
understand our computer design models

213
00:07:10,390 --> 00:07:08,479

are correct of how the space station is

214
00:07:13,029 --> 00:07:10,400
actually assembled on orbit

215
00:07:15,670 --> 00:07:13,039
so that's what we did last night

216
00:07:18,230 --> 00:07:15,680
again today as i'm sure folks have seen

217
00:07:20,150 --> 00:07:18,240
already we're focusing a lot on the

218
00:07:22,390 --> 00:07:20,160
cabin fan assembly in the columbus

219
00:07:24,950 --> 00:07:22,400
module making sure that it's clean uh

220
00:07:27,189 --> 00:07:24,960
and ready for continued operations we're

221
00:07:28,469 --> 00:07:27,199
going to continue that tomorrow so a lot

222
00:07:30,230 --> 00:07:28,479
of my briefing this morning to the

223
00:07:31,909 --> 00:07:30,240
mission management team was about what

224
00:07:33,909 --> 00:07:31,919
happened yesterday and then giving a

225
00:07:36,070 --> 00:07:33,919
preview of what we're doing today

226
00:07:37,589 --> 00:07:36,080
and i would imagine the ventilation

227
00:07:39,670 --> 00:07:37,599
would be an important item of the

228
00:07:41,909 --> 00:07:39,680
architecture for you

229
00:07:44,390 --> 00:07:41,919
yes

230
00:07:45,909 --> 00:07:44,400
as a space architect background

231
00:07:47,270 --> 00:07:45,919
ventilation is a very interesting part

232
00:07:48,629 --> 00:07:47,280
of the space station

233
00:07:50,710 --> 00:07:48,639
each of the modules of course were

234
00:07:52,550 --> 00:07:50,720
designed and built in a computer on the

235
00:07:53,749 --> 00:07:52,560
ground but were never actually linked up

236
00:07:55,909 --> 00:07:53,759
until they got into orbit so

237
00:07:57,270 --> 00:07:55,919
understanding the airflow between the

238
00:07:59,110 --> 00:07:57,280

different modules of the international

239
00:08:00,710 --> 00:07:59,120
space station from the russian segment

240
00:08:03,110 --> 00:08:00,720
through the u.s modules the jackson

241
00:08:05,589 --> 00:08:03,120
module and the the issa module

242
00:08:06,790 --> 00:08:05,599
is a very complex air flow system and we

243
00:08:10,150 --> 00:08:06,800
need to make sure that we're keeping it

244
00:08:11,430 --> 00:08:10,160
clean and well ventilated of course you

245
00:08:13,350 --> 00:08:11,440
know here on the ground you don't have

246
00:08:15,510 --> 00:08:13,360
to worry too much about your exhaling

247
00:08:17,510 --> 00:08:15,520
co2 or anything like that because we

248
00:08:19,350 --> 00:08:17,520
have natural convection due to gravity

249
00:08:21,270 --> 00:08:19,360
that will pull the co2 away from you and

250
00:08:23,430 --> 00:08:21,280
provide you with fresh oxygen that's not

251
00:08:25,909 --> 00:08:23,440
true on orbit if a crew member is in

252
00:08:27,350 --> 00:08:25,919
stale air the co2 that they exhale will

253
00:08:29,430 --> 00:08:27,360
just stay in front of their face and can

254
00:08:30,629 --> 00:08:29,440
actually affixiate them over time so we

255
00:08:32,230 --> 00:08:30,639
need to make sure that the air is

256
00:08:34,149 --> 00:08:32,240
constantly moving

257
00:08:36,149 --> 00:08:34,159
on orbit and therefore providing the

258
00:08:36,949 --> 00:08:36,159
crew with fresh clean air and that's why

259
00:08:38,870 --> 00:08:36,959
we

260
00:08:40,149 --> 00:08:38,880
investigate our ducting and our fans to

261
00:08:42,550 --> 00:08:40,159
make sure that we're providing that

262
00:08:44,230 --> 00:08:42,560
clean air throughout the vehicle

263
00:08:46,150 --> 00:08:44,240

and we do a lot of recycling of the

264
00:08:48,230 --> 00:08:46,160
atmosphere on board too right

265
00:08:50,230 --> 00:08:48,240
correct um we've got

266
00:08:52,790 --> 00:08:50,240
trace contaminated control systems which

267
00:08:55,670 --> 00:08:52,800
clean harmful contaminants that may be

268
00:08:57,590 --> 00:08:55,680
either off gas from new hardware or from

269
00:08:59,910 --> 00:08:57,600
a payload that will you know give off

270
00:09:01,829 --> 00:08:59,920
some kind of gas the then we also have

271
00:09:04,070 --> 00:09:01,839
our carbon dioxide removal assemblies

272
00:09:06,630 --> 00:09:04,080
which specifically go after the co2

273
00:09:08,550 --> 00:09:06,640
that's being exhaled by the crew members

274
00:09:09,990 --> 00:09:08,560
and what that does is that absorbs that

275
00:09:12,310 --> 00:09:10,000
and then we were able to vent that

276
00:09:14,470 --> 00:09:12,320
overboard or sometimes we have a

277
00:09:16,150 --> 00:09:14,480
processor called a sabati a engine which

278
00:09:18,310 --> 00:09:16,160
takes that carbon dioxide and actually

279
00:09:20,710 --> 00:09:18,320
can transform it back into water for us

280
00:09:22,630 --> 00:09:20,720
so it's a it's a very

281
00:09:25,829 --> 00:09:22,640
regenerative system and we try not to

282
00:09:27,030 --> 00:09:25,839
waste any gas or any water that we can

283
00:09:28,389 --> 00:09:27,040
great

284
00:09:30,710 --> 00:09:28,399
and then

285
00:09:34,310 --> 00:09:30,720
another part of the your job is planning

286
00:09:37,030 --> 00:09:34,320
for the expedition before it ever begins

287
00:09:39,670 --> 00:09:37,040
and this crew has had some changes in

288
00:09:41,190 --> 00:09:39,680

the duration of its expedition uh they

289
00:09:43,269 --> 00:09:41,200
got off the ground a little bit late

290
00:09:46,070 --> 00:09:43,279
because of some issues with uh one of

291
00:09:47,509 --> 00:09:46,080
the russian launch vehicles uh but we

292
00:09:49,509 --> 00:09:47,519
maintained the crew onboard the space

293
00:09:52,310 --> 00:09:49,519
station uh consistently we've done that

294
00:09:53,509 --> 00:09:52,320
for 11 years now and now we're hearing

295
00:09:55,350 --> 00:09:53,519
that we're going to adjust the flight

296
00:09:57,430 --> 00:09:55,360
program a little bit more so that this

297
00:09:58,870 --> 00:09:57,440
crew actually is going to get their full

298
00:10:01,430 --> 00:09:58,880
plan stay on orbit can you tell us a

299
00:10:03,350 --> 00:10:01,440
little bit how that all goes sure um so

300
00:10:05,509 --> 00:10:03,360
we were delayed due to an issue with

301
00:10:07,670 --> 00:10:05,519
what we call 44 progress the 44th

302
00:10:09,590 --> 00:10:07,680
progress to the vehicle uh was actually

303
00:10:11,269 --> 00:10:09,600
lost on launch uh and therefore there

304
00:10:12,630 --> 00:10:11,279
was a lot of concern over the launch

305
00:10:15,110 --> 00:10:12,640
vehicle making sure it was safe before

306
00:10:16,790 --> 00:10:15,120
we put human beings back on it um so

307
00:10:18,710 --> 00:10:16,800
there was a lot of investigation that

308
00:10:20,790 --> 00:10:18,720
both the our russian colleagues helped

309
00:10:22,790 --> 00:10:20,800
out with of course they led the actual

310
00:10:24,069 --> 00:10:22,800
investigation and we just sort of

311
00:10:25,269 --> 00:10:24,079
monitored and made sure we understood

312
00:10:27,190 --> 00:10:25,279
the progress they were making with that

313
00:10:29,110 --> 00:10:27,200

investigation once it was determined

314
00:10:30,630 --> 00:10:29,120
that the vehicle was safe and we were

315
00:10:32,470 --> 00:10:30,640
ready to launch the crew that happened

316
00:10:34,710 --> 00:10:32,480
back in november we were able to launch

317
00:10:37,750 --> 00:10:34,720
28s which mr burbank and his crew

318
00:10:39,350 --> 00:10:37,760
members flew on um before that uh i was

319
00:10:40,870 --> 00:10:39,360
actually part of the team that did a lot

320
00:10:42,630 --> 00:10:40,880
of the investigation what would we need

321
00:10:43,829 --> 00:10:42,640
to do if we decreed the vehicle if we

322
00:10:46,230 --> 00:10:43,839
actually brought all the crew members

323
00:10:48,389 --> 00:10:46,240
home how did we need to configure the

324
00:10:49,670 --> 00:10:48,399
vehicle so they'd be safe and ready for

325
00:10:51,190 --> 00:10:49,680
recruiter return once we were ready for

326
00:10:53,030 --> 00:10:51,200
that so that that spent a lot of time

327
00:10:54,949 --> 00:10:53,040
leading up to the increment

328
00:10:57,190 --> 00:10:54,959
but we also spent a lot of time making

329
00:10:58,069 --> 00:10:57,200
sure that dan and his crew members would

330
00:10:59,990 --> 00:10:58,079
have

331
00:11:01,829 --> 00:11:00,000
the right amount of handover available

332
00:11:03,030 --> 00:11:01,839
so that in the short period of time that

333
00:11:04,630 --> 00:11:03,040
they were going to be there with mike

334
00:11:06,150 --> 00:11:04,640
fossum and his crew they would be ready

335
00:11:08,949 --> 00:11:06,160
to take over and be in charge of the

336
00:11:12,230 --> 00:11:08,959
vehicle um now that said we have now

337
00:11:14,389 --> 00:11:12,240
extended a our mission here at the end

338
00:11:16,550 --> 00:11:14,399

we originally were supposed to have 28s

339
00:11:18,230 --> 00:11:16,560
return in the middle of may or sorry the

340
00:11:19,910 --> 00:11:18,240
middle of march and is now coming back

341
00:11:21,910 --> 00:11:19,920
at the very end of april so that's about

342
00:11:24,230 --> 00:11:21,920
a six weeks extension and what we've

343
00:11:25,509 --> 00:11:24,240
done is i've worked with my upcoming

344
00:11:28,630 --> 00:11:25,519
increment lead flight director matt

345
00:11:30,550 --> 00:11:28,640
abbott uh who's the increment 31 lead

346
00:11:32,630 --> 00:11:30,560
and now they had already started laying

347
00:11:33,910 --> 00:11:32,640
out plans for what april was supposed to

348
00:11:35,910 --> 00:11:33,920
look like what may is supposed to look

349
00:11:37,829 --> 00:11:35,920
like and we have started taking what

350
00:11:39,030 --> 00:11:37,839
their plans were and adjusting them to

351
00:11:41,190 --> 00:11:39,040
the crew members that we'll have on

352
00:11:43,430 --> 00:11:41,200
board so that we can follow those

353
00:11:46,150 --> 00:11:43,440
priorities and continue doing valuable

354
00:11:48,630 --> 00:11:46,160
science and work on board uh while we

355
00:11:51,910 --> 00:11:48,640
wait for 28 s to come home and then

356
00:11:54,389 --> 00:11:51,920
eventually the launch of 30s in may

357
00:11:56,230 --> 00:11:54,399
and so to wrap up the interview today

358
00:11:58,150 --> 00:11:56,240
you just finished up with talking about

359
00:11:59,590 --> 00:11:58,160
science how much science is the crew

360
00:12:00,949 --> 00:11:59,600
actually getting accomplished on board

361
00:12:03,829 --> 00:12:00,959
the space station

362
00:12:05,269 --> 00:12:03,839
so science is a very hard thing to to

363
00:12:07,350 --> 00:12:05,279

put a number on

364
00:12:09,430 --> 00:12:07,360
what we do is we look at how many

365
00:12:11,750 --> 00:12:09,440
payload operations that we have planned

366
00:12:13,430 --> 00:12:11,760
uh and and that can be anything from the

367
00:12:14,949 --> 00:12:13,440
crew members uh

368
00:12:16,629 --> 00:12:14,959
you know working with the combustion

369
00:12:18,870 --> 00:12:16,639
integration rack which i think folks

370
00:12:21,910 --> 00:12:18,880
have seen today uh we've also have

371
00:12:23,269 --> 00:12:21,920
multiple fluid experiments uh capillary

372
00:12:24,949 --> 00:12:23,279
flow is one of the things that we're

373
00:12:26,550 --> 00:12:24,959
very interested in

374
00:12:28,550 --> 00:12:26,560
and of course we the crew members

375
00:12:29,910 --> 00:12:28,560
themselves are guinea pigs they we we do

376
00:12:31,990 --> 00:12:29,920
all kinds of science studies on the crew

377
00:12:33,990 --> 00:12:32,000
members themselves of their food intake

378
00:12:36,470 --> 00:12:34,000
and and their bone loss or anything like

379
00:12:38,629 --> 00:12:36,480
that so uh when we're trying to figure

380
00:12:40,069 --> 00:12:38,639
out how much they've actually done

381
00:12:41,430 --> 00:12:40,079
we calculate all those things that we

382
00:12:42,870 --> 00:12:41,440
put on the plan and we come up with a

383
00:12:45,670 --> 00:12:42,880
number of hours

384
00:12:48,389 --> 00:12:45,680
so right now the goal of the program is

385
00:12:50,389 --> 00:12:48,399
to do about 35 hours a week of payload

386
00:12:52,629 --> 00:12:50,399
operations

387
00:12:54,550 --> 00:12:52,639
we due to some of the extenuating

388
00:12:55,990 --> 00:12:54,560

circumstances of folks being delayed

389
00:12:57,269 --> 00:12:56,000
getting on orbit and things like that

390
00:12:59,030 --> 00:12:57,279
we've actually upped that number to make

391
00:13:01,590 --> 00:12:59,040
sure that we meet that average so we're

392
00:13:03,829 --> 00:13:01,600
doing about 50 hours a week of crew

393
00:13:05,190 --> 00:13:03,839
tended payloads that doesn't count all

394
00:13:07,269 --> 00:13:05,200
the ground tenant payloads that we're

395
00:13:08,949 --> 00:13:07,279
also doing so you you have the alpha

396
00:13:11,350 --> 00:13:08,959
magnetic spectrometer and a bunch of

397
00:13:13,430 --> 00:13:11,360
payloads that don't require 24-hour crew

398
00:13:15,269 --> 00:13:13,440
interaction and and so those are

399
00:13:17,670 --> 00:13:15,279
continuously running gathering science

400
00:13:19,750 --> 00:13:17,680
data and bringing that down all the time

401
00:13:21,910 --> 00:13:19,760
so that's even beyond that unquote 50

402
00:13:23,269 --> 00:13:21,920
hours a week that we're doing

403
00:13:25,509 --> 00:13:23,279
okay well scott thanks a whole lot for

404
00:13:26,790 --> 00:13:25,519
being with us here today and and just to

405
00:13:28,470 --> 00:13:26,800
look ahead at tomorrow we're going to

406
00:13:30,790 --> 00:13:28,480
have tara rutley from the international

407
00:13:32,870 --> 00:13:30,800
space station program science office

408
00:13:34,790 --> 00:13:32,880
talking to more some more about it about

409
00:13:36,389 --> 00:13:34,800
the research onboard the station with us

410
00:13:37,990 --> 00:13:36,399
and then on friday we're planning on

411
00:13:39,829 --> 00:13:38,000
having trent martin

412
00:13:41,829 --> 00:13:39,839
from the ams project so he can talk a

413
00:13:43,750 --> 00:13:41,839

little bit about the cosmic ray

414
00:13:45,430 --> 00:13:43,760
collection that they're doing so with

415
00:13:47,430 --> 00:13:45,440
that we'll say thanks again to scott

416
00:13:49,750 --> 00:13:47,440
stover the lead flight director for

417
00:13:50,949 --> 00:13:49,760
expedition 30 and this increment aboard